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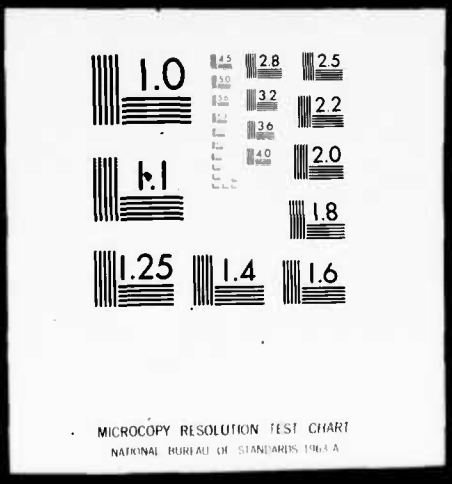

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FOREWORD

This User's Manual was prepared by the San Diego Operation of Convair Aerospace Division of General Dynamics for the San Antonio Air Materiel Area, Kelly AFB, Texas, under Request VE12, change 1, to Engineering Services Contract F41608-71-D-1383 dated 18 February 1972. Request VE12 is administered under the direction of Capt. G. A. Morgan (SAMMER). This document fulfills the requirements of CDRL Item B010.

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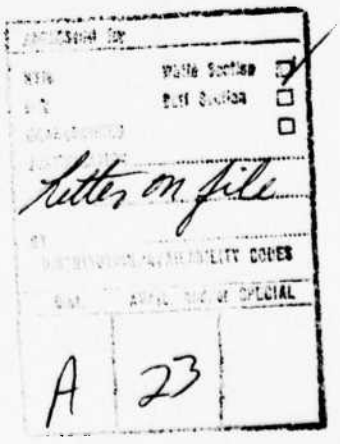

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LIST OF ABBREVIATIONS

ACI	Analytical Condition Inspection
AI	Accident/Incident
AIE	Accidents, Incidents, and EUMR
ANS	American National Standard
ATC	Action-Taken Codes
bpi	Bits Per Inch
byte	8 Binary Bits
CPU	Central Processor Unit
EUMR	Emergency Unsatisfactory Material Report
FH	Flight Hour
HMC	How-Malfunction Code
HPF	Hourly Postflight
IBM	International Business Machine
ID	Identification
IRAN	Inspect and Repair As Necessary
JCL	Job Control Language
MA, ma	Maintenance Action
MISR	COBOL name for correlation and regression subroutine
NAM	Network Analysis Model
NOR	Not Operationally Ready
NORM	Not Operationally Ready due to Maintenance
NORS	Not Operationally Ready due to Supply
NSG	Non-support General
SAAMA	San Antonio Air Materiel Area
SG	Support General
uma	Unscheduled Maintenance Action
WDC	When-Discovered Code
WUC	Work Unit Code

SECTION 1

INTRODUCTION

1.1 PURPOSE

A system of IBM 370 programs has been developed for the scheduled maintenance study by Convair Aerospace Division of General Dynamics for the San Antonio Air Materiel Area, Kelly AFB, Texas. This handbook provides information needed by user personnel for basic understanding and for executing each of the computer programs. A fleet of 150 F-106 aircraft was used to validate the design of the programs on the IBM 370 (Model 165) at Convair Aerospace, San Diego. The design of the programs is generalized to cover all USAF aircraft.

1.2 SCOPE

For each of the computer programs, the following information is given.

a. Purpose of the program.

b. Input Description.

c. Sample Input.

d. Procedures.

e. Output Description.

f. Sample Output.

g. Output Size and IBM 370 Time.

h. Notes on Limitations.

Programs have been written in American National Standard COBOL and Basic FORTRAN IV languages. Section 6 contains the computer source deck listings of all the IBM 370 computer programs together with the job control cards and sample data cards. To achieve compatibility with SAAMA equipment, only the subset of ANS COBOL compatible with Version D COBOL was used. Procedures to convert the IBM 370 programs into the SAAMA IBM 360 are contained in Paragraph 1.4.

To estimate computer time requirement on the IBM 360 from the IBM 370 data, it would be realistic to assume a factor of three to one. Nine-track, 1600-bits-per-inch tapes were used on the IBM 370. The program and data bank tapes, part of the contract end items to be delivered to SAAMA, are seven-track with 800 bits per inch.

In addition to the functions performed by the programs described in this manual, a sort and merge capability is also required. Since sort/merge programs are typically software features supplied with operating systems, the relevant discussions in this handbook are limited to descriptions of the sort/merge control fields.

For a detailed discussion of the engineering model for the scheduled maintenance study, see the Phase I report, Convair Aerospace report GDCA-AHD72-001, and the Phase II report, GDCA-AHD72-003.

1.3 MANUAL ORGANIZATION

Four major categories of computer programs are covered in this manual:

a. Data Reduction Programs (Section 2).

b. Data Bank Generation (Section 3).

c. Statistical Analysis Programs (Section 4).

d. Effectiveness and Cost Programs (Section 5).

Listings of all the IBM 370 computer programs with job control and sample data cards are contained in Section 6. Appropriate figures and tables are included in the various sections to improve the understanding of the logic and structure of the computer programs.

1.4 CONVERSION TO IBM 360

As part of the contract end items, computer programs and the data bank are stored in magnetic tapes. FORTRAN and COBOL programs are stored in separate reels.

Data Bank was written on two reels on SAAMA Reel Numbers 1045 (Reel 1) and 9490 (Reel 2). Tape was written on seven-track, 800 bpi with 50 characters per record, blocked 60 to a tape record. FORTRAN and COBOL source programs were written on SAAMA Reel No. 8761 and 10,479, respectively. Tape structure for the program tapes consists of 80 characters per record, blocked 20 to a tape record. There are about 4000 cards for the FORTRAN programs and about 14,000 cards for the COBOL programs.

For the convenience of the users, some modifications were made on the IBM 370 COBOL programs before they were copied onto the previously mentioned tapes:

a. Removal of the 'sync' in the Data Division.

b. Replace GOBACK with STOP RUN.

c. Carriage control character changed to 0, 1, or blank.

d. Program ID Statement change.

For conversion to IBM 360 at SAAMA, the user must:

a. Produce IBM 360 job control cards.

b. Modify file-control in the Input-Output section.

c. Generate input data cards.

The programs require less than 100,000 bytes of core storage.

SECTION 2

DATA REDUCTION PROGRAMS

2.1 GENERAL DESCRIPTION

The purpose of the data reduction programs is to reduce four data source inputs into four sorted files, which are used as input to the data bank generation programs. (See Section 3.) The four data sources consist of:

AFM 66-1 maintenance data.

AFM 65-110 utilization, NOR, and possessed hour data.

Data files for IRAN histories.

Accident, incident, and emergency unsatisfactory material report histories (AIE).

These data files are referred to as 66-1, 65-110, IRAN, and AIE files, respectively.

The analysis of maintenance policies requires that data from the four sources be processed and combined into a single data bank, which serves as input to the various analytical programs. The development of the data bank requires screening, reorganization, and summarization of the data from each of the four sources. The data bank is organized into a sorted file of aircraft serial number histories. For each serial number, all activity records for each of the data sources are summarized to statistics representing seven consecutive days. These seven-day periods are referred to as "weeks," although they do not correspond to any particular calendar week. To obtain the desired data organization in the data bank, the input from each of the four data sources must be sorted into ascending serial number sequence and into chronological order within each serial number. Table 2-1 contains first and last day numbers, with the corresponding calendar dates, for each of the week numbers used for this study. January 1, 1965 is the first day number for the week number one.

In addition to the required data, the 66-1 and 65-110 files contain data that is not relevant to this study. Consequently, these data files must be screened to eliminate the extraneous records. Furthermore, for various reasons, certain aircraft serial numbers are excluded from the data base. The screening programs for the 66-1, 65-110, and AIE files eliminate these serial numbers. Finally, the 66-1 file may contain duplicate records, and after the 66-1 data has been screened, sorted, and merged into a single ordered file, adjacent records must be compared to eliminate the duplicates. The source data tapes for 66-1 and 65-110 are shown in Tables 2-2 and 2-3, respectively.

Table 2-1. Conversion Table for Week Number

WEEK NO.	FIRST-JDAY	DATE	LAST-JDAY	DATE
1	1	1 JAN 65	3	3 JAN 65
2	4	4 JAN 65	10	10 JAN 65
3	11	11 JAN 65	17	17 JAN 65
4	18	18 JAN 65	24	24 JAN 65
5	25	25 JAN 65	31	31 JAN 65
6	32	1 FEB 65	38	7 FEB 65
7	39	8 FEB 65	45	14 FEB 65
8	46	15 FEB 65	52	21 FEB 65
9	53	22 FEB 65	59	28 FEB 65
10	60	1 MAR 65	66	7 MAR 65
11	67	8 MAR 65	73	14 MAR 65
12	74	15 MAR 65	80	21 MAR 65
13	81	22 MAR 65	87	28 MAR 65
14	88	29 MAR 65	94	4 APR 65
15	95	5 APR 65	101	11 APR 65
16	102	12 APR 65	108	18 APR 65
17	109	19 APR 65	115	25 APR 65
18	116	26 APR 65	122	2 MAY 65
19	123	3 MAY 65	129	9 MAY 65
20	130	10 MAY 65	136	16 MAY 65
21	137	17 MAY 65	143	23 MAY 65
22	144	24 MAY 65	150	30 MAY 65
23	151	31 MAY 65	157	6 JUN 65
24	158	7 JUN 65	164	13 JUN 65
25	165	14 JUN 65	171	20 JUN 65
26	172	21 JUN 65	178	27 JUN 65
27	179	28 JUN 65	185	4 JLY 65
28	186	5 JLY 65	192	11 JLY 65
29	193	12 JLY 65	199	18 JLY 65
30	200	19 JLY 65	206	25 JLY 65
31	207	26 JLY 65	213	1 AUG 65
32	214	2 AUG 65	220	8 AUG 65
33	221	9 AUG 65	227	15 AUG 65
34	228	16 AUG 65	234	22 AUG 65
35	235	23 AUG 65	241	29 AUG 65
36	242	30 AUG 65	248	5 SEP 65
37	249	6 SEP 65	255	12 SEP 65
38	256	13 SEP 65	262	19 SEP 65
39	263	20 SEP 65	269	26 SEP 65
40	270	27 SEP 65	276	3 OCT 65
41	277	4 OCT 65	283	10 OCT 65
42	284	11 OCT 65	290	17 OCT 65
43	291	18 OCT 65	297	24 OCT 65
44	298	25 OCT 65	304	31 OCT 65
45	305	1 NOV 65	311	7 NOV 65
46	312	8 NOV 65	318	14 NOV 65
47	319	15 NOV 65	325	21 NOV 65
48	326	22 NOV 65	332	28 NOV 65
49	333	29 NOV 65	339	5 DEC 65
50	340	6 DEC 65	346	12 DEC 65
51	347	13 DEC 65	353	19 DEC 65
52	354	20 DEC 65	360	26 DEC 65
53	361	27 DEC 65	367	2 JAN 66
54	368	3 JAN 66	374	9 JAN 66
55	375	10 JAN 66	381	16 JAN 66
56	382	17 JAN 66	388	23 JAN 66
57	389	24 JAN 66	395	30 JAN 66
58	396	31 JAN 66	402	6 FEB 66
59	403	7 FEB 66	409	13 FEB 66
60	410	14 FEB 66	416	20 FEB 66
61	417	21 FEB 66	423	27 FEB 66
62	424	28 FEB 66	430	6 MAR 66
63	431	7 MAR 66	437	13 MAR 66
64	438	14 MAR 66	444	20 MAR 66
65	445	21 MAR 66	451	27 MAR 66
66	452	28 MAR 66	458	3 APR 66
67	459	4 APR 66	465	10 APR 66
68	466	11 APR 66	472	17 APR 66
69	473	18 APR 66	479	24 APR 66
70	480	25 APR 66	486	1 MAY 66
71	487	2 MAY 66	493	8 MAY 66
72	494	9 MAY 66	500	15 MAY 66
73	501	16 MAY 66	507	22 MAY 66
74	508	23 MAY 66	514	29 MAY 66
75	515	30 MAY 66	521	5 JUN 66
76	522	6 JUN 66	528	12 JUN 66
77	529	13 JUN 66	535	19 JUN 66
78	536	20 JUN 66	542	26 JUN 66
79	543	27 JUN 66	549	3 JLY 66
80	550	4 JLY 66	556	10 JLY 66
81	557	11 JLY 66	563	17 JLY 66
82	564	18 JLY 66	570	24 JLY 66
83	571	25 JLY 66	577	31 JLY 66
84	578	1 AUG 66	584	7 AUG 66
85	585	8 AUG 66	591	14 AUG 66
86	592	15 AUG 66	598	21 AUG 66
87	599	22 AUG 66	605	28 AUG 66
88	606	29 AUG 66	612	4 SEP 66
89	613	5 SEP 66	619	11 SEP 66
90	620	12 SEP 66	626	18 SEP 66
91	627	19 SEP 66	633	25 SEP 66
92	634	26 SEP 66	640	2 OCT 66
93	641	3 OCT 66	647	9 OCT 66
94	648	10 OCT 66	654	16 OCT 66
95	655	17 OCT 66	661	23 OCT 66
96	662	24 OCT 66	668	30 OCT 66
97	669	31 OCT 66	675	6 NOV 66
98	676	7 NOV 66	682	13 NOV 66
99	683	14 NOV 66	689	20 NOV 66
100	690	21 NOV 66	696	27 NOV 66
101	697	28 NOV 66	703	4 DEC 66
102	704	5 DEC 66	710	11 DEC 66
103	711	12 DEC 66	717	18 DEC 66
104	718	19 DEC 66	724	25 DEC 66
105	725	26 DEC 66	731	1 JAN 67
106	732	2 JAN 67	738	8 JAN 67
107	739	9 JAN 67	745	15 JAN 67
108	746	16 JAN 67	752	22 JAN 67
109	753	23 JAN 67	759	29 JAN 67
110	760	30 JAN 67	766	5 FEB 67
111	767	6 FEB 67	773	12 FEB 67
112	774	13 FEB 67	780	19 FEB 67
113	781	20 FEB 67	787	26 FEB 67
114	788	27 FEB 67	794	5 MAR 67
115	795	6 MAR 67	801	12 MAR 67
116	802	13 MAR 67	808	19 MAR 67
117	809	20 MAR 67	815	26 MAR 67
118	816	27 MAR 67	822	2 APR 67
119	823	3 APR 67	829	9 APR 67
120	830	10 APR 67	836	16 APR 67
121	837	17 APR 67	843	23 APR 67
122	844	24 APR 67	850	30 APR 67
123	851	1 MAY 67	857	7 MAY 67
124	858	8 MAY 67	864	14 MAY 67
125	865	15 MAY 67	871	21 MAY 67
126	872	22 MAY 67	878	28 MAY 67
127	879	29 MAY 67	885	4 JUN 67
128	886	5 JUN 67	892	11 JUN 67
129	893	12 JUN 67	899	18 JUN 67
130	900	19 JUN 67	906	25 JUN 67
131	907	26 JUN 67	913	2 JLY 67
132	914	3 JLY 67	920	9 JLY 67
133	921	10 JLY 67	927	16 JLY 67
134	928	17 JLY 67	934	23 JLY 67
135	935	24 JLY 67	941	30 JLY 67
136	942	31 JLY 67	948	6 AUG 67
137	949	7 AUG 67	955	13 AUG 67
138	956	14 AUG 67	962	20 AUG 67
139	963	21 AUG 67	969	27 AUG 67
140	970	28 AUG 67	976	3 SEP 67
141	977	4 SEP 67	983	10 SEP 67
142	984	11 SEP 67	990	17 SEP 67
143	991	18 SEP 67	997	24 SEP 67
144	998	25 SEP 67	1004	1 OCT 67
145	1005	2 OCT 67	1011	8 OCT 67
146	1012	9 OCT 67	1018	15 OCT 67
147	1019	16 OCT 67	1025	22 OCT 67
148	1026	23 OCT 67	1032	29 OCT 67
149	1033	30 OCT 67	1039	5 NOV 67
150	1040	6 NOV 67	1046	12 NOV 67
151	1047	13 NOV 67	1053	19 NOV 67
152	1054	20 NOV 67	1060	26 NOV 67
153	1061	27 NOV 67	1067	3 DEC 67
154	1068	4 DEC 67	1074	10 DEC 67
155	1075	11 DEC 67	1081	17 DEC 67
156	1082	18 DEC 67	1088	24 DEC 67
157	1089	25 DEC 67	1095	31 DEC 67
158	1096	1 JAN 68	1102	7 JAN 68
159	1103	8 JAN 68	1109	14 JAN 68
160	1110	15 JAN 68	1116	21 JAN 68
161	1117	22 JAN 68	1123	28 JAN 68
162	1124	29 JAN 68	1130	4 FEB 68
163	1131	5 FEB 68	1137	11 FEB 68
164	1138	12 FEB 68	1144	18 FEB 68
165	1145	19 FEB 68	1151	25 FEB 68
166	1152	26 FEB 68	1158	3 MAR 68
167	1159	4 MAR 68	1165	10 MAR 68
168	1166	11 MAR 68	1172	17 MAR 68
169	1173	18 MAR 68	1179	24 MAR 68
170	1180	25 MAR 68	1186	31 MAR 68
171	1187	1 APR 68	1193	7 APR 68
172	1194	8 APR 68	1200	14 APR 68
173	1201	15 APR 68	1207	21 APR 68
174	1208	22 APR 68	1214	28 APR 68
175	1215	29 APR 68	1221	5 MAY 68
176	1222	6 MAY 68	1228	12 MAY 68
177	1229	13 MAY 68	1235	19 MAY 68
178	1236	20 MAY 68	1242	26 MAY 68
179	1243	27 MAY 68	1249	2 JUN 68
180	1250	3 JUN 68	1256	9 JUN 68
181	1257	10 JUN 68	1263	16 JUN 68
182	1264	17 JUN 68	1270	23 JUN 68
183	1271	24 JUN 68	1277	30 JUN 68
184	1278	1 JLY 68	1284	7 JLY 68
185	1285	8 JLY 68	1291	14 JLY 68
186	1292	15 JLY 68	1298	21 JLY 68
187	1299	22 JLY 68	1305	28 JLY 68
188	1306	29 JLY 68	1312	4 AUG 68
189	1313	5 AUG 68	1319	11 AUG 68
190	1320	12 AUG 68	1326	18 AUG 68
191	1327	19 AUG 68	1333	25 AUG 68
192	1334	26 AUG 68	1340	1 SEP 68
193	1341	2 SEP 68	1347	8 SEP 68
194	1348	9 SEP 68	1354	15 SEP 68
195	1355	16 SEP 68	1361	22 SEP 68
196	1362	23 SEP 68	1368	29 SEP 68
197	1369	30 SEP 68	1375	6 OCT 68
198	1376	7 OCT 68	1382	13 OCT 68
199	1383	14 OCT 68	1389	20 OCT 68
200	1390	21 OCT 68	1396	27 OCT 68
201	1397	28 OCT 68	1403	3 NOV 68
202	1404	4 NOV 68	1410	10 NOV 68
203	1411	11 NOV 68	1417	17 NOV 68
204	1418	18 NOV 68	1424	24 NOV 68
205	1425	25 NOV 68	1431	1 DEC 68
206	1432	2 DEC 68	1438	8 DEC 68
207	1439	9 DEC 68	1445	15 DEC 68
208	1446	16 DEC 68	1452	22 DEC 68
209	1453	23 DEC 68	1459	29 DEC 68
210	1460	30 DEC 68	1466	5 JAN 69
211	1467	6 JAN 69	1473	12 JAN 69
212	1474	13 JAN 69	1480	19 JAN 69
213	1481	20 JAN 69	1487	26 JAN 69
214	1488	27 JAN 69	1494	2 FEB 69
215	1495	3 FEB 69	1501	9 FEB 69
216	1502	10 FEB 69	1508	16 FEB 69
217	1509	17 FEB 69	1515	23 FEB 69
218	1516	24 FEB 69	1522	2 MAR 69
219	1523	3 MAR 69	1529	9 MAR 69
220	1530	10 MAR 69	1536	16 MAR 69
221	1537	17 MAR 69	1543	23 MAR 69
222	1544	24 MAR 69	1550	30 MAR 69
223	1551	31 MAR 69	1557	6 APR 69
224	1558	7 APR 69	1564	13 APR 69
225	1565	14 APR 69	1571	20 APR 69
226	1572	21 APR 69	1578	27 APR 69
227	1579	28 APR 69	1585	4 MAY 69
228	1586	5 MAY 69	1592	11 MAY 69
229	1593	12 MAY 69	1599	18 MAY 69
230	1600	19 MAY 69	1606	25 MAY 69
231	1607	26 MAY 69	1613	1 JUN 69
232	1614	2 JUN 69	1620	8 JUN 69
233	1621	9 JUN 69	1627	15 JUN 69
234	1628	16 JUN 69	1634	22 JUN 69
235	1635	23 JUN 69	1641	29 JUN 69
236	1642	30 JUN 69	1648	6 JLY 69
237	1649	7 JLY 69	1655	13 JLY 69
238	1656	14 JLY 69	1662	20 JLY 69

Table 2-1. Conversion Table for Week Number, Continued

WEEK NO.	FIRST-JDAY	DATE	LAST-JDAY	DATE
239	1663	21 JLY 69	1668	27 JLY 69
240	1670	28 JLY 69	1676	3 AUG 69
241	1677	4 AUG 69	1683	10 AUG 69
242	1684	11 AUG 69	1690	17 AUG 69
243	1691	18 AUG 69	1697	24 AUG 69
244	1698	25 AUG 69	1704	31 AUG 69
245	1705	1 SEP 69	1711	7 SEP 69
246	1712	8 SEP 69	1718	14 SEP 69
247	1719	15 SEP 69	1725	21 SEP 69
248	1726	22 SEP 69	1732	28 SEP 69
249	1733	29 SEP 69	1739	5 OCT 69
250	1740	6 OCT 69	1746	12 OCT 69
251	1747	13 OCT 69	1753	19 OCT 69
252	1754	20 OCT 69	1760	26 OCT 69
253	1761	27 OCT 69	1767	2 NOV 69
254	1768	3 NOV 69	1774	9 NOV 69
255	1775	10 NOV 69	1781	16 NOV 69
256	1782	17 NOV 69	1788	23 NOV 69
257	1789	24 NOV 69	1795	30 NOV 69
258	1796	1 DEC 69	1802	7 DEC 69
259	1803	8 DEC 69	1809	14 DEC 69
260	1810	15 DEC 69	1816	21 DEC 69
261	1817	22 DEC 69	1823	28 DEC 69
262	1824	29 DEC 69	1830	4 JAN 70
263	1831	5 JAN 70	1837	11 JAN 70
264	1838	12 JAN 70	1844	18 JAN 70
265	1845	19 JAN 70	1851	25 JAN 70
266	1852	26 JAN 70	1858	1 FEB 70
267	1859	2 FEB 70	1865	8 FEB 70
268	1866	9 FEB 70	1872	15 FEB 70
269	1873	16 FEB 70	1879	22 FEB 70
270	1880	23 FEB 70	1886	1 MAR 70
271	1887	2 MAR 70	1893	8 MAR 70
272	1894	9 MAR 70	1900	15 MAR 70
273	1901	16 MAR 70	1907	22 MAR 70
274	1908	23 MAR 70	1914	29 MAR 70
275	1915	30 MAR 70	1921	5 APR 70
276	1922	6 APR 70	1928	12 APR 70
277	1929	13 APR 70	1935	19 APR 70
278	1936	20 APR 70	1942	26 APR 70
279	1943	27 APR 70	1949	3 MAY 70
280	1950	4 MAY 70	1956	10 MAY 70
281	1957	11 MAY 70	1963	17 MAY 70
282	1964	18 MAY 70	1970	24 MAY 70
283	1971	25 MAY 70	1977	31 MAY 70
284	1978	1 JUN 70	1984	7 JUN 70
285	1985	8 JUN 70	1991	14 JUN 70
286	1992	15 JUN 70	1998	21 JUN 70
287	1999	22 JUN 70	2005	28 JUN 70
288	2006	29 JUN 70	2012	5 JLY 70
289	2013	6 JLY 70	2019	12 JLY 70
290	2020	13 JLY 70	2026	19 JLY 70
291	2027	20 JLY 70	2033	26 JLY 70
292	2034	27 JLY 70	2040	2 AUG 70
293	2041	3 AUG 70	2047	9 AUG 70
294	2048	10 AUG 70	2054	16 AUG 70
295	2055	17 AUG 70	2061	23 AUG 70
296	2062	24 AUG 70	2068	30 AUG 70
297	2069	31 AUG 70	2075	6 SEP 70
298	2076	7 SEP 70	2082	13 SEP 70
299	2083	14 SEP 70	2089	20 SEP 70
300	2090	21 SEP 70	2096	27 SEP 70
301	2097	28 SEP 70	2103	4 OCT 70
302	2104	5 OCT 70	2110	11 OCT 70

WEEK NO.	FIRST-JDAY	DATE	LAST-JDAY	DATE
303	2111	12 OCT 70	2117	18 OCT 70
304	2118	19 OCT 70	2124	25 OCT 70
305	2125	26 OCT 70	2131	1 NOV 70
306	2132	2 NOV 70	2138	8 NOV 70
307	2139	9 NOV 70	2145	15 NOV 70
308	2146	16 NOV 70	2152	22 NOV 70
309	2153	23 NOV 70	2159	29 NOV 70
310	2160	30 NOV 70	2166	6 DEC 70
311	2167	7 DEC 70	2173	13 DEC 70
312	2174	14 DEC 70	2180	20 DEC 70
313	2181	21 DEC 70	2187	27 DEC 70
314	2188	28 DEC 70	2194	3 JAN 71
315	2195	4 JAN 71	2201	10 JAN 71
316	2202	11 JAN 71	2208	17 JAN 71
317	2209	18 JAN 71	2215	24 JAN 71
318	2216	25 JAN 71	2222	31 JAN 71
319	2223	1 FEB 71	2229	7 FEB 71
320	2230	8 FEB 71	2236	14 FEB 71
321	2237	15 FEB 71	2243	21 FEB 71
322	2244	22 FEB 71	2250	28 FEB 71
323	2251	1 MAR 71	2257	7 MAR 71
324	2258	8 MAR 71	2264	14 MAR 71
325	2265	15 MAR 71	2271	21 MAR 71
326	2272	22 MAR 71	2278	28 MAR 71
327	2279	29 MAR 71	2285	4 APR 71
328	2286	5 APR 71	2292	11 APR 71
329	2293	12 APR 71	2299	18 APR 71
330	2300	19 APR 71	2306	25 APR 71
331	2307	26 APR 71	2313	2 MAY 71
332	2314	3 MAY 71	2320	9 MAY 71
333	2321	10 MAY 71	2327	16 MAY 71
334	2328	17 MAY 71	2334	23 MAY 71
335	2335	24 MAY 71	2341	30 MAY 71
336	2342	31 MAY 71	2348	6 JUN 71
337	2349	7 JUN 71	2355	13 JUN 71
338	2356	14 JUN 71	2362	20 JUN 71
339	2363	21 JUN 71	2369	27 JUN 71
340	2370	28 JUN 71	2376	4 JLY 71
341	2377	5 JLY 71	2383	11 JLY 71
342	2384	12 JLY 71	2390	18 JLY 71
343	2391	19 JLY 71	2397	25 JLY 71
[illegible]	2398	26 JLY 71	2404	1 AUG 71
[illegible]	2405	2 AUG 71	2411	8 AUG 71
346	2412	9 AUG 71	2418	15 AUG 71
347	2419	16 AUG 71	2425	22 AUG 71
348	2426	23 AUG 71	2432	29 AUG 71
349	2433	30 AUG 71	2439	5 SEP 71
350	2440	6 SEP 71	2446	12 SEP 71
351	2447	13 SEP 71	2453	19 SEP 71
352	2454	20 SEP 71	2460	26 SEP 71
353	2461	27 SEP 71	2467	3 OCT 71
354	2468	4 OCT 71	2474	10 OCT 71
355	2475	11 OCT 71	2481	17 OCT 71
356	2482	18 OCT 71	2488	24 OCT 71
357	2489	25 OCT 71	2495	31 OCT 71
358	2496	1 NOV 71	2502	7 NOV 71
359	2503	8 NOV 71	2509	14 NOV 71
360	2510	15 NOV 71	2516	21 NOV 71
361	2517	22 NOV 71	2523	28 NOV 71
362	2524	29 NOV 71	2530	5 DEC 71
363	2531	6 DEC 71	2537	12 DEC 71
364	2538	13 DEC 71	2544	19 DEC 71
365	2545	20 DEC 71	2551	26 DEC 71

Table 2-2. AFM 66-1 Source Data Tapes

Tapes With AFLC Numbers		
71	8417	14196
520	8977	14374
706	9164	15985
781	9244	16750
867	9610	16916
962	10681	18685
1210	11767	19257
1641	11961	19643
1841	12370	20449
5345	13255	20720
6265	13423	20782
7036	13836	20790
7728	14124	70333
8077	14175	
Tapes With KAFB Numbers		
7499	18988	

Table 2-3. AFM 65-110 Source Data Tapes (AFLC Numbers)

90149	93094	93568
90154	93191	93614
90167	93371	93619
90275	93418	93784
90288	93502	93844
93041	93517	93859
93054	93536	93910

The IRAN file is created by an IRAN data preprocessor that combines aircraft acceptance date data and IRAN event data, and that also calculates IRAN interval data by relating information from pairs of consecutive IRAN event records. Prior to executing the IRAN preprocessing program, the acceptance date data and the IRAN event data must be screened to eliminate the excluded aircraft serial numbers. These two data sources are then sorted by serial number and (for the IRAN event data) by calendar date.

The AIE data file is also created by combining data from two sources. Accident and incident data is supplied on magnetic tape, while the EUMR data is obtained from a separate source on cards. Both data sources must be screened to eliminate the excluded serial numbers and the card records must be reformatted to match the format of the tape data. The two files are then sorted and merged to produce the AIE file used as input to the data bank.

Details of data reduction/file generation processes for the 66-1, 65-110, AIE, and IRAN files are contained in Paragraphs 2.2, 2.3, 2.4, and 2.5, respectively.

2.2 AFM 66-1 FILE GENERATION

Since the AFM 66-1 file contains maintenance data that is not relevant to the present maintenance study, these extraneous data records must be screened out. Following the screening of each individual tape, the data is sorted into an ordered sequence, then merged with other AFM 66-1 screened and sorted tapes. Experience has shown that many records within the composite file are duplicates; these are eliminated. Finally, only data for a specified set of aircraft serial numbers is required for the data bank. These records are copied to form the final 66-1 file. The logic flow for these programs is shown in Figure 2-1.

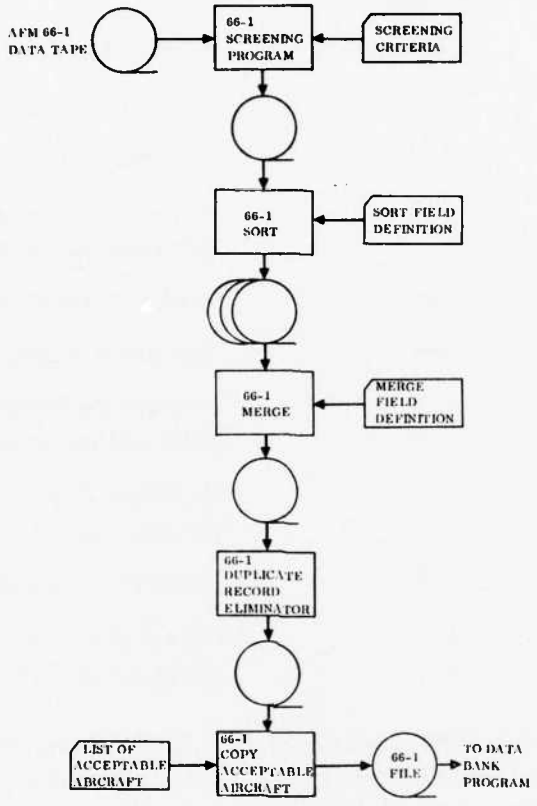


Figure 2-1. Logic Flow of AFM 66-1 File Generation

2.2.1 AFM 66-1 SCREEN

2.2.1.1 Purpose. This program, written in COBOL, screens the AFM 66-1 data tapes to eliminate unnecessary and unacceptable records and writes acceptable records on magnetic tape for further processing.

2.2.1.2 Input Data and Procedures. The program, a sample of card data input, and the associated job control language (JCL) for use on the IBM 370 are listed in Paragraph 6.1.1.

Input to the program consists of the raw AFM 66-1 tape and a deck of cards containing the screening criteria. Record layouts for the input on AFM 66-1 tapes are shown in Figure 2-2. The tape consists of 90-character data records, blocked 30 to a tape record. The screening criteria card data consists of a deck containing (in order) the data listed on the following page.

Card	Column	Description
a	1-4	Acceptable Aircraft Mission and Design
b	1	Acceptable Identification
c	1-2	Number of Rejected Aircraft
d	1-8	Rejected Aircraft Serial Numbers (Number of Cards Set by Card c)
e	1-8	Lowest Acceptable Serial Number
f	1-8	Highest Acceptable Serial Number
g	1-2	Number of Rejected How-Malfunction Codes
h	1-3	Rejected How-Malfunction Codes (Number of Cards Set by Card g)
i	1-2	Number of Rejected Action-Taken Codes
j	1	Rejected Action-Taken Codes (Number of Cards Set by Card i)

The program first opens the input and output files, reads and stores the screening data, then reads the first AFM 66-1 data record and checks for an acceptable Mission and Design designation, a numeric How-Malfunction code, a valid numeric date, and a non-blank serial number. Then the record is checked for unacceptable How-Malfunction code and Action-Taken code, and the serial number is checked for a full complement of eight digits. In seven-digit numbers, an additional zero is inserted after the second digit.

After confirming the presence of eight digits, the serial number is checked against the highest and lowest acceptable serial number and the list of unacceptable serial numbers for appropriate action. Finally the day number is computed, using 1 January 1965 as Day 1, and inserted into Columns 86 through 89 of the record. The verified record is then written on an output file and the process repeated with the next input record. When the last input record is screened, the remainder of the tape record is filled by nines and the input and output files are closed.

Figure 2-3 shows the screening criteria used in the F-106 Scheduled Maintenance Study. The program is suitable for use with all AFM 66-1 data files for any USAF aircraft (with the following limitations).

a. Rejected Aircraft Serial Numbers 25 Maximum

b. Rejected How-Malfunction Codes 8 Maximum

c. Rejected Action-Taken Codes 8 Maximum

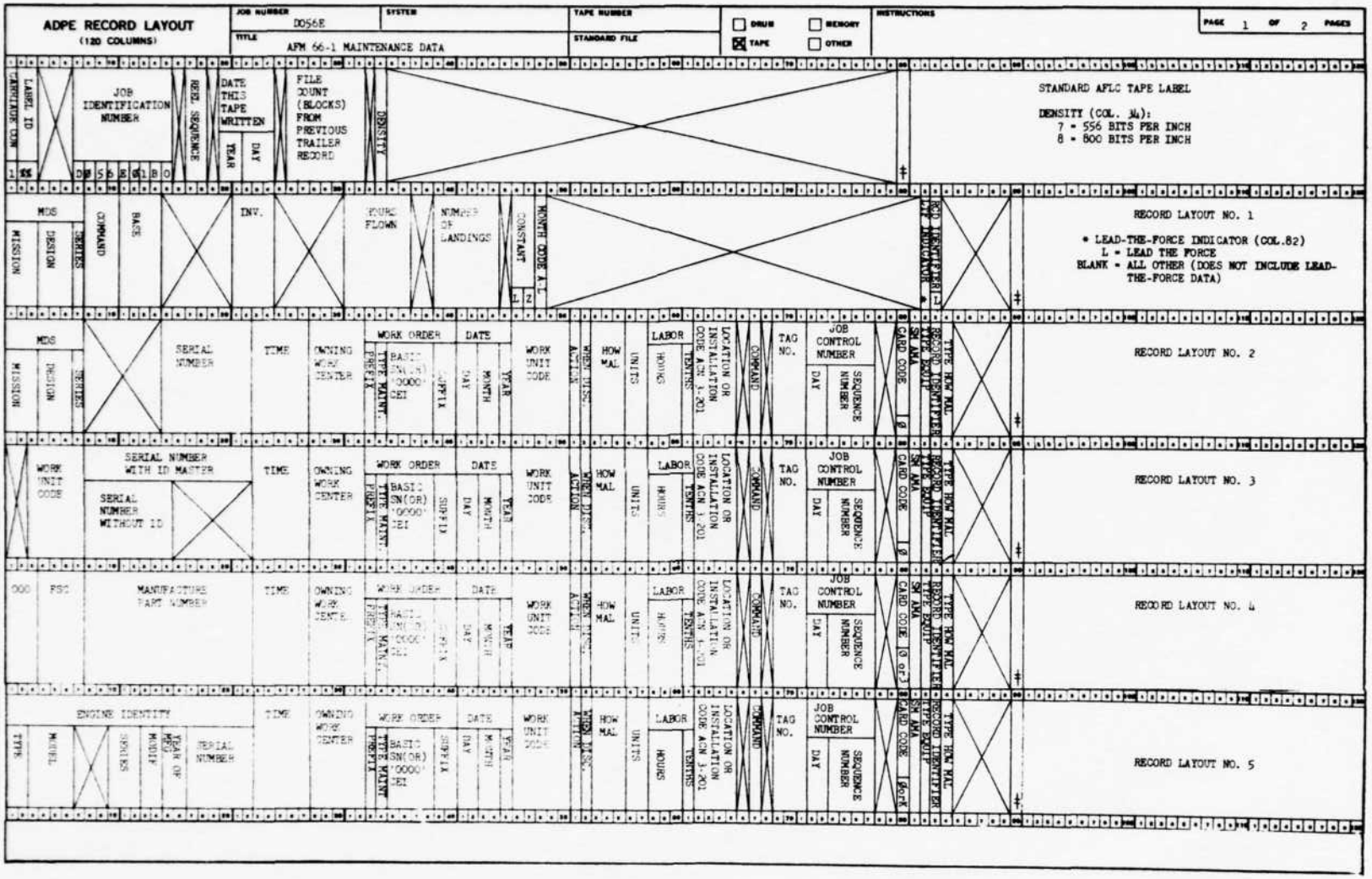


Figure 2-2. AFM 66-1 Tape Record Layouts (Sheet 1 of 2)

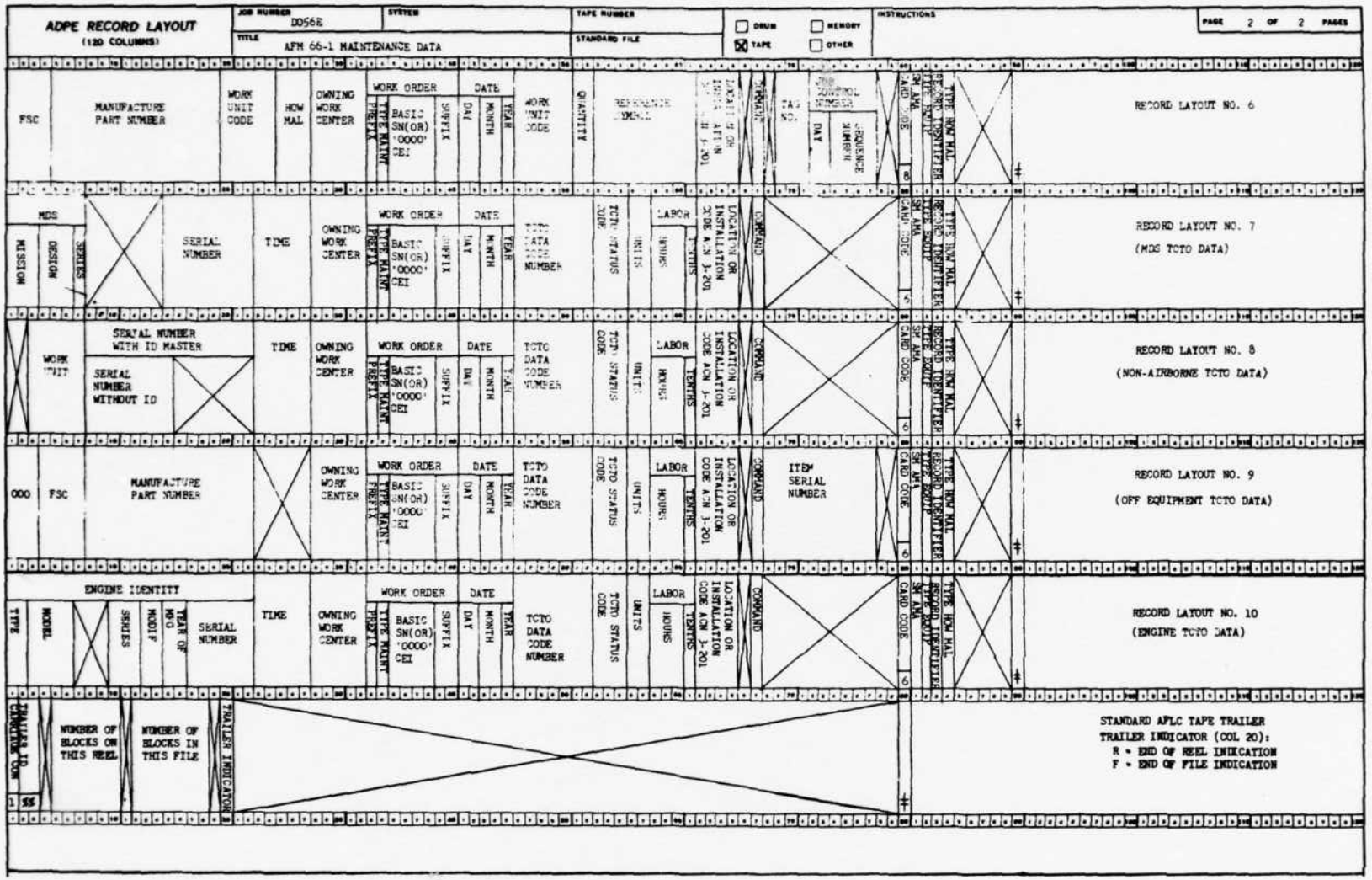
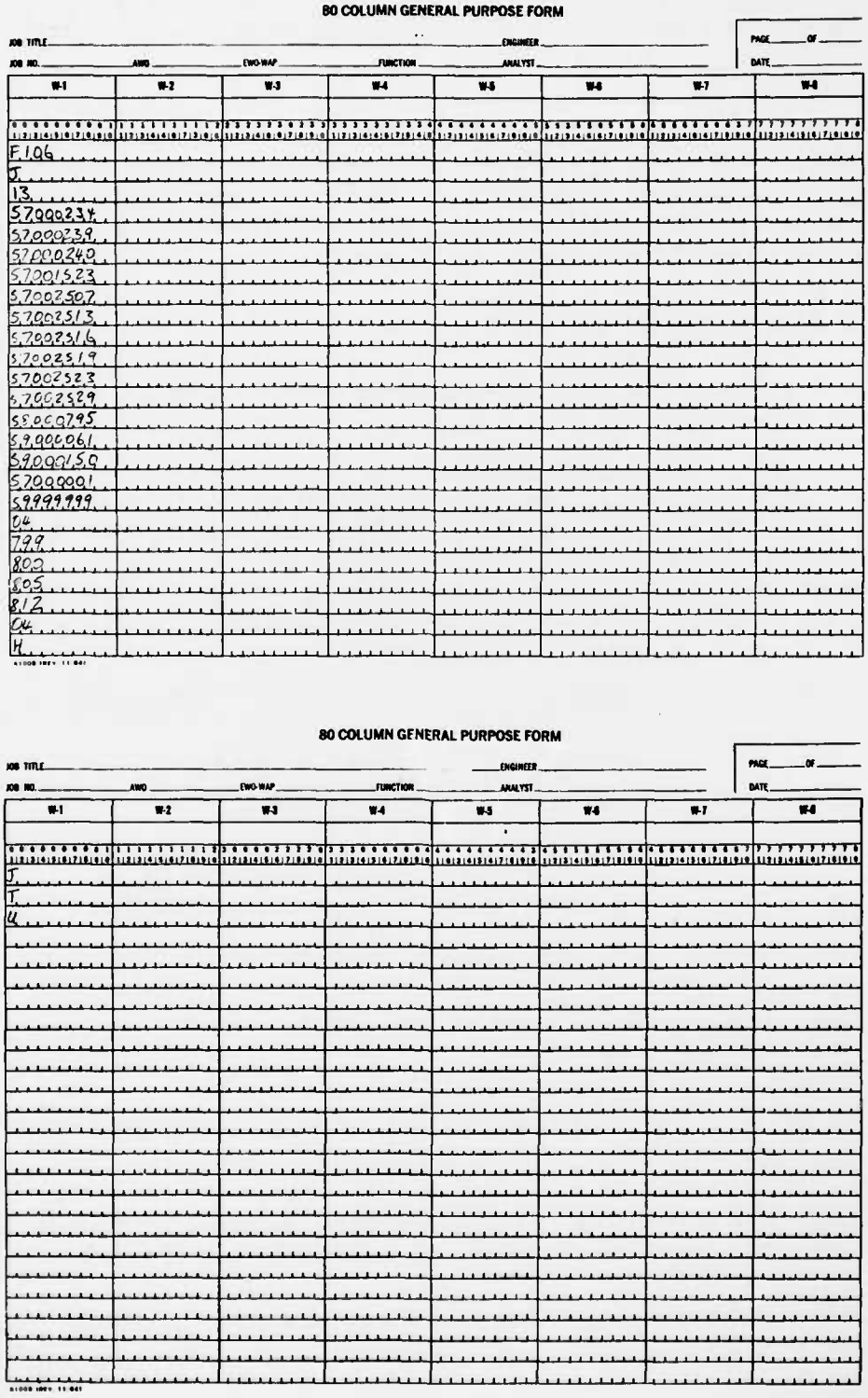


Figure 2-2. AFM 66-1 Tape Record Layouts (Sheet 2 of 2)



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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
F.106							
J							
13							
S7000234							
S7000239							
S7000240							
S7001523							
S7002507							
S7002513							
S7002516							
S7002519							
S7002523							
S7002529							
SS.0C0795							
S9000061							
S9000159							
S7000001							
S9999999							
04							
799							
802							
805							
812							
04							
H							

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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
J							
T							
4							

Figure 2-3. Sample Input — AFM 66-1 Screening Criteria

2.2.1.3 Output Description. The sample output, Figure 2-4, shows the same format as the AFM 66-1 data tapes, with the addition of the day number in Columns 86 through 89.

Experience with F-106 AFM 66-1 data tapes on the IBM 370 using 9-track, 1600 bpi tape drives indicates a yield of some 30,000 acceptable records from a total of about twice that number from each input tape. The screening process typically requires five to ten minutes of elapsed computer time. Without exception, a single reel of input was screened onto a single reel of output tape.

2.2.2 AFM 66-1 SORT

2.2.2.1 Purpose. This IBM utility program sorts the screened AFM 66-1 data tape into an ordered file.

2.2.2.2 Input Data and Procedures. The JCL control cards for the IBM utility program and a sample of card data input for use on the IBM 370 are shown in Paragraph 6.1.2. The input consists of card data defining the sort fields, sort characteristics, and the screened AFM 66-1 data tape. The sort fields are all defined as character fields in ascending order and are shown in the following list in order of hierarchy.

Field	Column	Description
1	15-22	Serial Number
2	86-89	Day Number
3	46-50	Work Unit Code
4	53-55	How-Malfunction Code
5	51-52	Action-Taken and When-Discovered Code
6	56-84	*
7	23-45	*

*Fields 6 and 7 are necessary to ensure that any duplicated records will be placed in adjacent order in the output file.

2.2.2.3 Output Description. The sample output, Figure 2-5, shows the same format as the screened output: 90-character data record, blocked 30 to a tape record.

Experience with the sorting of screened F-106 AFM 66-1 tapes on the IBM 370 using 9-track, 1600 bpi tape drives, typically required three to five minutes of elapsed computer time.

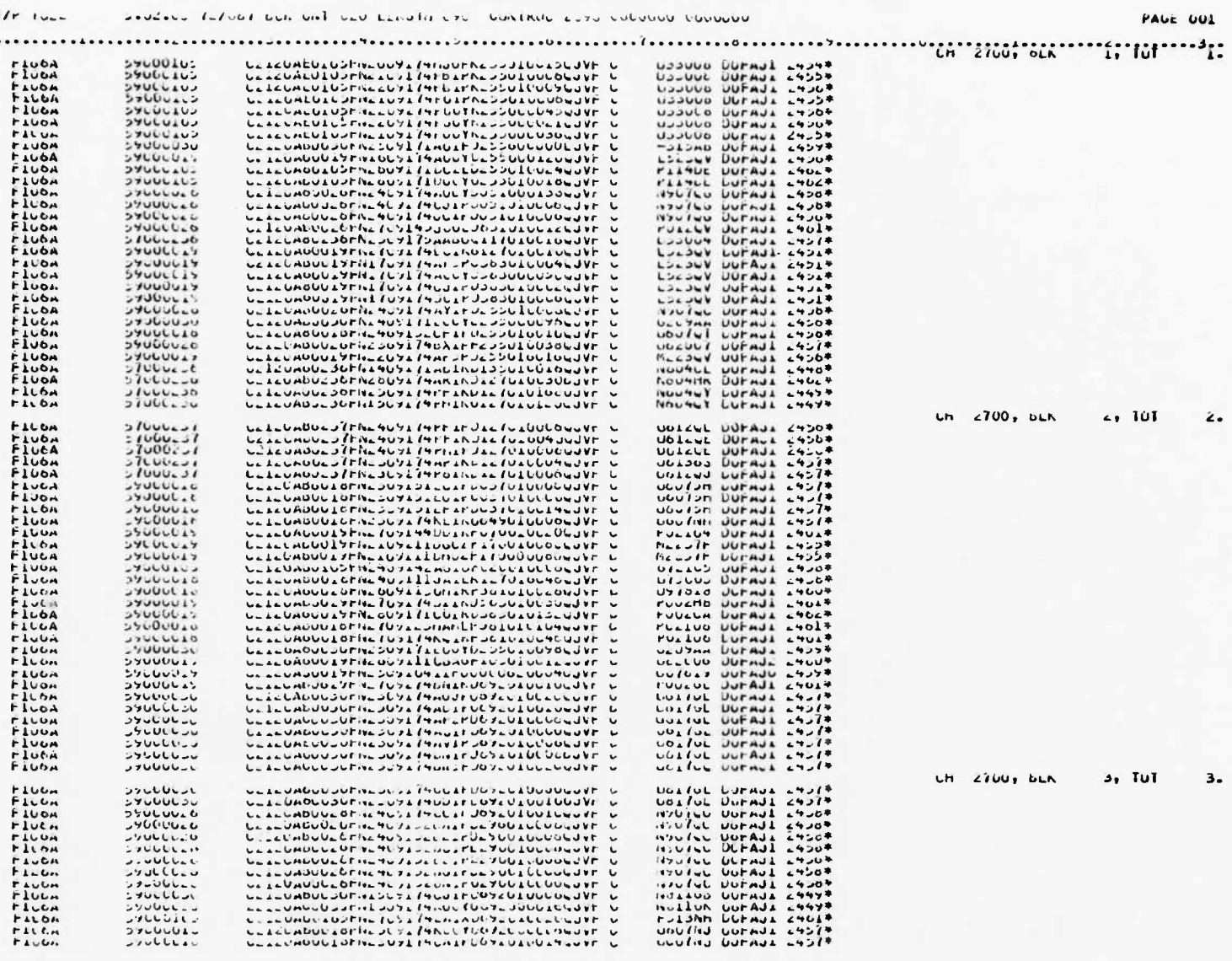


Figure 2-4. Sample Output — AFM 66-1 Screening Program

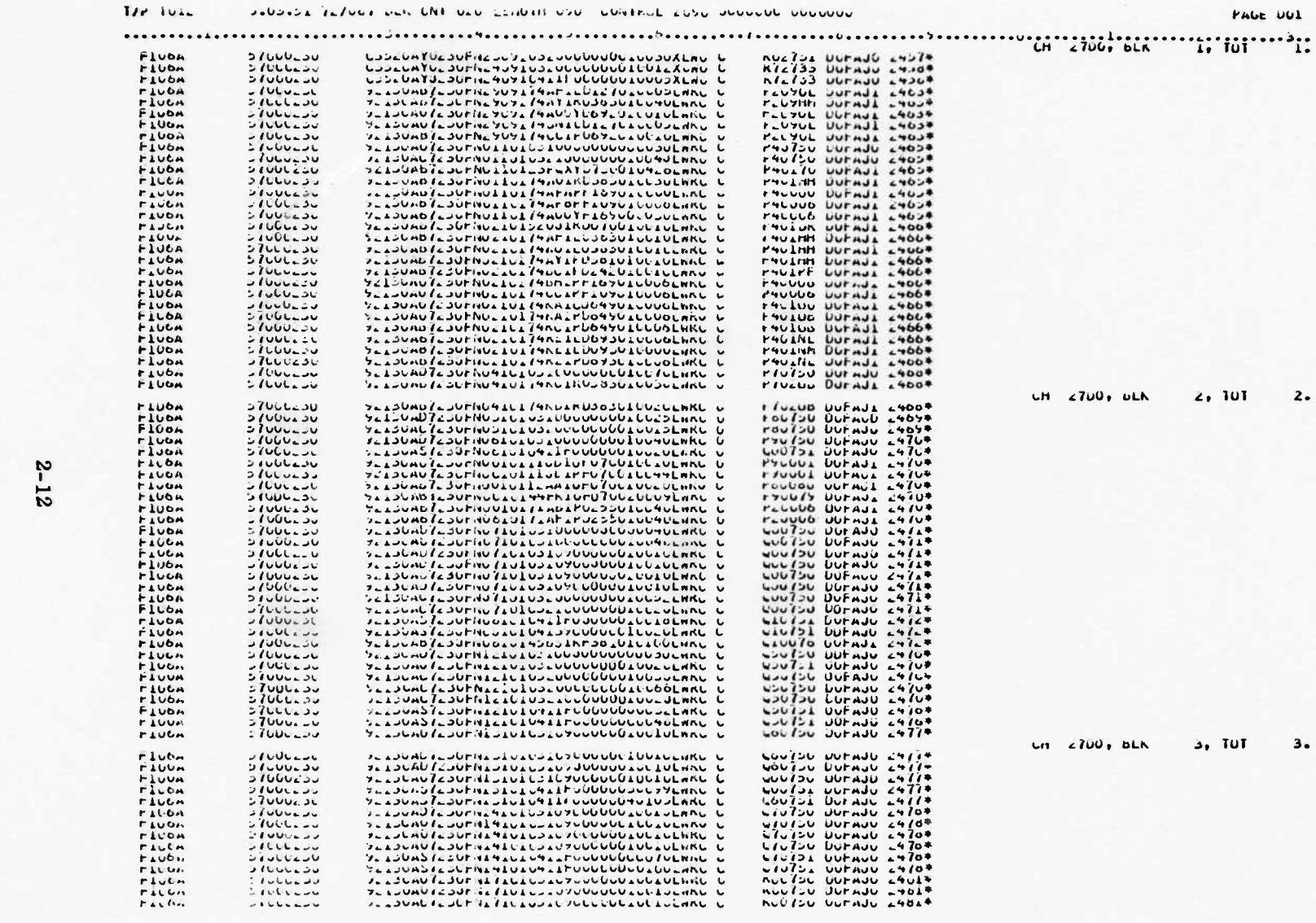


Figure 2-5. Sample Output — AFM 66-1 Sort Program

2.2.3 AFM 66-1 MERGE

2.2.3.1 Purpose. This IBM utility program merges the screened and sorted AFM 66-1 data tapes into a single file of data.

2.2.3.2 Input Data and Procedures. The JCL control cards for the IBM utility program and a sample of card data input for use on the IBM 370 are listed in Paragraph 6.1.3. The input card data is identical to that used in the AFM 66-1 Sort.

2.2.3.3 Output Description. Merging of 48 F-106 AFM 66-1 screened and sorted tapes on the IBM 370 using 9-track, 1600 bpi tape drives required a total of eight merges, each routine merging seven tapes. In the first step, seven screened and sorted tapes were merged (generally to one, occasionally to two tape reels). This was repeated for each group of seven tapes. These steps required 5 to 10 minutes of clock time. The final step, merging these intermediate tapes, required 20 to 30 minutes of elapsed computer time, and the file consisted of five data tapes. The total file contained approximately 1,600,000 records. The output tape has 90 characters to a data record, blocked 30 to a tape record and has identical format to that of the AFM 66-1 sort output data tape.

2.2.4 AFM 66-1 ELIMINATE DUPLICATE RECORDS

2.2.4.1 Purpose. This COBOL program eliminates duplicate records from the screened, sorted, and merged AFM 66-1 file.

2.2.4.2 Input Data and Procedures. The JCL control cards for use on an IBM 370 and the program are listed in Paragraph 6.1.4.

The input consists of the screened, sorted, and merged AFM 66-1 data tapes. The program opens the input and output files and reads and stores the first data record. The next record is then read and compared to the previous record. If all 90 characters are identical, the second record is moved over the first, the next record read, and the process repeated. If they are dissimilar, the first record is passed to the output file and the second record is stored for the next comparison. Upon detection of a series of nines on the input, the remainder of the output block is filled with nines and both input and output files closed.

2.2.4.3 Output Description. Screening, sorting, and merging of some 1,600,000 F-106 AFM 66-1 records yielded over 100,000 duplicate records. The number of duplicated records is displayed on the computer console. The program required 30 to 60 minutes of elasped computer time, and required four output data tapes. The record layout and the blocking factor are unchanged from the AFM 66-1 sort.

2.2.5 AFM 66-1 COPY ACCEPTABLE AIRCRAFT

2.2.5.1 Purpose. During the initial screening of the AFM 66-1 data tapes, records for a specified set of aircraft serial numbers were deleted. During formulation of the data bank, only data for a specific fleet of aircraft is necessary. This COBOL program writes these acceptable aircraft records on a magnetic tape to form the new AFM 66-1 file.

2.2.5.2 Input Data and Procedures. The JCL control cards, the program, and a sample of the card data input are listed in Paragraph 6.1.5. The input consists of card data defining the acceptable aircraft serial numbers. The first card defines the number of acceptable serial numbers, and subsequent cards define the serial numbers in ascending sequence.

Card	Column	Description
a	1-3	Number of Acceptable Aircraft
b	1-8	Acceptable Serial Numbers (ascending sequence)

The complete list of acceptable aircraft is shown in Table 2-4 and a sample input to this program in Figure 2-6. The program input and output files are opened, and the list of acceptable aircraft serial numbers is stored in the computer memory. The AFM 66-1 data file is read and records with an acceptable serial number are written on the output file. On detection of the last input record, the remainder of the output block is

Table 2-4. Tail Numbers of Acceptable Aircraft

```
T/P 0T01      18.23.21 72/073 BLK CNT 020 LENGTH 090  CONTROL 2090
.........1.........2.........3.........4.........5.........6.....
150
57000231
57000232
57000235
57000236
57000237
57000243
57000244
57002455
57002456
57002458
57002459
57002463
57002470
57002473
57002476
57002477
57002482
57002483
57002485

57002486
57002490
57002491
```

Table 2-4. Tail Numbers of Acceptable Aircraft, Continued

```
T/P DT01      18.23.21 72/073 BLK CNT 020 LENGTH 080  CONTROL Z080

.........1.........2.........3.........4.........5.........6.....
57002493
57002494
57002496
57002503
57002504
57002505
57002508
57002509
57002515
57002517
57002520
57002524
57002527
57002528
57002532
57002533
57002537

57002538
57002540
57002543
57002545
57002546
58000760
58000766
58000767
58000772
58000773
58000776
58000777
58000778
58000780
58000781
58000783
58000785
58000786
58000788
58000792

58000797
58000900
58000901
58000903
58000904
59000002
59000003
59000004
59000005
59000006
59000007
59000008
59000010
59000012
59000015
59000016
59000018
59000019
59000024
59000025

59000026
59000027
59000028
59000030
59000031
59000033
59000035
```

Table 2-4. Tail Numbers of Acceptable Aircraft, Continued

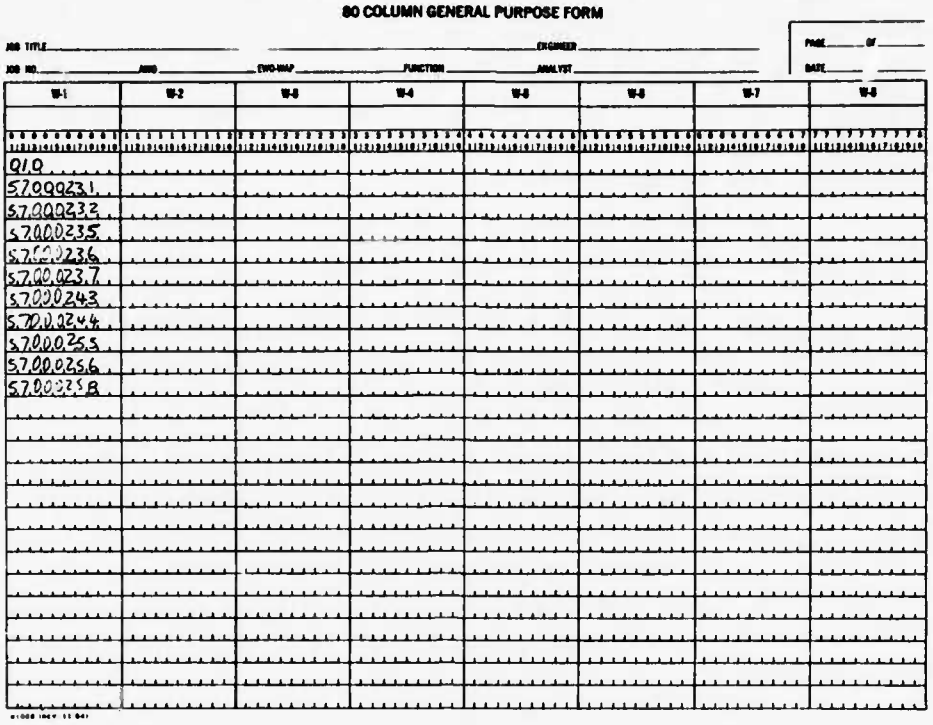
```
T/P DTO1      18.23.21 72/073 BLK CNT 020 LENGTH 080  CONTROL Z080

.........1.........2.........3.........4.........5.........6.....
59000043
59000044
59000046
59000048
59000051
59000052
59000053
59000054
59000056
59000057
59000058
59000059
59000060

59000063
59000064
59000065
59000067
59000069
59000072
59000074
59000076
59000078
59000080
59000082
59000084
59000085
59000088
59000090
59000092
59000094
59000095
59000096
59000099

59000103
59000104
59000105
59000106
59000109
59000110
59000115
59000116
59000119
59000126
59000127
59000128
59000130
59000132
59000133
59000137
59000138
59000140
59000141
59000143

59000144
59000145
59000146
59000147
59000149
59000151
59000152
59000153
59000155
59000157
59000164
```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Q10							
S7000231							
S7000232							
S7000235							
S7000236							
S7000237							
S7000243							
S7000244							
S7000255							
S7000256							
S7000258							

Figure 2-6. Sample Input — Acceptable Aircraft Program

filled with nines and the input and output files are closed. A count of the number of records read and records copied is displayed on the computer console.

The program is suitable for use with all screened and sorted AFM 66-1 data files for any USAF aircraft and will handle a maximum of 250 serial numbers.

2.2.5.3 Output Description. The record layout and the blocking factor are unchanged from the AFM 66-1 Sort. Experience with the AFM 66-1 file for the F-106 on the IBM 370 for a file of approximately 1,500,000 records produced some 1,010,000 records that were copied for the AFM 66-1 data bank. The program required 20 to 40 minutes of elapsed computer time and required three output data tapes.

2.3 AFM 65-110 FILE GENERATION

The AFM 65-110 file contains data that is not relevant to the present maintenance study and it is necessary to screen* out these extraneous data records. Following

*Because the original 65-110 tape data is classified, certain fields were blanked out of every record to declassify the data. The program required to copy and eliminate these data fields is not described in this manual, nor was it delivered as a contract end item. It is assumed that the user will have authorization to process the 65-110 data without declassification.

the screening process, the file is sorted into an ordered sequence, then merged with other similar AFM 65-110 screened and sorted tapes. Experience has shown that many of the records are duplicated; these are removed. Finally, only data for a specified set of aircraft serial numbers is required for the data bank, and these records are copied to form the final AFM 65-110 file. The logic flow for these programs is shown in Figure 2-7.

2.3.1 AFM 65-110 SCREEN

2.3.1.1 Purpose. This program, written in COBOL, screens the AFM 65-110 data tapes to eliminate unnecessary and unacceptable records and writes acceptable records on magnetic tape for further processing.

2.3.1.2 Input Data and Procedures. The program, a sample of card data input, and the associated job control language (JCL) for use on the IBM 370 are shown in Paragraph 6.2.1. Input to the program consists of the raw AFM 65-110 tape and a deck of cards containing the screening criteria. The record layouts for the AFM 65-110 tape are shown in Figure 2-8. The tape consists of 60-character data records, blocked 50 to a tape record. The screening criteria card deck consists of a deck containing, in order, the following.

Card	Column	Description
a	1-4	Acceptable Aircraft Mission and Design
b	1-2	Number of Rejected Aircraft
c	1-8	Rejected Aircraft Serial Numbers (Number of Cards Set by Card b)
e	1-8	Lowest Acceptable Serial Number
f	1-8	Highest Acceptable Serial Number
g	1	Maintenance Code Corresponding to Periodic Inspection
	2-6	Work Unit Code for Periodic Inspection
	11	Maintenance Code Corresponding to Hourly Postflight Inspection
	12-16	Work Unit Code for Hourly Postflight Inspection

The program opens the input and output files, reads and stores the screening data, then reads the first AFM 65-110 data record and checks for an acceptable Mission and Design designation, a valid date, and a non-blank serial number. Then the serial number is checked against the highest and lowest acceptable serial numbers and the

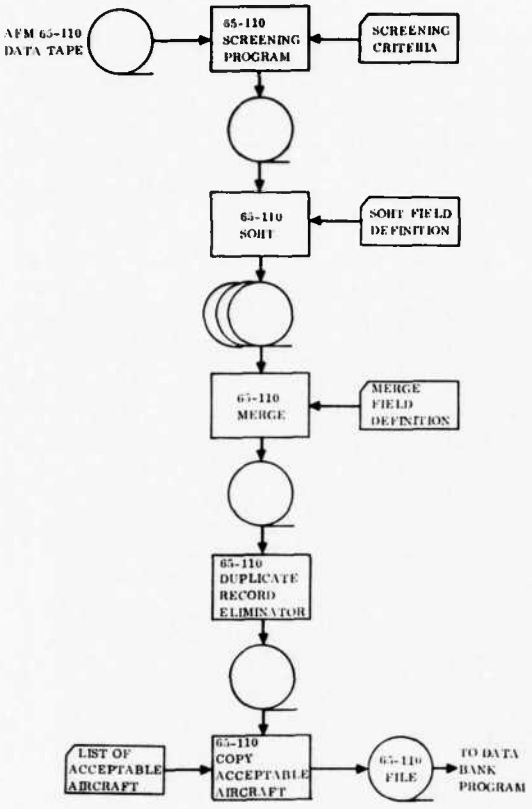


Figure 2-7. Logic Flow of AFM 65-110 File Generation

list of unacceptable serial numbers for appropriate action. If the WUC field is blank, the Maintenance Code field is tested for a code corresponding to the Periodic Inspection or Hourly Postflight Inspection and the appropriate WUC entered into the output record. Finally, the day number is computed using 1 January 1965 as day number 1 and inserted into Columns 49 through 52 of the output record. Upon screening of the last input record, the remainder of the life record is filled by nines and the input and output files closed. Figure 2-9 shows the screening criteria used in the F-106 Scheduled Maintenance Study.

The program is suitable for use with all USAF aircraft with the following program dimension limitation: a maximum of 25 rejected aircraft serial numbers is allowed.

2.3.1.3 Output Description. The sample output, Figure 2-10, shows the same format as the AFM 65-110 data tapes, with the addition of the day number in Columns 49 through 52.

Experience with the F-106 AFM 65-110 data tapes on the IBM 370 indicates approximately 8,000 acceptable records are available from a total of 10,000 records on each input tape. The screening process required two minutes of computer time.

2.3.2 AFM 65-110 SORT

2.3.2.1 Purpose. This IBM utility program sorts the screened AFM 65-110 data tape into an ordered file.

2.3.2.2 Input Data and Procedures. The JCL control cards for the IBM utility program and a sample of card data input for use on the IBM 370 are listed in Paragraph 6.2.2. The input consists of card data defining the sort fields, sort characteristics,

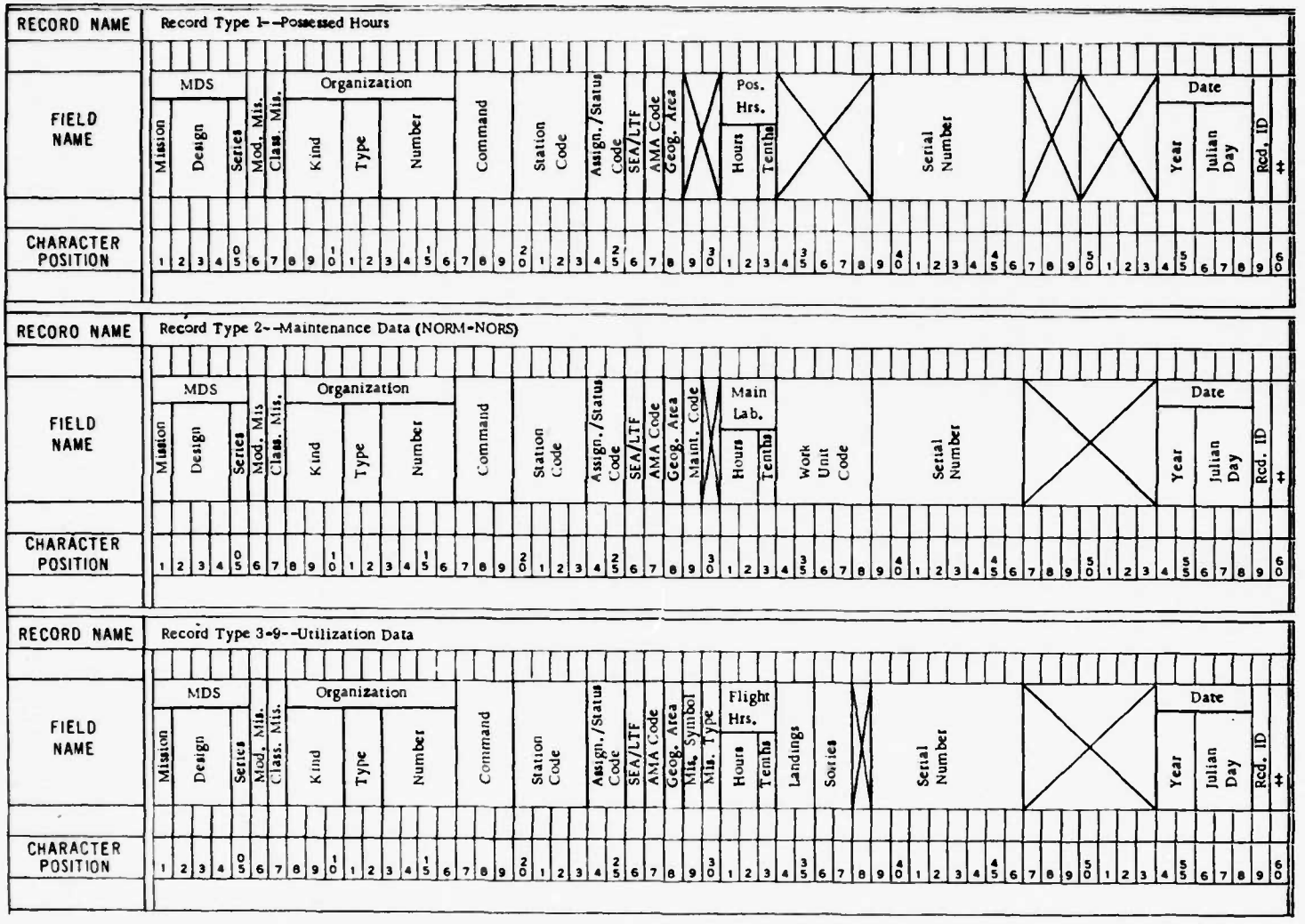


Figure 2-8. AFM 65-110 Tape Record Layouts

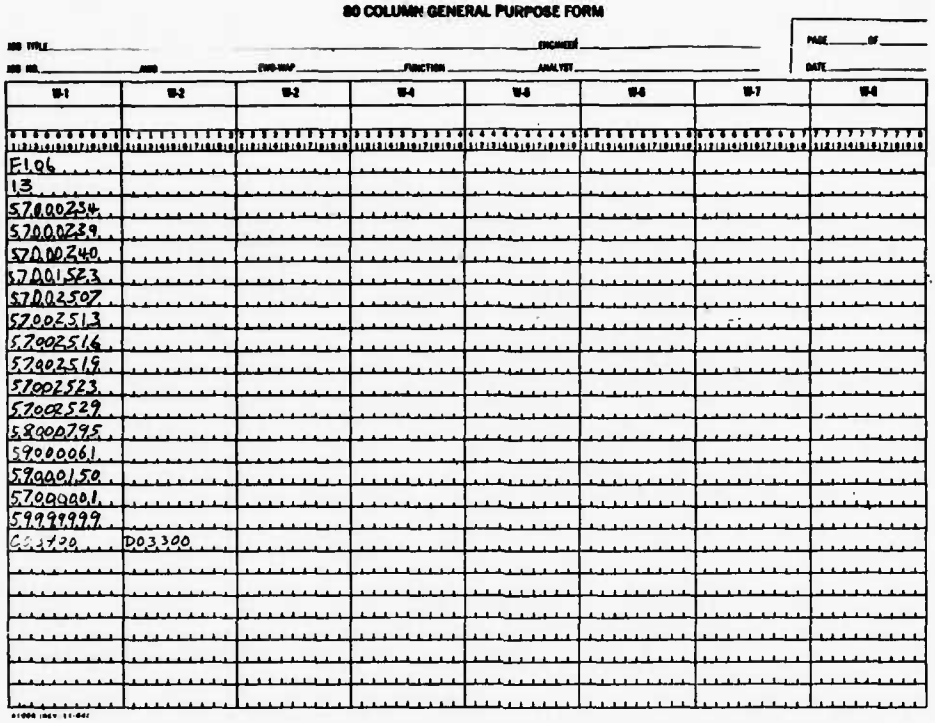


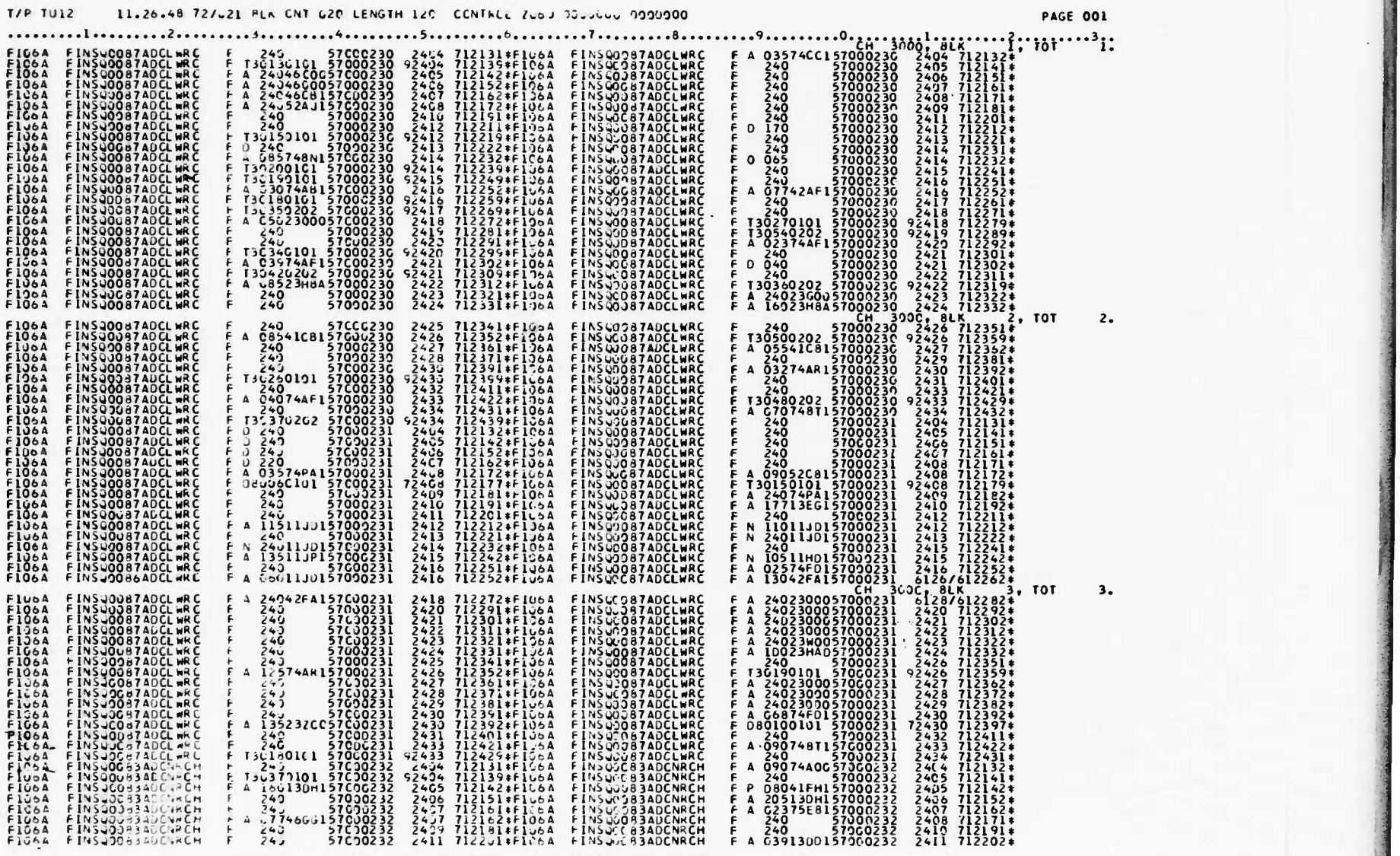
Figure 2-9. Sample Input — AFM 65-110 Screening Criteria

and the screened AFM 65-110 data tape. The sort fields are all defined as character fields in ascending order. The sort fields in order of hierarchy are:

Field	Column	Description
1	39-46	Serial Number
2	49-52	Day Number
3	59	Record ID
4	34-38	Work Unit Code or Landing and Sorties
5	29	Maintenance Code or Mission Symbol
6	1-27	*
7	30-33	*

*Fields 6 and 7 are necessary to ensure that any duplicated records will be placed in adjacent order in the output file.

2.3.2.3 Output Description. The output tape file structure consists of 60-character data records, blocked 50 to a tape record. Sample output is shown in Figure 2-11. Two minutes of IBM 370 time was required to screen a typical F-106 AFM 65-110 tape.



```
T/P TU12     11.26.48 727021 BLK CNT 020 LENGTH 120  CONTROL 7681 0000000 0000000                                    PAGE 001

.....1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3..
                                                                  CH  3000, BLK     1, TOT     1.
F106A FINSQ0087ADCLWRC  F   240      57C00230  2404 712131*F106A FINSQ0087ADCLWRC  F A 03574CC157000230  2404 712132*
F106A FINSQ0087ADCLWRC  F T30130101 57000230 92404 712139*F106A FINSQ0087ADCLWRC  F   240      57000230  2405 712141*
F106A FINSQ0087ADCLWRC  F A 24046C0G57C00230  2405 712142*F106A FINSQ0087ADCLWRC  F   240      57000230  2406 712151*
F106A FINSQ0087ADCLWRC  F A 24046000057000230  2406 712152*F106A FINSQ0087ADCLWRC  F   240      57000230  2407 712161*
F106A FINSQ0087ADCLWRC  F A 24046CB157C00230  2407 712162*F106A FINSQ0087ADCLWRC  F   240      57000230  2408 712171*
F106A FINSQ0087ADCLWRC  F A 24052AJ157C00230  2408 712172*F106A FINSQ0087ADCLWRC  F   240      57000230  2409 712181*
F106A FINSQ0087ADCLWRC  F   240      57000230  2410 712191*F106A FINSQ0087ADCLWRC  F   240      57000230  2411 712201*
F106A FINSQ0087ADCLWRC  F   240      57000230  2412 712211*F106A FINSQ0087ADCLWRC  F D 170      57000230  2412 712212*
F106A FINSQ0087ADCLWRC  F T30150101 57000230 92412 712219*F106A FINSQ0087ADCLWRC  F   240      57000230  2413 712221*
F106A FINSQ0087ADCLWRC  F D 24C     57000230  2413 712222*F106A FINSQ0087ADCLWRC  F   240      57000230  2414 712231*
F106A FINSQ0087ADCLWRC  F A 085748N157C00230  2414 712232*F106A FINSQ0087ADCLWRC  F O 065      57000230  2414 712232*
F106A FINSQ0087ADCLWRC  F T30200101 57000230 92414 712239*F106A FINSQ0087ADCLWRC  F   240      57000230  2415 712241*
F106A FINSQ0087ADCLWRC  F T30190101 57000230 92415 712249*F106A FINSQ0087ADCLWRC  F   240      57000230  2416 712251*
F106A FINSQ0087ADCLWRC  F A 03074AB157C00230  2416 712252*F106A FINSQ0087ADCLWRC  F A 07742AF157000230  2416 712252*
F106A FINSQ0087ADCLWRC  F T3C180101 57000230 92416 712259*F106A FINSQ0087ADCLWRC  F   240      57000230  2417 712261*
F106A FINSQ0087ADCLWRC  F T30350202 57C00230 92417 712269*F106A FINSQ0087ADCLWRC  F   240      57000230  2418 712271*
F106A FINSQ0087ADCLWRC  F A C5023000057C00230  2418 712272*F106A FINSQ0087ADCLWRC  F T30270101 57000230 92418 712279*
F106A FINSQ0087ADCLWRC  F   240      57000230  2419 712281*F106A FINSQ0087ADCLWRC  F T30540202 57000230 92419 712289*
F106A FINSQ0087ADCLWRC  F   240      57C00230  2420 712291*F106A FINSQ0087ADCLWRC  F A 02374AF157000230  2420 712292*
F106A FINSQ0087ADCLWRC  F T3C340101 57000230 92420 712299*F106A FINSQ0087ADCLWRC  F   240      57000230  2421 712301*
F106A FINSQ0087ADCLWRC  F A 03574AF157C00230  2421 712302*F106A FINSQ0087ADCLWRC  F D 040      57000230  2421 712302*
F106A FINSQ0087ADCLWRC  F T3042G202 57000230 92421 712309*F106A FINSQ0087ADCLWRC  F   240      57000230  2422 712311*
F106A FINSQ0087ADCLWRC  F A 08523H8A57000230  2422 712312*F106A FINSQ0087ADCLWRC  F T30360202 57000230 92422 712319*
F106A FINSQ0087ADCLWRC  F   240      57000230  2423 712321*F106A FINSQ0087ADCLWRC  F A 24023G0057000230  2423 712322*
F106A FINSQ0087ADCLWRC  F   240      57000230  2424 712331*F106A FINSQ0087ADCLWRC  F A 16023H8A57000230  2424 712332*
                                                                  CH  3000, BLK     2, TOT     2.
F106A FINSQ0087ADCLWRC  F   240      57CC0230  2425 712341*F106A FINSQ0087ADCLWRC  F   240      57000230  2426 712351*
F106A FINSQ0087ADCLWRC  F A 08541C8157C00230  2426 712352*F106A FINSQ0087ADCLWRC  F T30500202 57000230 92426 712359*
F106A FINSQ0087ADCLWRC  F   240      57000230  2427 712361*F106A FINSQ0087ADCLWRC  F A 05541C8157000230  2427 712362*
F106A FINSQ0087ADCLWRC  F   240      57000230  2428 712371*F106A FINSQ0087ADCLWRC  F   240      57000230  2429 712381*
F106A FINSQ0087ADCLWRC  F   240      57C00230  2430 712391*F106A FINSQ0087ADCLWRC  F A 03274AR157000230  2430 712392*
F106A FINSQ0087ADCLWRC  F T30260101 57000230 92430 712399*F106A FINSQ0087ADCLWRC  F   240      57000230  2431 712401*
F106A FINSQ0087ADCLWRC  F   240      57C00230  2432 712411*F106A FINSQ0087ADCLWRC  F   240      57000230  2433 712421*
F106A FINSQ0087ADCLWRC  F A 04074AF157000230  2433 712422*F106A FINSQ0087ADCLWRC  F T30480202 57000230 92433 712429*
F106A FINSQ0087ADCLWRC  F   240      57000230  2434 712431*F106A FINSQ0087ADCLWRC  F A G70748T157000230  2434 712432*
F106A FINSQ0087ADCLWRC  F T3C370202 57C00230 92434 712439*F106A FINSQ0087ADCLWRC  F   240      57000231  2404 712131*
F106A FINSQ0087ADCLWRC  F D 240     57000231  2404 712132*F106A FINSQ0087ADCLWRC  F   240      57000231  2405 712141*
F106A FINSQ0087ADCLWRC  F D 240     57C00231  2405 712142*F106A FINSQ0087ADCLWRC  F   240      57000231  2406 712151*
F106A FINSQ0087ADCLWRC  F D 24/     57C00231  2406 712152*F106A FINSQ0087ADCLWRC  F   240      57000231  2407 712161*
F106A FINSQ0087ADCLWRC  F D 220     57000231  2407 712162*F106A FINSQ0087ADCLWRC  F   240      57000231  2408 712171*
F106A FINSQ0087ADCLWRC  F A 03574PA157000231  2408 712172*F106A FINSQ0087ADCLWRC  F A 09052C8157000231  2408 712172*
F106A FINSQ0087ADCLWRC  F D8006C101 57C00231 72408 712177*F106A FINSQ0087ADCLWRC  F T30150101 57000231 92408 712179*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2409 712181*F106A FINSQ0087ADCLWRC  F A 24074PA157000231  2409 712182*
F106A FINSQ0087ADCLWRC  F   240      57000231  2410 712191*F106A FINSQ0087ADCLWRC  F A 17713EG157000231  2410 712192*
F106A FINSQ0087ADCLWRC  F   240      57000231  2411 712201*F106A FINSQ0087ADCLWRC  F   240      57000231  2412 712211*
F106A FINSQ0087ADCLWRC  F A 11511JJD157000231  2412 712212*F106A FINSQ0087ADCLWRC  F N 11011JD157000231  2412 712212*
F106A FINSQ0087ADCLWRC  F   240      57000231  2413 712221*F106A FINSQ0087ADCLWRC  F N 24011JD157000231  2413 712222*
F106A FINSQ0087ADCLWRC  F N 24011JD157C00231  2414 712232*F106A FINSQ0087ADCLWRC  F   240      57000231  2415 712241*
F106A FINSQ0087ADCLWRC  F A 13511JP157C00231  2415 712242*F106A FINSQ0087ADCLWRC  F N 10511HD157000231  2415 712242*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2416 712251*F106A FINSQ0087ADCLWRC  F A 02574FD157000231  2416 712252*
F106A FINSQ0086ADCLWRC  F A 06011JD157000231  2416 712252*F106A FINSQCC87ADCLWRC  F A 13042FA157000231  6126/612262*
                                                                  CH  3000, BLK     3, TOT     3.
F106A FINSQ0087ADCLWRC  F A 24042FA157C00231  2418 712272*F106A FINSQC087ADCLWRC  F A 24023000570C0231  6128/612282*
F106A FINSQ0087ADCLWRC  F   240      57000231  2420 712291*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2420 712292*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2421 712301*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2421 712302*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2422 712311*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2422 712312*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2423 712321*F106A FINSQC087ADCLWRC  F A 24023W0057000231  2423 712322*
F106A FINSQ0087ADCLWRC  F   240      57000231  2424 712331*F106A FINSQC087ADCLWRC  F A 1D023HAD57000231  2424 712332*
F106A FINSQ0087ADCLWRC  F   240      57000231  2425 712341*F106A FINSQC087ADCLWRC  F   240      57000231  2426 712351*
F106A FINSQ0087ADCLWRC  F A 12574AR157000231  2426 712352*F106A FINSQC087ADCLWRC  F T30190101 57000231 92426 712359*
F106A FINSQC087ADCLWRC  F   240      57C00231  2427 712361*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2427 712362*
F106A FINSQC087ADCLWRC  F   240      57C00231  2428 712371*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2428 712372*
F106A FINSQC087ADCLWRC  F   240      57000231  2429 712381*F106A FINSQC087ADCLWRC  F A 24023000570C0231  2429 712382*
F106A FINSQC087ADCLWRC  F   240      57C00231  2430 712391*F106A FINSQC087ADCLWRC  F A G6874FD157000231  2430 712392*
F106A FINSQC087ADCLWRC  F A 13523ZCC57C00231  2430 712392*F106A FINSQC087ADCLWRC  F D80100101 57000231 72430 712397*
F106A FINSQ0087ADCLWRC  F   240      57C00231  2431 712401*F106A FINSQC087ADCLWRC  F   240      57000231  2432 712411*
F106A FINSQC087ADCLWRC  F   240      57C00231  2432 712421*F106A FINSQC087ADCLWRC  F A 090748T157C00231  2433 712422*
F106A FINSQC087ADCLWRC  F T3C180101 57C00231 92433 712429*F106A FINSQC087ADCLWRC  F   240      57000231  2434 712431*
F106A FINSQC083ADCNRCH  F   240      57C00232  2404 712131*F106A FINSQC083ADCNRCH  F A 09074A0C57C00232  2404 712132*
F106A FINSQ0083ADCNRCH  F T3C370101 57C00232 92404 712139*F106A FINSQC083ADCNRCH  F   240      57000232  2405 712141*
F106A FINSQC083ADCNRCH  F A 16013DH157C00232  2405 712142*F106A FINSQC083ADCNRCH  F P D8041FH157000232  2405 712142*
F106A FINSQC083ADCNRCH  F   240      57000232  2406 712151*F106A FINSQC083ADCNRCH  F A 20513DH157000232  2406 712152*
F106A FINSQC083ADCNRCH  F   240      57000232  2407 712161*F106A FINSQC083ADCNRCH  F A G2375E8157000232  2407 712162*
F106A FINSQC083ADCNRCH  F A 07746GG157C00232  2407 712162*F106A FINSQC083ADCNRCH  F   240      57000232  2408 712171*
F106A FINSQC083ADCNRCH  F   240      57C00232  2409 712181*F106A FINSQC083ADCNRCH  F   240      57000232  2410 712191*
F106A FINSQC083ADCNRCH  F   240      57C00232  2411 712201*F106A FINSQC083ADCNRCH  F A G39130D157000232  2411 712202*
```

Figure 2-10. Sample Output — AFM 65-110 Screening Program

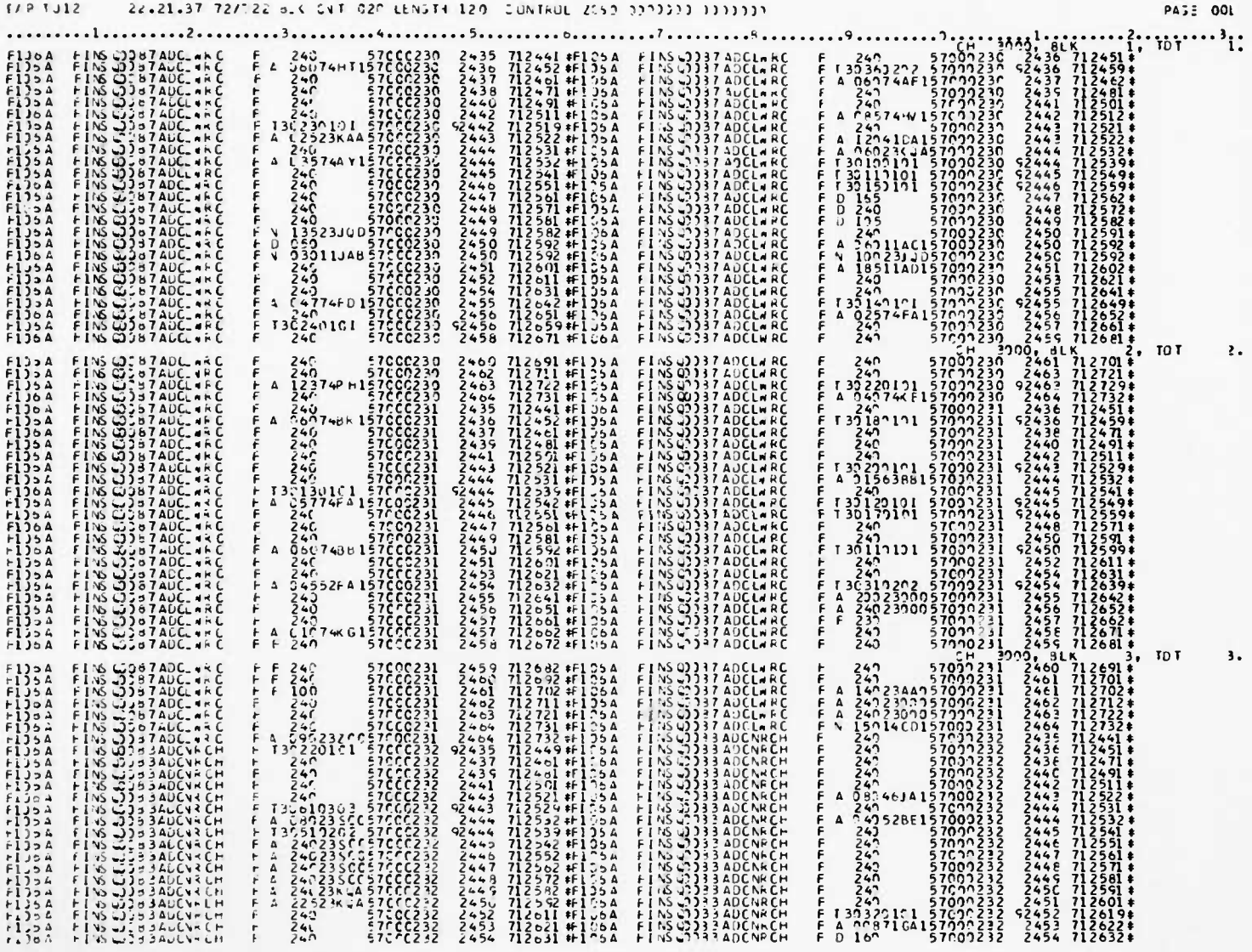


Figure 2-11. Sample Output — AFM 65-110 Sort Program

2.3.3 AFM 65-110 MERGE

2.3.3.1 Purpose. This IBM utility program merges the screened and sorted AFM 65-110 data tapes into a single file.

2.3.3.2 Input Data and Procedures. The input data comprises the screened and sorted AFM 65-110 data tapes and the input card data defining the merge fields. The JCL control cards for the IBM utility program and a sample of card data input for the IBM 370 are listed in Paragraph 6.2.3. The input card data is identical to that used in the AFM 65-110 Sort, as shown in Paragraph 2.3.2.2.

2.3.3.3 Output Description. Merging of 21 F-106 AFM 65-110 screened and sorted tapes on the IBM 370 required a total of four merges. In the first step, seven screened and sorted tapes were merged to one tape reel. This was repeated for the other 14 tapes. These steps required three to five minutes of elapsed time. The file contained 480,000 records and required one reel of tape. The output format is the same as that used for the AFM 65-110 sort output data tape.

2.3.4 AFM 65-110 ELIMINATE DUPLICATE RECORDS

2.3.4.1 Purpose. This COBOL program eliminates duplicate records from the screened, sorted, and merged AFM 65-110 file.

2.3.4.2 Input Data and Procedures. The JCL control cards for use on an IBM 370 and the program are shown in Paragraph 6.2.4. The input consists of the screened, sorted, and merged AFM 65-110 data tapes. Operation is identical to that of the corresponding program for the AFM 66-1 file in Paragraph 2.2.4.2.

2.3.4.3 Output Description. Screening, sorting, and merging of approximately 485,000 F-106 AFM 65-110 records yielded over 36,000 duplicate records. The number of duplicate records is displayed on the IBM 370 and required one output reel. The record layout and the blocking factor are unchanged from the AFM 65-110 sort.

2.3.5 AFM 65-110 COPY ACCEPTABLE AIRCRAFT

2.3.5.1 Purpose. During the initial screening of the AFM 65-110 data tapes, records for a specified set of aircraft serial numbers were deleted. During formulation of the data bank, however, only data for a specific fleet of aircraft is necessary. This COBOL program writes these acceptable aircraft records on a magnetic tape to form the new AFM 65-110 file.

2.3.5.2 Input Data and Procedures. The JCL control cards, the program, and a sample of card data input are listed in Paragraph 6.2.5. The input consists of the AFM 65-110 merged file (with any duplicate records removed) and a card deck defining

the acceptable serial numbers. The input card deck and operation of the program are identical to those for the AFM 66-1 file in Paragraph 2.2.5.2.

2.3.5.3 Output Description. The output record layout is the same as the AFM 65-110 sort. The F-106 AFM 65-110 file of approximately 480,000 records yielded some 300,000 records for the new AFM 65-110 file, requiring five minutes of computer time and one reel of tape.

2.4 AIE FILE GENERATION

The AIE file comprises data from two sources: handwritten Accident/Incident data supplied by SAAMA and magnetic tapes containing Accident/Incident/EUMR data (see Table 2-5). The two sets of data are converted to the same format, the files merged, and any duplicate records removed. Only data for a specified set of aircraft serial numbers is required for the data bank, and these records are copied to form the new AIE file. The logic flow for these programs is shown in Figure 2-12.

Table 2-5. AIE Data Sources

1.	Source Data Tapes
	KAFB 9490
	KAFB 10479
	KAFB 18609
	KAFB 30324
	KAFB 38816
2.	Other Sources
	Listing of F-106 Accident/Incident/EUMR Data - February 1969 through November 1971
	Handwritten F-106 Accident Data for 1970 and 1971 (19 records)
	Handwritten F-106 Incident Data for 1970 and 1971 (139 records)

2.4.1 ACCIDENT/INCIDENT FORMATTER

2.4.1.1 Purpose. This program, written in COBOL, converts the Accident/Incident card data to magnetic tape in a format compatible with the Accident/Incident/EUMR data tapes.

2.4.1.2 Input Data and Procedures. The program, a sample of card input, and the associated job control language (JCL) for use in the IBM 370 are listed in Paragraph 6.3.1.

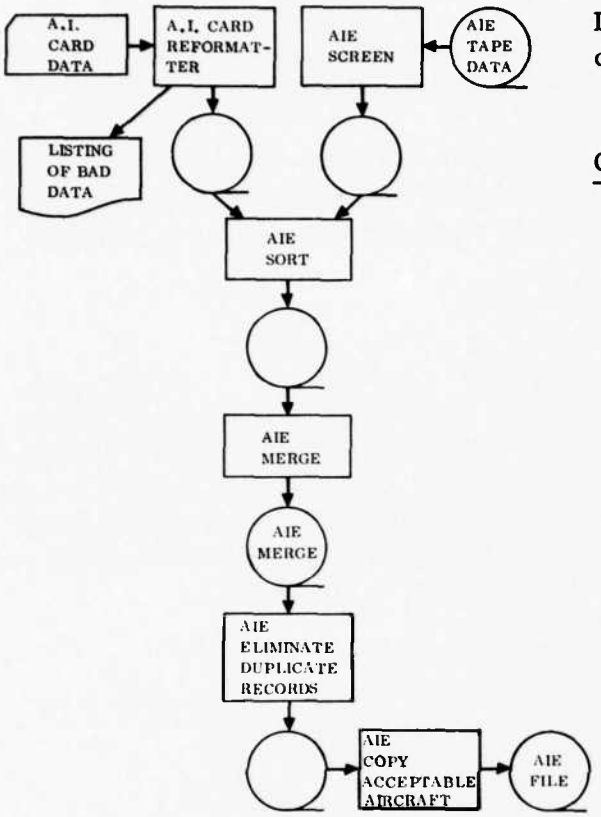


Figure 2-12. Logic Flow of AIE File Generation

Input to the program is a deck of cards containing the AI data in the following format.

Column	Description
2-3	First two digits of serial number
5-8	Last four digits of serial number
10-11	Day of report date
12-14	Three-character abbreviation for month of report date (e.g. JAN, FEB)
15-16	Two-digit year of report date
19	Report Code I = incident 1 = accident (category 1) 2 = accident (category 2)
21-25	Work Unit Code
26-80	May be blank, or may be used to further describe the report.

The data must have been previously screened to eliminate unacceptable serial numbers, dates prior to 1 January 1965, and bad or blank work unit codes. The program is suitable for use with AI data from any USAF aircraft, provided the card data is in the correct format.

2.4.1.3 Output Description. The output record layout is shown in Figure 2-13, and a sample output is given in Figure 2-14. The tape has 50 characters to a data record, blocked 60 to a tape record.

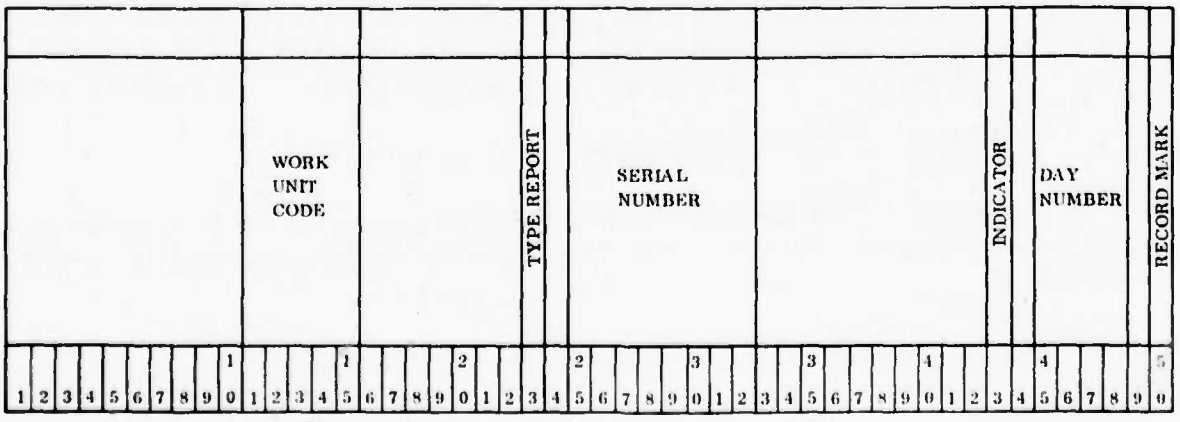


Figure 2-13. AI Reformatter Record Layout

```
T/P TU22     13.37.33 72/045 BLK CNT 02C LENGTH 100  CONTROL 2050 0000000 0000000                    PAGE 001
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
                                                                                  CH  3000, BLK      1, TOT      1.
        13C00  1 56C00456  $ C1E5 *        758E1  1 56000459  $ 0795 *
        51E00  1 56C00461  $ C29C *        14CC1  1 56000461  $ 1322 *
        520E1  1 56C00462  $ 0537 *        46HB1  1 56000463  $ 0860 *
        13881  1 56C00463  $ 1141 *        45BA1  1 56000465  $ 1035 *
        45EM1  1 57C00232  $ 0193 *        51EC1  1 57000232  $ 0280 *
        46EA1  1 57C00235  $ 0427 *        14JF1  1 57000241  $ 0784 *
        14J81  1 57C00243  $ C596 *        75GE1  1 57000482  $ 0910 *
        42BA1  1 57C00781  $ C45E *        13801  1 57002303  $ 0718 *
        13DH1  1 57C02431  $ 0293 *        45EM1  1 57002453  $ 0811 *
        71C00  1 57C02455  $ 02E6 *        75GE1  1 57002456  $ 0904 *
        14EA1  1 57C02457  $ 07C2 *        23J80  1 57002457  $ 1573 *
        51AH1  1 57C02458  $ 0271 *        14J81  1 57002459  $ 0575 *
        51E00  1 57C02461  $ 0244 *        46CV1  1 57002461  $ 1741 *
        14JA1  1 57C02464  $ 107C *        13H01  2 57002465  $ 1055 *
        14JA1  1 57C02467  $ 1070 *        13BA1  1 57002467  $ 1873 *
        23800  1 57C02469  $ 1071 *        23JA0  1 57002472  $ 0737 *
        23JA0  1 57C02475  $ 0747 *        13AAF  1 57002476  $ 0662 *
        14JA1  1 57C02478  $ 01C3 *        51AJ1  1 57002478  $ 0273 *
        51E00  1 57C02480  $ 0252 *        428A1  1 57002482  $ 0482 *
        42BA1  1 57C02482  $ C65C *        51E00  1 57002483  $ 0256 *
        51AJ1  1 57C02485  $ 02E7 *        51AM1  1 57002487  $ 0281 *
        93AEA  1 57C02491  $ C662 *        23HA0  1 57002492  $ 0193 *
        51E00  1 57C02492  $ 0246 *        13BA1  1 57002492  $ 1988 *
        23SR0  1 57002495  $ 1566 *        52C00  1 57002500  $ 0117 *
        460A1  1 57C02500  $ 1429 *        51EC1  1 57002509  $ 0245 *
        51EA1  1 57C02514  $ 0277 *        23N0E  1 57002514  $ 1806 *
        52CA1  1 57C02515  $ 1638 *        51AM1  1 57002520  $ 0250 *
        13EF1  1 57C02520  $ 1350 *        14C01  1 57002522  $ 1330 *
        51EC1  1 57C02523  $ 025E *        23HA0  1 57002526  $ 0330 *
        23EC1  1 57C02526  $ 0649 *        51AG1  1 57002532  $ 0298 *
                                                                                  CH  3000, BLK      2, TOT      2.
        51EA1  1 57002535  $ C278 *        75801  1 57002535  $ 0670 *
        45EE1  1 57C02536  $ 0508 *        23GCR  1 57002538  $ 0069 *
        51AH1  1 57C02539  $ 030C *        45C81  1 57002543  $ 1300 *
        14JE1  1 57C02546  $ 0863 *        45CA1  1 57002547  $ 0526 *
        45EC1  1 58E00090  $ 1548 *        46EAA  1 58000759  $ 0369 *
        23J8C  1 58C00759  $ C831 *        51E00  1 58000760  $ 0290 *
        51E00  1 58C0C765  $ 0220 *        51E00  1 58000766  $ 0021 *
        42BA1  1 58C00767  $ 0491 *        46CA1  1 58000768  $ 1706 *
        T4JE1  1 58C0C765  $ 0434 *        14GE1  1 58000773  $ 0065 *
        14AC1  1 58C00776  $ 0244 *        23HA0  1 58000779  $ 1978 *
        11HA8  2 58CC0781  $ 0824 *        75BF1  1 58000783  $ 0705 *
        14C00  1 58000785  $ 0441 *        41EA1  1 58000790  $ 0807 *
        75CE1  1 58C00902  $ 1CC5 *        23HA0  1 59000006  $ 0413 *
        51AH1  1 59C00008  $ 0301 *        52AA1  1 59000009  $ 0383 *
        13AAC  1 59C0C0C5  $ 0562 *        13AAA  1 59000011  $ 0253 *
        11H00  1 59C00012  $ 0075 *        13DH1  1 59000014  $ 0306 *
        23HA0  1 59C00014  $ 0389 *        14000  1 59000014  $ 1530 *
        13881  1 59C00021  $ 14C3 *        45BF1  1 59000023  $ 1337 *
        14J81  1 59C00026  $ 1421 *        46HA1  1 59000027  $ 0771 *
        51E00  1 59C00033  $ 02E6 *        14JA1  1 59000033  $ 1538 *
        45A00  1 59C0C036  $ 03C8 *        75GE1  1 59000036  $ 0893 *
        14FA1  1 59C00040  $ C581 *        13AAA  1 59000041  $ 0250 *
        42AG1  1 59C00042  $ C2E8 *        13CH1  1 59000044  $ 0271 *
        14AJ0  1 59C00044  $ 03C7 *        51EA1  1 59000044  $ 1102 *
        51EA1  1 59C00047  $ 11E7 *        14J81  1 59000052  $ 0700 *
        23HA0  1 59C00053  $ 0517 *        14JA1  1 59000054  $ 0242 *
        14J81  1 59C00056  $ 0784 *        14JK1  1 59000057  $ 0930 *
        51E81  1 59C00062  $ 0075 *        23J80  1 59000065  $ 0074 *
        14DC1  1 59C00065  $ 1573 *        51E00  1 59000067  $ 0287 *
        46CA1  1 59C00069  $ 05E6 *        52AE1  1 59000074  $ 1303 *
                                                                                  CH  3000, BLK      3, TOT      3.
        14FA1  1 59C0C074  $ 1313 *        51E00  1 59000076  $ 0286 *
        51E00  1 59C0C080  $ 02B6 *        51C00  1 59000082  $ 0292 *
        51EC1  1 59C00083  $ 0278 *        14A01  1 59000085  $ 1714 *
        14JA1  1 59C00089  $ 1CE6 *        458F1  1 59000090  $ 0077 *
        11H00  1 59C0009C  $ C181 *        13ACE  2 59000091  $ 0916 *
        23J8C  1 59C00092  $ 0174 *        13000  2 59000096  $ 1833 *
        75GE1  1 59CCC097  $ 0EE7 *        13AA1  1 59000100  $ 1932 *
        138E1  1 59C00101  $ 1134 *        138E1  1 59000101  $ 1315 *
        14JF1  1 59C001C2  $ 0712 *        45000  2 59000104  $ 0679 *
        23SR0  1 59C001C9  $ C803 *        52AF1  1 59000112  $ 1173 *
        138E1  1 59000121  $ 117C *        51EC1  1 59000129  $ 0274 *
        14J81  1 59CC0133  $ 0652 *        44FP1  1 59000133  $ 0684 *
        51EC1  1 59C00133  $ 1459 *        23SR0  1 59000133  $ 1764 *
        14JA1  1 59C00134  $ 1062 *        51E00  1 59000143  $ 0252 *
```

Figure 2-14. Sample Output — AI Reformatter

Experience with the data made available for the F-106 showed many records without a work unit code, and these were discarded. The elapsed computer time to run the Reformatter program was one to two minutes on the IBM 370; the output required one reel of magnetic tape.

2.4.2 AIE SCREEN

2.4.2.1 Purpose. This program, written in COBOL, screens the AIE data tapes to eliminate unnecessary and unacceptable records and to write acceptable records on magnetic tape for further processing. Acceptable records must have correct Mission and Design. Records containing unacceptable serial numbers and bad date information are rejected. The output record has an additional field that contains the day number, using 1 January 1965 as day one.

2.4.2.2 Input Data and Procedures. The program, a sample of card input, and the associated JCL for use on the IBM 370 are listed in Paragraph 6.3.2. Input to the program consists of the raw AIE data tape and a deck of cards containing the screening criteria. The record layout for the input AIE data is shown in Figure 2-15. The tape has 90 characters to a data record, blocked 30 to a tape record. The screening criteria card deck consists of a deck containing the following (in the order shown).

Card	Column	Description
a	1-4	Acceptable Aircraft Mission and Design
b	1-2	Number of Rejected Aircraft
c	1-8	Rejected Aircraft Serial Numbers (Number of cards set by card b)
d	1-8	Lowest Acceptable Serial Number
e	1-8	Highest Acceptable Serial Number

The program opens the input and output files, reads and stores the screening data, then reads the first AIE data record and checks for an unacceptable Mission and Design designation and a valid date. The serial number is then checked against the highest and lowest serial numbers and against the list of unacceptable serial numbers for appropriate action. Finally, the day number is computed, using 1 January 1965 as day one, and inserted into Columns 45 through 48 of the record. The verified record is then written on an output file and the process repeated with the next input record. Upon screening of the last input record, the remainder of the output tape record is filled with nines and the input and output files closed. Figure 2-16 shows the screening criteria used in the F-106 Scheduled Maintenance Study.

The program is suitable for all AIE data tapes for any USAF aircraft, with the following program dimension limitation: a maximum of 25 rejected aircraft serial numbers is allowed.

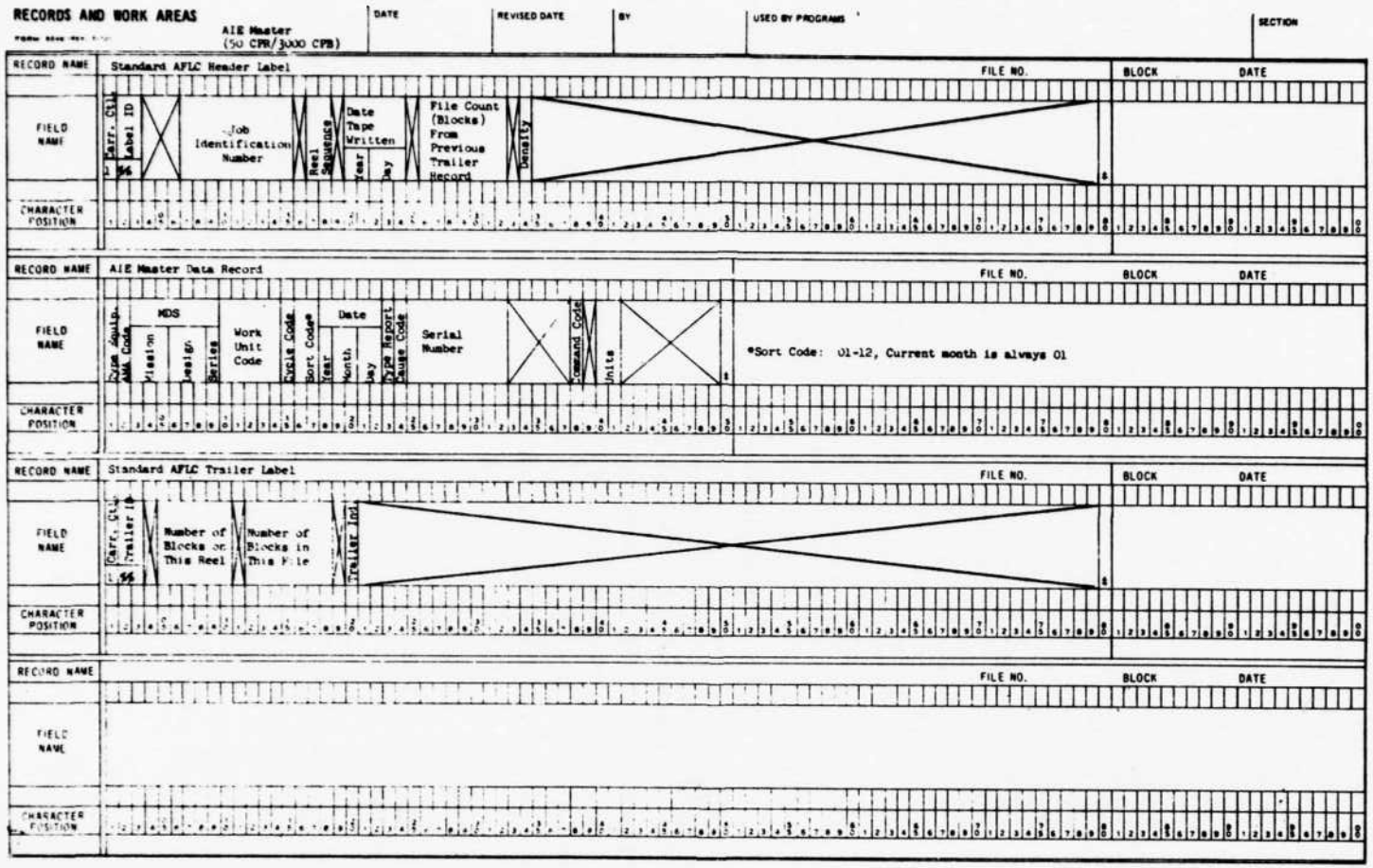


Figure 2-15. AIE Tape Record Layouts

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AREA _____ FLOW MAP _____ FUNCTION _____ ANALYST _____ DATE _____

1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8
F106							
13							
57009254							
57000239							
57000240							
57001523							
57002507							
57002513							
57002516							
57002519							
57002523							
57002529							
58000795							
59000061							
59000150							
57000001							
59999999							

Figure 2-16. Sample Input — Screening Criteria for AIE Tapes

2.4.2.3 Output Description. The sample output, Figure 2-17, has the same format as the AIE data tapes, with the addition of the day number in Columns 45 through 48. Experience with the F-106 AIE data tapes on the IBM 370 indicated that the data was very sparse, with an average of only 50 records per data tape. The majority of the AIE data came from the listing, which had approximately 1500 records. Screening of these 1500 records required about one minute of computer elapsed time.

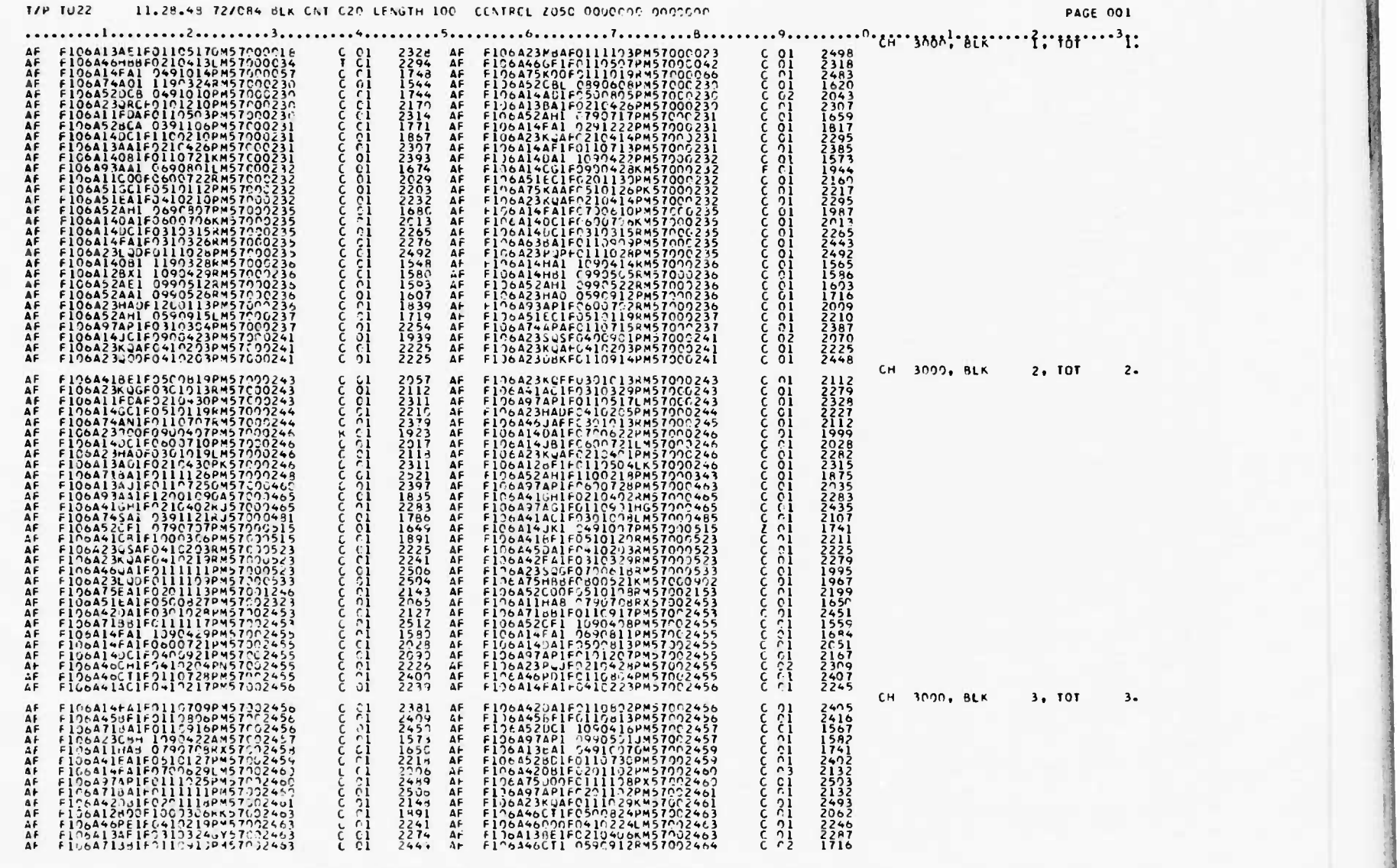
2.4.3 AIE SORT

2.4.3.1 Purpose. This IBM utility program sorts the screened AIE data tapes into an ordered file.

2.4.3.2 Input Data and Procedures. The JCL control cards for the IBM utility program and a sample of card data input for use on the IBM 370 are listed in Paragraph 6.3.3. The input consists of card data defining the sort fields, sort characteristics, and the screened AIE data tape. The sort fields are all defined as character fields in ascending order. The sort fields in order of hierarchy are:

Field	Column	Description
1	25-32	Serial Number
2	45-48	Day Number
3	10-14	Work Unit Code
4	1-50	*

*Field 4 is necessary to ensure that any duplicated records will be placed in adjacent order in the output file.



```
T/P TU22     11.28.48 72/084 BLK CNT 020 LENGTH 100  CONTROL ZOSC 0000000 0000000                                    PAGE 001

.....1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3.....
AF  F106A13AE1F0110517PM57000016     C 01   2326  AF  F106A23MBAF0111123PM57000023     C 01   2498
AF  F106A46MMBF0210413LM57000034     T 01   2294  AF  F106A466F1F0110507PM57000042     C 01   2318
AF  F106A14FA1  0491014PM57000057    C 01   1748  AF  F106A75K00F0110193M57000066     C 01   2483
AF  F106A74A01  1190324PM57000230    C 01   1544  AF  F106A52CBL  0890608PM57000230     C 01   1620
AF  F106A52DCB  0491010PM57000230    C 01   1744  AF  F106A14AD1F0500805PM57000230     C 02   2043
AF  F106A23JRCF0101210PM57000230     C 01   2170  AF  F106A13BA1F0210426PM57000230     C 01   2307
AF  F106A11FDAF0110503PM57000230     C 01   2314  AF  F106A52AH1  0790717PM57000231     C 01   1659
AF  F106A52BCA  0391106PM57000231    C 01   1771  AF  F106A14FA1  0291222PM57000231     C 01   1817
AF  F106A14DC1F1100210PM57000231     C 01   1867  AF  F106A23KQAF0210414PM57000231     C 01   2295
AF  F106A13AA1F0210426PM57000231     C 01   2307  AF  F106A14AF1F0110713PM57000231     C 01   2385
AF  F106A14081F0110721KM57000231     C 01   2393  AF  F106A140A1  1090422PM57000232     C 01   1573
AF  F106A93AA1  0690801LM57000232    C 01   1674  AF  F106A14CG1F0900428KM57000232     F 01   1944
AF  F106A11C00F0600722RM57000232     C 01   2029  AF  F106A51EC1F0201130PM57000232     C 01   2160
AF  F106A513C1F0510112PM57000232     C 01   2203  AF  F106A75KAAF0510126PK57000232     C 01   2217
AF  F106A51EA1F0410210PM57000232     C 01   2232  AF  F106A23KQAF0210414PM57000232     C 01   2295
AF  F106A52AH1  0690807PM57000235    C 01   1686  AF  F106A14FA1F0710610PM57000235     C 01   1987
AF  F106A140A1F0600706KM57000235     C 01   2013  AF  F106A140C1F0600706KM57000235     C 01   2013
AF  F106A14DC1F0310315RM57000235     C 01   2265  AF  F106A140C1F0310315RM57000235     C 01   2265
AF  F106A14FA1F0310326RM57000235     C 01   2276  AF  F106A63BA1F0110909PM57000235     C 01   2443
AF  F106A23LQDF0111026PM57000235     C 01   2492  AF  F106A23PQPF0111026PM57000235     C 01   2492
AF  F106A140B1  1190328KM57000236    C 01   1548  AF  F106A14HA1  1090414KM57000236     C 01   1565
AF  F106A12BX1  1090429RM57000236    C 01   1580  AF  F106A14HB1  0990505RM57000236     C 01   1586
AF  F106A52AE1  0990512RM57000236    C 01   1593  AF  F106A52AH1  0990522RM57000236     C 01   1603
AF  F106A52AA1  0990526RM57000236    C 01   1607  AF  F106A23HA0  0590912PM57000236     C 01   1716
AF  F106A23HA0F1200113PM57000236     C 01   1839  AF  F106A93AP1F0600702RM57000236     C 01   2009
AF  F106A52AH1  0590915LM57000237    C 01   1719  AF  F106A51EC1F0510119RM57000237     C 01   2210
AF  F106A97AP1F0310304PM57000237     C 01   2254  AF  F106A744PAF0110715RM57000237     C 01   2387
AF  F106A14JC1F0900423PM57000241     C 01   1939  AF  F106A23SQSF0400901PM57000241     C 02   2070
AF  F106A23KQAF0410203PM57000241     C 01   2225  AF  F106A23KQAF0410203PM57000241     C 01   2225
AF  F106A23JQDF0410203PM57000241     C 01   2225  AF  F106A23UBKF0110914PM57000241     C 01   2448
                                                                                        CH  3000, BLK     2, TOT     2.
AF  F106A418E1F0500819PM57000243     C 01   2057  AF  F106A23KQFF0301013RM57000243     C 01   2112
AF  F106A23KQGF0301013RM57000243     C 01   2112  AF  F106A41AC1F0310329PM57000243     C 01   2279
AF  F106A11FDAF0210430PM57000243     C 01   2311  AF  F106A97AP1F0110517LM57000243     C 01   2328
AF  F106A14GC1F0510119KM57000244     C 01   2210  AF  F106A23HADF0410205PM57000244     C 01   2227
AF  F106A74AN1F0110707KM57000244     C 01   2379  AF  F106A46JAFF0301013RM57000245     C 01   2112
AF  F106A23QQF0900407PM57000246      K 01   1923  AF  F106A140A1F0700622PM57000246     C 01   1999
AF  F106A14QC1F0600710PM57000246     C 01   2017  AF  F106A14JB1F0600721LM57000246     C 01   2028
AF  F106A23HA0F0310119LM57000246     C 01   2118  AF  F106A23KQAF0210401PM57000246     C 01   2282
AF  F106A13AQ1F0210430PK57000246     C 01   2311  AF  F106A126F1F0110504LK57000246     C 01   2315
AF  F106A718A1F0111126PM57000248     C 01   2521  AF  F106A52AH1F1100218PM57000343     C 01   1875
AF  F106A13AJ1F0110725PM57000465     C 01   2397  AF  F106A97AP1F0600728PM57000463     C 01   2035
AF  F106A93AA1F1200109GA57000465     C 01   1835  AF  F106A41GH1F0210402RM57000465     C 01   2283
AF  F106A41GH1F0210402RJ57000465     C 01   2283  AF  F106A97AG1F0110931HG57000465     C 01   2435
AF  F106A74SA1  0391121RJ57000481    C 01   1786  AF  F106A41AC1F0301008LM57000485     C 01   2107
AF  F106A52CF1  0790707PM57000515    C 01   1649  AF  F106A14JK1  0491007PM57000515     Z 01   1741
AF  F106A41GA1F1000306PM57000515     C 01   1891  AF  F106A418F1F0510120RM57000523     C 01   2211
AF  F106A23QSAF0410203RM57000523     C 01   2225  AF  F106A45DA1F0410203RM57000523     C 01   2225
AF  F106A23KQAF0410213RM57000523     C 01   2241  AF  F106A42FA1F0310329RM57000523     C 01   2279
AF  F106A46WA1F0111111PM57000523     C 01   2506  AF  F106A23SQGF0700618RM57000533     C 01   1995
AF  F106A23LQDF0111109PM57000533     C 01   2504  AF  F106A75HBBF0800521KM57000902     C 01   1967
AF  F106A75EA1F0201113PM57002246     C 01   2143  AF  F106A52C00F0510108RM57002153     C 01   2199
AF  F106A51EA1F0500827PM57002323     C 01   2065  AF  F106A11HA8  0790708RX57002453     C 01   1650
AF  F106A42DA1F0301028PM57002453     C 01   2127  AF  F106A718B1F0110917PM57002453     C 01   2451
AF  F106A718B1F0111117PM57002453     C 01   2512  AF  F106A52CF1  1090408PM57002455     C 01   1559
AF  F106A14FA1  1090429PM57002455    C 01   1580  AF  F106A14FA1  0690811PM57002455     C 01   1684
AF  F106A14FA1F0600721PM57002455     C 01   2028  AF  F106A140A1F0500813PM57002455     C 01   2051
AF  F106A14QC1F0400921PM57002455     C 01   2090  AF  F106A97AP1F0110207PM57002455     C 01   2167
AF  F106A46CH1F0410204PM57002455     C 01   2226  AF  F106A23PQJF0210428PM57002455     C 02   2309
AF  F106A46CT1F0110728PM57002455     C 01   2400  AF  F106A46PD1F0110804PM57002455     C 01   2407
AF  F106A41C1F0410217PM57002456      C 01   2239  AF  F106A14FA1F0410223PM57002456     C 01   2245
                                                                                        CH  3000, BLK     3, TOT     3.
AF  F106A14FA1F0110709PM57002456     C 01   2381  AF  F106A420A1F0110802PM57002456     C 01   2405
AF  F106A45BF1F0110806PM57002456     C 01   2409  AF  F106A45BF1F0110813PM57002456     C 01   2416
AF  F106A718A1F0110916PM57002456     C 01   2450  AF  F106A52DC1  1090416PM57002457     C 01   1567
AF  F106A23CHH 1090422AM57002457     C 01   1573  AF  F106A97AP1  0990521JM57002457     C 01   1582
AF  F106A11HA8  0790708RX57002458    C 01   1650  AF  F106A13EA1  0491007PM57002459     C 01   1741
AF  F106A41FA1F0510127PM57002459     C 01   2218  AF  F106A52BC1F0110730PM57002459     C 01   2402
AF  F106A14FA1F0700629LM57002462     L 01   2006  AF  F106A420B1F0201102PM57002460     C 03   2132
AF  F106A97AP1F0111025PM57002460     C 01   2489  AF  F106A75J00F0111128PX57002460     C 01   2503
AF  F106A718A1F0111111PM57002459     C 01   2506  AF  F106A97AP1F0201102PM57002461     C 01   2132
AF  F106A420A1F0201114PM57002461     C 01   2143  AF  F106A23KQAF0111029KM57002461     C 01   2493
AF  F106A12H00F1000306KM57002463     C 01   1491  AF  F106A46CT1F0500824PM57002463     C 01   2062
AF  F106A46PE1F0410219PM57002463     C 01   2241  AF  F106A46000F0410224LM57002463     C 01   2246
AF  F106A13AF1F0310324GY57002463     C 01   2274  AF  F106A130E1F0210406KM57002463     C 01   2287
AF  F106A718B1F0110917PM57002463     C 01   2441  AF  F106A46CT1  0590912RM57002464     C 02   1716
```

Figure 2-17. Sample Output — AIE Screening Program

2.4.3.3 Output Description. The sample output, Figure 2-18, is typical of AIE data. It has the same format as the AIE screened output. Sorting of the F-106 AIE data required one minute of elapsed computer time on the IBM 370.

2.4.4 AIE MERGE

2.4.4.1 Purpose. This IBM utility program merges the screened and sorted AIE data tapes into a single file.

2.4.4.2 Input Data and Procedures. The JCL control cards for this IBM utility program and a sample of card data input for use on the IBM 370 are listed in Paragraph 6.3.4. The input card data is identical to that used in the AIE Sort program.

2.4.4.3 Output Description. The F-106 AIE file required just one computer run to merge the seven input tapes into one. These input tapes comprised the five data tapes (see Table 2-5), a tape generated from the listing input data, and a tape generated from the handwritten input data. The output AIE file had some 3000 records, and the merge required one minute on the IBM 370. The output format is identical to the AIE Sort output.

2.4.5 AIE ELIMINATE DUPLICATE RECORDS

2.4.5.1 Purpose. This COBOL program eliminates duplicate records from the screened, sorted, and merged AIE file.

2.4.5.2 Input Data and Procedures. The JCL control cards for use on the IBM 370 and the program are listed in Paragraph 6.3.5. The input is the merged AIE data tape; operation is identical to that of the AFM 66-1 Eliminate Duplicate Records in Paragraph 2.2.4.2.

2.4.5.3 Output Description. The program detected 10 duplicate records in the F-106 AIE file of approximately 3000 records and required about one minute of IBM 370 time. The output format is identical to that of the AIE Sort in Paragraph 2.4.3.3.

2.4.6 AIE COPY ACCEPTABLE AIRCRAFT

2.4.6.1 Purpose. During the initial screening of the AIE data, records for a specified set of aircraft serial numbers were deleted. During formulation of the data bank, only data for a specific fleet of aircraft is necessary. This COBOL program writes these acceptable records on a magnetic tape to form the new AIE file.

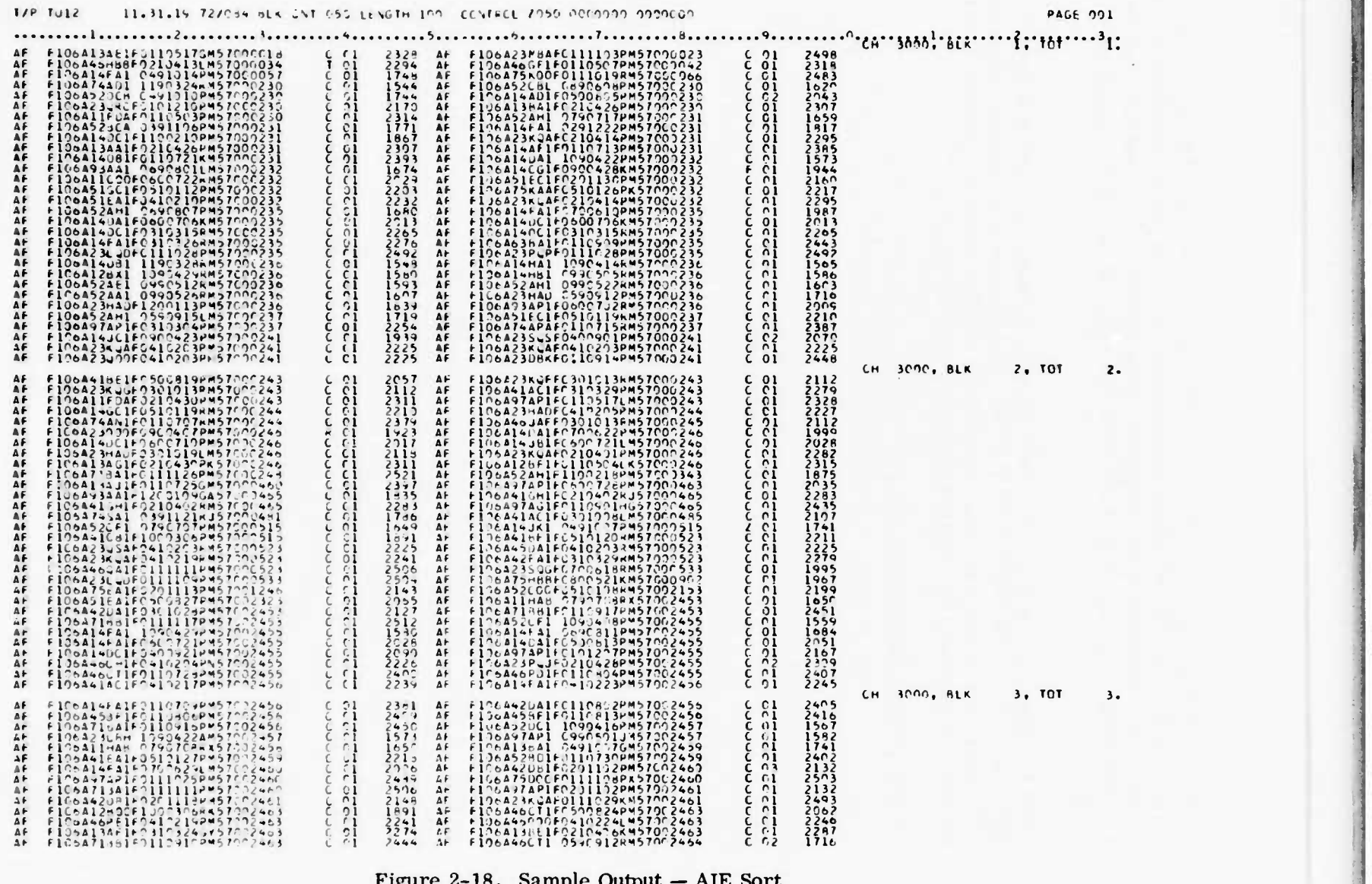


Figure 2-18. Sample Output — AIE Sort

2.4.6.2 Input Data and Procedures. The JCL control cards, the program, and a sample of card data input are listed in Paragraph 6.3.6. The input consists of the AIE file and a card deck defining the acceptable serial numbers. The input card deck and operation of the program are identical to that for the AFM 66-1 file in Paragraph 2.2.5.2.

2.4.6.3 Output Description. The record layout is unchanged from the AIE Sort program. Experience with the F-106 AIE file of approximately 3000 records yielded some 2000 records for the new AIE file. The program required one to two minutes of IBM 370 time and the output file required one reel of magnetic tape.

2.5 IRAN FILE GENERATION

The objective of the IRAN File Generation programs is to combine IRAN event data and aircraft acceptance date data to produce the IRAN data file used as input to the Data Bank program. IRAN interval data is calculated from data on consecutive IRAN event records. The output file includes information on current IRAN event, the following IRAN event, and the included IRAN interval. A printed report of this data is generated. (See Figure 2-19.)

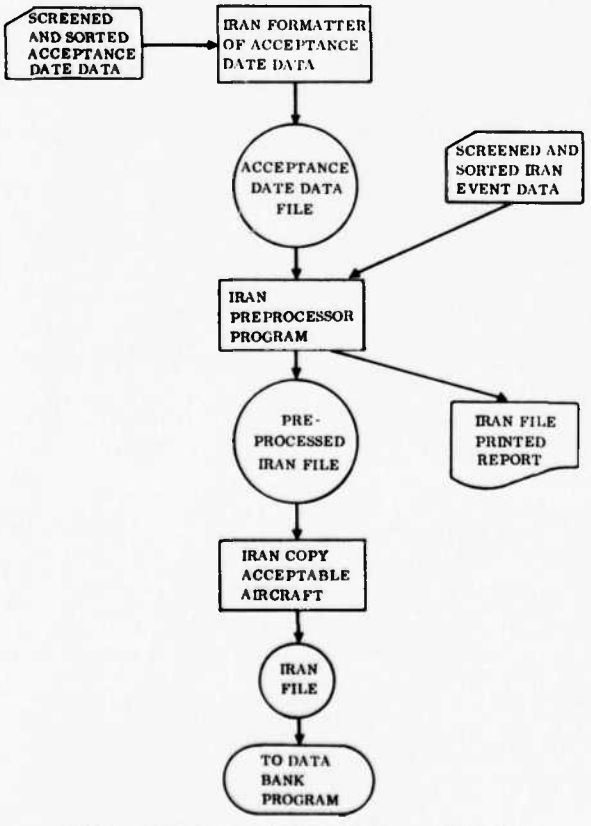


Figure 2-19. Logic Flow of IRAN File Generation

All of the IRAN File Generation programs were developed for the IBM 370 and have been written to be compatible with SAAMA computers. The programs were written using (ANS) COBOL.

The IRAN File Generation task consists of three COBOL programs:

a. IRAN Formatter of Acceptance Date Data.

b. IRAN Preprocessor.

c. IRAN Copy of Acceptable Aircraft.

The IRAN file is subsequently used for input to the Data Bank programs.

2.5.1 IRAN FORMATTER OF ACCEPTANCE DATE DATA

2.5.1.1 Purpose. The purpose of the IRAN Formatter of Acceptance Date Data program is to convert the serial number

to an eight-digit format and to convert the date to a day number. The converted output, the Acceptance Date Data file, is subsequently used for input to the IRAN Preprocessor program. Paragraph 6.4.1 shows the source program and corresponding job control cards.

2.5.1.2 Input Data and Procedures. The card input consists of a deck containing one acceptance date data card for each aircraft. The cards contain:

Column	Data
1-2	First two digits of serial number
3-6	Last four digits of serial number
17-18	Month of acceptance date*
19-20	Day of acceptance date*
21-22	Two-digit year of acceptance date

The record layout is shown in Figure 2-20. The sample card input is:

```
57 230      060158
57 231      070158
57 232      070158
57 235      080158
```

2.5.1.3 Output Description. Output is an intermediate Acceptance Date Data file containing the converted eight-digit serial number and converted day number. The record layout is shown in Figure 2-20. Records are 80 characters long, blocked 1 to a record. For the F-106 fleet, processing of 265 records took less than one minute on the IBM 370 computer.

2.5.2 IRAN PREPROCESSOR

2.5.2.1 Purpose. The purpose of the IRAN Preprocessor is to prepare a Preprocessed IRAN file and an IRAN printed report (Figure 2-19). Paragraph 6.4.2 contains a listing of the source program and corresponding job control cards. The following is a description of the operation of the IRAN Preprocessor program.

An event card is read and the serial number and the start and finish dates are converted. Cumulative flight hours are calculated. An acceptance date record is then read from the Acceptance Date Data file and the serial numbers are compared. If

---

*Values must be punched right-justified within these fields. The values may have leading zeros or blanks.

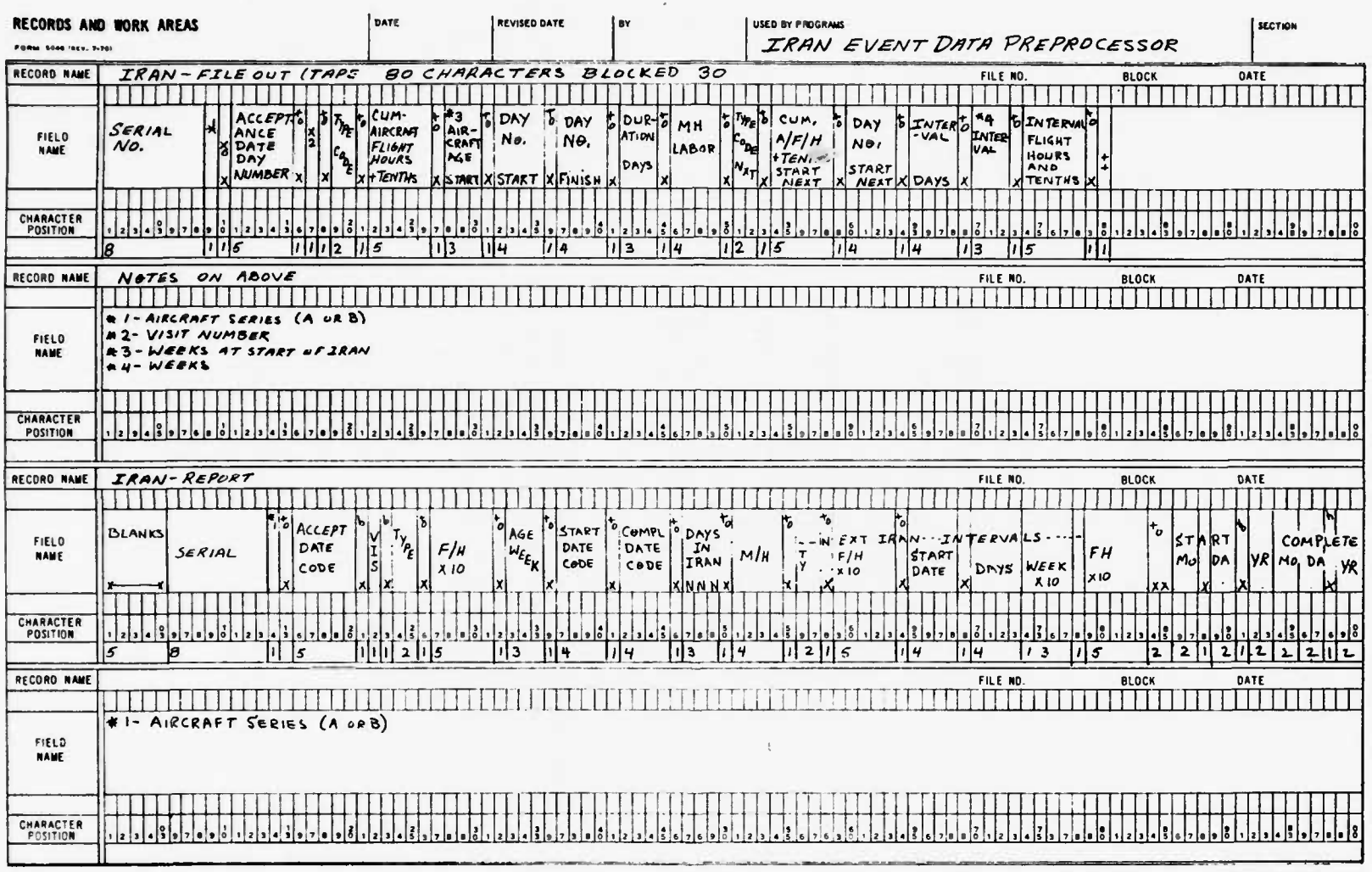


Figure 2-20. IRAN File Generation Record Layouts (Sheet 1 of 2)

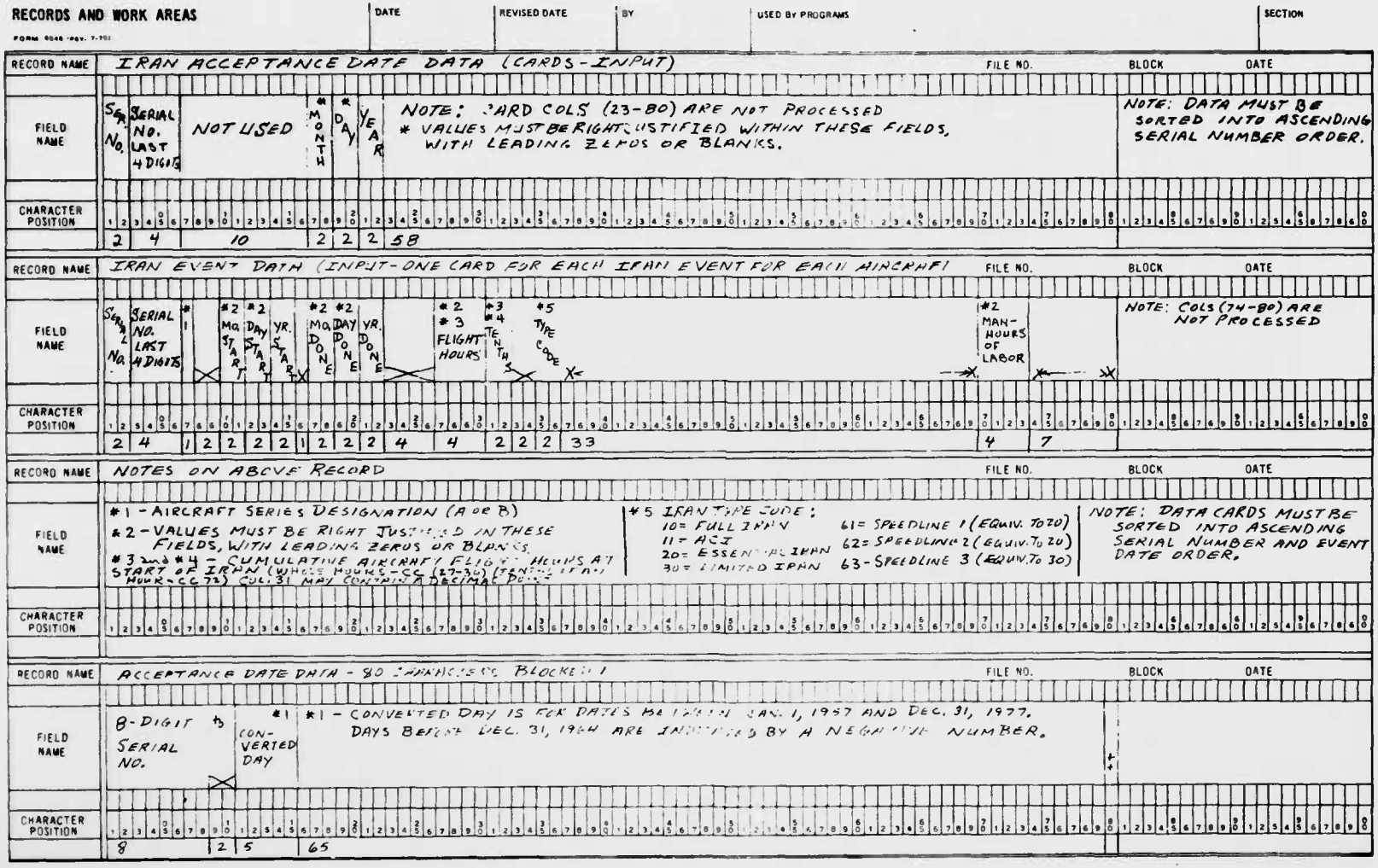


Figure 2-20. IRAN File Generation Record Layouts (Sheet 2 of 2)

the serial numbers match, the acceptance date is moved to the output record temporary storage area.

All data pertaining to the current IRAN event is moved to the output area. If the acceptance data and IRAN start date are available, the aircraft age is calculated. If IRAN start and finish dates are available, the IRAN duration is calculated. The next IRAN event card is read into the output area fields pertaining to the next IRAN. The serial number and start and finish dates are converted, and cumulative flight hours are calculated. The serial numbers are again compared; if they match, the IRAN interval data in days, weeks, and flight hours is calculated.

The output is written on tape and printed in the report. If the last event card read was for the current serial number, the next event card is read and the second half of this procedure is repeated. If the last event card read was for a different serial number, the entire procedure beginning with retrieval of an acceptance date record is repeated. This cycle is continued until all IRAN event cards have been read and processed.

All fields for which data is missing are filled with the value zero. This will occur for the information on next IRAN and IRAN interval for the last IRAN for each serial number and if particular elements of input data are missing.

2.5.2.2 Input Data and Procedures. The input consists of IRAN acceptance date data previously described and IRAN event data cards. The following is a description of the input for IRAN event data (one card for each IRAN event for each aircraft).

Column	Data
1-2	First two digits of serial number
3-6	Last four digits of serial number
7	Aircraft series designation (A or B)
10-11	Month of IRAN start date*
12-13	Day of IRAN start date*
14-15	Two-digit year of IRAN start date
17-18	Month of IRAN completion date*
19-20	Day of IRAN completion date*
21-22	Two-digit year of IRAN completion date

*Values must be punched right-justified within these fields. The values may have leading zeros or blanks.

Column	Data
27-30	Cumulative aircraft flight hours at start of IRAN (whole hours)*
32	Cumulative aircraft flight hours at start of IRAN (tenths of an hour — Column 31 may contain a decimal point)
35-36	IRAN type code:
	10 = full IRAN
	11 = ACI
	20 = essential IRAN
	30 = limited IRAN
	61 = Speedline 1 (equivalent to 20)
	62 = Spcedline 2 (equivalent to 20)
	63 = Speedline 3 (equivalent to 30)
70-73	Manhours of labor in IRAN*

The IRAN event data cards must be sorted into ascending serial number and event date order. The following is a sample card input.

```
57 230A  091064 111664     834.7  10
57 230A  100465 110965    1041.1  20
57 230A  100768 122468    1924.8  10                    4245
57 231A  092864 120164     920.5  10
57 231A  101465 111765    1189.1  20
57 231A  112068 030669    2004.7  10                    4507
57 232A  111565 011766     989.6  20
57 232A  112067 022168    1478.7  10
57 232A  021670 032970    2036.6  10                    4140
57 235A  070665 080665    1002.3  20
57 235A  072666 091966    1211.0  30
57 235A  100266 123066    1233.1  20                    3676
57 235A  032169 052969    1749.3  10                    4463
```

2.5.2.3 Output Description. The output consists of a magnetic tape file (Preproccssed IRAN file) and a corresponding printed IRAN report. The output tape records are 80-character records formatted as follows.

*Values must be punched right-justified within these fields. The values may have leading zeros or blanks.

Position	Data
1-8	Serial number
9	Aircraft series (A or B)
11-15	Acceptance date day number
17	Visit number
19-20	IRAN type code (see description under IRAN event data input formats)
22-26	Cumulative aircraft flight hours and tenths at start of IRAN
28-30	Aircraft age in weeks at start of IRAN
32-35	IRAN start date day number
37-40	IRAN completion date day number
42-44	Duration of IRAN (days)
46-49	Manhours of labor in IRAN
51-52	Next IRAN type code (see description under IRAN event data input formats)
54-58	Cumulative aircraft flight hours and tenths at start of next IRAN
60-63	Next IRAN start date day number
65-68	IRAN interval (days)
70-72	IRAN interval (weeks)
74-78	IRAN interval (flight hours and tenths)

Tape output records consist of 80 characters, blocked 30 to a tape record. Figure 2-20 shows the record layout; Figure 2-21 is a sample of the tape output.

The printed output is a report containing the same data fields (in the same order) as the tape output, plus the start and completion dates of the IRAN. The printed output report consists of 120-character data records, blocked 25 to a tape record. Figure 2-20 shows the record layout, and Figure 2-22 is a sample of the printed output report tape. For the F-106 fleet, processing of 265 records took approximately one minute on the IBM 370.

2.5.3 IRAN COPY ACCEPTABLE AIRCRAFT

2.5.3.1 Purpose. The purpose of the IRAN Copy Acceptable Aircraft program is to select acceptable aircraft serial numbers for input to the data bank.

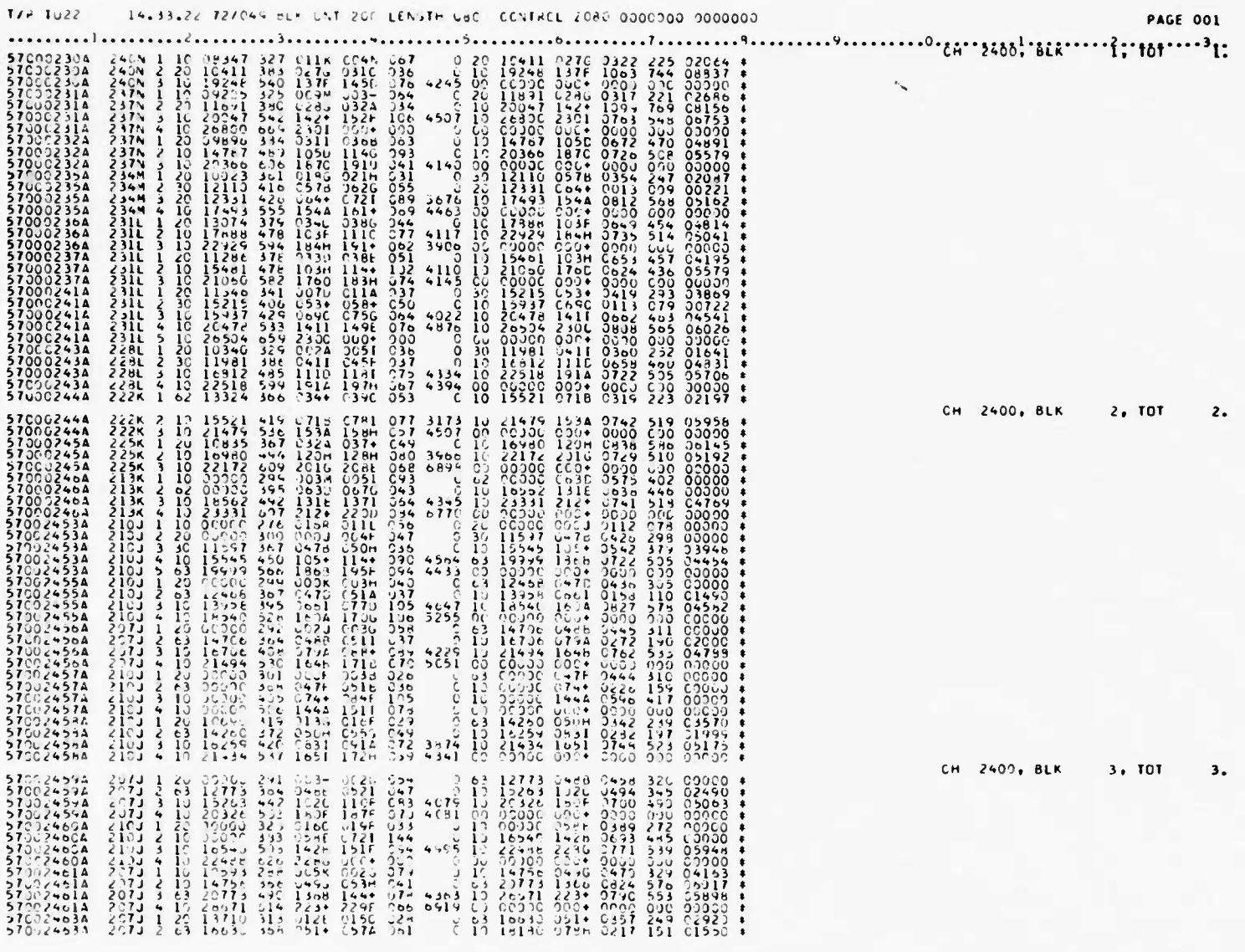
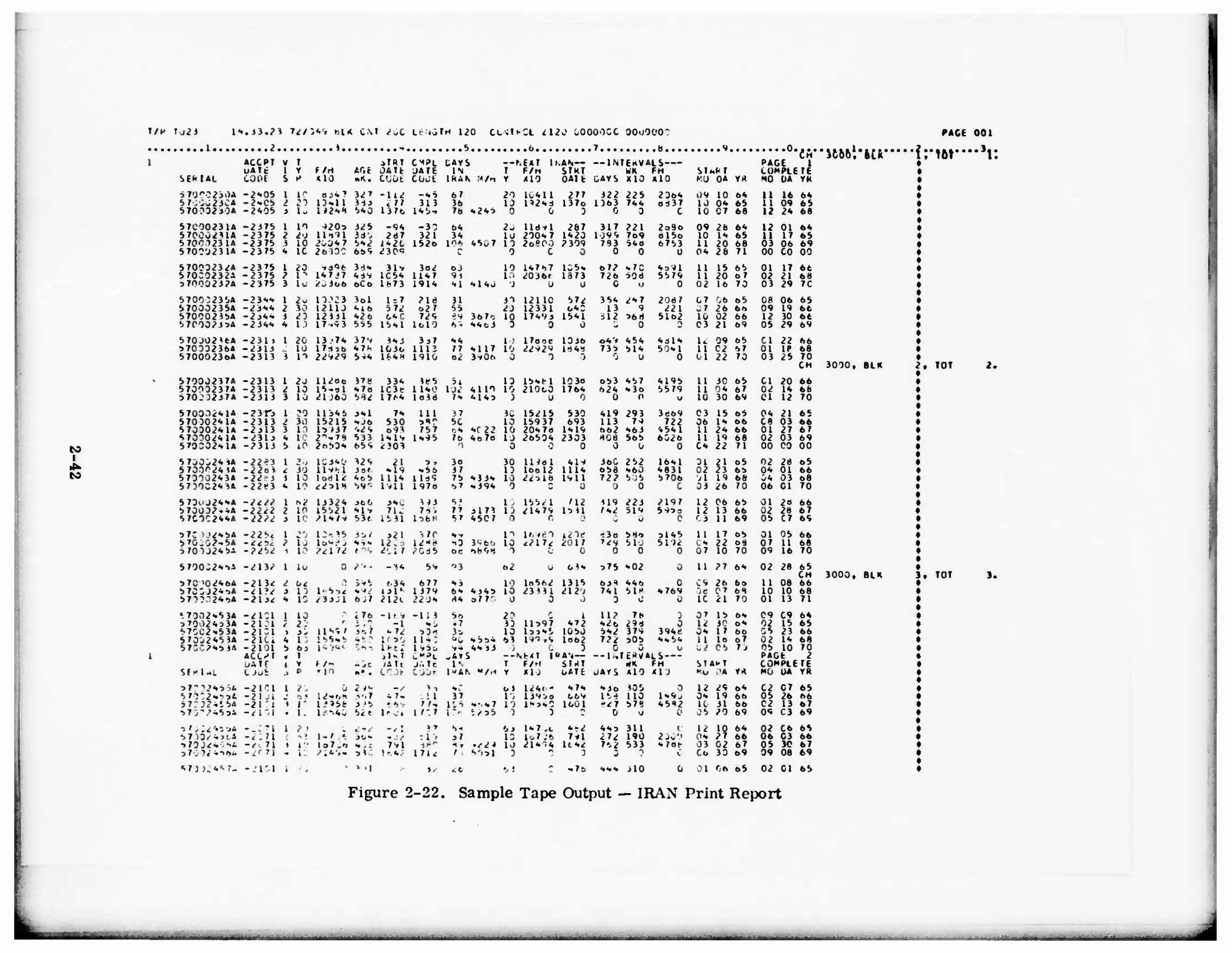


Figure 2-21. Sample Tape Output — IRAN File



```
T/P T023     14.33.23 727349 BLK CNT 200 LENGTH 120  CONTROL 2120 0000000 0000000                                                
```

2.5.3.2 Input Data and Procedures. The JCL cards, the program, and a sample of card data input are shown in Paragraph 6.4.3. The input consists of the Preprocessed IRAN file and a card deck defining the acceptable aircraft serial numbers. The input card deck and operation of the program are identical to that for the AFM 66-1 file in Paragraph 2.2.5.2.

2.5.3.3 Output Description. The record layout is described in Figure 2-20, and a sample of the tape output is shown in Figure 2-21. The IRAN file of 562 records was copied in one minute of elapsed computer time.

SECTION 3

DATA BANK GENERATION

3.1 GENERAL DESCRIPTION

Generation of the Data Bank requires six input files:

a. AFM 66-1 Data File

b. AFM 65-110 Data File

c. AIE Data File

d. IRAN Data File

e. WUC Data File

f. Data Bank Control Data

Preparation of the first four files was covered in Section 2. This section is concerned with the preparation of the WUC data file, the Data Bank Control Data, the Data Bank program, and the WUC Conversion program. Preparation of the WUC data file was made more complex because of revisions in WUC designation during the period which the Data Bank covers. Additional programs have been developed to first check the WUCs that are processed in the Data Bank, then to convert the WUCs prior to the changeover to the new designation. The logic flow for generating the Data Bank is shown in Figure 3-1.

3.2 WUC FILE GENERATION

The WUC data file comprises the five-digit WUC records and must be sorted into ascending order on the work unit code field. The Data Bank program uses the WUC file as one of the input files. (See Figure 3-1.) If the WUC designation is changed during the period covered by the Data Bank, the Acceptable WUC representing the codes will be printed in the final output. The logic flow of the WUC file generation is shown in Figure 3-2. If there are no changes in WUC designations, the Sort WUC for Conversion and WUC Merge steps should be bypassed, and the WUC for conversion as input data would not be available.

3.2.1 SORT ACCEPTABLE WUC

3.2.1.1 Purpose. This IBM Utility program sorts the Acceptable WUC data into an ordered file.

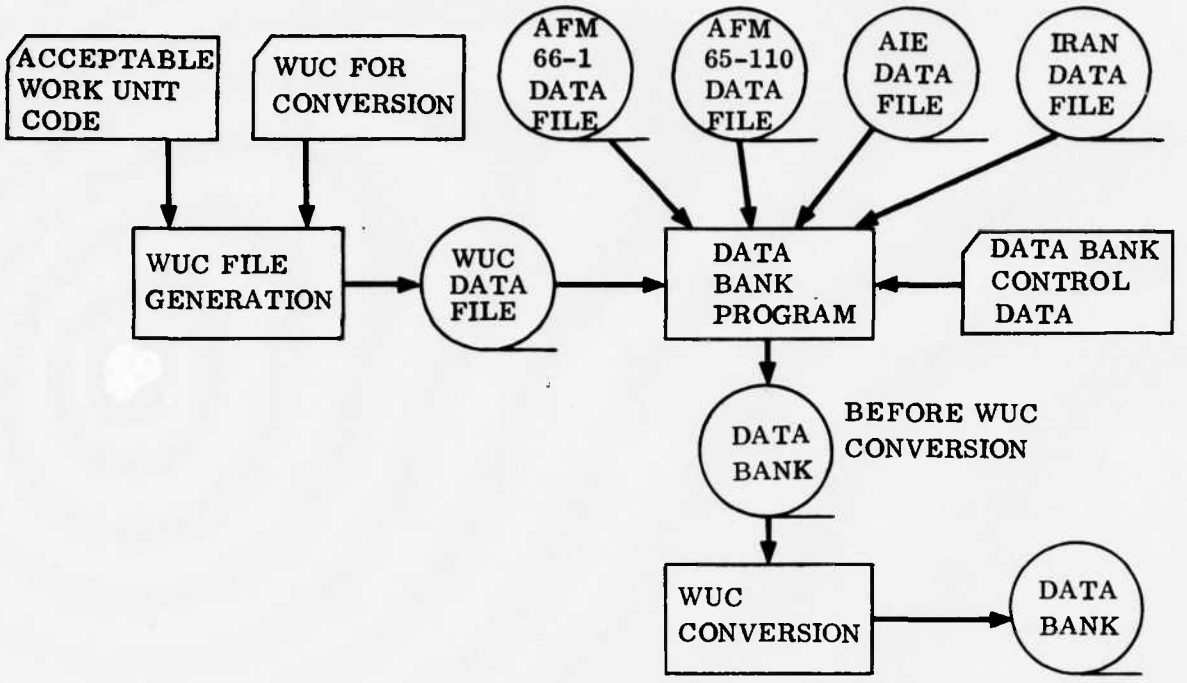


Figure 3-1. Logic Flow — Data Bank Generation

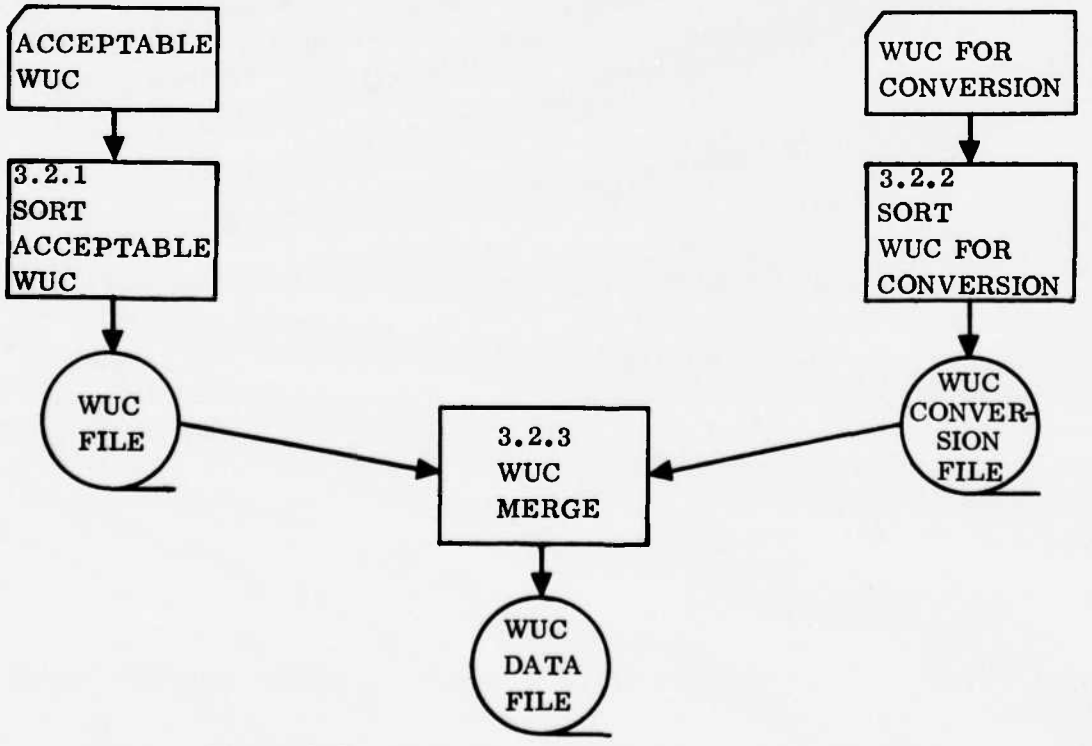


Figure 3-2. Logic Flow — WUC File Generation

3.2.1.2 Input Data and Procedures. The job control language (JCL) for the IBM utility program and a sample of card data input for use on the IBM 370 are shown in Paragraph 6.5.1. The format of the input data is given in Figure 3-3, and the listing of WUCs used in the F-106 Scheduled Maintenance Study is given in Table 3-1. The 20-character data record is the minimum record length accepted by the IBM 370 Sort Utility program at Convair Aerospace. The Sort key is defined as a character field, in ascending order on Columns 1 through 5.

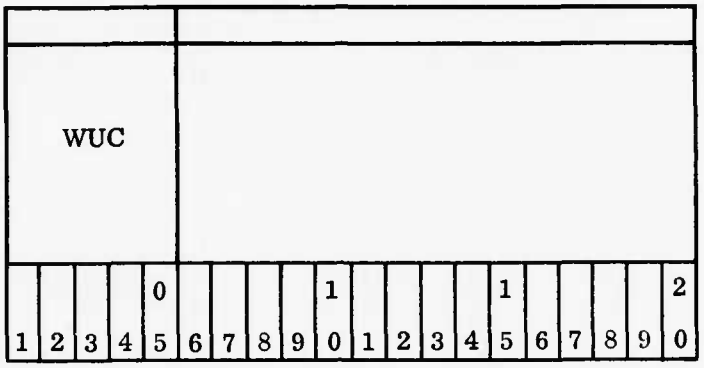


Figure 3-3. Format of WUC Record

3.2.1.3 Output Description. The sample output, Figure 3-4, has 20-character data records, blocked 50 to a tape record. The time required to sort the 2043 WUCs for the F-106 Scheduled Maintenance Study was less than one minute on the IBM 370 computer.

3.2.2 SORT WUC FOR CONVERSION

3.2.2.1 Purpose. When the WUC designations have been changed during the period covered by the data bank, it is essential that the list of Acceptable WUCs includes codes that, although obsolete and superseded at the end of the period, had validity at the start of the data bank period. This program sorts these obsolete WUCs in the identical sequence as the list of Acceptable WUC prior to merging of the two files.

3.2.2.2 Input Data and Procedures. The JCL for the IBM Utility program and a sample of card data inputs for use with the IBM 370 are shown in Paragraph 6.5.2. The format of the input WUC to be converted is shown in Figure 3-5. This program only uses the Old WUC (i.e., the one to be added to the data bank) but the WUC to supersede it is also included on the input card deck, enabling the same file to be used in a subsequent program. The listings of the "Old WUC," (those to be replaced) and the "New WUC" (those to supersede the old one used in the F-106 Scheduled Maintenance Study) are given in Tables 3-2 and 3-3. The sort data is defined as a character field, in ascending order in Columns 2 through 6.

Table 3-1. Work Unit Codes

T/P TU12 22.27.41 72/224 BLK CNT 998 LENGTH 120 CONTROL Z02C 0006300 0000000 PAGE 001

```
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.....1AAA1.....2.....3..
                                                                                    CH 1000, BLK     1, TOT     1.
11AAA   11AAB   11AA1   11ACF   11AC1   11AD1
11AE1   11AG1   11AJ1   11AQ1   11AR1   11AU1
11AV1   11ADD   11CAA   11CA1   11CBA   11CB1
11CCA   11CC1   11CDA   11CD1   11CEA   11CE1
11CFA   11CF1   11CGA   11CG1   11CH1   11CJ1
11CDD   11DAA   11DAB   11DAC   11DAD   11DAE
11DAF   11DAD   11DBA   11DBB   11DBC   11DBD
11DBE   11DBC   11DCA   11DC8   11DCC   11DCD
11DCE   11DCF
                                                                                    CH 1000, BLK     2, TOT     2.
11DCG   11DCH   11DCJ   11DCK   11DC9   11DDA
11DDB   11DDC   11DDD   11DDE   11DDF   11DDG
11DDH   11DDD   11DEA   11DEB   11DEC   11DED
11DEE   11DEF   11DEG   11DEH   11DE9   11DFA
11DFB   11DFC   11DFD   11DFE   11DFF   11DFG
11DFH   11DFJ   11DFA   11DGA   11DGB   11DGC
11DGD   11DGE   11DGF   11DGG   11DG9   11DHA
11DHB   11DHC   11DHD   11DHE   11DH9   11DDD
11EAA   11EAB
                                                                                    CH 1000, BLK     3, TOT     3.
11EAC   11EAD   11EAE   11EAF   11EAG   11EAH
11EAJ   11EAK   11EAL   11EBE   11EBA   11EBB
11EBC   11EBD   11EBE   11EBF   11EBG   11EBH
11EBJ   11EBK   11EBD   11ECA   11ECB   11ECC
11ECD   11ECE   11ECF   11ECG   11ECH   11ECJ
11ECK   11ECL   11ECM   11ECN   11EC9   11EDA
11EDB   11EDC   11EDD   11EDE   11EDF   11EDG
11EDD   11EDD   11FAA   11FAB   11FAC   11FAD
11FAE   11FAF
                                                                                    CH 1000, BLK     4, TOT     4.
11FAG   11FAH   11FAJ   11FAK   11FAL   11FAM
11FBA   11FBB   11FBC   11FBD   11FBE   11FBF
11FBG   11FBH   11FBJ   11FBK   11FB9   11FCA
11FCB   11FCC   11FCD   11FCE   11FCF   11FCG
11FCH   11FCJ   11FCK   11FCL   11FCM   11FCN
11FCD   11FDA   11FDB   11FDC   11FDD   11FDE
11FDF   11FDG   11FDD   11FCD   11GAA   11GAB
11GAC   11GAD   11GAE   11GAF   11GAG   11GAD
11GDD   11HAA
                                                                                    CH 1000, BLK     5, TOT     5.
11HAB   11HA1   11HB1   11HDD   11JAA   11JAA
11JAC   11JAD   11JAE   11JAF   11JA1   11JB1
11JC1   11JD1   11JE1   11JF1   11JG1   11JH1
11JJ1   11JK1   11JL1   11JM1   11JN1   11JP1
11JQ1   11JR1   11JS1   11JT1   11JD9   11KA1
11KB1   11KC1   11KD1   11KE1   11KF1   11KG1
11KM1   11KJ1   11KK1   11KL1   11K99   11LA1
11LB1   11LC1   11LD1   11LE1   11LF1   11LG1
11LDD   11DDD
                                                                                    CH 1000, BLK     6, TOT     6.
12AA1   12AB1   12AC1   12AD1   12AE1   12AF1
12AG1   12ADD   12BA1   12BB1   12BC1   12BD1
12BE1   12BF1   12BG1   12BH1   12BJ1   12BK1
12BL1   12BN1   12BP1   12BQ1   12BR1   12BS1
12BT1   12BU1   12BV1   12BW1   12BX1   12BY1
12BZ1   12BZ2   12BZ4   12BZ0   12DA1   12DC1
12DD1   12DDD   13AAA   13AAB   13AAC   13AAD
13AAE   13AAF   13AAG   13AAH   13AAJ   13AAK
13AA1   13AB1
                                                                                    CH 1000, BLK     7, TOT     7.
13ACA   13ACB   13ACC   13ACD   13ACE   13ACF
13ACG   13ACI   13AD1   13AE1   13AF1   13AG1
13AH1   13AJ1   13AD0   13BA1   13BB1   13BCA
13BC1   13BD1   13BE1   13BF1   13BG1   13BH1
13BDD   13CA1   13CB1   13CC1   13CD1   13CF1
13CF1   13CG1   13CH1   13CJ1   13CK1   13CL1
13CM1   13CN1   13CP1   13CQ1   13CD9   13DA1
13DB1   13DC1   13DD1   13DEA   13DEB   13DEC
13DED   13DEE
                                                                                    CH 1000, BLK     8, TOT     8.
13DEF   13DE1   13DF1   13DG1   13DH1   13DJ1
13DK1   13DL1   13EB1   13EC1   13EEA   13EE1
13EF1   13EG1   13EH1   13EJ1   13EK1   13FL1
13EM1   13EN1   13EP1   13FDC   13FF1   13FF1
13FG1   13FM1   13FDC   13GC1   13GE1   13GH1
13GT1   13HA1   13HB1   13HC1   13HD1   13HE1
```

Table 3-1. Work Unit Codes, Continued

```
T/P TU12     22.27.41 72/224 BLK CNT 998 LENGTH 12D  CONTROL ZD20 0000000 0000000        CH 1000, BLK     8, TOT     8  PAGE 002

13MF1....1.........2.........3.........4.........5.........6.........7.........8.........9.........1.........2.........3..
13JD1          13JE1          13JF1          13JG1          13JH1          13JJ1
13JK1          13JL1

                                                                          CH 1000, BLK     9, TOT     9.
13JM1          13JQQ          13QQQ          14AA1          14AB1          14AC1
14AD1          14AE1          14AF1          14AG1          14AQQ          14AA1
14BB1          14BC1          14BD1          14BE1          14BF1          14BQQ
14CA1          14CB1          14CCA          14CC8          14CC1          14CD1
14CE1          14CF1          14CG1          14CM1          14CJ1          14CK1
14CL1          14CM1          14COD          14DA1          14DB1          14DC1
14DD1          14DE1          14DF1          14DD0          14FA1          14EB1
14EC1          14ED1          14EE1          14EF1          14EG1          14EH1
14EJ1          14EK1

                                                                          CH 1000, BLK    10, TOT    10.
14EL1          14EM1          14EN1          14EP1          14EQQ          14FA1
14FBA          14FB1          14FC1          14FDQ          14GA1          14GB1
14GC1          14GD1          14GE1          14GF1          14GG1          14GH1
14GL1          14GM1          14GN1          14GCO          14HA1          14HB1
14HC1          14HD1          14HE1          14HF1          14HG1          14HH1
14HOO          14JA1          14JB1          14JC1          14JD1          14JE1
14JF1          14JG1          14JH1          14JJ1          14JK1          14JM1
14JN1          14JP1          14JQ1          14JR1          14JQQ          14QQQ
23HAA          23HAB

                                                                          CH 1000, BLK    11, TOT    11.
23HAC          23HAD          23HAE          23HAF          23HAG          23HAH
23HAJ          23HAK          23HAL          23HAM          23HA7          23HBA
23HBB          23HBC          23HBD          23HBE          23HBF          23HBG
23HBH          23HBQ          23HQA          23HQB          23HQC          23HQD
23HQE          23HQQ          23HOO          23JAA          23JAB          23JAC
23JAD          23JAE          23JAF          23JAG          23JAH          23JAJ
23JAK          23JAQ          23JBA          23JBB          23JBC          23JBD
23JBQ          23JQA          23JQB          23JQC          23JQD          23JQE
23JQF          23JQG

                                                                          CH 1000, BLK    12, TOT    12.
23JQH          23JQJ          23JQL          23JQM          23JQN          23JQP
23JQQ          23JQR          23JQ0          23JC0          23KAA          23KAB
23KAC          23KAD          23KAE          23KAF          23KAG          23KAH
23KAQ          23KQA          23KQB          23KQC          23KQD          23KQE
23KQF          23KQG          23KQH          23KQJ          23KQK          23KQL
23KQM          23KQN          23KQP          23KQQ          23KQR          23KQS
23KQO          23KDD          23LAB          23LAC          23LA7          23LBA
23LQC          23LQD          23MAA          23MAB          23MAC          23MA9
23MBA          23MBD

                                                                          CH 1000, BLK    13, TOT    13.
23MQA          23MQQ          23MRA          23MRB          23MR9          23MSA
23MSB          23MSC          23MSQ          23MTA          23MTB          23MTQ
23MUA          23MVF          23NQA          23NQC          23NQD          23NQE
23NQF          23NQG          23NQH          23NQJ          23NQK          23NQL
23NQM          23NQN          23NDQ          23PQA          23PQB          23PQC
23PQD          23PQE          23PQF          23PQG          23PQH          23PQJ
23PQK          23PQL          23PQM          23PQN          23PQP          23PQQ
23PQR          23PQS          23PQT          23PQU          23PQV          23PQW
23PQX          23PQY

                                                                          CH 1000, BLK    14, TOT    14.
23PQZ          23PRA          23PRB          23PQQ          23QQA          23QQB
23QQC          23QQD          23QQE          23QQF          23QQG          23QQH
23QQJ          23QQK          23QQL          23QQM          23QQN          23QQP
23QQQ          23QQR          23QQS          23QQT          23QQU          23QQV
23QQW          23QQX          23QQY          23QQQ          23QRA          23QRB
23QRC          23QRD          23QRE          23QRF          23QRG          23QRH
23QRJ          23QRQ          23QSA          23QSB          23QSC          23QSD
23QSE          23QSF          23QSQ          23QTA          23QTB          23QTC
23QTD          23QTE

                                                                          CH 1000, BLK    15, TOT    15.
23QTF          23QTG          23QTH          23QTJ          23QTQ          23QQQ
23SQA          23SQB          23SQC          23SQD          23SQE          23SQF
23SQG          23SQH          23SQJ          23SQK          23SQL          23SQM
23SQN          23SQP          23SQQ          23SQR          23SQS          23SQT
23SQU          23SQV          23SRA          23SRB          23SRC          23SRD
23SRE          23SRF          23SRG          23SRH          23SRJ          23SRK
23SRL          23SRM          23SRN          23SRP          23SRQ          23SR9
23SQQ          23ZDQ          23DQQ          41AA1          41AB1          41AC1
41ADI          41AE1

                                                                          CH 1000, BLK    16, TOT    16.
41AF1          41AG1          41AH1          41AJ1          41AK1          41AQQ
41BA1          41BB1          41BC1          41BD1          41BF1          41BG1
41BJ1          41BDD          41CA1          41CB1          41CC1          41CD1
```

Table 3-1. Work Unit Codes, Continued

```
T/P TU12     22.27.41 72/224 BLK CNT 998 LENGTH 120  CONTROL 2020 0000000 0000200      CH  1000, BLK    16, TOT    16    PAGE 203

41CE1....1.....2....41CF1....3.....4....41CG1....5.....6....41CH1....7.....8....41CJ1....9.....0....41C0A....1.....2.....3..
41DA1                41DC1                41DD1                41DE1                41DFA                41D00
41FA1                41FB1                41EC1                41ED1                41E00                41FA1
41F01                41FF1                41GA1                41GB1                41GC1                41G01
41GE1                41GF1                41GG1                41GM1                41GJ1                41GK1
41GL1                41GM1
                                                                                                       CH  1000, BLK    17, TOT    17.
41GN1                41GP1                41G00                41HA1                41HB1                41HC1
41H00                41KA1                41KB1                41KC1                41KD1                41KE1
41K00                41LA1                41LC1                41MA1                41MB1                41NC1
41ND1                41ME1                41MF1                41M00                41NAA                41NAB
41NAC                41NA0                41NAE                41NA1                41NBA                41NB0
41NCA                41NCB                41NCC                41NC0                41NDA                41NDB
41NDC                41N00                41N00                41PA1                41PB1                41PC1
41PD1                41P00                41QA1                41QB1                41Q00                41000
42AD1                42AE1
                                                                                                       CH  1000, BLK    18, TOT    18.
42AF1                42AG1                42AH1                42AJ1                42AK1                42AL1
42AM1                42AN1                42A00                42BA1                42BE1                42B00
42CA1                42C01                42CG1                42CK1                42CL1                42C00
42DA1                42DB1                42EA1                42EB1                42EC1                42ED1
42EE1                42EF1                42EG1                42EH1                42E00                42FA1
42FB1                42FC1                42FD1                42FE1                42FF1                42FG1
42FH1                42FJ1                42FK1                42FL1                42F00                42GA1
42GB1                42G00                42000                44DA1                44DB1                44D01
44DE1                44DF1
                                                                                                       CH  1000, BLK    19, TOT    19.
44DG1                44DH1                44DK1                44000                44EC1                44EF1
44EG1                44FC1                44FE1                44FF1                44FG1                44FH1
44FK1                44FM1                44FN1                44F00                44GA1                44G00
44000                45AA1                45AB1                45AC1                45AD1                45AE1
45AF1                45AGA                45AG1                45AJA                45AJ1                45AK1
45AL1                45AM1                45AN1                45AP1                45AQ1                45AR1
45ATA                45AT1                45AU1                45AV1                45AW1                45A00
45BA1                45BB1                45BC1                45BD1                45BE1                45BF1
45BGA                45BG1
                                                                                                       CH  1000, BLK    20, TOT    20.
45BJA                45BJ1                45BK1                45BL1                45BM1                45BN1
45BP1                45BR1                45BSA                45BU1                45BV1                45BV1
45BW1                45B00                45CAA                45CA1                45CB1                45CC1
45CO1                45CE1                45CF1                45CG1                45CH1                45C00
45DA1                45DB1                45DE1                45DH1                45D00                45EA1
45EBA                45EB1                45EC1                45ED1                45EEA                45EE1
45EF1                45EG1                45EH1                45EJ1                45EMA                45EM1
45EN1                45E00                45GAA                45GA1                45GB1                45GC1
45GD1                45G00
                                                                                                       CH  1000, BLK    21, TOT    21.
45HA1                45HB1                45JA1                45JB1                45JC1                45JD1
45JE1                45JFA                45JF1                45JGA                45JGB                45JG1
45JM1                45JJ1                45JK1                45JL1                45JM1                45JN1
45JP1                45JQ1                45JRA                45JR1                45J00                45000
46AA1                46AB1                46AC1                46AD1                46AJ1                46AK1
46AP1                46AQ1                46A00                46CA1                46CB1                46CC1
46CD1                46CE1                46CF1                46CG1                46CH1                46CJ1
46CK1                46CL1                46CP1                46CQ1                46CR1                46CS1
46CT1                46CU1
                                                                                                       CH  1000, BLK    22, TOT    22.
46CV1                46CW1                46CX1                46CY1                46CZ1                46CZ2
46CZ3                46CZ4                46CD0                46DB1                46DK1                46DL1
46DT1                46DU1                46DV1                46DD0                46FA1                46FF1
46FT1                46FU1                46FV1                46FY1                46FZ1                46FZ3
46F00                46GA1                46GB1                46GC1                46GD1                46GE1
46GF1                46GG1                46GH1                46GJ1                46GK1                46GL1
46G00                46HAA                46HAB                46HAC                46HAD                46HAE
46HAF                46HAG                46HAH                46HAK                46HA1                46HBA
46HBB                46HBC
                                                                                                       CH  1000, BLK    23, TOT    23.
46HBD                46HB1                46HCA                46HCB                46HCC                46HCD
46HCE                46HCF                46HCG                46HCH                46HC1                46H00
46JAA                46JAB                46JAC                46JAD                46JAE                46JAF
46JA1                46JBA                46JBB                46JBC                46JB1                46JC1
46JD1                46JE1                46JF1                46JG1                46JH1                46JJ1
46KA1                46KB1                46KD0                46LB1                46LC1                46MA1
46MB1                46MC1                46MD1                46ME1                46MF1                46NA1
46NB1                46NC1                46ND1                46NE1                46NF1                46NG1
46N0C                46PB1
                                                                                                       CH  1000, BLK    24, TOT    24.
46PC1                46PD1                46PE1                46P00                46QA1                46QR1
```

Table 3-1. Work Unit Codes, Continued

```
T/P TU12     22.27.41 72/224 BLK CNT 99B LENGTH 120  CONTROL 2020 0000000, 0000330        CH  1333, BLK    24, TOT    24    PAGE 004

1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3..
46QC1              46000              46RA1              46RB1              46RC1              46RD1
46R00              46SA1              46SB1              46S00              46000              47AAA
47AAB              47AAC              47AC1              47AD1              47AE1              47ACA              47ACB
47ACC              47AC1              47AD1              47AE1              47AJ0              47BAA              47BAA
47BAB              47BAC              47BAD              47BAJ              47BAK              47BAL
47BAM              47BAN              47BAP              47BA1              47BB0              47CA1
47CB1              47CD1              47C00              47000              49AAA              49AAB
49AA1              49AC1

                                                                                                 CH  1333, BLK    25, TOT    25.
49AD1              49AE1              49AF1              49AG1              49AH1              49AJ1
49AK1              49AL1              49AM1              49A00              49BA1              49BB1
49BD1              49BF1              49BG1              49BJ1              51AC1              51AD1
51AE1              51AF1              51AG1              51AH1              51AJ1              51AD0
51BA1              51BB1              51BF1              51B00              51CA1              51CB1
51CD1              51C00              51DA1              51DB1              51DC1              51DD1
51DE1              51DF1              51DG1              51DH1              51DJ1              51DK1
51D00              51EA1              51EB1              51EC1              51ED1              51EF1
51EF1              51E00

                                                                                                 CH  1333, BLK    26, TOT    26.
51FA1              51FB1              51FC1              51FD1              51FE0              51GA1
51G00              51000              52AA1              52AB1              52AE1              52AF1
52AG1              52AH1              52AJ1              52AK1              52AL1              52AM1
52A00              52BA1              52BB1              52BC1              52BD1              52BE1
52BF1              52BG1              52BH1              52BJ1              52B00              52CA1
52CB1              52CC1              52CD1              52CE1              52CF1              52CG1
52CH1              52CJ1              52CK1              52C00              52DA1              52DB1
52DCA              52DC1              52DD1              52DE1              52DF1              52DG1
52DH1              52DJ1

                                                                                                 CH  1333, BLK    27, TOT    27.
52DK1              52DL1              52D00              52EA1              52EB1              52EC1
52EE1              52000              55AA1              55AB1              55AC1              55AD1
55AE1              55AF1              55A00              63AF1              63AG1              63BG1
63AM1              63AK1              63AM1              63AP1              63BA1              63BG1
63BK1              63B00              65AAA              65AAB              65AAC              65AAD
65AAE              65AA1              65ACA              65ACB              65ACC              65ACD
65ACE              65ACF              65ACG              65ACH              65ACJ              65ACK
65ACL              65AC1              65AD1              65AE1              65AF1              65AG1
65AH1              65AJ1

                                                                                                 CH  1333, BLK    28, TOT    28.
65AK1              65AL1              65AG0              65BAA              65BAB              65BAC
65BA0              65BAE              65BAF              65BAG              65BAH              65BAJ
65BAK              65BAL              65BAM              65BAN              65BA1              65BB1
65BCA              65BCB              65BCD              65BC1              65BD1              65BE1
65BF1              65BG1              65BH1              65BJ1              65BK1              65BL1
65BM1              65BN1              65BP1              65B00              71AA1              71ABP
71ABT              71AB1              71AC1              71AD1              71AE1              71AF1
71AK1              71A00              718A1              718B1              718C1              718E1
718F1              718H1

                                                                                                 CH  1333, BLK    29, TOT    29.
718J0              71CA1              71CB1              71CC1              71CD1              71CE1
71CF1              71CG1              71CH1              71CJ1              71CK1              71C00
71DA1              71DCV              71DC1              71DD1              71DF1              71DG1
71DH1              71DJ1              71DG0              71EB1              71ED0              71FC1
71F00              71GA1              71GB1              71GD1              71GE1              71000
74AA1              74AB1              74ACA              74AC1              74ADA              74ADB
74ADC              74ADD              74ADE              74ADF              74ADG              74ADH
74ADJ              74ADK              74ADL              74ADM              74ADN              74ADP
74ADQ              74ADR

                                                                                                 CH  1333, BLK    30, TOT    30.
74ADS              74ADT              74ADW              74ADX              74ADY              74ADZ
74AD1              74AEA              74AEB              74AEC              74AED              74AEE
74AEF              74AEG              74AEH              74AEJ              74AEK              74AEL
74AEM              74AEN              74AEP              74AEQ              74AER              74AES
74AF1              74AGA              74AGB              74AG1              74AJ1              74AKA**************
74AK1              74ALA              74AL1              74AM1**************74ANB**************74ANC**************
74AND**************74ANG**************74ANH**************74ANJ**************74ANK**************74ANL**************
74ANM**************74ANN**************74ANQ**************74ANS**************74ANT**************74ANU**************
74ANV**************74ANW**************

                                                                                                 CH  1333, BLK    31, TOT    31.
74ANX**************74ANY**************74ANZ**************74AN1              74AN2**************74AN3**************
74AN4**************74AN5**************74AN6**************74AN7**************74AN8**************74APA
74APB              74APC              74APF              74APG              74APH              74APJ
74APK              74APL              74APM              74APN              74APP              74APR
74APS              74APT              74APU              74APV              74APW              74APX
74APY              74APZ              74AP1              74AP2              74AP3              74AP4
74AP5              74AP6              74AP7              74AP8              74AQB**************74AQC**************
74AQ1              74ARB              74ARC              74ARD              74ARE              74ARF
```

Table 3-1. Work Unit Codes, Continued

```
T/P TU12     22.27.41 72/224 BLK CNT 998 LENGTH 120  CONTROL 2020 0000000 0000000        CH  1000, BLK    31, TOT    31    PAGE 005
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
74ARG                74ARH
                                                                                          CH  1000, BLK    32, TOT    32.
74ARJ                74ARK                74ARL                74ARM                74ARN                74ARP
74ARQ                74ARR                74ARS                74ART                74ARU                74ARV
74ARW                74ARX                74AR1                74ASA****************74AS1                74ATA
74ATB                74ATC                74AT1                74AU1                74AV1                74AW1
74AX1                74AY1                74AZ1                74A00                74BAA                74BAB
74BAC                74BAD                74BAE                74BA1                74BBA                74BB1
74BCA                74BCB                74BCC                74BCD                74BCE                74BC1
74BD1                74BE1                74BF1                74BG1                74BH1                74BJ1
74BKA                74BKB
                                                                                          CH  1000, BLK    33, TOT    33.
74BK1                74BL1                74BMA                74BMB                74BM1                74BNA
74BN1                74BPA****************74BPB****************74BP1                74BQ1                74BRA
74BRB                74BR1                74BS1                74BT1                74BUA****************74BUB****************
74BU1                74BV1                74BW1                74BXA                74BX1                74BY1
74BZA                74BZ1                74CAA                74CAB                74CAC                74CAD
74CAE                74CA1                74CB1                74CCA                74CCB                74CCC
74CCD                74CCE                74CCF                74CCG                74CCH                74CCJ
74CCK                74CCL                74CC1                74CD1                74CEA****************74CE1****************
74CFA                74CFB
                                                                                          CH  1000, BLK    34, TOT    34.
74CF1                74CGA                74CG1                74CHA                74CHB****************74CHC****************
74CHE****************74CHF****************74CH1                74CJA                74CJB                74CJC
74CJD                74CJE                74CJ1                74CK1****************74CM1****************74CN1****************
74CP1****************74CQA****************74CQB****************74CQC****************74CQD****************74CQE****************
74CQ1****************74CRA****************74CRB****************74CRC****************74CRD****************74CRE****************
74CRF****************74CRG****************74CRH****************74CRJ****************74CRK****************74CRL****************
74CR1****************74CSA****************74CSB****************74CSI****************74CTA****************74CTB****************
74CTC****************74CTD****************74CTE****************74CY1****************74DB1                74DCA
74DCB                74DCC
                                                                                          CH  1000, BLK    35, TOT    35.
74DCD                74DCE                74DC1                74DD1                74DE1                74DF1
74DG1                74DZ1                74EB1****************74EU1****************74EV1****************74EW1****************
74EX1****************74EDD****************74FAA                74FAB                74FAC                74FAD
74FAE                74FAF                74FAG                74FAH                74FAJ                74FAK
74FAL                74FAM                74FAN                74FAP                74FAQ                74FAR
74FAS                74FAT                74FAU                74FAV                74FAW                74FAX
74FAY                74FAZ                74FA0                74FA1                74FA2                74FA3
74FA4                74FA5                74FA6                74FA7                74FA8                74FBA****************
74FBB****************74FBC****************
                                                                                          CH  1000, BLK    36, TOT    36.
74FBD****************74FBE****************74FBF****************74FBG****************74FBH****************74FBJ****************
74FBK****************74FBL****************74FBM****************74FB1                74FCA                74FCB
74FCC                74FCD                74FCE                74FCF                74FCG****************74FCH****************
74FCJ****************74FCK****************74FCL****************74FCM****************74FCN****************74FCP****************
74FCQ****************74FCR****************74FCS****************74FCT****************74FCU****************74FCV****************
74FCW****************74FCX****************74FCY****************74FCZ****************74FC1                74FC2****************
74FC3****************74FC4****************74FC5****************74FC6****************74FC7****************74FC8****************
74FC9****************74FDA                74FDB                74FDC                74FDD                74FDE
74FDF                74FDG
                                                                                          CH  1000, BLK    37, TOT    37.
74FDH                74FDJ                74FDK                74FDL                74FDM                74FDN
74FDP                74FDQ                74FDR                74FDS                74FDT                74FDU
74FDV                74FDW                74FDX                74FDY                74FDZ                74FD1
74FD2                74FD3                74FD4                74FD5                74FD6                74FD7
74FD8                74FD9                74FEA                74FEB                74FEC****************74FED****************
74FEE****************74FEF****************74FE1****************74FFA                74FFB                74FFC
74FFD                74FFE                74FFF                74FFG                74FFH                74FFJ
74FFK                74FFL                74FFM                74FFN                74FF1                74FG1
74FM1                74FJ1
                                                                                          CH  1000, BLK    38, TOT    38.
74FK1                74FDD                74GA1****************74GB1****************74GD1****************74GE1****************
74GF1****************74GGA****************74GG1****************74GH1****************74GJ1****************74GK1****************
74GL1****************74GM1****************74GNA****************74GN1****************74GP1****************74GQ1****************
74GR1****************74GGG****************74HA1                74HB1                74HC1                74HD1
74HE1                74HG1                74HH1                74HJ1                74HL1                74HM1
74HP1                74HQ1                74HRA                74HRB                74HRC                74HR1
74HS1                74HTA                74HTB                74HT1                74HU1                74HV1
74HW1                74HXA                74HX1                74HY1                74HZ1                74H00
74KAA                74KAB
                                                                                          CH  1000, BLK    39, TOT    39.
74KAC                74KA1                74KRB****************74KB1                74KCA                74KCB
74KC1                74KDB****************74KDC****************74KD1                74KFA                74KEB
74KEC                74KED                74KE1                74KFA****************74KFB                74KFC****************
74KFD****************74KFE****************74KFF****************74KFG****************74KFH****************74KFJ****************
74KFK****************74KFL****************74KF1                74KGA                74KGB                74KGC
```

Table 3-1. Work Unit Codes, Continued

```
T/P TU12     22.27.41 72/224 BLK CNT 998 LENGTH 120  CONTROL ZC20 000000: 0000250        CH  1222, BLK    39, TOT    39    PAGE  226
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........1.........2.........3..
74KGD                74KGE                74KGF                74KGG                74KGH                74KGJ
74KGK                74KGL                74KGM                74KGN                74KGP                74KGQ
74KG1                74KM1                74KJA                74KJ1                74KK1                74KL1
74KMA****************74KM1

                                                                                                       CH  1222, BLK    40, TOT    40.
74KN1                74KP1                74KQ1                74KR1                74KS1****************74KT1****************
74KU1****************74KV1****************74KQQ                74LA1                74LB1                74LC1
74LE1                74LG1                74PA1                74PB1                74PC1                74PD1
74PE1                74PFA                74PF1                74PG1                74PH1                74PJ1
74PK1                74PL1                74PM1                74PN1                74PP1                74PQQ
74QAA                74QA1                74QQQ                75AAA                75AAB                75AA1
75ABA                75ABB                75AB1                75AC1                75AD1                75AE1
75AFA                75AFB                75AF1                75AGA                75AGB                75AG1
75AH1                75AJ1

                                                                                                       CH  1222, BLK    41, TOT    41.
75AK1                75ADD                75BAA                75BAB                75BAC                75BA1
75BBA                75BBB                75BBC                75BB1                75BCA                75BCB
75BC1                75BDB                75BDC                75BDD                75BD1                75BEB
75BEC                75BE1                75BFB                75BFC                75BFD                75BF1
75BGA                75BG1                75BHA                75BH1                75BJA                75BJB
75BJ1                75BL1                75BM1                75BQQ                75CAE                75CAF
75CAG                75CAJ                75CA1                75CBB                75CBD                75CBF
75CB1                75CC1                75CD1                75CED                75CF1                75CG1
75CK1                75CDD

                                                                                                       CH  1222, BLK    42, TOT    42.
75DAA                75DAB                75DAC                75DAD                75DAE                75DAF
75DAG                75DAH                75DAJ                75DAK                75DA1                75DBA
75DBB                75DBC                75DBD                75DBE                75DBF                75DB1
75DCA                75DCB                75DCC                75DCD                75DCE                75DC1
75DQQ                75EAB                75EAC                75EAD                75EAE                75EAF
75EA1                75EBA                75EBB                75EBC                75EB1                75ECA
75EF1                75EG1                75EH1                75EB1                75FC1                75FD1
75FF1                75FG1                75GAA                75GAB                75GAC                75GAD
75GAE                75GAF

                                                                                                       CH  1222, BLK    43, TOT    43.
75GA1                75GBA                75GBB                75GBC                75GB1                75GCA
75GCB                75GCC                75GC1                75GDA                75GDB                75GDC
75GD1                75GE1                75GFA                75GFB                75GFC                75GF1
75GG1                75GHA                75GHB                75GH1                75GJ1                75GK1
75GL1                75GM1                75GDQ                75HA1                75HBA                75HBB
75HBC                75HBD                75HBE                75HB1                75HCQ                75JA1
75JBA                75JBB                75JBC                75JBD                75JB1                75JCA
75JCB                75JCC                75JCD                75JC1                75JD1                75JE1
75JF1                75JG1

                                                                                                       CH  1222, BLK    44, TOT    44.
75JH1                75JDD                75KAA                75KAB                75KAC                75KAD
75KAE                75KAF                75KAG                75KBA                75KBB                75KBC
75KB1                75KC1                75KQQ                75QQQ                93AA1                93AB1
93AC1                93AD1                93AEA                93AF1                93AF1                93AG1
93AH1                93AJ1                93AK1                93AL1                93AM1                93AN1
93AP1                93AQ1                93AR1                93AS1                93AT1                93AU1
93AV1                93AQQ                97AA1                97AC1                97AE1                97AF1
97AM1                97AJ1                97AM1                97AN1                97AP1                97AQ1
97AU1                978C1

                                                                                                       CH    2?, BLK    45, TOT    45.
978D1
```

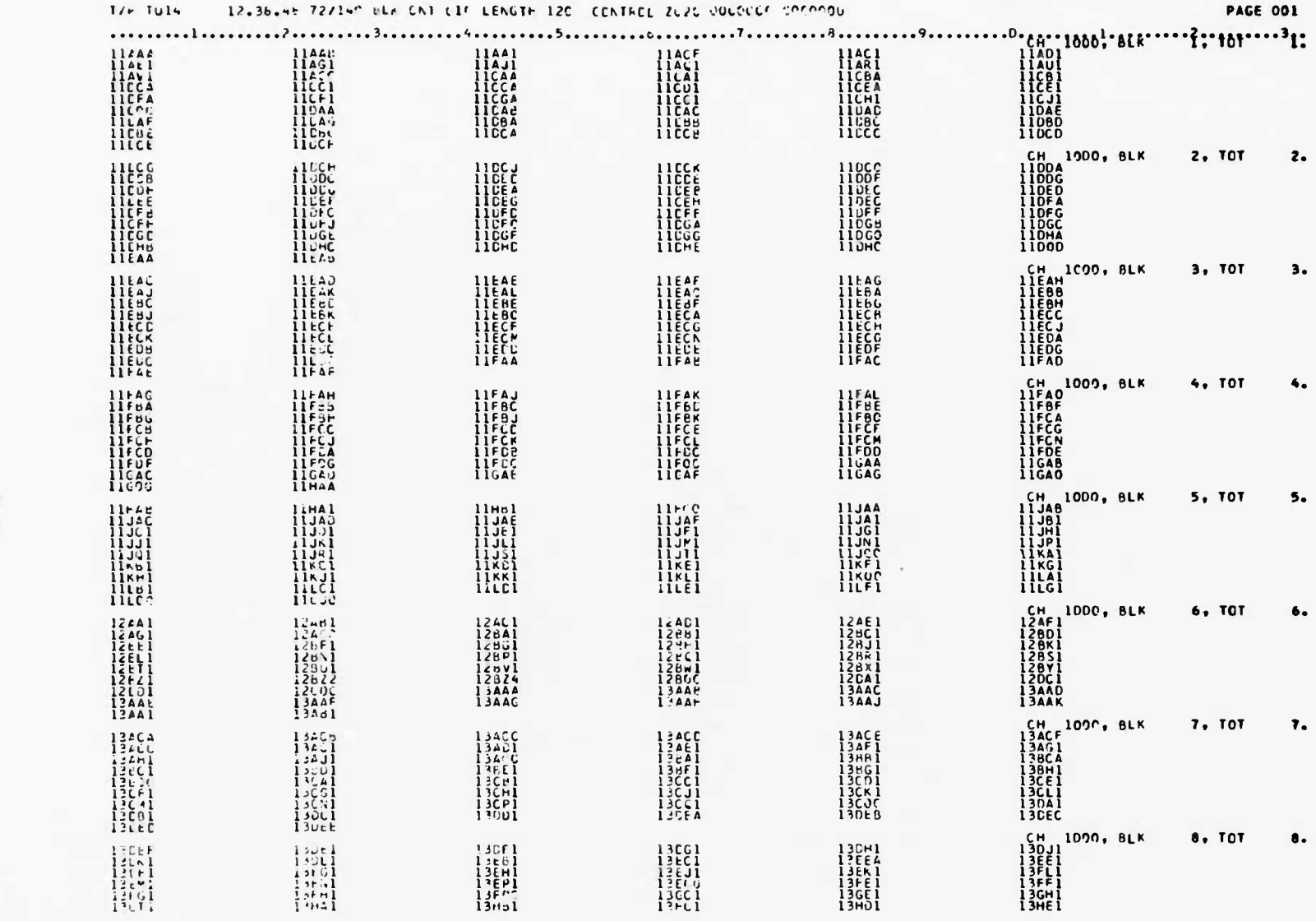


Figure 3-4. Sample Output — Sort Acceptable WUC

Table 3-2. WUC Conversion — Work Unit Codes for Deletion

```
T/P TU12     10.21.11 727143 BLK CNT 020 LENGTH 080  CONTROL 2C80 0000000 0000000        CH  1600, BLK      4, TOT      4    PAGE 002
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
 74DCE
 74DC1
 74DD1
 74DE1
 74DF1
 74DG1
 74DZ1

 74FA0                                                                                  CH  1600, BLK      5, TOT      5.
 74FDC
 74FDD
 74FDE
 74FDF
 74FDG
 74FDH
 74FDJ
 74FDK
 74FDL
 74FDM
 74FDN
 74FDP
 74FDQ
 74FDR
 74FDS
 74FDT
 74FDU
 74FDV
 74FDW

 74FDX                                                                                  CH  1600, BLK      6, TOT      6.
 74FDY
 74FDZ
 74FD1
 74FD2
 74FD3
 74FD4
 74FD5
 74FD6
 74FD7
 74FD8
 74FD9
 74FFA
 74FFB
 74FFC
 74FFD
 74FFE
 74FFF
 74FFG
 74FFH

 74FFJ                                                                                  CH  1600, BLK      7, TOT      7.
 74FFK
 74FFL
 74FFM
 74FG1
 74FH1
 74FJ1
 74FK1
 74FQD
 74KAA
 74KAB
 74KCA
 74KCB
 74KEA
 74KEC
 74KED
 74KGA
 74KGB
 74KGC
 74KGD

 74KGE                                                                                  CH  1600, BLK      8, TOT      8.
 74KGF
 74KGG
 74KGH
 74KGJ
 74KGK
```

Table 3-2. WUC Conversion — Work Unit Codes for Deletion, Continued

```
T/P TU12      10.21.11 72/143 BLK CNT 020 LENGTH 080  CONTROL 2080 0000000 0000000        CH  1600, BLK      8, TOT      8    PAGE 003
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
 74KGL
 74KH1
 74KJA
 74KK1
 74KL1
 74KN1
 74PA1
 74PB1
 74PC1
 74PD1
 74PE1
 74PFA
 74PF1
 74PG1

                                                                                CH   800, BLK      9, TOT      9.
 74PH1
 74PJ1
 74PK1
 74PL1
 74PM1
 74PN1
 74PP1
 74PQQ
 74QAA
 74QA1
```

Table 3-3. WUC Conversion — Work Unit Codes for Conversion
(WUC in the first column to be replaced by WUC in the right-hand column)

```
P TU13     10.21.12 72/143 BLK CNT 020 LENGTH 080  CONTROL 2080 0000000 0000000        CH  1600, BLK     4, TOT     4    PAGE 002
.....1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3..
74CG1 74DB1
74CHA 74DCA
74CHB 74DCB
74CHC 74DCC
74CHE 74DCD
74CHF 74DCE
74CH1 74DC1

74CK1 74DD1                                                                    CH  1600, BLK     5, TOT     5.
74CM1 74BV1
74CN1 74BW1
74CP1 74BY1
74CQA 74CAA
74CQB 74CAB
74CQC 74CAC
74CQD 74CAD
74CQE 74CAE
74CQI 74CA1
74CRA 74CCA
74CRB 74CCB
74CRC 74CCC
74CRD 74CCD
74CRE 74CCE
74CRF 74CCF
74CRG 74CCG
74CRH 74CCH
74CRJ 74CCJ
74CRK 74CCK

74CRL 74CCL                                                                    CH  1600, BLK     6, TOT     6.
74CR1 74CC1
74CSA 74CFA
74CSB 74CFB
74CS1 74CF1
74CTA 74CJA
74CTB 74CJB
74CTC 74CJC
74CTD 74CJD
74CTE 74CJE
74CT1 74CJ1
74EB1 74FA0
74EU1 74FK1
74EV1 74FG1
74EW1 74FH1
74EX1 74FJ1
74EOD 74F0D
74FBA 74FFA
74FBB 74FFB
74FBC 74FFC

74FBD 74FFD                                                                    CH  1600, BLK     7, TOT     7.
74FBE 74FFE
74FBF 74FFF
74FBG 74FFG
74FBH 74FFH
74FBJ 74FFJ
74FBK 74FFK
74FBL 74FFL
74FBM 74FFM
74FB1 74FF1
74FCA 74FDA
74FCB 74FDB
74FCC 74FDC
74FCD 74FDD
74FCE 74FDE
74FCF 74FDF
74FCG 74FDG
74FCH 74FDH
74FCJ 74FDJ
74FCK 74FDK

74FCL 74FDL                                                                    CH  1600, BLK     8, TOT     8.
74FCM 74FDM
74FCN 74FDN
74FCP 74FDP
74FCS 74FDS
74FCR 74FDR
```

Table 3-3. WUC Conversion — Work Unit Codes for Conversion, Continued
(WUC in the first column to be replaced by WUC in the right-hand column)

74FL5	74FD5
74FLT	74FDT
74FL6	74FD6
74FLV	74FDV
74FLW	74FDW
74FLX	74FDX
74FLY	74FDY
74FL4	74FD4
74FL1	74FD1
74FL2	74FD2
74FL3	74FD3
74FLA	74FDA
74FL5	74FD5
74FLB	74FDB
74FL7	74FD7
74FL8	74FD8
74FL9	74FD9
74FDM	74FEA
74FD6	74FEB
74FEA	74FLA
74FEB	74FLB
74FLC	74FEC
74FLD	74FLD
74FEE	74FEE
74FEF	74FEF
74FE1	74FC1
74FF1	74FB1
74GA1	74PA1
74GB1	74PB1
74GD1	74PC1
74GE1	74PE1
74GF1	74PF1
74GGA	74PFA
74GG1	74PF1
74GH1	74PG1
74GJ1	74PH1
74GK1	74PJ1
74GL1	74PK1
74GM1	74PL1
74GNA	74UAA
74GN1	74UA1
74GP1	74PM1
74GQ1	74PN1
74GR1	74PP1
74G00	74P00
74RBB	74RLB
74RB1	74RC1
74RC1	74RD1
74RDB	74REB
74RDC	74REC
74RD1	74RE1
74REB	74RFB
74RE1	74RF1
74RFA	74RGA
74RFB	74RGB
74RFC	74RGC
74RFD	74RGD
74RFE	74RGE
74RFF	74RGF
74RFG	74RGG
74RFM	74RGM
74RFJ	74RGJ
74RFK	74RGK
74RFL	74RGL
74RF1	74RG1
74RG1	74RM1
74RPA	74RJA
74RM1	74RP1
74RP1	74RK1
74RQ1	74RL1
74RR1	74RM1
74RS1	74RN1
74RT1	74RP1
74RU1	74RQ1
74RV1	74RR1

CH 1600, BLK 8, TOT 8

CH 1600, BLK 9, TOT 9

CH 1600, BLK 10, TOT 10

CH 1600, BLK 11, TOT 11

CH 1600, BLK 12, TOT 12

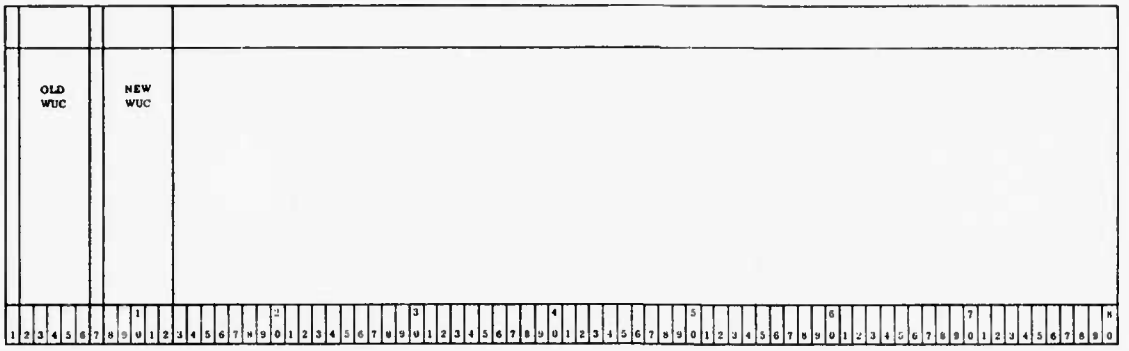


Figure 3-5. Record Layout — Convert WUC

3.2.2.3 Output Description. The sample output, Figure 3-6, has 80-character data records, blocked 20 to a tape record. The time required to sort the 221 F-106 WUCs was less than one minute on the IBM 370 computer.

3.2.3 WUC MERGE

3.2.3.1 Purpose. When the WUC designations have been changed during the period covered by the data bank, the list of Acceptable WUCs must include codes that, although obsolete and superseded at the end of the period, had validity at the start of the data bank period. This COBOL program adds these obsolete WUCs to the list of Acceptable WUCs.

3.2.3.2 Input Data and Procedures. The program listing and the associated JCL for use with the IBM 370 are shown in Paragraph 6.5.3. The input comprises two files: Acceptable WUC and WUC Conversion. The record layouts are shown in Figures 3-3 and 3-5, respectively. Both input files must be sorted before using with the WUC merge program.

3.2.3.3 Output Description. The output comprises the Acceptable WUCs and the Old WUCs, merged to form a file to use as input to the Data Bank program. The output record layout and blocking factor are identical to that of the Acceptable WUC shown in Figure 3-3.

3.3 DATA BANK PROGRAM

3.3.1 PURPOSE. The Data Bank program processes the input data files to produce a data bank for statistical analysis. The program, written in COBOL, provides the logic to control the input files so as to merge all data for a particular aircraft serial number into one of four output data formats. The basic time unit for all records is one week. Only input data records having a WUC listed in the Acceptable WUC file, the 3-digit WUC file, or a scheduled or Special Inspection code is used to construct the data bank output records.

Figure 3-6. Sample Output — Sort Converted WUC

3.3.2 INPUT DATA AND PROCEDURES. The program, a sample of card data input, and the associated job control language (JCL) for use with the IBM 370 are shown in Paragraph 6.5.4. The input to the program comprises five input data files and the control data. The five input files are:

a. AFM 66-1 Data File

b. AFM 65-110 Data File

c. IRAN Data File

d. AIE Data File

e. WUC Data File

The control data consists of a deck of cards with the following format.

Card Type	Column	Description
a	1-2	Scheduled Inspection, 2-Digit WUC
	6-7	Special Inspection, 2-Digit WUC
	11-18	First Aircraft Serial Number to be Processed
	28-30	Last Week Number to be Processed
	32	Mission of Aircraft
	33-35	Design of Aircraft
	36-40	Number of Aircraft to be Processed
b	1-3	Number of Action-Taken Codes (ATC) to Process
c	1	Action-Taken Code (Number of Cards Set by Card b)
d	1-3	Number of Maintenance Codes for NORM and NORS Hours
	4-6	Number of Maintenance Codes for NORM Hours only
e	1	Maintenance Codes (NORM Codes First) (Number of Cards Set by Col. 1-3 of Card d)
f	1-3	Number of 3-Digit WUCs to be Processed
g	1-3	3-Digit WUC (Number Set by Card f)
h	1-3	Number of 2-Digit WUC Groups
	7-10	Number of 5-Digit WUCs to be Processed

Card Type	Column Number	Description
i	1-2	2-Digit WUC Group Identification (ID) (Number of Cards Set by Card h)
	6-10	Position in WUC file of First WUC with Corresponding 2-Digit WUC Group ID
	11-15	Position in WUC file of Last WUC with Corresponding 2-Digit WUC Group ID

A sample set of input data, used for the F-106 Scheduled Maintenance Study, is given in Figure 3-7. All numbers should be right-justified within their designated fields. It is also important that the Maintenance Codes, card type e, be arranged such that codes corresponding to NORM hours be placed ahead of the codes corresponding to NORS hours.

The Data Bank program first opens all input and output files and reads the control data. The four data files are then updated to the first aircraft, and then to the first week for which both AFM 66-1 and AFM 65-110 data is available. All four files are then processed, merging data with a time step of one week. Processing is terminated when the day number in the files reaches the day corresponding to the Last Week, when the next aircraft is processed. This continues until either the end of the 65-110 or 66-1 files or the number of aircraft to be processed is exceeded. On completion, the output tape record is filled with nines, and all files are closed.

The program is suitable for use with the appropriate processed data files for any USAF aircraft with the following program dimension limitations.

a.	Number of Action-Taken Codes	5 Maximum
b.	Number of Maintenance Codes	17 Maximum
c.	Number of 3-Digit WUCs	7 Maximum
d.	Number of 2-Digit WUC Groups	22 Maximum
e.	Number of WUCs	3000 Maximum
f.	Number of Type 3 Output Records for Serial Number - Week	250 Maximum
g.	Number of Type 4 Output Records for Serial Number - Week	250 Maximum

3.3.3 OUTPUT DESCRIPTION. The sample output, Figure 3-8, shows examples of the four types of output records; the format of the data records is given in Figure 3-9. The source of each data item in the four output record types is listed in Table 3-4.

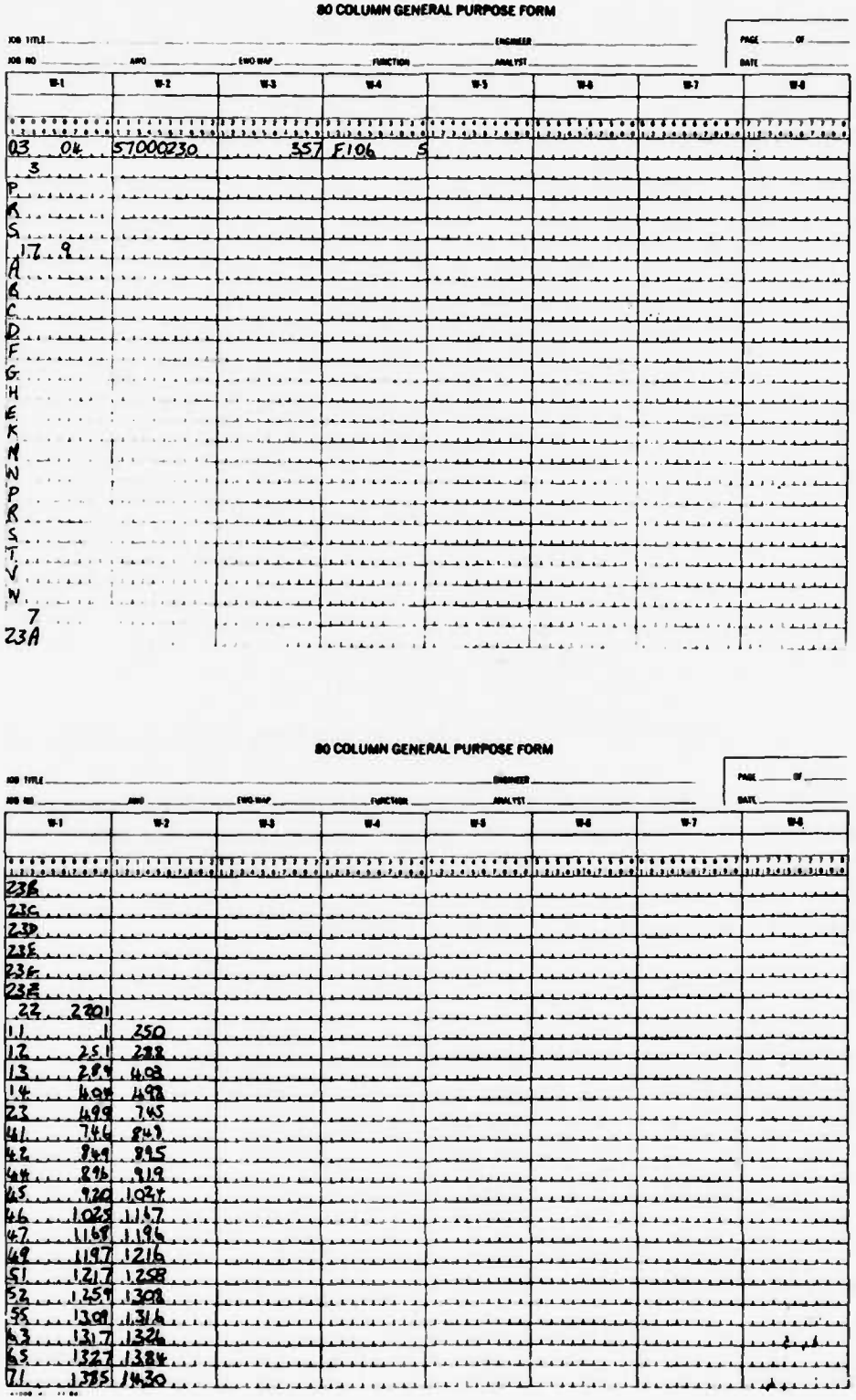


Figure 3-7. Sample Input — Data Bank Control

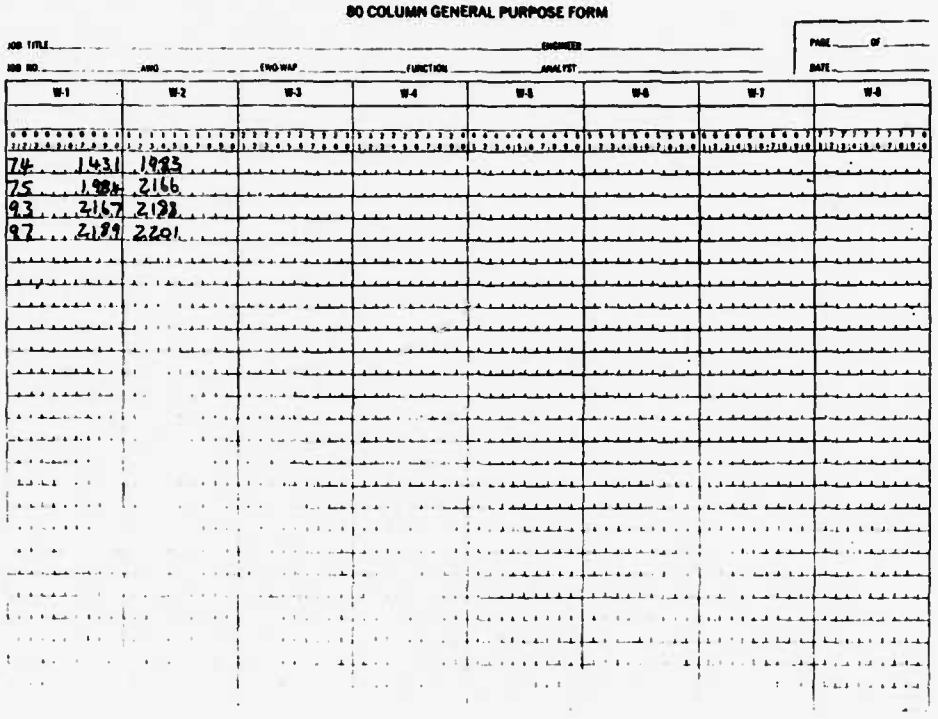


Figure 3-7. Sample Input — Data Bank Control, Continued

Experience with the files generated for the F-106 Scheduled Maintenance Study, with 150 aircraft for approximately 150 weeks, produced an output file with 609,691 records and required 31 minutes of IBM 370 time. The maximum number of Type 3 and Type 4 records for a particular Serial Number-Week combination was 98 and 111, respectively. The output file required one reel of magnetic tape.

3.4 WUC CONVERSION

The group of programs is necessary to change WUCs within records if their designations have changed within the period covered by the data bank. The logic flow for this group of programs is indicated in Figure 3-10.

3.4.1 SORT WUC FOR CONVERSION

3.4.1.1 Purpose. This IBM Utility program sorts the WUCs that are to be changed before the week of the designation change into an ordered file.

3.4.1.2 Input Data and Procedures. The JCL cards for the IBM Utility porgram and the data used on the F-106 Scheduled Maintenance Study are listed in Paragraph 6.5.5.

Figure 3-8. Sample Output — Data Bank

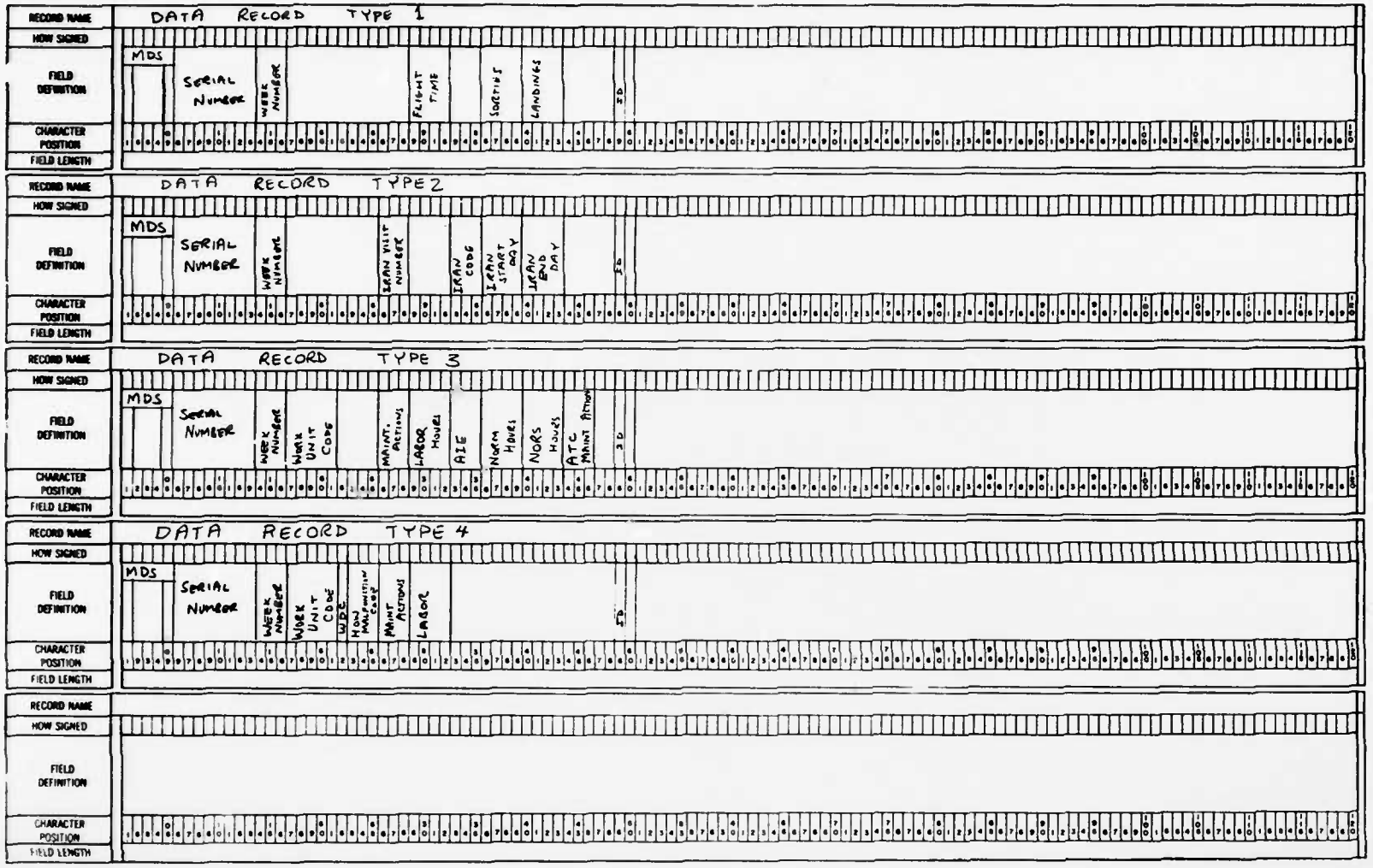


Figure 3-9. Record Layouts — Data Bank

Table 3-4. Data Item Source

RECORD TYPE 1

Column	Nomenclature	Source Data
1-5	MDS	Input Control Data
6-13	Serial-Number	Any Input File
14-16	Week-Number	Computed From Day-Number from Any Input File
29-32	Flight-Hours	Sum for the Serial Number-Week of Columns 31-33 on 65-110 type 3-9 records
36-39	Sorties	Sum for the Serial Number-Week of Columns 36-37 on 65-110 type 3-9 records
40-43	Landings	Sum for the Serial Number-Week of Columns 34-35 on 65-110 type 3-9 records
49	Record ID	Set to 1
50	Record Mark	

RECORD TYPE 2

Column	Nomenclature	Source Data
1-5	MDS	Input Control Data
6-13	Serial-Number	Any Input File
14-16	Week-Number	Computer from Day-Number from Any Input File
26-28	IRAN-Visit-No.	Value for the Serial-Number-Week from IRAN File, Columns 19-20
36-39	IRAN-Start-Day	Value for the Serial-Number-Week from IRAN File, Columns 32-35
40-43	IRAN-End-Day	Value for the Serial-Number-Week from IRAN File, Columns 37-40
49	Record ID	Set to 2
50	Record Mark	

RECORD TYPE 3

Column	Nomenclature	Source Data
1-5	MDS	Input Control Data
6-13	Serial-Number	Any Input File
14-16	Week-Number	Computed from Day-Number from Any Input File
17-21	WUC	Data Records for Serial-Number-Week for the Files: a. 65-110 File, Type 2 Records, Columns 34-38 b. 66-1 File, Columns 46-50 c. AIE File, Columns 10-14
26-28	Maintenance Action	The Sum of 66-1 File, Columns 56-57 for the Serial-Number-Week-WUC Combination
29-32	Labor Hours	The Sum of 66-1 File, Columns 58-61 for the Serial-Number-Week-WUC Combination
33-35	AIE	The Number of AIE Records for the Serial-Number-Week-WUC Combination
36-39	NORM Hours	The Sum of 65-110 File, Type 2 Records, Columns 31-33 for the Serial-Number-Week-WUC and Maintenance Code, Column 39, Corresponding to NORM Codes
40-43	NORS Hours	The Sum of 65-110 File, Type 2 Records, Columns 31-33 for the Serial-Number-Week-WUC and Maintenance Code, Column 39, Corresponding to NORS Code
44-46	ATC Maintenance Actions	The Sum of 66-1 File Columns 56-57 for the Selected ATC from the Input Data for the Serial-Number-Week-WUC Combination
49	Record ID	Set to 3
50	Record Mark	

RECORD TYPE 4

Column	Nomenclature	Source Data
1-5	MDS	Input Control Data
6-13	Serial-Number	Any Input File
14-16	Week-Number	Computed from Day-Number from Any Input File
17-21	WUC	For the Serial-Number-Week Combination, 66-1 File, Columns 46-50
22	WDC	For the Serial-Number-Week-WUC Combination 66-1 File, Column 52
23-25	HMC	For the Serial-Number-Week-WUC-WDC Combination, 66-1 File, Columns 53-55
26-28	Maintenance Action	The Sum for the Serial-Number-Week-WUC-WDC-HMC Combination, 66-1 File, Columns 56-57
29-32	Labor	The Sum for the Serial-Number-Week-WUC-WDC-HMC Combination, 66-1 File, Columns 58-61
49	Record ID	Set to 4
50	Record Mark	

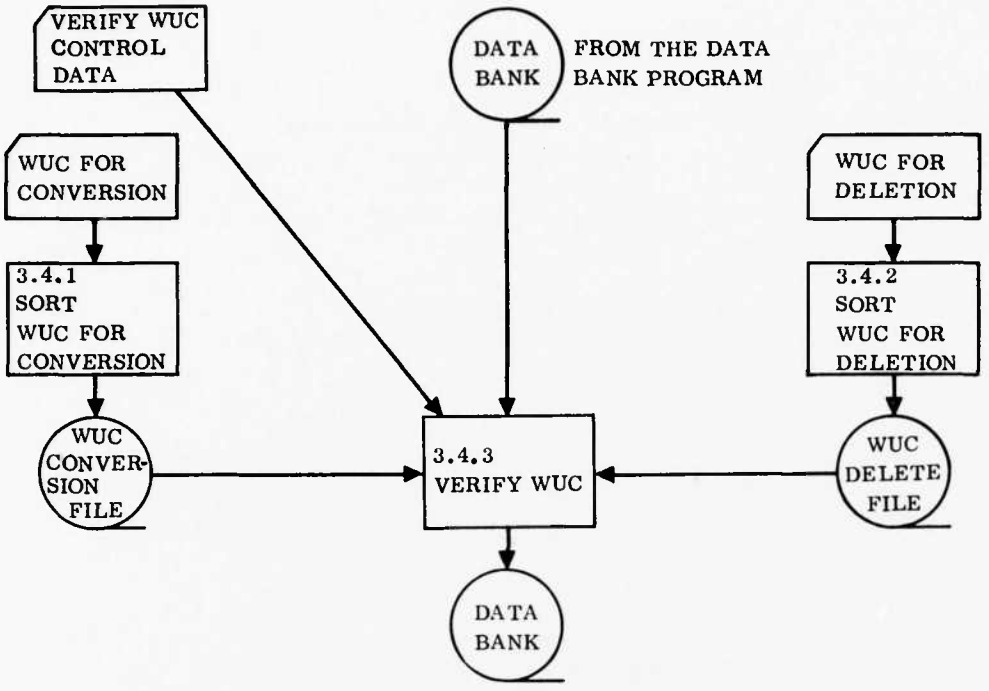


Figure 3-10. Logic Flow — WUC Conversion

The input consists of a tape containing the WUC using the format of Figure 3-5 and should be identical to the one used in Paragraph 3.2.2 and the card data defining the sort field. This is defined as a character field in ascending order. The sort field is:

Field	Column Number	Description
1	2-6	Old WUC

3.4.1.3 Output Description. The sample output, Figure 3-11, has 80 characters to a data record, blocked 20 to a tape record. The sort for the 170 WUCs to be converted on the F-106 Data Bank required less than one minute of IBM 370 computer time.

3.4.2 SORT WUC FOR DELETION

3.4.2.1 Purpose. This IBM Utility program sorts the WUCs (which are to be deleted when occurring in records before the week of the change of WUC designation) into an ordered file.

3.4.2.2 Input Data and Procedures. The JCL cards for the IBM Utility program and the data cards used on the F-106 Scheduled Maintenance Study are shown in Paragraph 6.5.6.

```
T/P TU13     10.21.12 72/143 BLK CNT 020 LENGTH 080  CONTROL 2080 0000000 0000000                    PAGE 001
.........1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
                                                                                  CH  1600, BLK     1, TOT     1.
 74AJ1 74AK1
 74AKA 74ALA
 74AK1 74AL1
 74AM1 74AN1
 74ANB 74APA
 74ANC 74APB
 74AND 74APC
 74ANG 74APF
 74ANH 74APG
 74ANJ 74APH
 74ANK 74APJ
 74ANL 74APK
 74ANM 74APL
 74ANN 74APM
 74ANQ 74APP
 74ANS 74APR
 74ANT 74APS
 74ANU 74APT
 74ANV 74APU
 74ANW 74APV

                                                                                  CH  1600, BLK     2, TOT     2.
 74ANX 74APW
 74ANY 74APX
 74ANZ 74APY
 74AN1 74AP1
 74AN2 74AP2
 74AN3 74AP3
 74AN4 74AP4
 74AN5 74AP5
 74AN6 74AP6
 74AN7 74AP7
 74AP1 74AQ1
 74AQB 74ARB
 74AQC 74ARC
 74AQ1 74AR1
 74AR1 74AS1
 74ASA 74ATA
 74AS1 74AT1
 74AT1 74AU1
 74BCA 74BBA

                                                                                  CH  1600, BLK     3, TOT     3.
 74BC1 74BB1
 74BD1 74BC1
 74BF1 74PD1
 74BG1 74BD1
 74BH1 74BF1
 74BJ1 74BG1
 74BK1 74BH1
 74BL1 74BJ1
 74BMA 74BKA
 74BMB 74BKB
 74BM1 74BK1
 74BN1 74BL1
 74BPA 74BMA
 74BPB 74BMB
 74BP1 74BM1
 74BQ1 74BN1
 74BR1 74BP1
 74BT1 74BQ1
 74BUA 74BRA
 74BUB 74BRB

                                                                                  CH  1600, BLK     4, TOT     4.
 74BU1 74BR1
 74BV1 74BS1
 74BW1 74BT1
 74BX1 74BU1
 74BZA 74BXA
 74BZ1 74BX1
 74CAA 74BZA
 74CA1 74BZ1
 74CC1 74CD1
 74CEA 74CGA
 74CE1 74CG1
 74CFA 74CHA
 74CF1 74CH1
```

Figure 3-11. Sample Output — Sort WUC for Conversion

Format of the input tape records is shown in Figure 3-12. The sort control cards are identical to those in Paragraph 3.4.1.1.

3.4.2.3 Output Description. The sample output is shown in Figure 3-13. The sort for the 221 WUCs to be deleted in the F-106 Data Bank required less than one minute of IBM 370 time.

3.4.3 VERIFY WUC

3.4.3.1 Purpose. This program, written in COBOL, provides two functions. First, it performs a logical check on the two lists of WUCs previously prepared. If these lists are verified, it then proceeds to change and delete records within the Data Bank according to the two input files.

3.4.3.2 Input Data and Procedures. The program, a sample of card data input, and the associated JCL for the IBM 370 are shown in Paragraph 6.5.7.

The input to the program consists of the data bank from the Data Bank program, WUC conversion file, WUC Delete file, and a control card defining the two-digit code to be processed and the date of the WUC designation change. This control card has the following format.

Column	Description
1-3	Week of WUC Designation Change
5-6	First Two Digits of WUC to be Changed

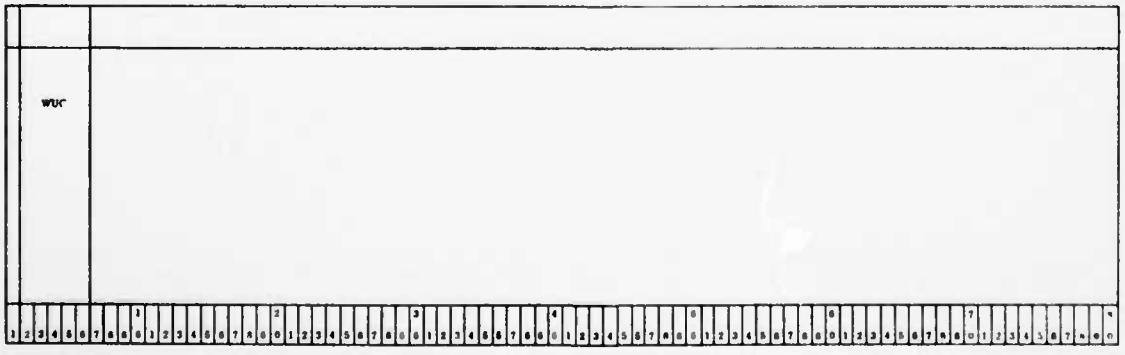


Figure 3-12. Record Layout — WUC for Deletion

```
T/P TU12     10.21.11 72/143 BLK CNT 020 LENGTH 080  CONTROL 2080 0000000 0000000                    PAGE 001
.....1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3..
74AEF                                                                  CH  1600, BLK     1, TOT     1.
74AEH
74ALA
74AL1
74APA
74APB
74APC
74APF
74APG
74APH
74APJ
74APK
74APL
74APM
74APP
74APR
74APS
74APT
74APU
74APV

74APW                                                                  CH  1600, BLK     2, TOT     2.
74APX
74APY
74APZ
74AP2
74AP3
74AP4
74AP5
74AP6
74AP7
74AKB
74AKC
74ATA
74AU1
74BBA
74BB1
74BE1
74BRA
74BKB
74BRA

74BRB                                                                  CH  1600, BLK     3, TOT     3.
74BS1
74BXA
74BY1
74CAB
74CAL
74CAD
74CAE
74CCA
74CCB
74CCC
74CCD
74CCE
74CCF
74CCG
74CCH
74CCJ
74CCK
74CCL
74CD1

74CFB                                                                  CH  1600, BLK     4, TOT     4.
74CGA
74CJA
74CJB
74CJC
74CJD
74CJE
74CJ1
74DB1
74DCA
74DCE
74DCC
74DCD
```

Figure 3-13. Sample Output — Sort WUC for Deletion

A sample input, used in the F-106 Scheduled Maintenance Study, is shown in Figure 3-14. Week 280 corresponds to May 1970, when the Air Force revised the F-106 WUC callouts for System 74.

As shown in Figure 3-10, the program first reads the WUC Delete file, containing the list of WUCs to be deleted from the data bank generated from the Data Bank program. Then the WUC Conversion file is read. (The Conversion file contains a list of WUCs to be replaced and a list of the replacing WUCs.) The week of WUC change is contained in the control card previously mentioned.

The program then checks the logical consistency of the WUCs on these two input files. After consistency is verified, the program reads the data bank generated from the Data Bank program to delete those records with the WUCs matching those in the WUC Delete file and to convert those records with WUCs matching those in the WUC Conversion file.

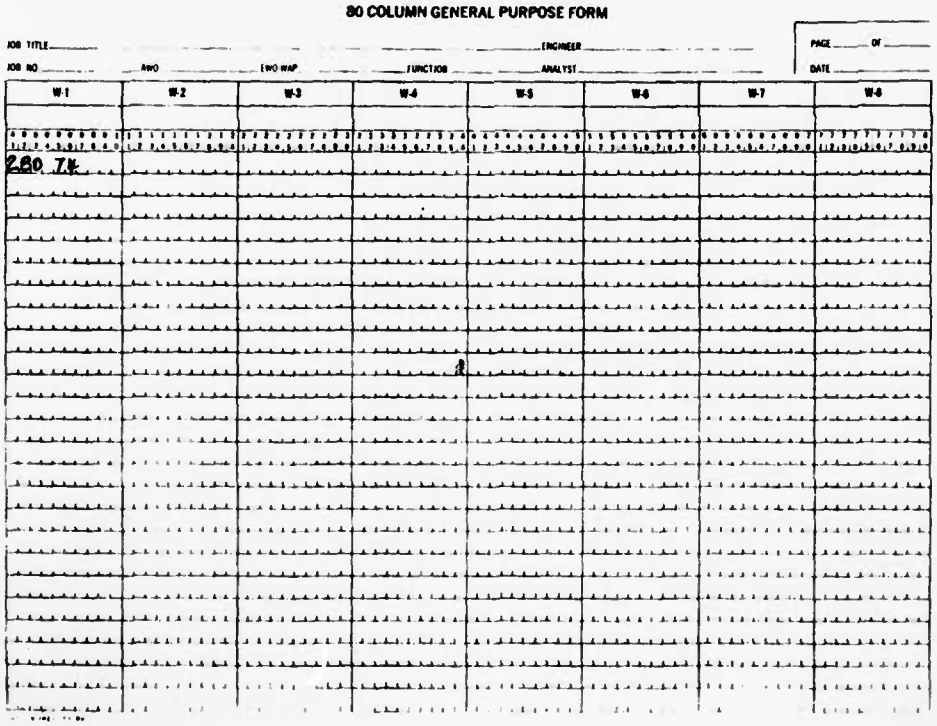


Figure 3-14. Sample Input — Verify WUC

The program is suitable for use with the Data Bank file for any USAF aircraft (with the following program dimension limitations).

a.	WUCs to be changed	300 Maximum
b.	WUCs to be deleted	300 Maximum

3.4.3.3 Output Description. The output has the identical format to that of the Data Bank program shown in Figure 3-9. If the two WUC lists are verified, the number of records processed, passed, changed, and dropped are displayed on the console. If the WUC lists are not correct, the errors are listed on an output file. It took eight minutes of IBM 370 time to run the Verify WUC program for the F-106 fleet.

SECTION 4

STATISTICAL ANALYSIS PROGRAMS

4.1 GENERAL DESCRIPTION

A group of programs has been developed to perform various statistical analysis tasks using the data bank as input. (Section 3 contains the details of the data bank generation.) Relationship of the statistical analysis program is shown in Figure 4-1. The tasks solved by the statistical analysis programs are:

a. Frequency Analysis (Task I).

b. Manhour and NOR Time Analysis (Task II).

c. Interval Length Analysis (Task III).

d. Effect of Time after Inspection (Task IV).

e. Removal Action Analysis (Task V).

f. Aircraft Inspection Histories.

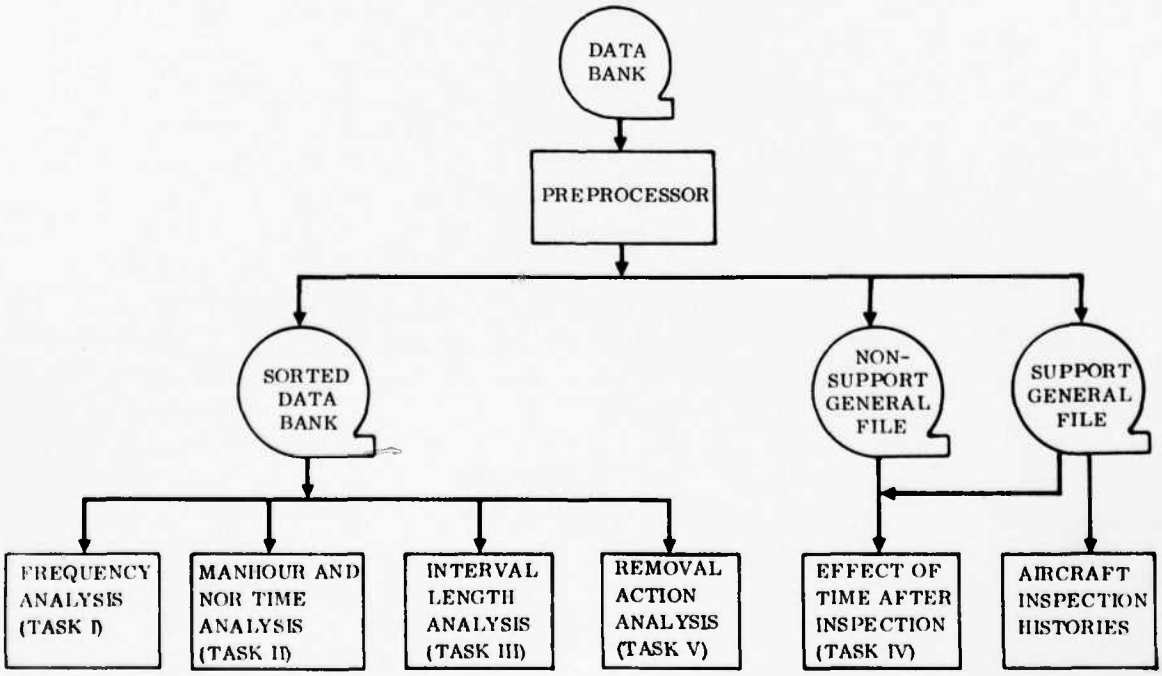


Figure 4-1. Logic Flow — Statistical Analysis Programs

A set of programs, called Preprocessor, was developed to sort and reformat the input data bank (Figure 4-1) into three output files which, in turn, were used to input the six major program modules. The three output files from the Preprocessor are:

a. Sorted Data Bank.

b. Non-support General File.

c. Support General File.

Preprocessor programs are discussed in detail in Paragraph 4.2. Programs for various statistical analysis tasks and Aircraft Inspection Histories are discussed in Paragraphs 4.3 through 4.8.

4.2 PREPROCESSOR PROGRAMS

The Preprocessor programs were developed to reformat and sort the input data bank into three output files (Figure 4-2). All Preprocessor programs were developed for the IBM 370 and have been written to be compatible with SAAMA computers. The Preprocessor Formatter program was written using (ANS) COBOL. Sorting is accomplished by using a standard IBM utility sort program.

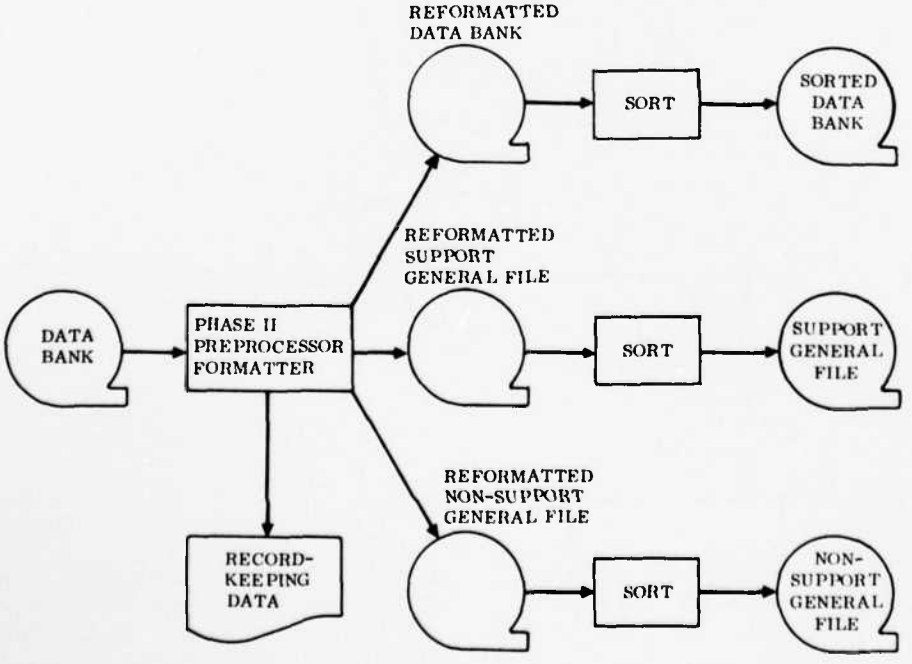


Figure 4-2. Logic Flow — Preprocessor Programs

4.2.1 PREPROCESSOR FORMATTER

4.2.1.1 Purpose. The Preprocessor Formatter program was developed to summarize and reformat data records from the input data bank file into three output files, which are then sorted and used as input to subsequent programs (Figure 4-2).

4.2.1.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.6.1. The data bank file, created by the Data Bank programs or the work unit code (WUC) convert program, is the input to the Preprocessor Formatter program. The input data records, consisting of four record types, have been organized in a sequence of aircraft serial number, week number, and record type. (See Figure 3-9 for the Data Bank Record layout.)

The Preprocessor Formatter program reformats data records by transferring flight hours from Type 1 records to Type 3 and Type 4 records. Also, flight hours, sorties, and landings from Type 1 records are summed within an aircraft serial number for a given week and transferred to Type 3 and Type 4 records.

All Type 2 records are skipped by the Preprocessor program. For a specific serial number for a given week, there will be no more than one Type 1 record and no more than 250 Type 3 or Type 4 records. Figure 4-3 shows the detailed program logic.

4.2.1.3 Output Description. Output from the Preprocessor Formatter program consists of three files containing either Type 3 or Type 4 records or both (Figure 4-4). Types contain 70-character data records, blocked 40 to a record. The three files are:

a. The Reformatted Data Bank file (Type 3 and Type 4 records) from which b and c are separated.

b. The Support General file (Type 3 records only) with WUC prefixes of 03 and 04.

c. The Non-Support General file (Type 3 records with WUC prefixes greater than 09 and Type 4 records).

An additional output is the record-keeping listing, which gives Input/Output Totals (Figure 4-5) and Aircraft-Level Subtotals (Figure 4-6).

The single-line input/output totals in Figure 4-5 are described in the following fields.

Field	Column	Description
1	2-8	Data Record Input
2	10-16	Type 3 and 4 Data Records Input
3	18-20	Number of Aircraft

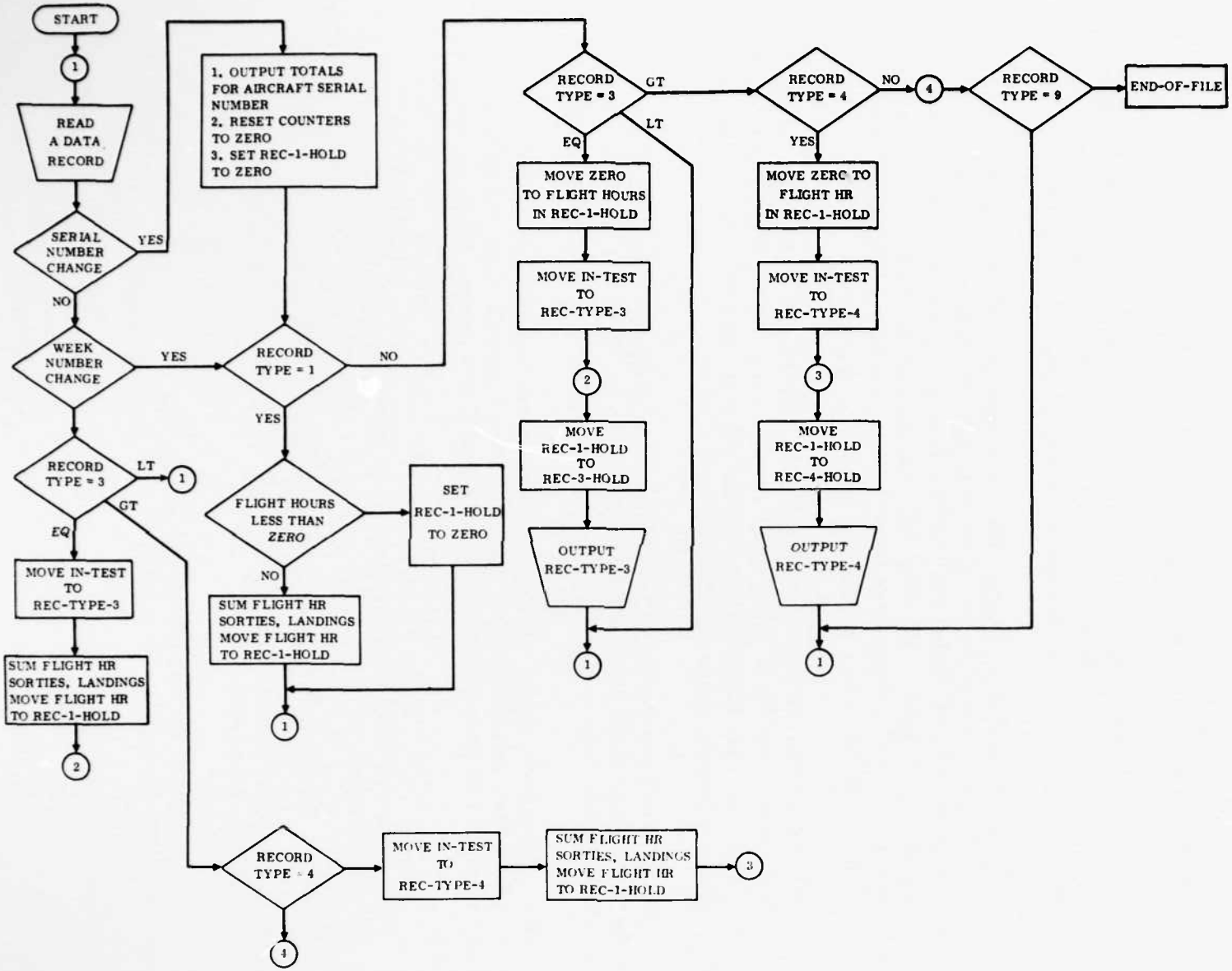


Figure 4-3. Logic Flow – Preprocessor Formatter Program

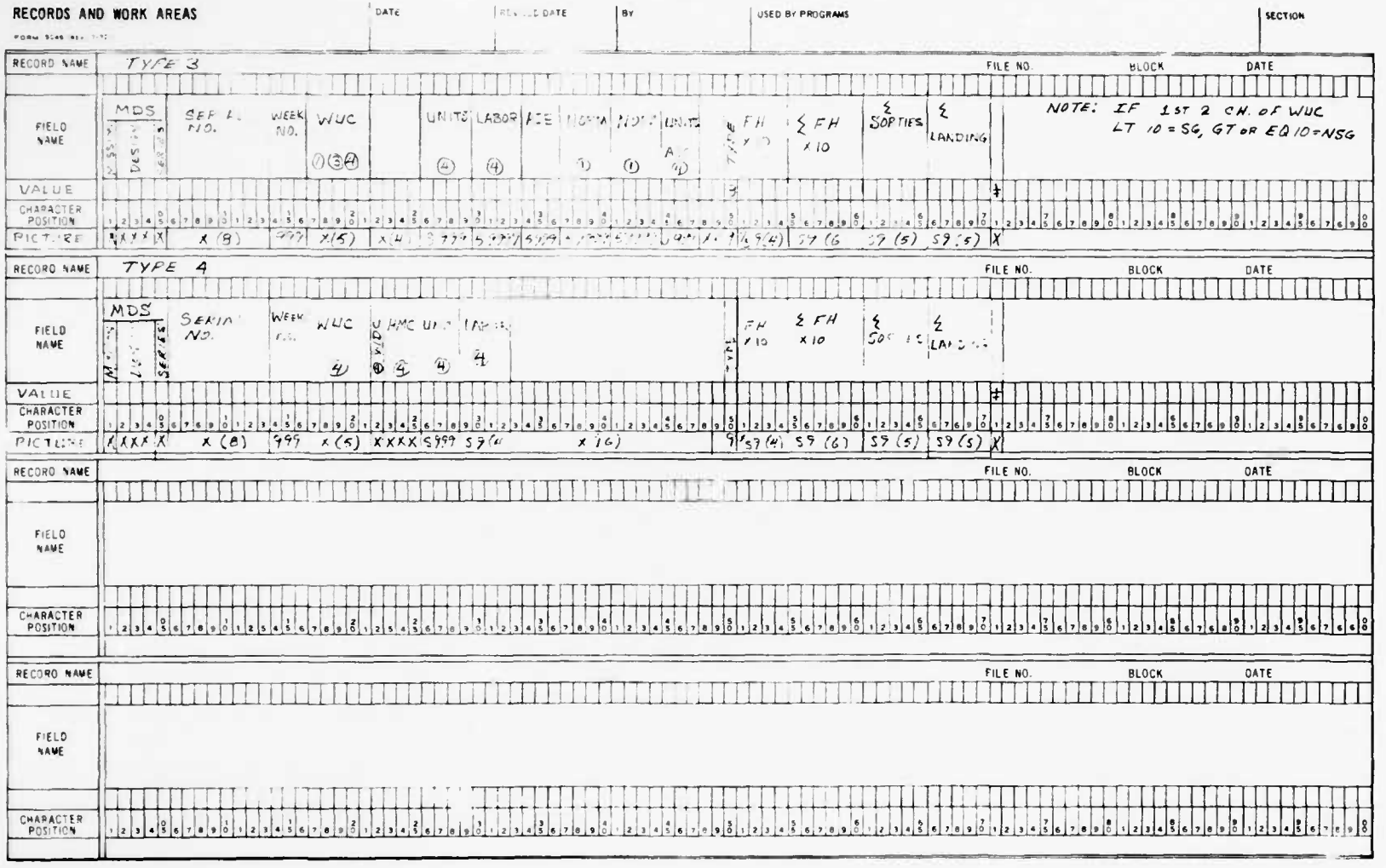


Figure 4-4. Preprocessor Tape Record Layouts

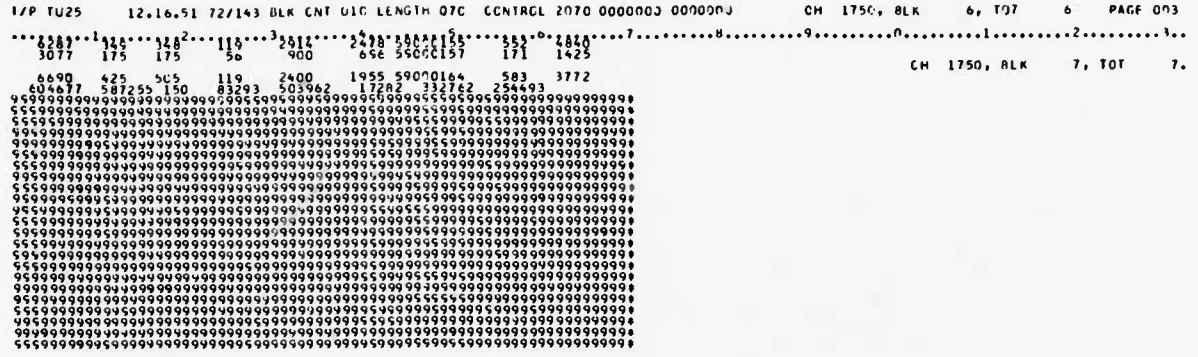


Figure 4-5. Sample Output — Record-Keeping (Input/Output Totals)

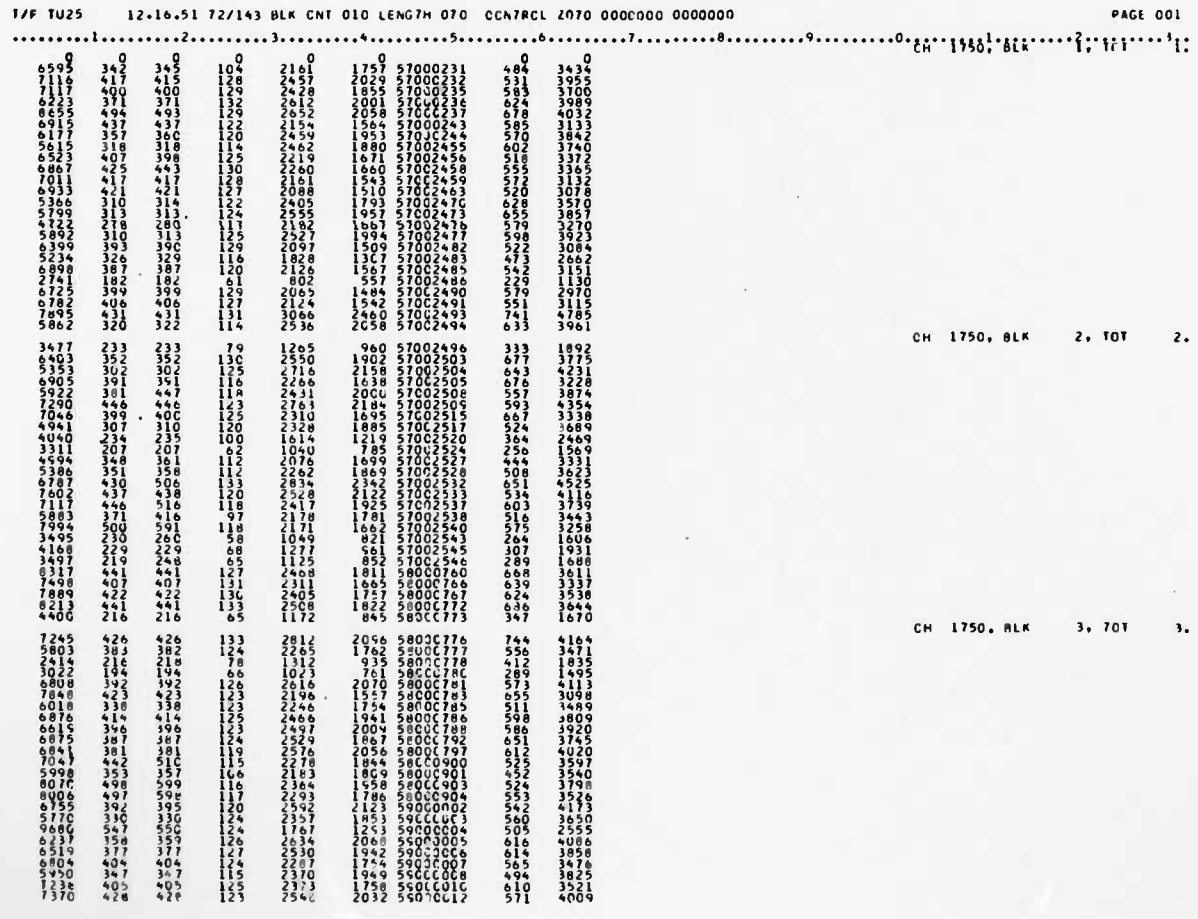


Figure 4-6. Sample Output — Record Keeping (Aircraft-Level Subtotals)

Field	Column	Description
4	22-28	Support General Data Records Output
5	30-36	Non-Support General Data Records Output
6	38-44	Type 1 Records Input
7	46-52	Type 3 Records Input/Output
8	54-60	Type 4 Records Input/Output

The Aircraft-Level Subtotals fields are:

Field	Column	Description
1	2-7	Total Flight Hours
2	9-13	Total Sorties
3	15-19	Total Landings
4	21-26	Type 1 Records
5	28-34	Type 3 Records
6	36-42	Type 4 Records
7	44-51	Aircraft Serial Number
8	53-58	Support General Records
9	60-65	Non-support General Records

For the 150-aircraft F-106 fleet, the Preprocessor Formatter program requires approximately ten minutes of IBM 370 computer clock time and two minutes of central processor unit (CPU) time. The input volume is 604,677, the reformatted Data Bank output volume is 587,255, the reformatted Support General volume is 83,293, and the reformatted Non-support General volume is 503,962.

4.2.2 REFORMATTED SUPPORT GENERAL WUC SORT

4.2.2.1 Purpose. This IBM utility program sorts the Support General data records into an ordered file for subsequent use on Task IV Statistical Programs and the Aircraft Inspection Histories Plot Program.

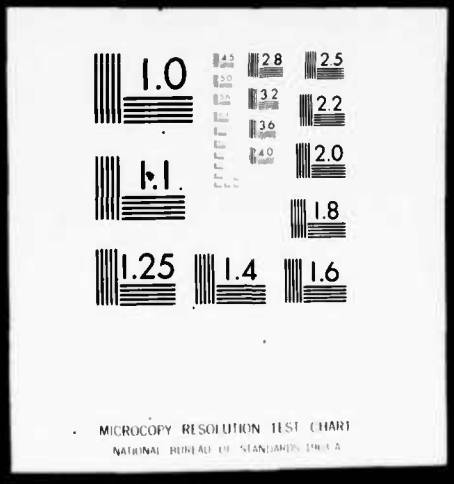
4.2.2.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.6.2. The sort fields, in order of hierarchy, are:

Field	Column	Description
1	6-13	Serial Number

AD-A045 625 GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV F/G 1/5
F-106 SCHEDULED MAINTENANCE STUDY. USER'S MANUAL,(U)
SEP 72 G WANG, R S GROTE , J R COOPER F41608-71-D-1383
UNCLASSIFIED GDCA-AHD72-006 NL

2 OF 6
ADA045825

2 OF 6
ADA045625



Field	Column	Description
2	14-16	Week
3	17-21	Work Unit Code
4	49	Type

The input tape record layout is shown in Figure 4-4. Only record Type 3 data is sorted.

4.2.2.3 Output Description. Sorting the Support General file of 83,293 data records took approximately two minutes of elapsed time and 30 seconds of CPU time (IBM 370). A sample of the sorted output is shown in Figure 4-7.

4.2.3 REFORMATTED NON-SUPPORT GENERAL WUC SORT

4.2.3.1 Purpose. This IBM utility program sorts the Non-support General data records into an ordered file for subsequent use on Task IV Statistical Programs.

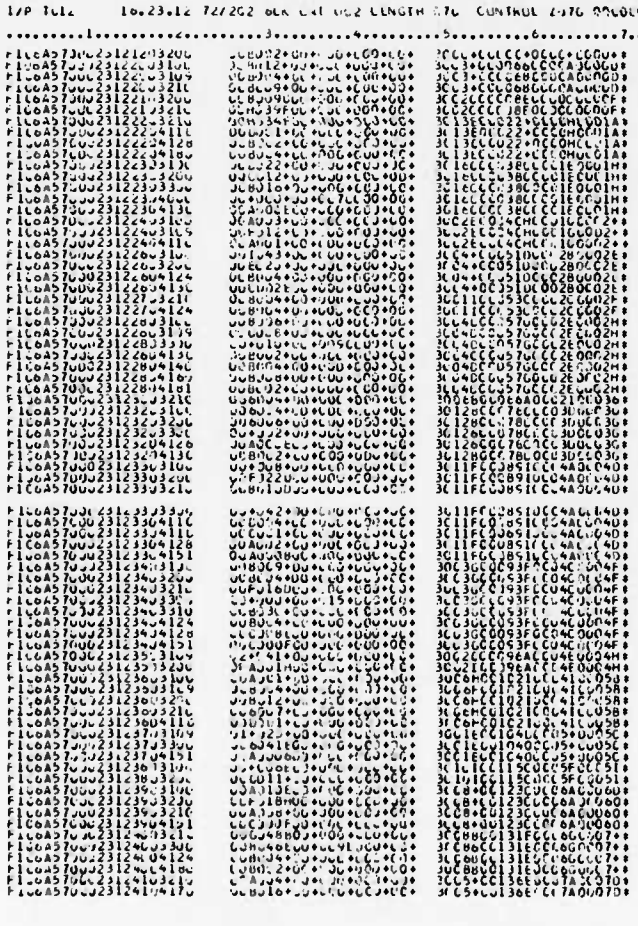


Figure 4-7. Sample Output — Support General WUC Sort

4.2.3.2 Input Data and Procedures. Paragraph 6.6.3 shows the program and JCL cards. The sort fields, in order of hierarchy, are:

Field	Column	Description
1	6-13	Serial Number
2	14-16	Week
3	17-21	Work Unit Code
4	49	Type

The input tape record layout is shown in Figure 4-4. Record Types 3 and 4 are sorted.

4.2.3.3 Output Description. Sorting the Non-support General file of 503,962 data records took 20 minutes of elapsed time and 30 seconds of CPU time (IBM 370). A sample of the sorted output is shown in Figure 4-8.

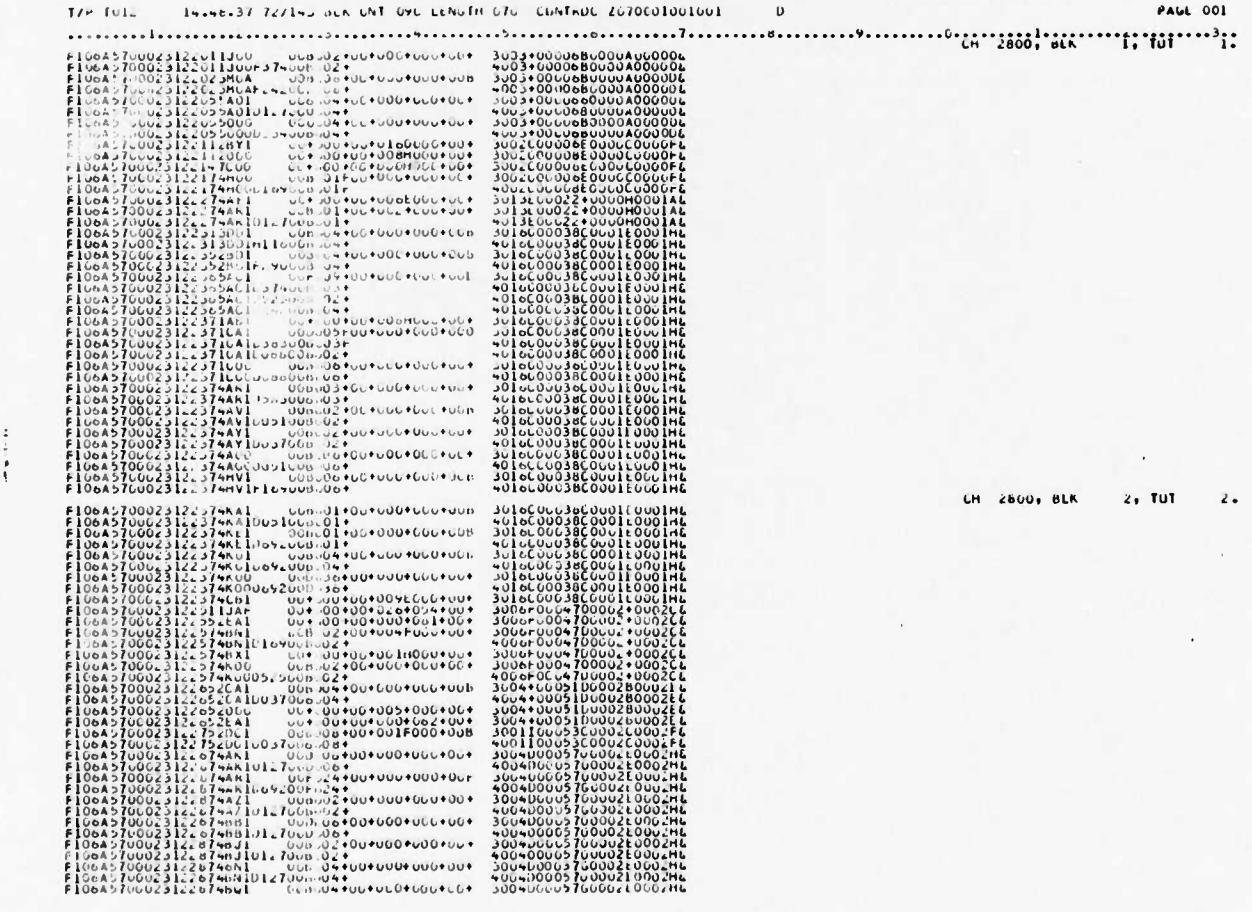


Figure 4-8. Sample Output — Non-support General WUC Sort

4.2.4 REFORMATTED DATA BANK SORT

4.2.4.1 Purpose. This IBM utility program sorts Data Bank data records into an ordered file for subsequent use on Tasks I, II, III, and V Statistical Programs.

4.2.4.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.6.4. The sort fields, in order of hierarchy, are:

Field	Column	Description
1	17-21	Work Unit Code
2	23-25	How-Malfunction Code
3	6-13	Serial Number
4	14-16	Week

The input tape record layout is shown in Figure 4-4. Record Types 3 and 4 are sorted.

4.2.4.3 Output Description. Sorting the Data Bank file of 587,255 data records on the IBM 370 took 27 minutes of elapsed time and 3 minutes of CPU time. A sample of the sorted output is shown in Figure 4-9.

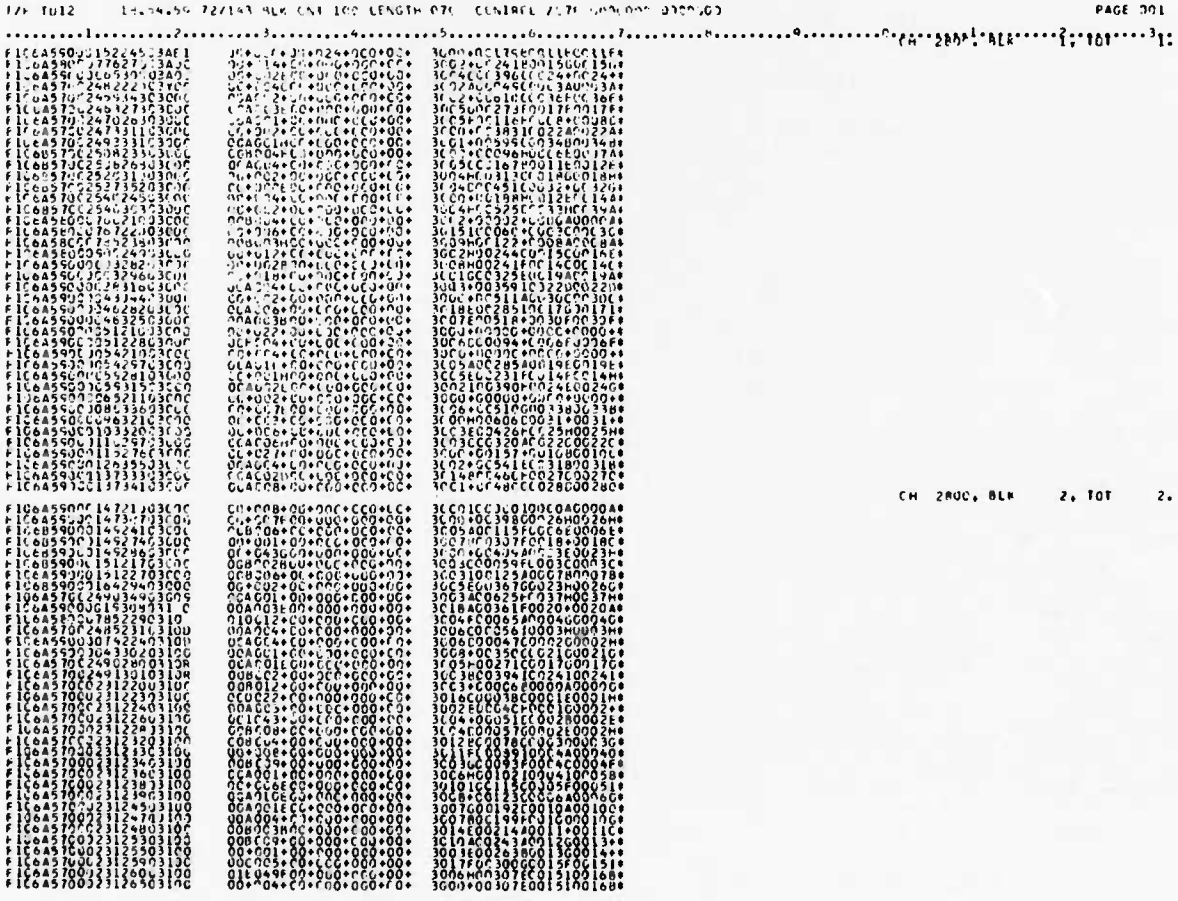


Figure 4-9. Sample Output — Data Bank Sort

4.3 FREQUENCY ANALYSIS — TASK I

The objective of this task is to generate a matrix of data to determine the kinds of malfunctions that occur on a WUC and when they are discovered, and to compare these results with the definitions of scheduled inspections. A system of three COBOL programs has been developed to perform this task (Figure 4-10).

a. Title Formatter and Five-Digit WUC Analysis (Paragraph 6.7.1).

b. Frequency Analysis Sort (Paragraph 6.7.2).

c. Three-Digit WUC Analysis (Paragraph 6.7.3).

Paragraph 6.7 contains the listing of the source programs with the corresponding job control cards, as noted above.

4.3.1 TITLE FORMATTER AND FIVE-DIGIT WUC ANALYSIS

4.3.1.1 Purpose. The purpose of this program is to format the titles from the data for Support General (SG) WUC, perform the analysis at the five-digit WUC level, and to provide two output files to be used for the three-digit WUC analysis.

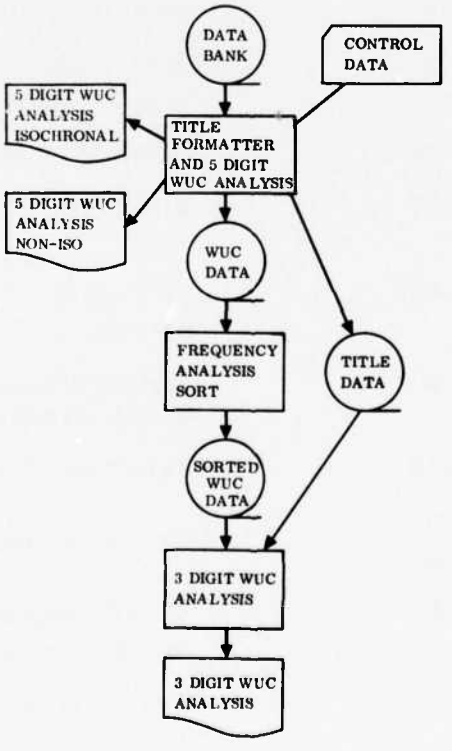


Figure 4-10. Logic Flow — Frequency Analysis

4.3.1.2 Input Data and Procedures. There are two types of input data: tape and card deck. Tape data consists of a data bank sorted in the order of Work Unit Code (WUC), How-Malfunction Code (HMC), aircraft serial number, and week number. The card deck data has the following format.

Card	Column	Description
a	3-5	Number of isochronal aircraft.
b	3-10	Isochronal aircraft serial number in ascending sequence.
	13-15	Starting week number for isochronal inspection.
c	1-5	When-Discovered Code (WDC) titles (WDC used must be in Column 5 and in ascending sequence).
d	1-3	Number of WDC corresponding to unscheduled inspections.
e	1-3	Sequential position of WDC corresponding to an unscheduled inspection.
f	1-3	Number of SG WUC to follow.
g	1-3	Sequential position of WDC corresponding to scheduled inspection.
	6-10	Scheduled inspection in ascending sequence.
h	1-80	Five cards with SG WUC titles (Columns 1-80).
i	1-25	Five cards with SG WUC titles (Columns 81-105).
j	1-3	Sequential position of WDC corresponding to two-digit SG WUC.
	6-10	Two-digit SG WUC.
k	1-3 4-6	WDC in sequence matching SG WUC.
l	1-5	SG WUC requiring time interval to define end of inspection.
	7-8	Week interval for SG WUC.

A sample input data deck is shown in Figure 4-11. The program generates four outpu files:

a. Title Information.

b. Five-digit WUC Analysis Report — Isochronal.

c. Five-digit WUC Analysis Report — Non-isochronal.

d. Five-digit WUC Analysis data.

The title information file is derived partially from the input card deck (Cards c, h, and i) and the data bank input file. The card deck defines the WDC and SG WUC titles. The Support General WUC Frequency is obtained from Type 3 records by totaling the number of maintenance action field for the appropriate SG-WUC.

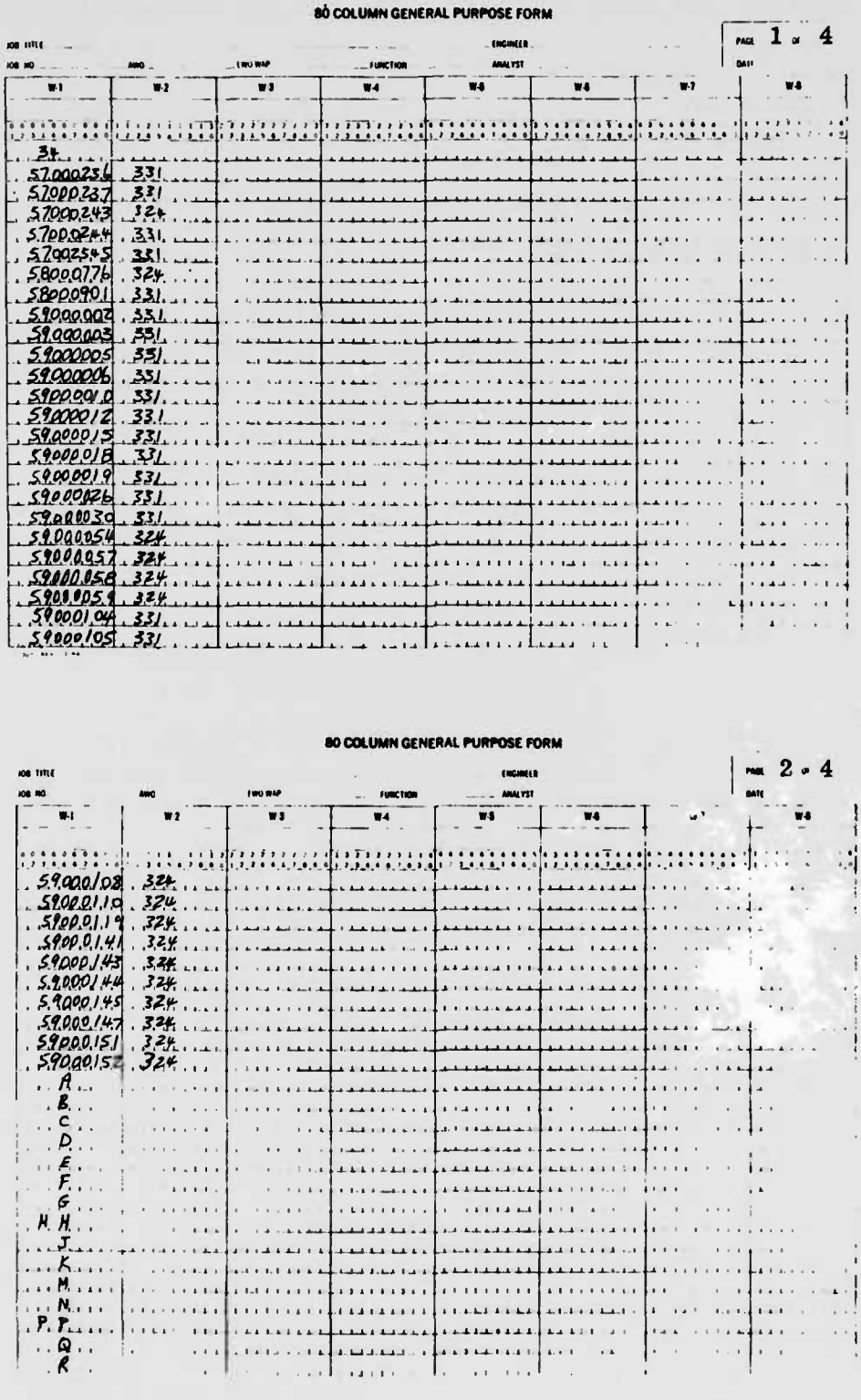
The five-digit WUC Analysis Report-Isochronal file uses the Isochronal title to each page of the report; the frequencies for each WUC and HMC combination are obtained by accumulating the maintenance actions for each of the 21 WDCs for the Isochronal aircraft subset. The total unscheduled maintenance actions are accumulated, as are all totals over the complete WUC. The output is also written in the WUC-Data file for subsequent usage at the three-digit WUC level. A similar report file is available for Non-isochronal aircraft.

4.3.1.3 Output Description. The output consists of two report files that have 130 characters to a data record, blocked 15 to a tape record, and two data files that have 130 characters to a data record, blocked 23 to a tape record. A typical report output is shown in Figure 4-12.

The record layout for the two data files is shown in Figure 4-13, an example of the WUC Data in Figure 4-14, and Title Data in Figure 4-15. The WUC Data file contains:

Column	Value	Description
1	H	Flag indicating data relates to a specific HMC.
	W	Flag indicating data is a total for a WUC.
3-7		Five-digit WUC.
9-11	xxx	Three-digit HMC.
	BLANK	Total data for a WUC.
13-17		For Column 1 = H, sum of MA for WUC, HMC, WDC(1). For Column 1 = W, sum of MA for WUC + WDC(1).

This is repeated for 21 When-Discovered Codes.



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JOB TITLE — ENGINEER — PAGE 1 OF 4

JOB NO — AWD — FWD WAP — FUNCTION — ANALYST — DATE

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
34							
57000236	331						
57000237	331						
57000243	324						
57000244	331						
57002545	331						
58000776	324						
58000901	331						
59000002	331						
59000003	331						
59000005	331						
59000006	331						
59000010	331						
59000012	331						
59000015	331						
59000018	331						
59000019	331						
59000026	331						
59000030	331						
59000054	324						
59000057	324						
59000058	324						
59000059	324						
59000104	331						
59000105	331						

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JOB TITLE — ENGINEER — PAGE 2 OF 4

JOB NO — AWD — FWD WAP — FUNCTION — ANALYST — DATE

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
59000108	324						
59000110	324						
59000119	324						
59000141	324						
59000143	324						
59000144	324						
59000145	324						
59000147	324						
59000151	324						
59000152	324						
A							
B							
C							
D							
E							
F							
G							
H	H						
J							
K							
M							
N							
P	P						
Q							
R							

Figure 4-11. Sample Input — Title Formatter and Five-Digit WUC Analysis (Sheet 1 of 2)

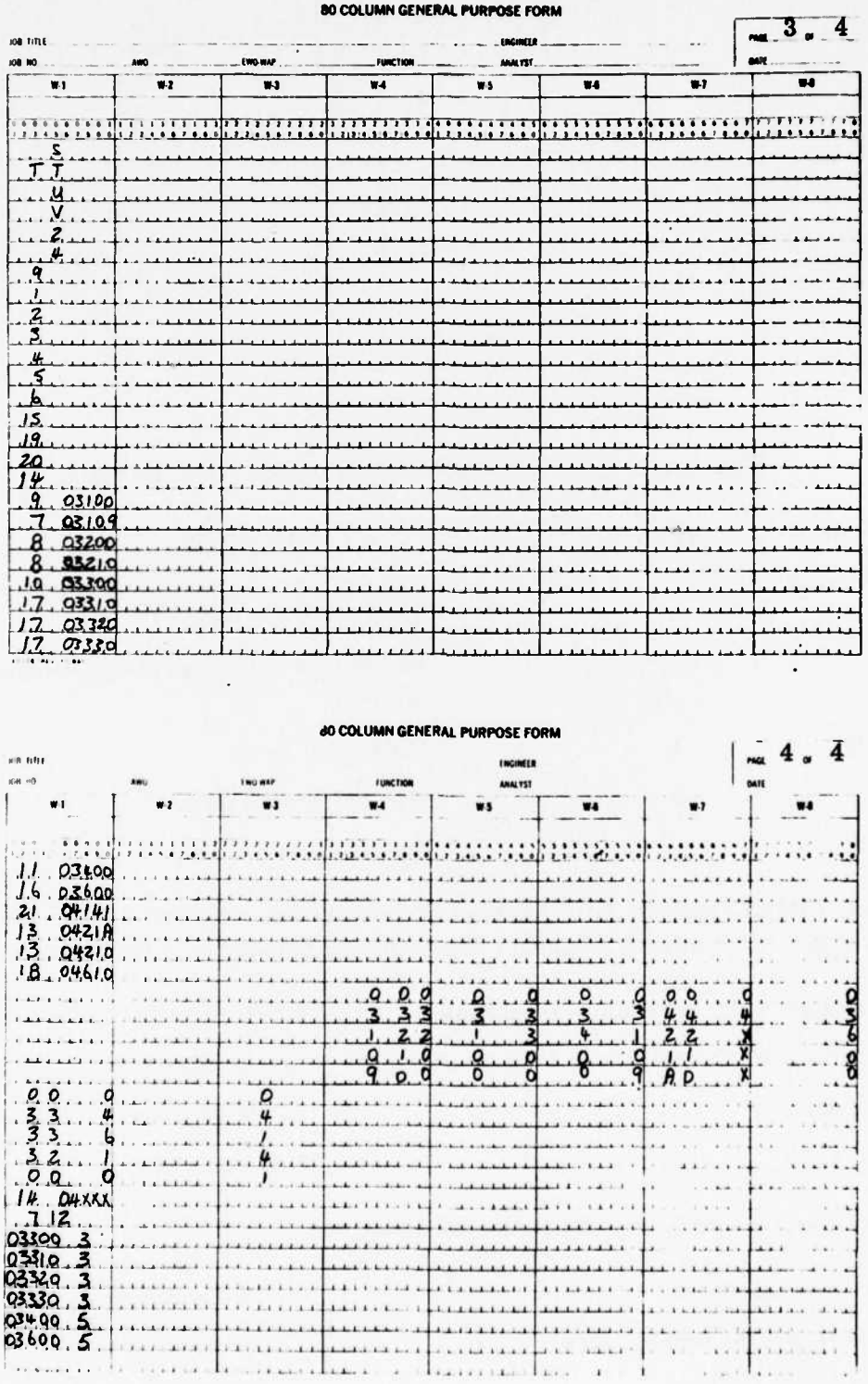
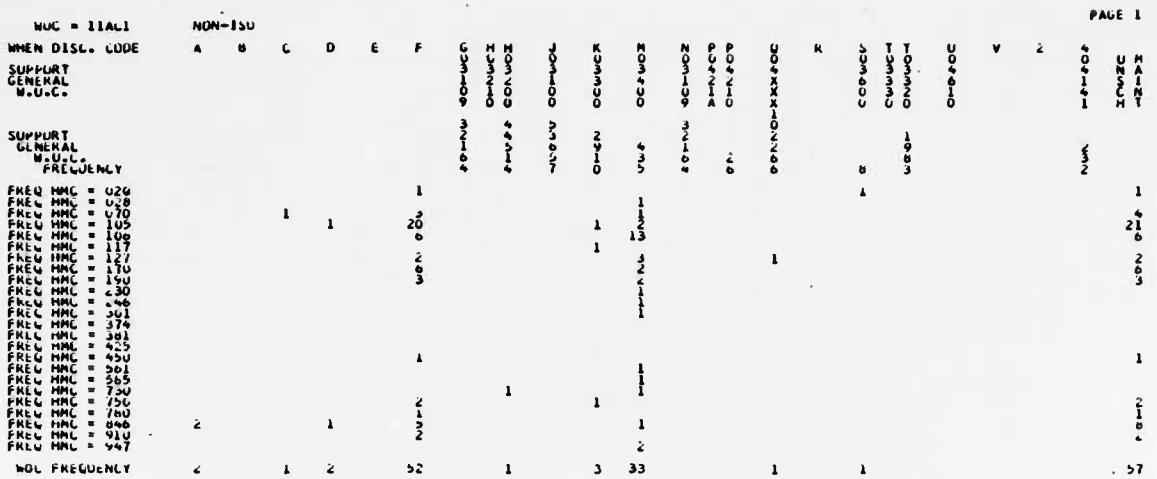


Figure 4-11. Sample Input — Title Formatter and Five-Digit WUC Analysis (Sheet 2 of 2)



WUC = 11AA1 NON-ISO PAGE 1

WHEN DISC. CODE: A B C D E F G53109 H53200 H53600 J54100 K53500 M53400 N53109 P04211A P04210 U04XXX10226 R S53000 T53320 T53330 U04810 V Z 40141 UNSCH MAINT

SUPPORT GENERAL M.U.C. 32164 44214 25657 21010 43527 31164 2 6 1 1953 8 5 32

SUPPORT GENERAL M.U.C. FREQUENCY

FREQ MMC = 026					1						1							1											1		
FREQ MMC = 028					3						1																		1		
FREQ MMC = 070			1		20					1	2																		21		
FREQ MMC = 105				1	6						13																		6		
FREQ MMC = 106										1																					
FREQ MMC = 117					2						3					1													2		
FREQ MMC = 127					6						2																		6		
FREQ MMC = 170					3						4																		3		
FREQ MMC = 190											1																				
FREQ MMC = 230											1																				
FREQ MMC = 246											1																				
FREQ MMC = 301											1																				
FREQ MMC = 374																															
FREQ MMC = 381																															
FREQ MMC = 425																															
FREQ MMC = 450					1																								1		
FREQ MMC = 501											1																				
FREQ MMC = 565											1																				
FREQ MMC = 730							1				1																				
FREQ MMC = 756										1																			2		
FREQ MMC = 780					2						1																		1		
FREQ MMC = 846	2			1	3						1																		8		
FREQ MMC = 910					2																								4		
FREQ MMC = 947											2																				
WUC FREQUENCY	2		1	2	52		1		3	33			1		1														57		

Figure 4-12. Sample Output — Five-Digit WUC Analysis

Column	Value	Description
118-123		For Col. 1 = H, sum of unscheduled MA for WUC and HMC.
		For Col. 1 = W, sum of unscheduled MA for WUC.
125	1	Isochronal Data.
	2	Non-isochronal data.
130		End of record.

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer throughput time was 11 minutes. The following number of records were generated.

a.	Five-digit WUC Analysis — Isochronal	20,505 records
b.	Five-digit WUC Analysis — Non-isochronal	51,341 records
c.	Title Data	21 records
d.	WUC Data	30,614 records

The program has the following dimensional limitations.

a.	Isochronal aircraft	36 Maximum
b.	Number of Unscheduled WDC	10 Maximum
c.	Number of SG-WUC	14 Maximum
d.	Number of SG-WUC using time to determine end of inspection	10 Maximum

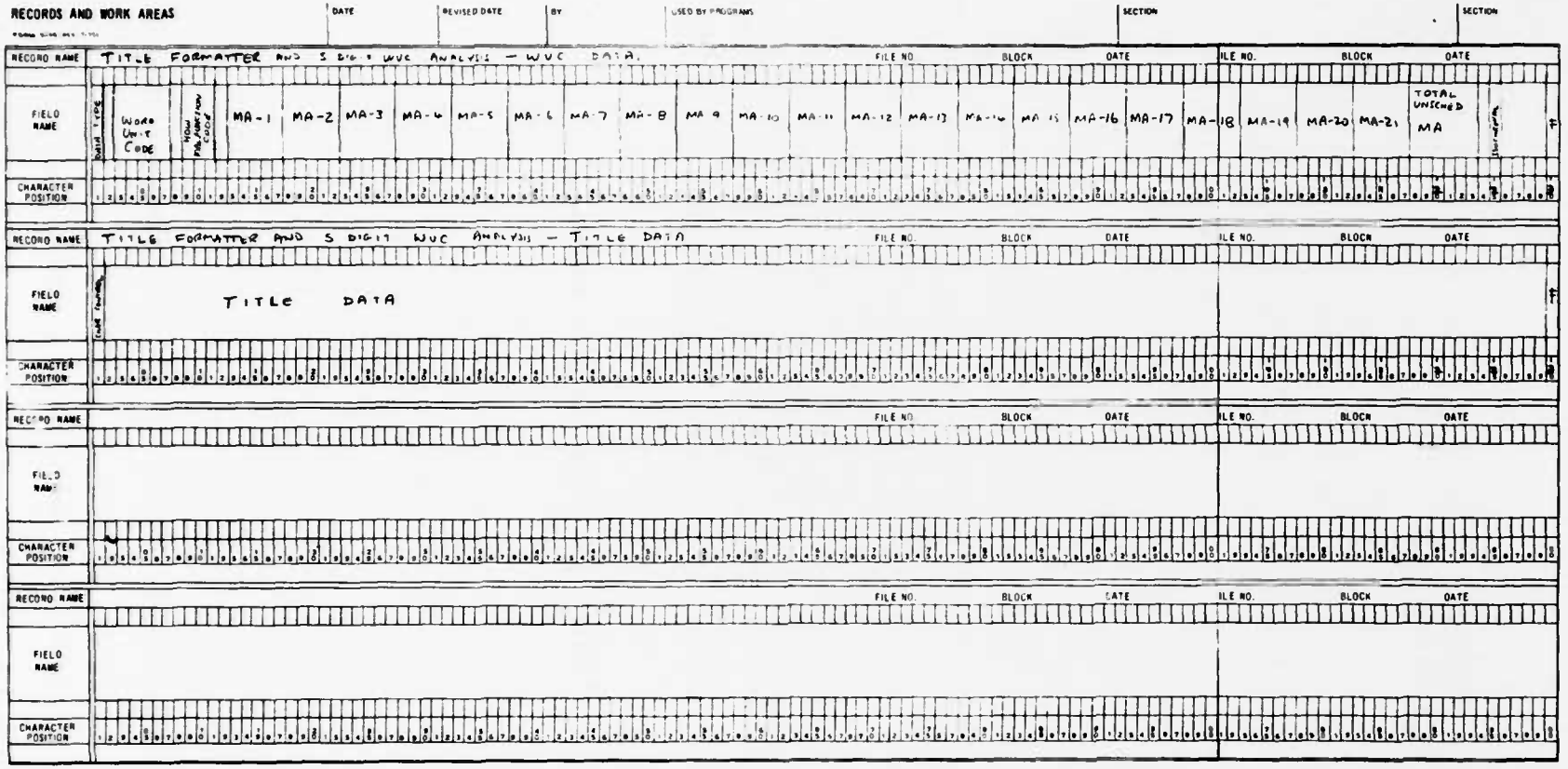


Figure 4-13. Record Layout — Title Formatter and Five-Digit WUC Analysis

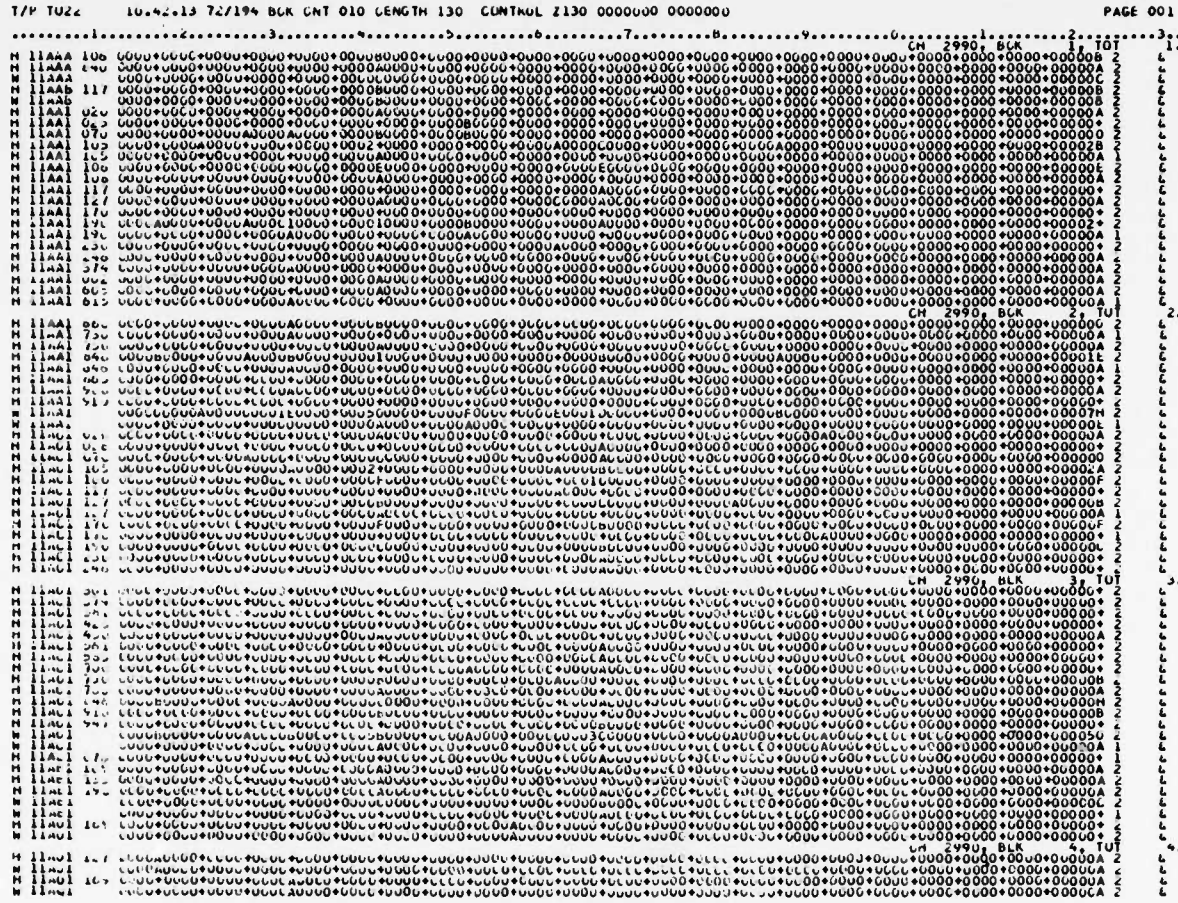


Figure 4-14. Sample Output — WUC Data

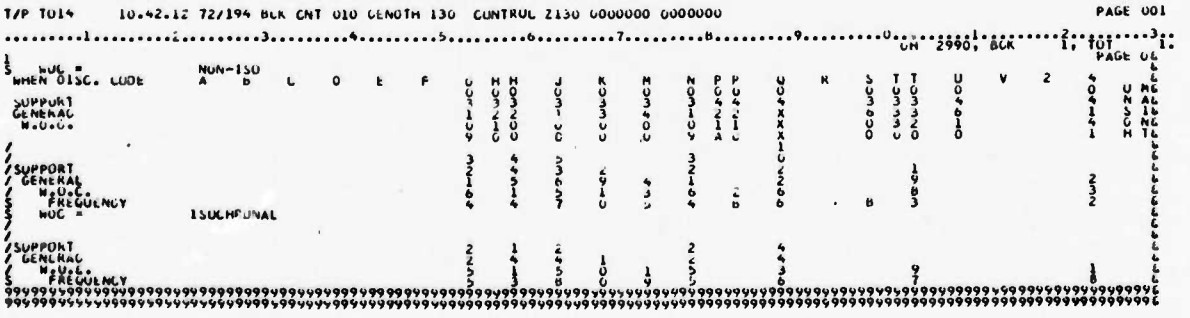


Figure 4-15. Sample Output — Title Data

4.3.2 FREQUENCY ANALYSIS SORT

3.4.2.1 Purpose. The purpose of this program is to sort output WUC Data for further processing.

4.3.2.2 Input Data and Procedures. The input consists of the WUC Data file described in Paragraph 3.4.1.3.

4.3.2.3 Output Description. The output file, 130 characters to a data record, blocked 23 to a tape record, is sorted according to the following keys in ascending order.

Key	Column	Description
1	125	Isochronal
2	3-5	Three-digit WUC
3	1	Data Type
4	9-11	HMC

It required two minutes on the IBM 370 to sort the 30,636 records for the 150-aircraft F-106 fleet.

4.3.3 THREE-DIGIT WUC ANALYSIS

4.3.3.1 Purpose. The purpose of this program is to perform the analysis at the three-digit WUC level.

4.3.3.2 Input Data and Procedures. Two previously generated files are input data to this program:

a. Sorted WUC data.

b. Title data.

Operation of the program is similar to analysis at the five-digit WUC level, Paragraph 4.3.1.2. Differences include a single report output, with the Isochronal preceding the Non-isochronal data.

4.3.3.3 Output Description. The output consists of a single report file, 130 characters to a data record, blocked 15 to a tape record. A typical output is shown in Figure 4-16. On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer throughput time was two minutes; 14,660 print records were generated.

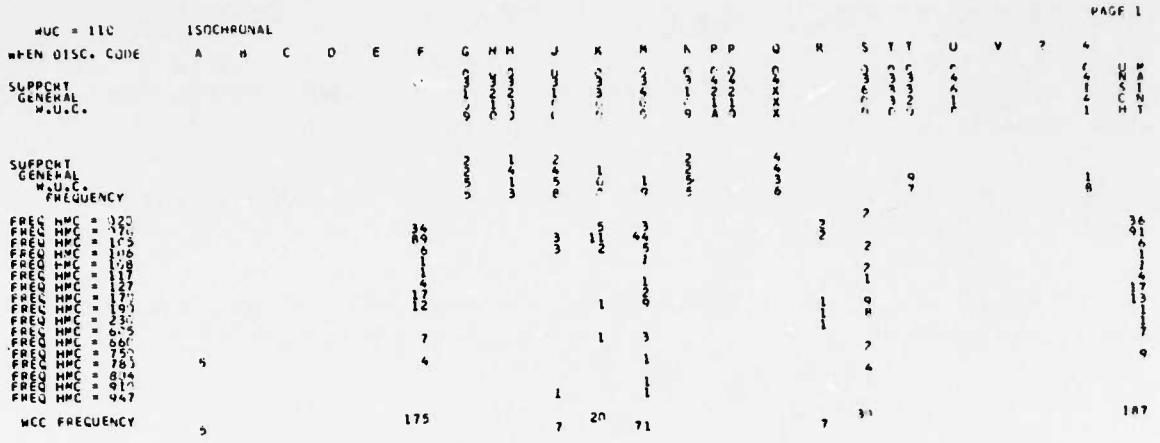


Figure 4-16. Sample Output — Three-Digit WUC Analysis

4.4 MANHOUR AND NOR TIME ANALYSIS — TASK II

The objective of this task is to generate cumulative probability distributions for manhour and NOR time analysis. A system of five COBOL programs has been developed to perform this task (Figure 4-17).

a. Task II Preprocessor.

b. Sort 2BS.

c. Cumulative Distribution 2B.

d. Sort 2CS.

e. Cumulative Distribution 2C.

Paragraph 6.8 contains the listing of the source programs with corresponding job control cards.

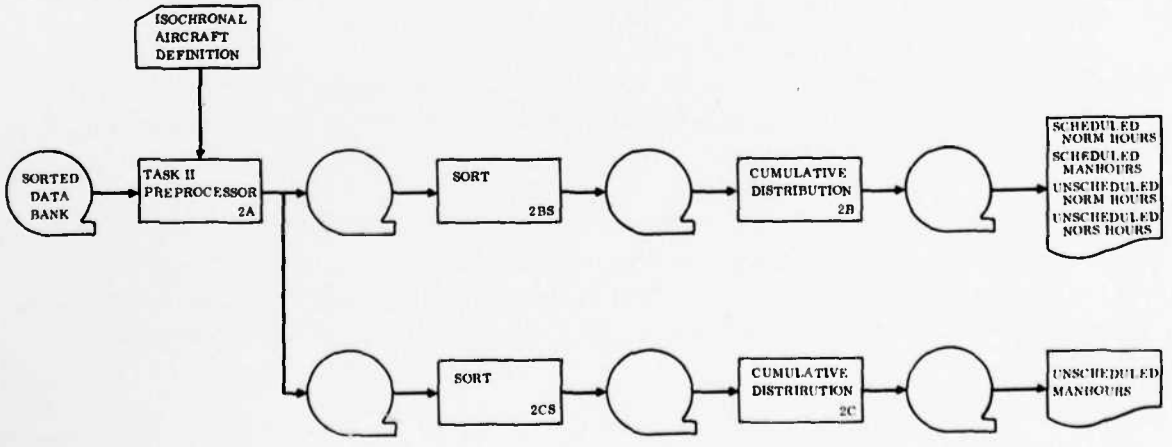


Figure 4-17. Logic Flow — Manhours and NOR Time Analysis (Task II)

4.4.1 PREPROCESSOR — TASK II

4.4.1.1 Purpose. The purpose of the Task II Preprocessor is to generate two output files for further processing using the sorted data bank tape, isochronal aircraft definition, a selected list of WUCs, and inspection criteria data as inputs as shown in Figure 4-17.

4.4.1.2 Input Data and Processors. There are two types of input data: tape and card deck. Tape data consists of a data bank sorted in the order of WUC, HMC, aircraft serial number, and week number. For the tape record layout, see Figure 4-4. The data card deck has the following formats.

Card No. 1:

Column	Description
1-5	WUC for Hourly Post Flight Inspection
6-10, 11-15, 16-20	WUC for MA-1 Scheduled Calibration
21-25	WUC for Periodic Inspection
26-30	WUC for IRAN Depot Visit
31-35	WUC for Preflight Inspection
36-40	WUC for Basic Postflight Inspection
41-45	WUC for Special Hourly Postflight
46-47	Minimum number of weeks between inspections for the four WUCs in Columns 1 through 20.
48-49	Minimum number of weeks between inspections for Periodic Inspection and IRAN Depot Visit

Card No. 2:

3-5	Number of Isochronal Aircraft. (Current program is dimensioned for a maximum of 36 isochronal aircraft, which may be increased by minor program modification.)

The following cards describe the isochronal aircraft fleet, one card per isochronal aircraft; the serial numbers are sorted in ascending order.

Column	Description
3-10	Aircraft Serial Number
13-15	Starting Week Number for Isochronal Inspection

Figure 4-18 is a sample input data deck listing. The Task II Preprocessor program (Figure 4-17) produces two output files (2B and 2C) containing the following information.

File	Data Type	Description
2B	1	NORM Hours — Scheduled Inspection
2B	2	Manhours — Scheduled Inspection
2B	3	NORM Hours — Unscheduled Maintenance Actions
2B	4	NORS Hours — Unscheduled Maintenance Actions
2C	1	Manhours — Unscheduled Maintenance Actions

a. NORM Hours and Manhours — Scheduled Inspection (for File 2B, Data Types 1 and 2). Any NOR time charged during preflights and basic postflights is recorded as unscheduled maintenance. Manhours expended during the look phase of these inspections, however, are charged as support general, so that these inspections are included when calculating the look phase manhour distributions. For a given type of scheduled inspection, each occurrence of that inspection on an aircraft provides an observation of the NORM hours charged during the look and repair phases of the inspection and the manhours charged during the look phase.

   To calculate the NORM hours for the inspection, the first Type 3 record encountered with the support general (SG) WUC corresponding to that inspection is combined with records for immediately succeeding weeks with the same code until the end of a continuous block of weekly records is reached. The NORM hours sum for the inspection is obtained by accumulating the NORM hours recorded in this block of records. The manhours for the look phase of this inspection are obtained by also accumulating the manhours in the same way.

   By analyzing the plots of flight hours versus week for the F-106 fleet (see Aircraft Inspection Histories, Paragraph 4.8), it was discovered that the minimum number of weeks between inspections was more than two weeks for Hourly Post Flight Inspections and MA-1 Scheduled Calibration Inspections. The minimum number of weeks between inspections for Periodic Inspections and IRAN Depot Visit Inspections was more than four weeks. This information was incorporated to define an inspection as part of the input data. (See Paragraph 4.4.1.2.)

b. Manhours — Unscheduled Maintenance Action (for File 2C, Data Type 1). The manhour distributions are calculated separately for repair actions and unscheduled maintenance actions by accumulating the number of manhours charged against a specific WUC and specific HMC for successive weeks until a week is encountered with a nonzero number of maintenance actions. The number of repair actions or unscheduled actions against the same WUC is accumulated at the same time.

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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
03300033310	0332003330	0340003600	0310003200	0321002304			
34							
57000236	331						
57000237	331						
57000243	324						
57000244	331						
57002545	331						
58000776	324						
58000901	331						
59000002	331						
59000003	331						
59000005	331						
59000006	331						
59000010	331						
59000012	331						
59000015	331						
59000018	331						
59000019	331						
59000026	331						
59000030	331						
59000054	324						
59000057	324						
59000058	324						
59000059	324						
59000104	331						

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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
59000105	331						
59000108	324						
59000110	324						
59000119	324						
59000141	324						
59000143	324						
59000144	324						
59000145	324						
59000147	324						
59000151	324						
59000152	324						

Figure 4-18. Sample Data — Task II Preprocessor

This data is obtained from Record Type 4. The ratio of these totals provides one observation of manhours per maintenance action for this WUC malfunction. Each occurrence of a maintenance action on an aircraft is in the bank for the specific WUC malfunction. Each occurrence of a maintenance action on an aircraft in the bank for the specific WUC malfunction combination provides another observation.

c. NORM and NORS Hours — Unscheduled Maintenance Actions (for File 2B, Data Types 3 and 4). The distribution for unscheduled NORM hours is the same as in Item b except that only unscheduled maintenance actions are included. Again, NORM hours and maintenance action totals are accumulated from week to week until a nonzero number of maintenance actions field is encountered. The ratio of the two totals then provides one observation of unscheduled NORM hours per maintenance action for the specific WUC. Since the type of malfunction is not recorded in AFM 65-110, through which NORM hours are recorded, it is not possible to calculate this distribution for a specific type of malfunction. The data for this calculation is obtained from Record Type 3.

Calculation of the NORS hours distribution is somewhat different. In this case, the parameter is NORS hours per week for a specific WUC. Each week for which NORS hours are charged against the specific WUC in Record Type 3 provides another observation.

4.4.1.3 Output Description. The output consists of two tape files (2B and 2C) with 20-character data records blocked 90 to a tape record, with the following formats.

Column	Description
1-5	Work Unit Code (WUC)
6-8	How-Malfunction Code (HMC)
10-15	Observation Data
17	Isochronal Indicator
	=1 Isochronal Inspection
	=2 Non-Isochronal Inspection
19	Data Type
	For File 2B:
	=1 Scheduled NORM Hours
	=2 Scheduled Manhours
	=3 Unscheduled NORM Hours
	=4 Unscheduled NORS Hours

Column	Description
	For File 2C:
	=1 Unscheduled Manhours
20	Record Mark

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer throughput time was about 10 minutes. Records totaling 348,511 and 243,801 were generated for Files 2B and 2C, respectively.

4.4.2 SORT FOR SCHEDULED NORM HOURS, MANHOURS, UNSCHEDULED NORM HOURS, NORS HOURS (SORT 2BS)

4.4.2.1 Purpose. The purpose of this program is to sort output File 2B for further processing.

4.4.2.2 Input Data and Procedures. The input consists of tape File 2B as described in Paragraph 4.4.1.3.

4.4.2.3 Output Description. An output tape with 20 characters per record and a blocking factor of 90, consisting of scheduled NORM hours, manhours, and unscheduled NORM and NORS hours records, is sorted according to the following keys in ascending order.

Key	Column	Description
1	17	Isochronal Indicator
2	19	Data Type
3	1-5	Work Unit Code

It took about four minutes on the IBM 370 to sort 348,511 records for the 150-aircraft F-106 fleet.

4.4.3 CUMULATIVE DISTRIBUTION FOR SCHEDULED NORM HOURS, MANHOURS, UNSCHEDULED NORM HOURS, NORS HOURS

4.4.3.1 Purpose. This program generates cumulative distribution plots for scheduled NORM hours and manhours and for unscheduled NORM and NORS hours by WUC and isochronal subset type. The number of observations, maximum and minimum values, and the mean and variance of the observation are printed on the top of each plot.

4.4.3.2 Input Data and Procedures. The format for the input data card is:

Column	Description
1-5	Total Isochronal Aircraft Weeks. For definition, see Figure 2-1 in GDCA-AHD72-003, F-106 Scheduled Maintenance Study, Phase II — Model Formulation and Data Analysis.
6-10	Total Non-Isochronal Aircraft Weeks. For definition, see the preceeding reference.
13-14	Printout Suppression Cutoff for Isochronal Subset.
15-16	Printout Suppression Cutoff for Non-Isochronal Subset.

Figure 4-19 is a sample input data card.

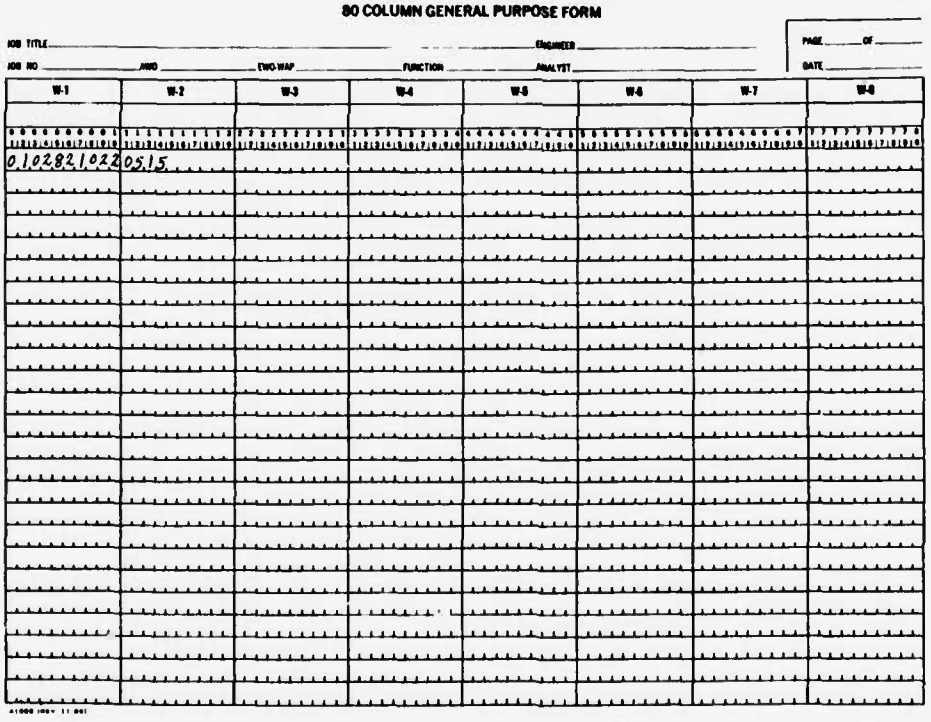


Figure 4-19. Sample Data — Cumulative Distribution for Scheduled NORM Hours, Manhours, Unscheduled NORM Hours, and NORS Hours

4.4.3.3 Output Description. Cumulative distribution plots by a printer contain the following information.

Work Unit Code

Output Data — one of four types:

Scheduled NORM Hours

Scheduled Manhours

Unscheduled NORM Hours

Unscheduled NORS Hours

Isochronal or Non-Isochronal Subset

Number of Observations

Maximum and Minimum Values

Mean and Variation

The plot tape has 130-character data records, blocked 15 to a tape record. The values for printout suppression cutoff have a significant impact on the output volume. The effect of cutoff on output volume is shown below, based on the F-106 experience:

No. of Aircraft	Isochronal	Non-Isochronal	No. of Plots
15	0	10	1275
15	10	10	686
150	5	15	2101

It took six minutes on the IBM 370 to process 348,511 records and to generate the observation tape for the F-106 fleet. It required three printer hours to make 2101 plots. A sample output from a recent F-106 run is shown in Figure 4-20.

4.4.4 SORT FOR UNSCHEDULED MANHOURS (SORT 2CS)

4.4.4.1 Purpose. The purpose of this program is to sort output File 2C for further processing.

4.4.4.2 Input Data and Procedures. The input consists of tape File 2C, as described in Paragraph 4.4.1.3.

4.4.4.3 Output Description. The output tape file, consisting of unscheduled manhours charged against a specific WUC and specific HMC is sorted according to the following keys in ascending order.

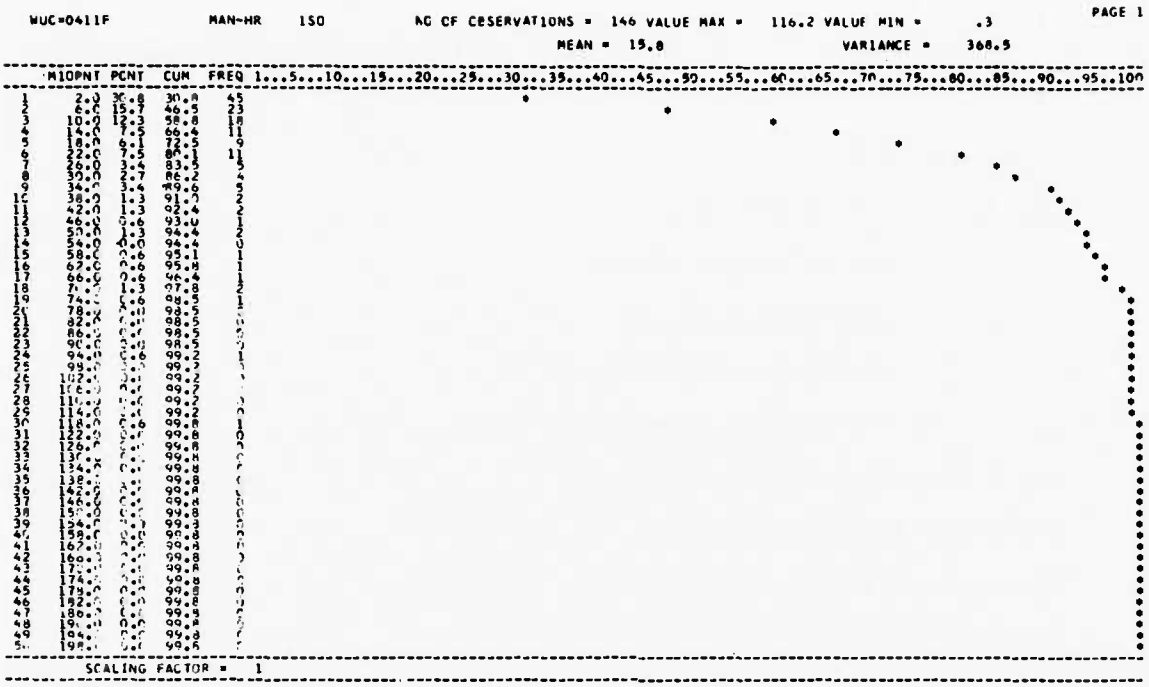


Figure 4-20. Sample Output — Cumulative Distribution of Scheduled Manhours

Key	Column	Description
1	17	Isochronal Indicator
		=1 Isochronal Subset
		=2 Non-Isochronal Subset
2	19	Data Type
		=1 Manhours
3	1-5	Work Unit Code (WUC)
4	6-8	How-Malfunction Code (HMC)

The output tape consists of 20-character data records, blocked 90 to a tape record. It took one minute and 36 seconds to sort 243,801 records for a fleet of 150 F-106 aircraft.

4.4.5 CUMULATIVE DISTRIBUTION FOR UNSCHEDULED MANHOURS

4.4.5.1 Purpose. This program generates cumulative distribution plots for unscheduled manhours by WUC, HMC, and isochronal subset type. The number of observations, maximum and minimum values, and mean and variance of the observations are printed at the top of each plot.

4.4.5.2 Input Data and Procedures. The format for the data card is:

Column	Description
1-2	Printout suppression cutoff for isochronal subset
3-4	Printout suppression cutoff for non-isochronal subset

A sample data card is shown in Figure 4-21.

4.4.5.3 Output Description. Cumulative distribution plots by a printer contain:

a. Work Unit Code (WUC).

b. Output Data — Unscheduled Manhours.

c. Isochronal or Non-Isochronal Subset.

d. Number of Observations.

e. Maximum and Minimum values.

f. Mean and Variance.

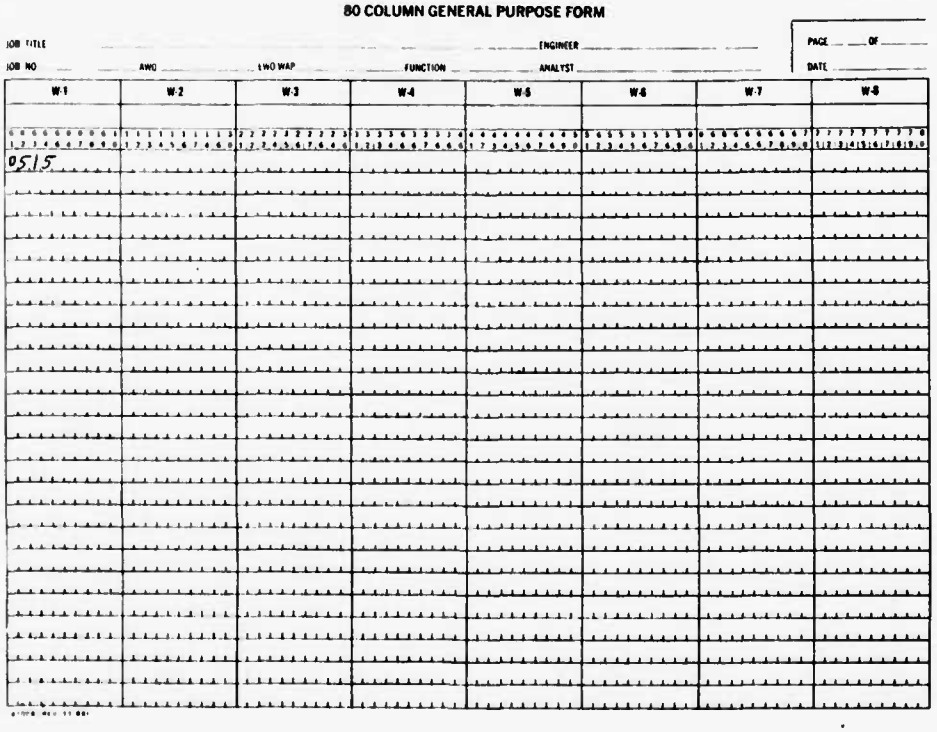


Figure 4-21. Sample Data — Cumulative Distribution for Unscheduled Manhours

The plot tape consists of 130-character data records, blocked 15 to a tape record. The values for printout suppression cutoff have a significant impact on the output volume. The effect of cutoff on output volume is shown below, based on the F-106 experience.

No. of Aircraft	Isochronal	Non-Isochronal	No. of Plots
15	0	10	1433
150	0	10	7455
150	5	15	2819

The fleet of 150 F-106 aircraft required about 22 minutes on the IBM 370 to generate the observation tape and four hours of printer time to print the 2819 plots. A sample output from a recent F-106 run is shown in Figure 4-22.

4.5 INTERVAL LENGTH ANALYSIS — TASK III

The objective of this task is to generate cumulative probability distributions for interval length analysis. A system of five COBOL programs has been developed to perform this task. (See Figure 4-23).

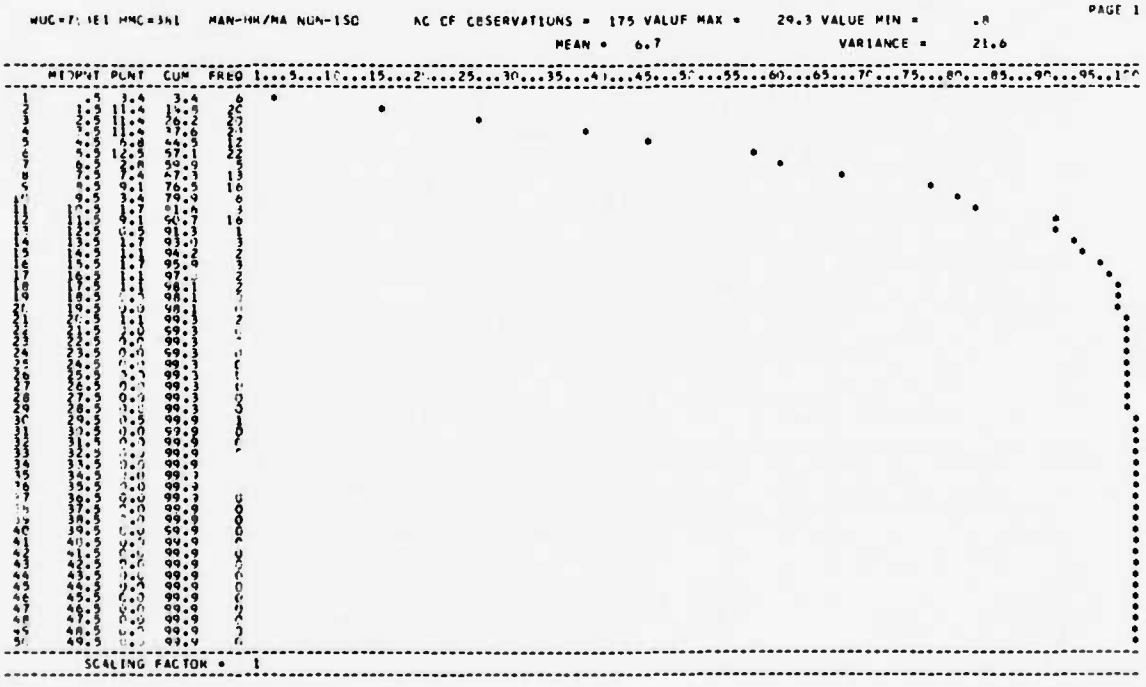


Figure 4-22. Sample Output — Cumulative Distribution for Unscheduled Manhours

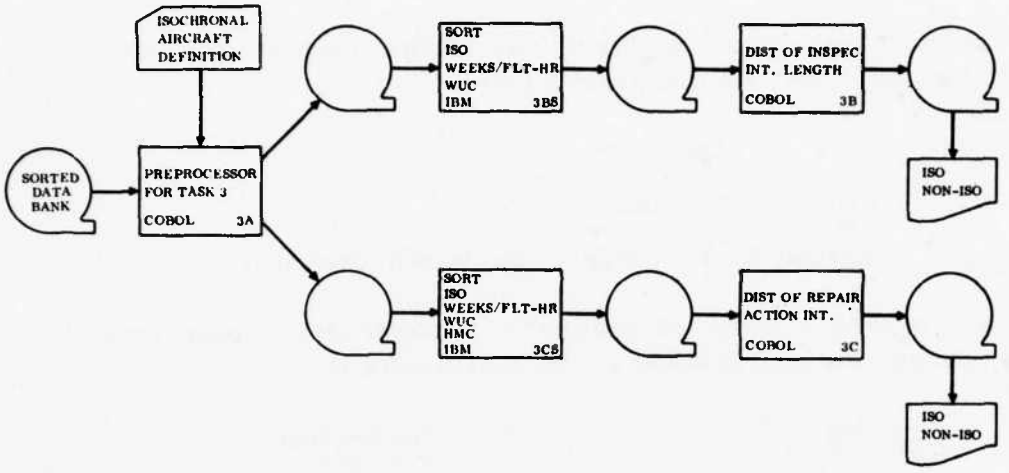


Figure 4-23. Logic Flow — Interval Length Analysis

a. Task III Preprocessor.

b. Sort 3BS.

c. Cumulative Distribution 3B

d. Sort 3CS.

e. Cumulative Distribution 3C.

Paragraph 6.9 shows the listing of the source programs with corresponding job control cards.

4.5.1 PREPROCESSOR — TASK III

4.5.1.1 Purpose. The purpose of the Task III Preprocessor is to generate two output files for further processing using the sorted data bank tape, isochronal aircraft definition, a selected list of WUCs, and inspection criteria data as inputs (Figure 4-23).

4.5.1.2 Input Data and Procedures. There are two types of input data: tape and card deck. Tape data consists of a data bank sorted in the order of WUC, HMC, aircraft serial number, and week number. For the tape record layout, see Figure 4-4. The data card deck has the following format.

Column	Description
Card No. 1:	
3-5	Number of Isochronal Aircraft. (Current program is dimensioned for a maximum of 36 isochronal aircraft, which may be increased by minor program modification.)

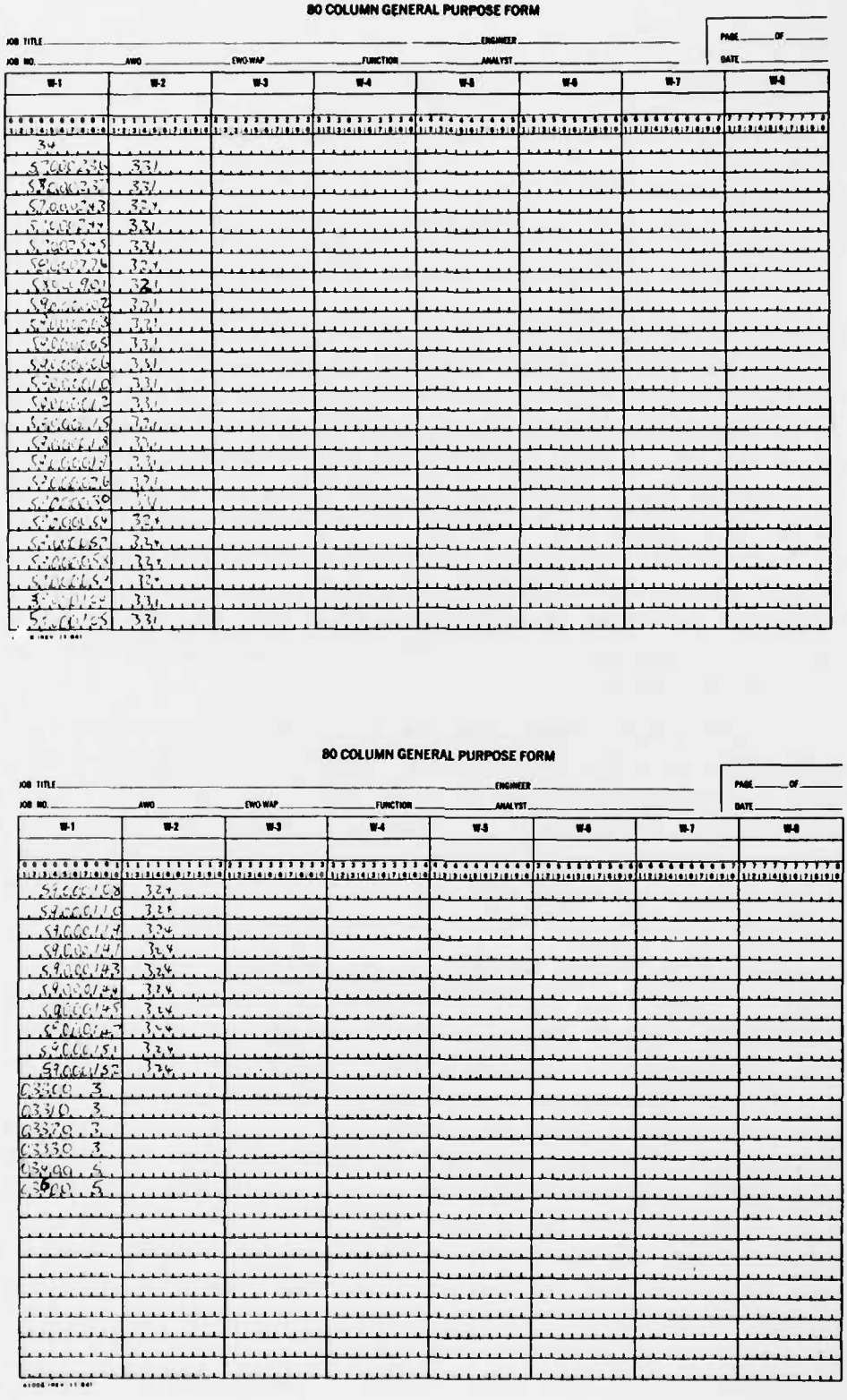
The following cards describe the isochronal aircraft fleet (one card per isochronal aircraft); serial numbers are sorted in ascending order.

Column	Description
3-10	Aircraft Serial Number
13-15	Starting Week Number for Isochronal Inspection

The next group of cards contains information for a special set of support general (SG) WUCs and relating time span in weeks for inspection criteria.

Card	Column	Description
1	1-5	WUC for Hourly Post Flight Inspection
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC
2	1-5	WUC for MA-1 Scheduled Calibration
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC
3	1-5	WUC for MA-1 Scheduled Calibration
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC
4	1-5	WUC for MA-1 Scheduled Calibration
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC
5	1-5	WUC for Periodic Inspection
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC
6	1-5	WUC for IRAN Depot Visit
	6-8	Minimum Number of Weeks Span Between Inspections for the WUC

A sample input data deck is shown in Figure 4-24. The Task III Preprocessor program (Figure 4-23) produces two output files (3B and 3C) containing the following information.



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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
34							
S7000238	331						
S8000337	331						
S7000243	331						
S7000244	331						
S7000245	331						
S8000226	331						
S8000231	331						
S8000232	331						
S8000233	331						
S8000238	331						
S8000236	331						
S8000240	331						
S8000242	331						
S8000245	331						
S8000248	331						
S8000247	331						
S8000226	331						
S8000230	331						
S8000254	331						
S8000257	331						
S8000258	331						
S8000259	331						
S8000262	331						
S8000263	331						

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JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
S8000138	324						
S8000140	324						
S8000144	324						
S8000141	324						
S8000143	324						
S8000144	324						
S8000145	324						
S8000146	324						
S8000151	324						
S8000152	324						
C3300 3							
C3310 3							
C3320 3							
C3330 3							
C3400 5							
C3500 5							

Figure 4-24. Sample Data — Task III Preprocessor

File	Date Type	Description
3B	1	Inspection Interval in Weeks
3B	2	Inspection Interval in Flight Hours
3C	1	Repair Action Interval in Weeks
3C	2	Repair Action Interval in Flight Hours

a. Inspection Interval Lengths (for File 3B, Data Types 1 and 2). Observation data will be generated for the interval between successive occurrences of two inspections of the same type. The inspections will be located in the data bank by checking for the appropriate SG WUCs in the Type 3 records. The inspection interval is defined to be the period between the end of one inspection and the start of the next. As for the repair action intervals below, the inspection intervals will be measured in both weeks and flight hours. The data bank will have only one Type 3 record for each inspection short enough to be performed in less than a week. However, long inspections will lead to a number of data bank records for consecutive weeks. Therefore, it will be necessary to determine the week numbers for both the start and the end of each inspection. This analysis will be performed for all inspection types.

By analyzing the plots of flight hours versus week for the F-106 fleet (see Aircraft Inspection Histories, Paragraph 4.8), it was discovered that the minimum number of weeks between inspections was three or more weeks for hourly Post Flight Inspections and MA-1 Scheduled Calibration Inspections. The minimum number of weeks between inspections for Periodic Inspections and IRAN Depot Visit Inspections was five or more weeks. This information was incorporated to define an inspection as part of the input data. (See Paragraph 4.5.1.2.)

b. Repair Action Intervals (for File 3C, Data Types 1 and 2). This task involves the generation of observation data of the repair action interval for each combination of equipment identification WUC and HMC. Two types of observation data will be generated for each such combination: one for the interval measured in weeks and one for the interval measured in flight hours. Each observation will be the interval between two consecutive flight-hour totals found in the Type 4 records, in which the maintenance actions are recorded. It follows that whenever two or more maintenance actions are encountered for the same aircraft-week-WUC-HMC (i.e., in the same Type 4 record), one or more intervals of zero length will be included in both distributions. All distributions generated for this task will be stored on magnetic tape so that they will be available for use as input analyses to be performed at a later time.

4.5.1.3 Output Description. The output consists of two tape files (3B and 3C) and 20-character data records blocked 90 to a tape record, with the following formats.

Column	Description
1-5	Work Unit Code (WUC)
6-8	How-Malfunction Code (HMC)
10-15	Observation Data
17	Isochronal Indicator
	=1 Isochronal Inspection
	=2 Non-Isochronal Inspection
19	Data Type:
	For File 3B:
	=1 Inspection Interval Length in Weeks
	=2 Inspection Interval Length in Flight Hours
	For File 3C:
	=1 Repair Action Interval Length in Weeks
	=2 Repair Action Interval Length in Flight Hours
20	Record Mark

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer throughput time was eight minutes. Records totaling 139,770 and 218,760 were generated for Files 3B and 3C, respectively.

4.5.2 SORT FOR INSPECTION LENGTH INTERVAL (SORT 3B)

4.5.2.1 Purpose. The purpose of this program is to sort output File 3B for further processing.

4.5.2.2 Input Data and Procedures. The input consists of tape File 3B as described in Paragraph 4.5.1.3.

4.5.2.3 Output Description. The output tape file, 20-character data records blocked 90 to a tape record and consisting of inspection interval lengths in weeks and in flight hours, is sorted according to the following keys in ascending order.

Key	Column	Description
1	17	Isochronal Indicator
2	19	Data Type
3	1-5	Work Unit Code

It took about five minutes on the IBM 370 to sort 139,700 records for the 150-aircraft F-106 fleet.

4.5.3 CUMULATIVE DISTRIBUTION FOR INSPECTION LENGTH INTERVAL

4.5.3.1 Purpose. This program generates cumulative distribution plots for inspection length intervals by WUC and isochronal subset type. The number of observations, maximum and minimum values, and the mean and variance of the observation are printed on the top of each plot.

4.5.3.2 Input Data and Procedures. The input data card has the following format.

Column	Description
1-5	Printout Suppression Cutoff for Non-Isochronal Subset
6-10	Printout Suppression Cutoff for Isochronal Subset

Figure 4-25 is a sample data card.

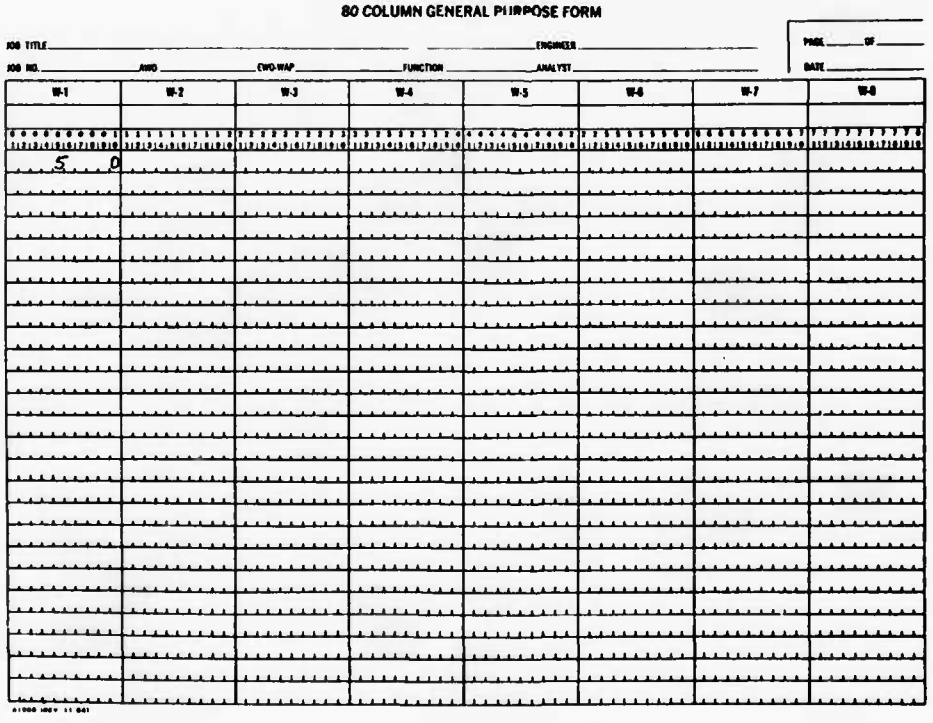

Figure 4-25. Sample Data — Cumulative Distribution for Inspection Length Interval

4.5.3.3 Output Description. Cumulative distribution plots by a printer contain the following information.

a. Work Unit Code (WUC).

b. Output Data — One of the two types:

Inspection Interval Length in Weeks.

Inspection Interval Length in Flight Hours.

c. Isochronal or Non-Isochronal Subset.

d. Number of Observations.

e. Maximum and Minimum Values.

f. Mean and Variance.

The tape structure of the plot tape consists of 130-character data records, blocked 15 to a tape record. It took five minutes on the IBM 370 to process 139,770 records for the F-106 fleet and six minutes on the printer to make 176 plots. A sample output from a recent F-106 run is shown in Figure 4-26.

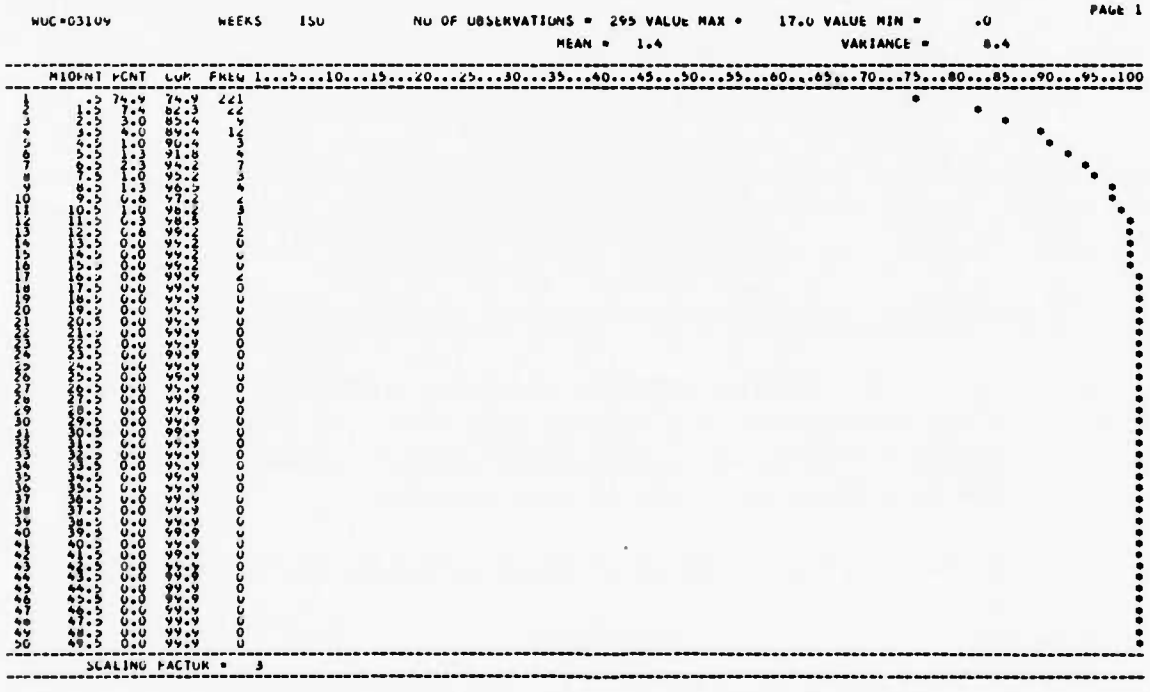

Figure 4-26. Sample Output — Cumulative Distribution for Inspection Length Interval

4.5.4 SORT FOR REPAIR ACTION INTERVAL (SORT 3C)

4.5.4.1 Purpose. The purpose of this program is to sort output File 3C for further processing.

4.5.4.2 Input Data and Procedures. The input consists of tape File 3C, as described in Paragraph 4.5.1.3.

4.5.4.3 Output Description. The output tape file, consisting of repair action interval lengths in weeks and in flight hours charged against a specific WUC and specific HMC, is sorted according to the following keys in ascending order.

Key	Column	Description
1	17	Isochronal Indicator
		=1 Isochronal Subset
		=2 Non-Isochronal Subset
2	19	Data Type
		=1 Repair Action Interval in Weeks
		=2 Repair Action Interval in Flight Hours
3	1-5	Work Unit Code (WUC)
4	6-8	How-Malfunction Code (HMC)

The output tape file structure consists of 20-character data records, blocked 90 to a tape record. It took three minutes to sort 218,760 records for a fleet of 150 F-106 aircraft.

4.5.5 CUMULATIVE DISTRIBUTION FOR REPAIR ACTION INTERVAL

4.5.5.1 Purpose. This program generates cumulative distribution plots for repair action intervals in weeks and in flight hours by WUC, HMC, and isochronal subset type. The number of observations, maximum and minimum values, and the mean and variance of the observations are printed on top of each plot.

4.4.5.2 Input Data and Procedures. The input data card has the following format.

Column	Description
1-5	Printout Suppression Cutoff for Non-Isochronal Subset
6-10	Printout Suppression Cutoff for Isochronal Subset

Figure 4-27 is a sample data card.

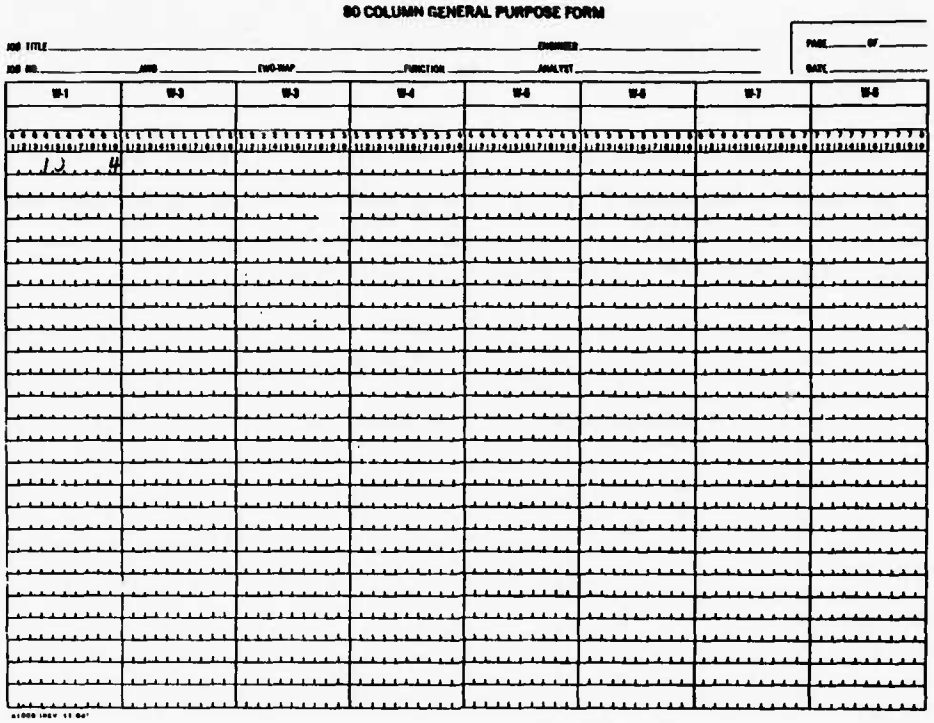

Figure 4-27. Sample Data — Cumulative Distribution for Repair Action Interval

4.5.5.3 Output Description. Cumulative distribution plots by a printer contain the following information.

a. Work Unit Code (WUC).

b. Output Data — One of the Two Types:

Repair Action Interval in Weeks.

Repair Action Interval in Flight Hours.

c. Isochronal or Non-Isochronal Subset.

d. Number of Observations.

e. Maximum and Minimum Values.

f. Mean and Variance.

The tape structure of the plot tape consists of 130-character data records, blocked 15 to a tape record. The values for printout suppression cutoff have a significant impact on the output volume. The effect of cutoff on output volume is shown on the following page, based on the F-106 experience.

No. of Aircraft	Isochronal	Non-Isochronal	No. of Plots
150	4	4	3426
150	4	10	2283

For a fleet of 150 F-106 aircraft, it required about 14 minutes on the IBM 370 to process 218,760 records and three printer hours to print 2284 plots. A sample output plot from a recent F-106 run is shown in Figure 4-28.

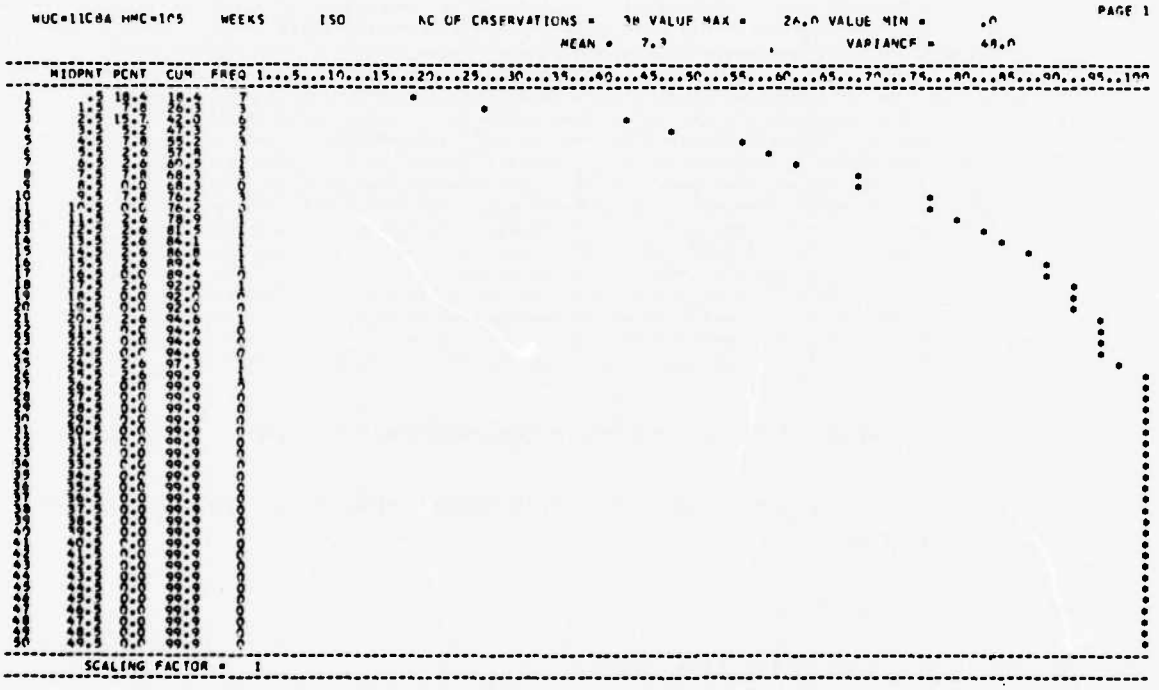

Figure 4-28. Sample Output – Cumulative Distribution for Repair Action Interval

4.6 EFFECT OF TIME AFTER INSPECTION

This set of programs determines the effect of time after an inspection on maintenance requirements and effectiveness parameters. Independent variables will be used with a number of dependent variables for specified sets of equipment identification WUCs. A second analysis, to determine the trend of the various Data Bank variables and the effect of scheduled inspections on these trends, is also included.

The eight programs listed on the following page have been developed to perform these tasks. The logic flow at Aircraft and WUC levels are shown in Figures 4-29 and 4-30, respectively.

a. Measure Observations at Aircraft Level.

b. Measure Observations at WUC Level.

c. Sort Aircraft-Level Observations.

d. Sort WUC-Level Observations.

e. Merge WUC-Level Observations.

f. Count Observations.

g. Analyze Regression and Correlation.

h. Analyze Trend.

FORTRAN-COBOL linkage is used for processing items a, b, and g. COBOL input/output processing is employed to ensure data compatibility, provide more efficient input/output processing, and permit multi-reel file processing of the FORTRAN programs.

4.6.1 MEASURE OBSERVATIONS AT AIRCRAFT LEVEL

4.6.1.1 Purpose. The purpose of this program is to generate the observations for a defined set of independent variables for a defined set of dependent variables for isochronal and non-isochronal aircraft subsets.

4.6.1.2 Input Data and Procedures. The program was written in both FORTRAN and COBOL. The latter provides the input/output capability and the FORTRAN section performs the requisite measurements. A listing of the complete program, the associated job control language (JCL), and a sample of input data is given in Paragraph 6.10.1. The COBOL input/output is used to handle multi-reel files.

Linkage is provided by a call in the FORTRAN program to a COBOL program entry. The entries in the COBOL program and their uses are.

CREAD1	Reads control cards, Type 1.
CREAD2	Reads control cards, Type 2.
CREAD3	Reads control cards, Type 3.
COBRD1	Reads data records from the Support General WUC file or the Non-support General WUC file, depending on the code transmitted by the FORTRAN program.

The input comprises:

a. The Support General (SG) WUC file.

b. The Non-support General (NSG) WUC file.

c. Cards containing the control data.

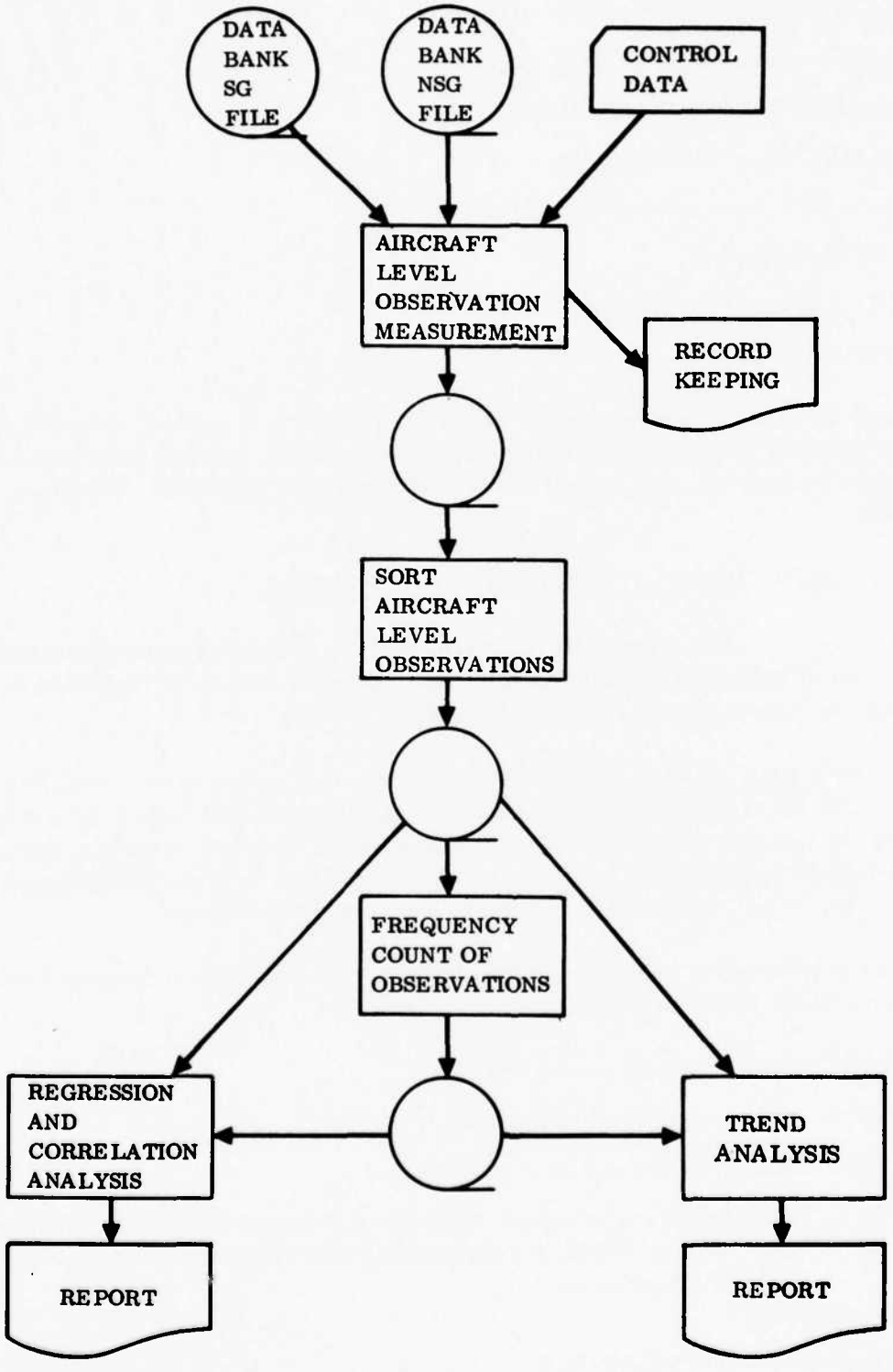

Figure 4-29. Logic Flow — Effect of Time After Inspection — Aircraft Level

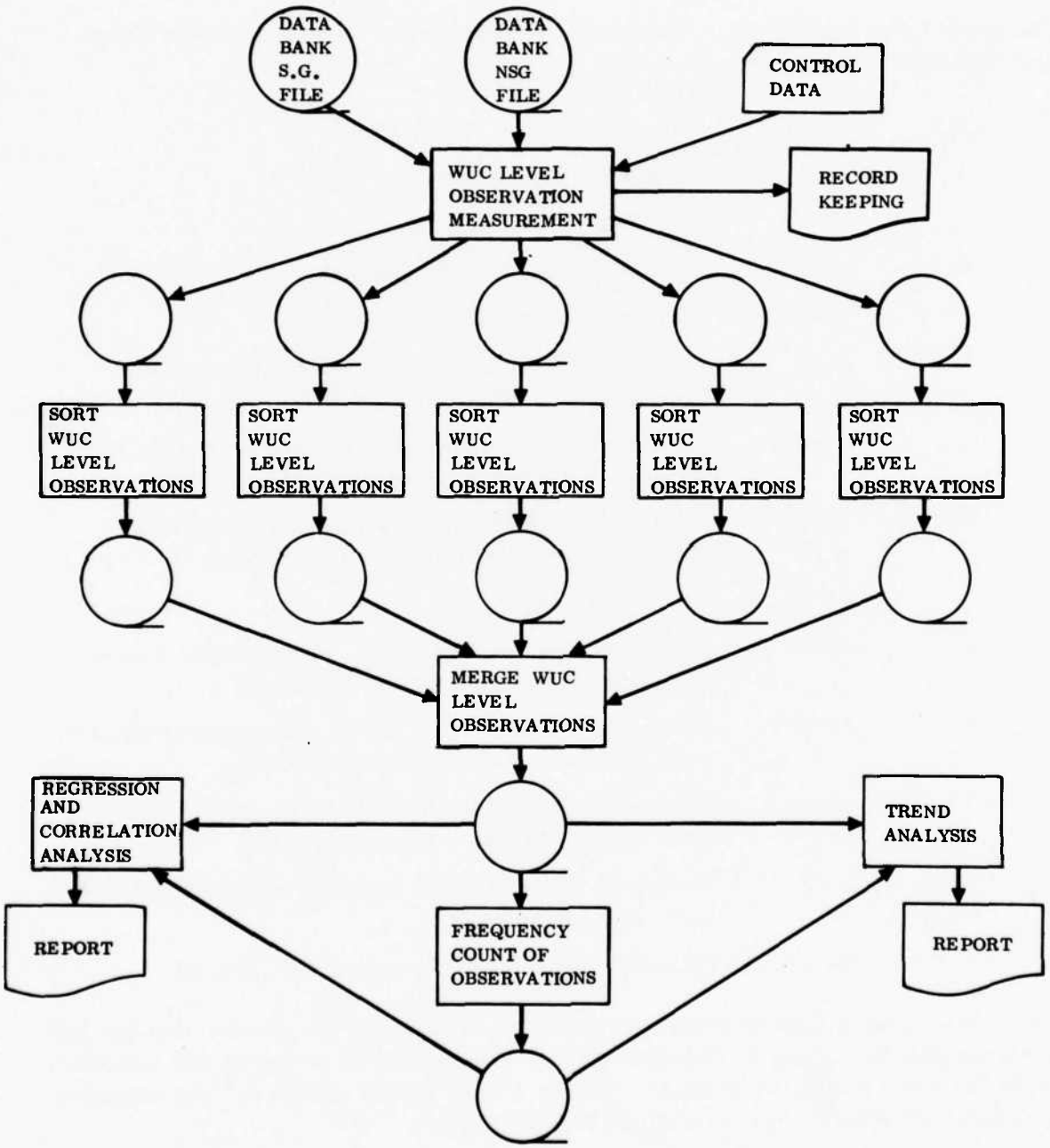

Figure 4-30. Logic Flow — Effect of Time After Inspection — WUC Level

The criterian to measure the end of an inspection is determined by the interval in weeks between occurrences of the inspection code. For Hourly Postflight and MA1 inspections, the minimum interval to define the end of a current inspection is two weeks. For the Periodic inspection, the interval is increased to four weeks. The code corresponding to these inspections is the required input to the program, Cards 5 through 7.

The control data used in the F-106 Scheduled Maintenance Study is shown in Figure 4-31 and has the following format.

Card	Column	Description
1	3-10	First Week of Analysis
	13-20	Last Week of Analysis
2	3-10	First Serial Number for Analysis
	13-20	Last Serial Number for Analysis
3	3-10	Position in SG WUC table that follows the Periodic Inspection for measurement of NORM Hours
	13-20	Position in SG WUC table that follows the Hourly Post-flight Inspection for measurement of NORM Hours
4	3-10	Position in SG WUC table that follows the Periodic Inspection for measurement of AIE/Sortie
	13-20	Dummy (use zero)
5	32-36	First entry into SG WUC table, using greater than two week interval to define End of Inspection
6	32-36	Second entry into SG WUC table, using greater than two week interval to define End of Inspection
7	32-36	Third entry into SG WUC table, using greater than four week interval to define End of Inspection
8-On	3-10	Isochronal Aircraft Serial Number. (These must be in ascending sequence.)
	13-20	Starting Week Number for Isochronal Aircraft

The final card must have an eight-digit number in Columns 3-10, greater than the last serial number from Card 2, Columns 13-20. This is used as an end-of-file indicator. Cards 1-4 and 8 and on are examples of Type 1 input cards. Cards 5-7 are examples of Type 2, as defined by the COBOL-FORTRAN linkage.

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JOB TITLE ENGINEER PAGE 1 OF 2

JOB NO AMO ENG MAP FUNCTION ANALYST DATE

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
100	500						
57000231	59000164						
3	1						
3	0						
			03300				
			033				
			03400				
57000236	331						
57000237	331						
57000243	324						
57000244	331						
57002545	331						
58000776	324						
58000901	331						
59000002	331						
59000003	331						
59000005	331						
59000006	331						
59000010	331						
59000012	331						
59000015	331						
59000018	331						
59000019	331						
59000026	331						
59000030	331						

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JOB TITLE ENGINEER PAGE 2 OF 2

JOB NO AMO ENG MAP FUNCTION ANALYST DATE

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
59000054	324						
59000057	324						
59000058	324						
59000059	324						
59000104	331						
59000105	331						
59000108	324						
59000110	324						
59000119	324						
59000141	324						
59000143	324						
59000144	324						
59000145	324						
59000147	324						
59000151	324						
59000152	324						
59000153	324						

Figure 4-31. Sample Input — Measure Observations at Aircraft Level

The independent variables are the following measure of time after the inspection.

a. Number of Weeks since Inspection. For each observation, this includes the week for which the values of the dependent variables are being determined, but not the week during which the inspection was completed.

b. Number of Flight Hours Accumulated since Inspection. This includes all flight hours for the week of the observation, but none of the flight hours for the week during which the inspection was completed.

c. Number of Sorties Flown since Inspection. This includes all sorties flown during the week of the observation, but none of those flown during the week in which the inspection was completed.

d. Number of Landings Performed since Inspection. This includes all landings performed during the week of the observation, but none of those performed during the week in which the inspection was completed.

The dependent variables are:

a. NORM Hours per Periodic Inspection. Separate observations are made for NORM hours per periodic inspection for periodic inspections immediately preceded by each of the following types of inspection.

   1. Hourly Postflight.
   2. MA1 Inspection.

   An observation of time after each of these inspection types is performed with each of the four independent variables.

b. NORM Hours per Hourly Postflight. Separate observations are made for NORM hours per hourly postflight inspection for hourly postflights preceded by each of the following types of inspection.

   1. Periodic Inspection.
   2. Hourly Postflight.
   3. MA1 Inspection.

   For each of these inspection types, an observation is taken with each of the four independent variables.

c. Number of AIEs per Sortie. The number of AIEs per sortie is calculated for each aircraft week after the last preceding periodic inspection. All four of the independent variables are used.

d. Number of Flight Hours per Week. The variable flight hours per week are defined to be the quotient obtained by dividing the number of hours flown since the latest periodic inspection by the number of weeks since that inspection.

e. Number of Sorties per Week. The variable sorties per week are defined in the same way as flight hours per week. It will be observed with the independent variable sorties since the inspection.

f. Number of Landings per Week. The variable landings per week are also defined in the same way. They are observed as a function of landings since the inspection.

4.6.1.3 Output Description. The output consists of a magnetic tape 40-characters to a data record blocked 70 to a tape record. A sample is shown in Figure 4-32, and the format of the data record is as follows.

Column	Value	Description
3-10	Zeroes	Aircraft Level
11-12	01	Non-isochronal Aircraft
	02	Isochronal Aircraft
13-14	01	NORM Hours — Periodic
	02	NORM Hours — Hourly Postflight
	03	AIEs/Sortie
	04	Flight Hour/Week

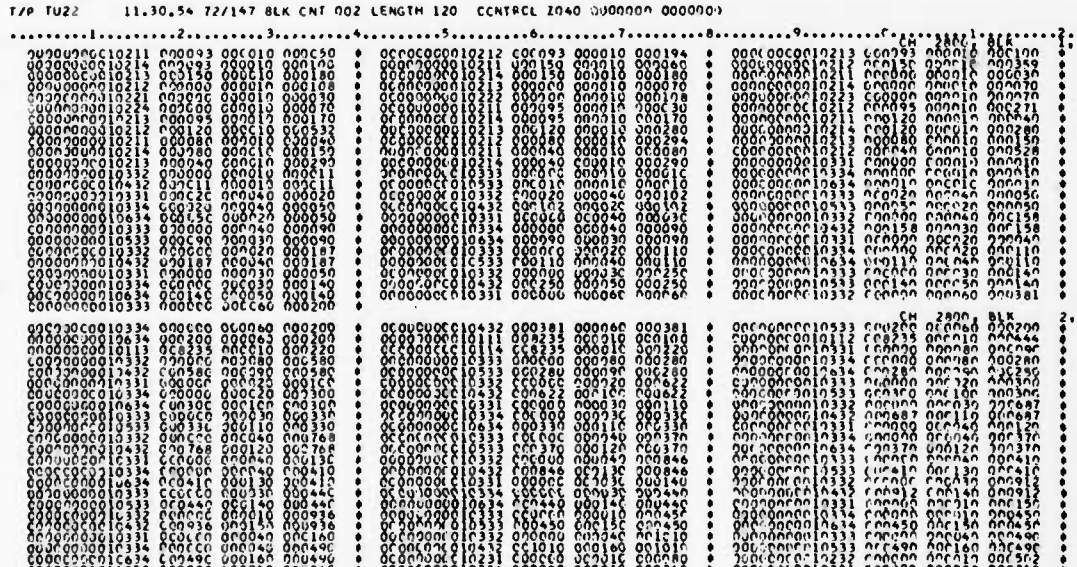


Figure 4-32. Sample Output — Measure Observations at Output Level

Column	Value	Description
	05	Sortie/Week
	06	Landing/Week
15	1	Origins — Hourly Postflight
	2	Origins — MAs
	3	Origins — Periodic
16	1	Independent Variable — Week
	2	Independent Variable — Flight Hours
	3	Independent Variable — Sortie
	4	Independent Variable — Landing
18-23	XXXXXX	Numerator of Dependent Variable
25-30	XXXXXX	Denominator of Dependent Variable
32-37	XXXXXX	Independent Variable
40	≠	End of Data Record

Output is achieved by a call from the FORTRAN program to the COBOL entry, COBOUT.

The record keeping output file contains a copy of the input control data and an additional line containing:

Column	Description
1-8	Number of Control Data Cards
9-16	Number of Output Observations
17-28	Number of Input Records from SG File
29-36	Number of Input Records from NSG File
37-44	Number of Type 1 Input Cards
45-52	Number of Type 2 Input Cards
53-61	Number of Type 3 Input Cards (always zero at Aircraft Level)

Figure 4-33 is a sample of the record keeping output. On a recent IBM 370 run for an F-106 fleet of 150 aircraft, a total of 55,288 observations were measured, requiring seven minutes of computer time.

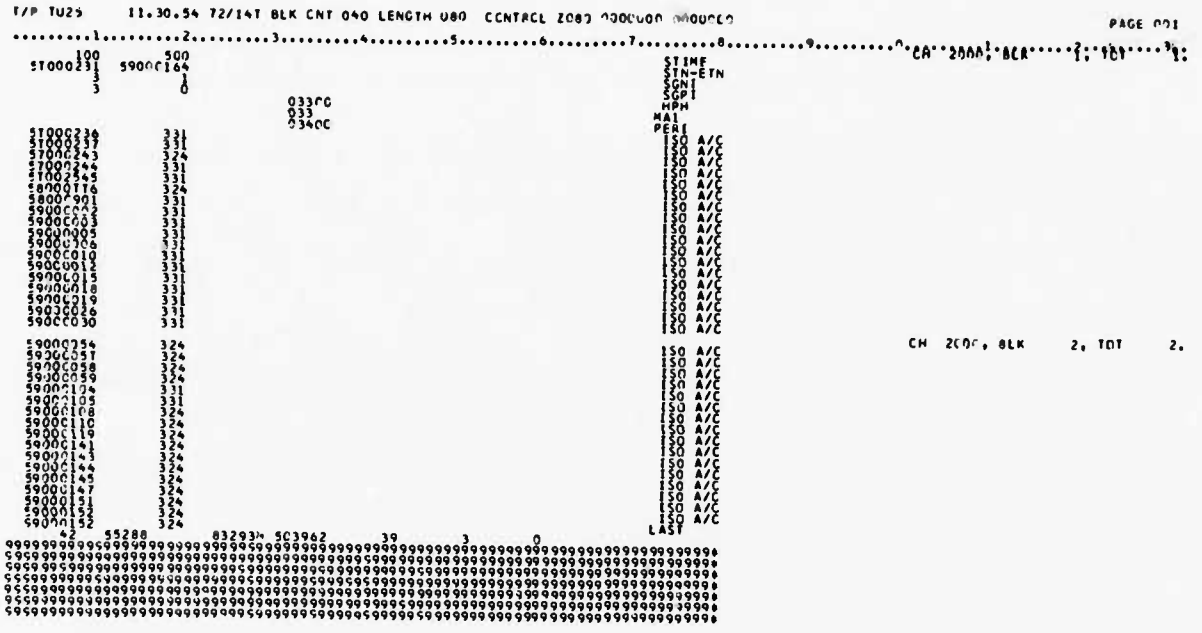


Figure 4-33. Sample Output — Record Keeping at Aircraft Level

4.6.2 MEASURE OBSERVATIONS AT WUC LEVEL

4.6.2.1 Purpose. The purpose of this program is to generate the observations for a defined set of independent variables for a defined set of dependent variables for isochronal and non-isochronal aircraft subsets.

4.6.2.2 Input Data and Procedures. The program uses both FORTRAN and COBOL; the latter provides the input/output capability for the FORTRAN section, which performs the requisite measurements. A listing of the complete program, the associated JCL, and a sample of input data is given in Paragraph 6.10.2. The COBOL input/output is identical to that used in Paragraph 4.6.1.2. The input comprises:

a. Support General (SG) WUC File.

b. Non-Support General (NSG) WUC File.

c. Card containing the control data.

The criteria to define the end of an inspection is defined in the same manner as at the aircraft level, Paragraph 4.6.1.2.

For each group of NSG WUC groups, different origins for the measurement of intervals between inspections may be defined. Thus, the input data defines first the origin of the inspection, followed by the groups of NSG-WUC groups to be observed. Each NSG-WUC group can be subdivided into a three-digit code and a two-digit code. The

three-digit code will include observations for all NSG-WUCs with the corresponding first three digits. The two-digit code group will include observations for all NSG-WUCs except those for the preceding three-digit codes. The three-digit code for a particular two-digit code subset must precede the two-digit code in the input control data.

The NSG-WUC set using the Hourly-Postflight, MA1, and Period inspections as origin for the F-106 Scheduled Maintenance Study is:

Set	Description	
2	74A	All of 74A
3	74B	All of 74B
4	74C	All of 74C
5	74D	All of 74D
6	74F	All of 74F
7	74H	All of 74H
8	74K	All of 74K
9	74L	All of 74L
10	74P	All of 74P
11	74Q	All of 74Q
12	74000	Only 74000

The NSG-WUC sets using the Hourly Postflight and Periodic inspection as origins are:

Set	Description	
1	11J	All of 11J
2	11K	All of 11K
3	11	All of 11 except for 11J, 11K
4	12B	All of 12B
5	12	All of 12 except for 12B
6	13C	All of 13C
7	13J	All of 13J
8	13	All of 13 except for 13C, 13J
9	14	All of 14
10	23K	All of 23K

Set	Description	
11	23M	All of 23M
12	23N	All of 23N
13	23Q	All of 23Q
14	23S	All of 23S
15	23	All of 23 except 23K, 23M, 23N, 23Q, 23S
16	41F	All of 41F
17	41	All of 41 except 41F
18	42E	All of 42E
19	42F	All of 42F
20	42G	All of 42G
21	42	All of 42 except for 42E, 42F, 42G
22	44	All of 44
23	45E	All of 45E
24	45J	All of 45J
25	45	All of 45 except for 45E, 45J
26	46A	All of 46A
27	46C	All of 46C
28	46G	All of 46G
29	46H	All of 46H
30	46J	All of 46J
31	46	All of 46 except 46A, 46C, 46G, 46H, 46J
32	47	All of 47
33	49A	All of 49A
34	49	All of 49 except 49A
35	51	All of 51
36	52	All of 52
37	55	All of 55
38	63	All of 63
39	65	All of 65

Set	Description	
40	71	All of 71
41	75	All of 75
42	93	All of 93
43	97	All of 97

The control card data used in the F-106 Maintenance Study shown in Figure 4-34 has the following format.

Card	Column	Description
1	3-10	First week of analysis
	13-20	Last week of analysis
2	3-10	First serial number for analysis
	13-20	Last serial number for analysis
3	3-10	Number of SG-WUC with week interval definition to define end of inspection
	13-20	Number of groups of non-SG-WUC
4	32-36	SG-WUC with greater than two-week interval for definition of end of inspection
5	32-36	SG-WUC with greater than two-week interval for definition of end of inspection
6	32-36	SG-WUC with greater than four-week interval for definition of end of inspection
7	8-10	Identification used on output for following group of NSG-WUC
	13-20	Starting index for WUC set number for the following group of NSG-WUC
8	3-10	Number of SG-WUC for origin used with following NSG-WUC dictionary
	13-20	Number of NSG-WUC in following dictionary
9	32-36	SG-WUC for origin with following NSG-WUC. (Number of cards set by Card B, Col. 1-10.)
10	32-36	NSG-WUC using above SG-WUC as origin. (Number of cards set by Card 8, Col. 11-20.)

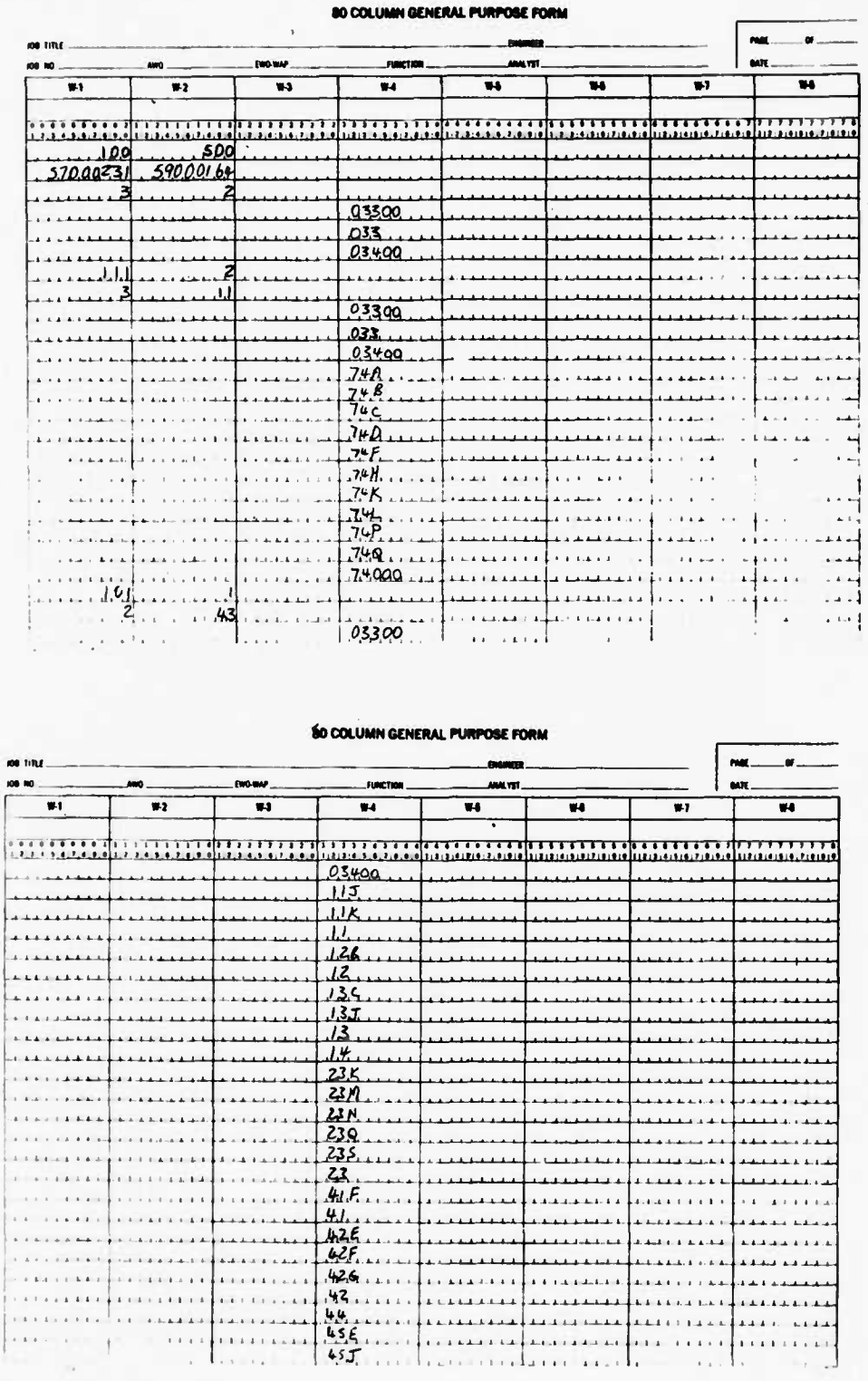


Figure 4-34. Sample Input — Measure Observations at WUC Level (Sheet 1 of 2)

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ___ OF ___

JOB NO. _____ AWD _____ EWO WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
			46				
			47				
			49A				
			49				
			51				
			62				
			55				
			63				
			65				
			71				
			75				
			93				
			97				
				ABCDEFRV2			
				KTM			
1	3						
57000236	331						
57000237	331						
57000243	324						
57000244	331						
57002545	331						
58000776	324						
58000901	331						
59000002	331						
59000003	331						

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ___ OF ___

JOB NO. _____ AWD _____ EWO WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
59000005	331						
59000006	331						
59000010	331						
59000012	331						
59000015	331						
59000018	331						
59000019	331						
59000026	331						
59000030	331						
59000054	324						
59000057	324						
59000058	324						
59000059	324						
59000104	331						
59000105	331						
59000108	324						
59000110	324						
59000119	324						
59000141	324						
59000143	324						
59000144	324						
59000145	324						
59000147	324						
59000151	324						
59000152	324						

Figure 4-34. Sample Input — Measure Observations at WUC Level (Sheet 2 of 2)

Card	Column	Description
11	8-10	Identification used on output for following SG-WUC origins
	13-20	Starting index for the WUC set-number for the following group of NSG-WUC
12	3-10	Number of SG-WUC in following dictionary
	13-20	Number of NSG-WUC in following dictionary
13	32-36	SG-WUC for origins with following NSG-WUC (Number of cards set by Card 12, Col. 3-10)
14	32-36	NSG-WUC using above SG-WUC as origin (Number of cards set by Card 12, Col. 13-20)
15	41-49	Nine WDC used to define unscheduled maintenance
16	41-43	Three WDC used to define inspections
17	3-10	Position of first WDC, corresponding to Abort mission, in WDC table
	13-20	Position of second WDC, corresponding to Abort mission, in WDC table
18	3-10	Isochronal aircraft serial number. (These must be in ascending sequence)
	13-20	Starting week number for isochronal aircraft

The final card must have an eight-digit number in Columns 3-10 greater than the last serial number for Card 2, Columns 13-20. This is used as an end-of-file indicator.

Cards 1-3, 7-8, 11-12, and 17 and on are examples of Type 1 input cards; 4-6, 9-10, and 13-14 are examples of Type 2; and 15-16 are examples of Type 3 (as defined by the COBOL-FORTRAN Linkage).

Data for the various sets of WUCs is analyzed with measurements taken using the following independent and dependent variables. The independent variables are:

a. Number of Weeks since Inspection. For each observation, this includes the week for which the values of the dependent variables are being determined, but not the week during which the inspection was completed.

b. Number of Flight Hours Accumulated since Inspection. This includes all flight hours for the week of the observation, but none of the flight hours for the week during which the inspection was completed.

c. Number of Sorties Flown since Inspection. This includes all sorties flown during the week of the observation, but none of those flown during the week in which the inspection was completed.

d. Number of Landings Performed since Inspection. This includes all landings performed during the week of the observation, but none of those performed for the week during which the inspection was completed.

Not all dependent variables are measured against each independent variable. The dependent variables measured are:

a. Unscheduled Maintenance Actions per Week.

b. Unshceduled Maintenance Actions per Flight Hour.

c. Unscheduled Maintenance Actions per Sortie.

d. Unscheduled Maintenance Actions per Landing.

Variables a through d are defined to be the quotients obtained by dividing the number of unscheduled maintenance actions since an inspection by the number of weeks, flight hours, sorties, and landings since the inspection. These are observed as functions of independent variables a through d. A separate observation of each variable is performed for each of the inspection types associated with the WUC set. In each observation, a value of each variable is calculated for each week up to the next occurrence of an inspection of any of these types.

e. The Number of Repair Actions (fix phase maintenance actions) per Inspection by Inspection type. This observation is calculated somewhat differently than the other dependent variables. For a given number of weeks after a given type of inspection, each aircraft provides a number of observations of whether or not a second type of inspection occurs in the given week. Each aircraft also provides a number of observations of the number of repair actions in the given week that result from the second type of inspection, as identified by the When-Discovered Code. The number of repair actions per inspection for this inspection type is then the total number of these repair actions on all aircraft divided by the total number of inspections of this type on all aircraft. The inspection types for which this variable is calculated are those for which When-Discovered Codes correspond to an inspection. Each observation includes all four independent variables, measured from the latest occurrence of an inspection of one of the specified types. A separate analysis is performed for each combination of When-Discovered Code and type of inspection used as a time origin.

f. Abort Maintenance Actions per Sortie. An abort maintenance action is defined in the input on Card 17. The ratio of the number of these actions for an aircraft-week to the number of sorties in that week constitutes an observation of this dependent variable. This observation is analyzed with all four independent variables, which are to be measured from the latest occurrence of an inspection of one of the specified types. Separate observations are performed on data for the different inspection types.

The program is suitable for data from all USAF aircraft with the following dimensional limitations.

a.	Total number of WUC sets	200 maximum
b.	Number of WUC groups	7 maximum
c.	Number of WDCs	9 maximum
d.	Number of WDCs (Inspection)	3 maximum

4.6.2.3 Output Description. The output consists of a magnetic tape with 40 characters to a data record, blocked 70 to a tape record. A sample is shown in Figure 4-35; the format of the data record is:

Column	Value	Description
3-7		Group ID of Origin (defined by input data)
8-10	XXX	WUC Set Number (defined by input data)
11	0	For Columns 13-14 = 07, 08, 09, 10, 20
	1	Current Inspection HPF
	2	Current Inspection MAs
	3	Current Inspection Periodic
12	1	Non-Isochronal Aircraft
	2	Isochronal Aircraft
13-14	07	Unscheduled MA/Week
	08	Unscheduled MA/Flight Hour
	09	Unscheduled MA/Sortie
	10	Unscheduled MA/Landing
	18	Repair Action/Inspection
	20	Abort MA/Sortie
15	1	Origins — Hourly Postflight
	2	Origins — MAs
	3	Origins — Periodic
16	1	Independent Variable — Week
	2	Independent Variable — Flight Hour

Column	Value	Description
	3	Independent Variable — Sortie
	4	Independent Variable — Landing
18-23	XXXXXX	Numerator of dependent variable
25-30	XXXXXX	Denominator of dependent variable
32-37	XXXXXX	Independent variable
40	≠	End of data record

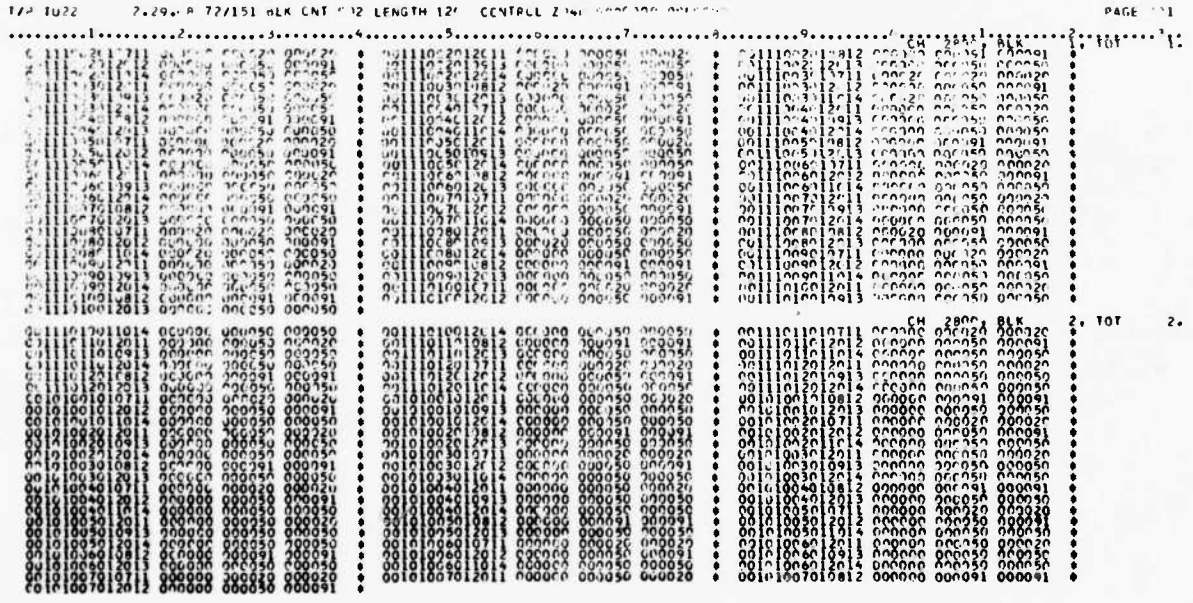


Figure 4-35. Sample Output — Measure Observations at WUC Level

The record-keeping output file contains a copy of the input control data and an additional line containing:

Column	Description
1-8	Number of control data cards
9-16	Number of output observations
17-28	Number of input records from SG file
29-36	Number of input records from NSG file
37-44	Number of Type 1 input cards
45-52	Number of Type 2 input cards
53-61	Number of Type 3 input cards

A sample of the record keeping output is shown in Figure 4-36. On a recent IBM 370 run for an F-106 fleet of 150 aircraft, a total of 3,902,190 observations were measured, requiring 25 minutes of computer time and five reels of magnetic tape for output.

4.6.3 SORT AIRCRAFT-LEVEL OBSERVATIONS

4.6.3.1 Purpose. This IBM utility program sorts the aircraft-level observation tape records into an ordered file for subsequent use by the:

a. Observation Count program.

b. Regression and Correlation Analysis program.

c. Trend Analysis program.

The logic flow for this Sort is shown in Figure 4-29.

4.6.3.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.10.3. The sort fields in order of hierarchy are:

Field	Column	Description
1	3-16	See description in Paragraph 4.6.1.3
2	32-37	Independent Variable

The sort input tape record is described in Paragraph 4.6.1.3, and a sample is shown in Figure 4-32.

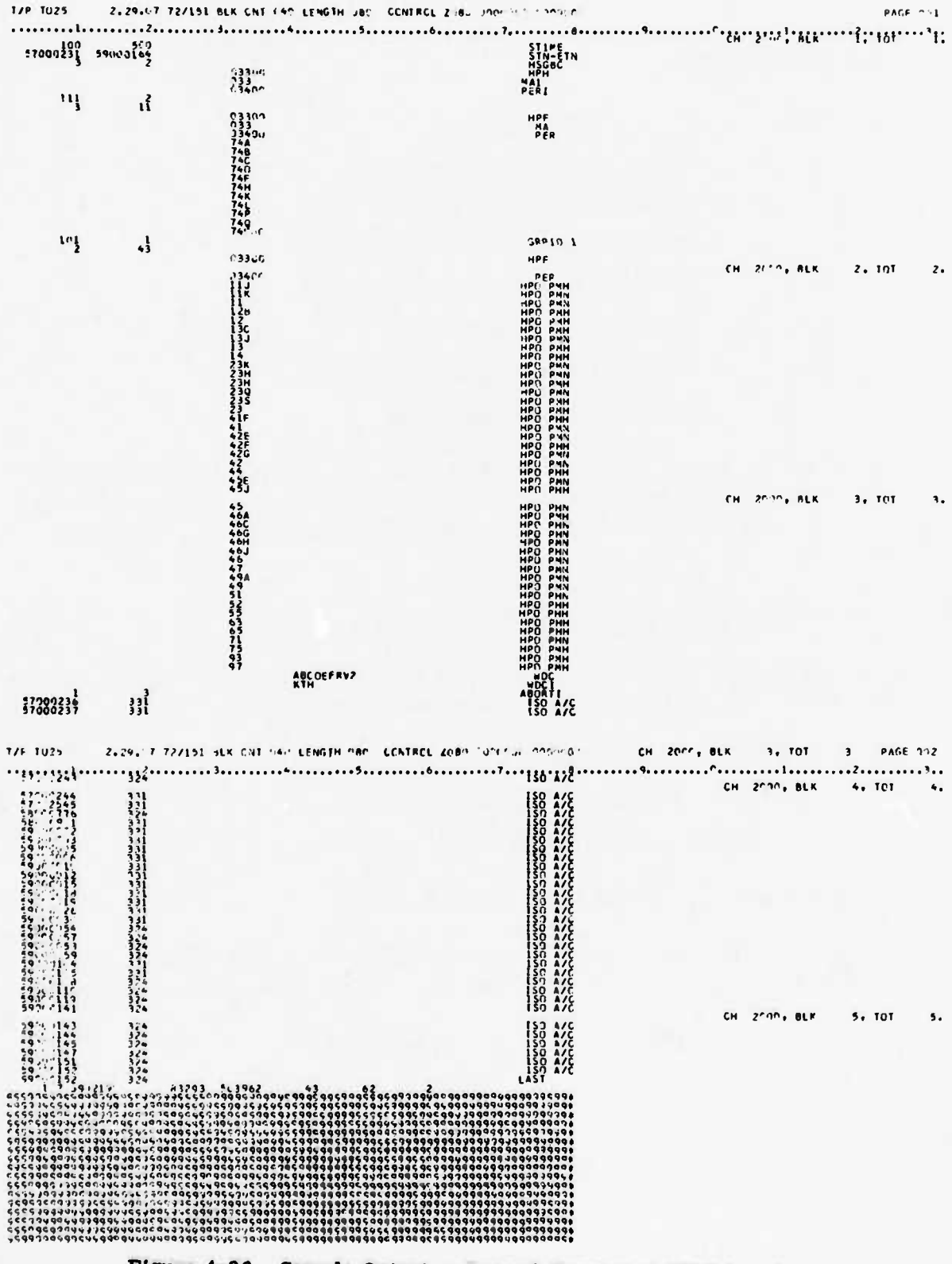


Figure 4-36. Sample Output — Record Keeping at WUC Level

4.6.3.3 Output Description. Sorting 55,288 records of the Aircraft-Level Observations file for an F-106 fleet of 150 aircraft took three minutes on the IBM 370.

4.6.4 SORT WUC-LEVEL OBSERVATIONS

4.6.4.1 Purpose. This IBM utility program sorts the WUC-level observation tape records into an ordered file for subsequent use by the Merge WUC-Level Observations program. Separate sorts were performed to prevent exceeding the sort capacity and to provide more efficient processing. The logic flow for this sort and the subsequent merge is shown in Figure 4-30.

4.6.4.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.10.4. The sort fields in order of hierarchy are:

Field	Column	Description
1	3-16	See description in Paragraph 4.6.2.3
2	32-37	Independent Variable

4.6.4.3 Output Description. Sorting approximately 800,000 records of the WUC-Level Observations file for an F-106 fleet of 150 aircraft took 20 minutes on the IBM 370. Five sort input tapes generated seven sort output tapes, which were subsequently merged.

4.6.5 MERGE WUC-LEVEL OBSERVATIONS

4.6.5.1 Purpose. This IBM utility program merges the sorted WUC-level observation tape records into an ordered multi-reel file for subsequent use by the:

a. Observations Count program.

b. Regression and Correlation Analysis program.

c. Trend Analysis program.

4.6.5.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.10.5. The merge fields and tape record description are the same as described in Paragraph 4.6.4.2.

4.6.5.3 Output Description. Merging 3,902,190 records of the sorted WUC-Level Observations file for an F-106 fleet of 150 aircraft took 29 minutes on the IBM 370. Seven sort input tapes generated a merged output file of five tapes.

4.6.6 OBSERVATIONS COUNT

4.6.6.1 Purpose. This COBOL program counts the number of observations in each of two files:

a. Aircraft-Level sorted file.

b. WUC-Level Observations merged file.

As shown in Figures 4-29 and 4-30, the respective outputs are input to the corresponding aircraft-level and WUC-level Regression and Correlation and Trend Analysis programs.

4.6.6.2 Input Data and Procedures. The combined listing of the program and JCL cards is shown in Paragraph 6.10.6. The respective input records for aircraft and WUC levels are described in Paragraphs 4.6.1.3 and 4.6.2.3.

4.6.6.3 Output Description. The output tape records consist of 30-character data records blocked 90 data records to a tape record. The output data record description is:

Field	Column	Description
1	3-16	See column breakdown in Paragraphs 4.6.1.3 and 4.6.2.3, respectively, for aircraft and WUC levels.
2	17-22	Count of Observations.
3	24-29	Count of Observations for Equal Values in Columns 3-10. (For record-keeping purposes, not used by subsequent programs.)

Figure 4-37 shows a sample tape output record for the Aircraft-Level Observations Count. Processing for an F-106 fleet of 150 aircraft on the IBM 370 resulted in the following input/output statistics.

a. Aircraft Level. 55,288 input records and 54 output records required three minutes of processing time.

b. WUC Level. 3,902,190 input records and 4342 output records required 23 minutes of processing time.

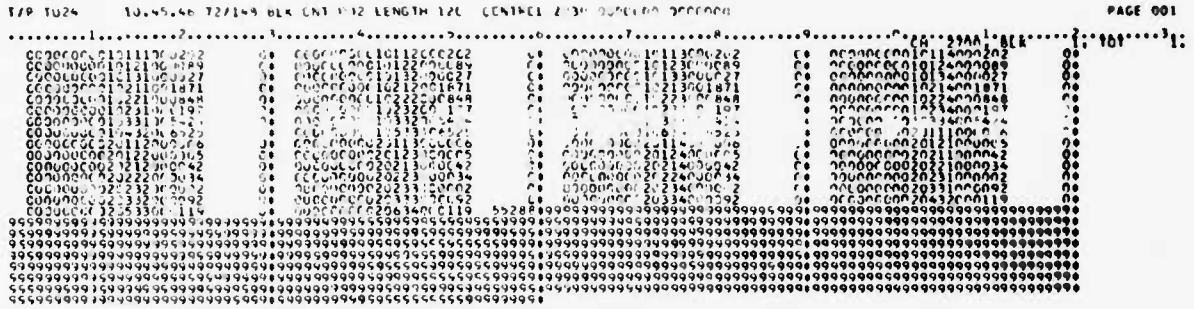


Figure 4-37. Sample Output — Observations Count

4.6.7 REGRESSION AND CORRELATION ANALYSIS

4.6.7.1 Purpose. The purpose of this program is to provide regression and correlation analysis of the data from the observation at both aircraft and WUC levels.

4.6.7.2 Input Data and Procedures. The program uses both FORTRAN and COBOL, with the latter providing the input/output capability for the FORTRAN in a similar manner as in Measure of Observation at the Aircraft Level, Paragraph 4.6.1.2. Linkage is provided by a call in the FORTRAN program to a COBOL program entry. The entries in the COBOL program and their uses are:

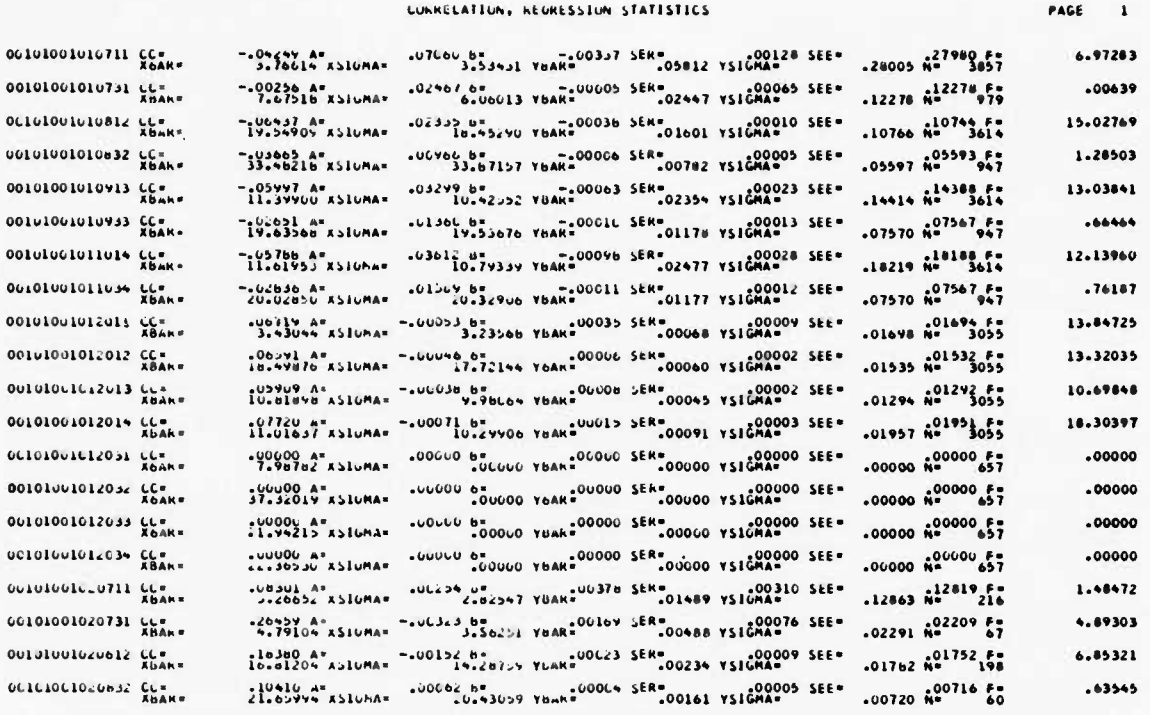
COBFRQ — reads the frequency count of observations tape records.

COBOBS — reads the sorted or merged observations tape records.

A listing of the program and the associated JCL is given in Figure 4-35.

The input consists of two magnetic tape files, one containing the observations and the other the frequency of each group of observations as described previously. The routines used can handle up to a maximum of 5000 observations. If more are available, records are skipped to reduce the total number of observations for computation to less than 5000. If fewer than four observations are available, the data for that group is bypassed. Under certain circumstances, the routine MISR can, for constant values of input data, provide extremely high output values (1.0E75). Under these conditions, flag is set and all output values are set to zero except the mean values and the number of observations.

4.6.7.3 Output Description. The output is a listing of the various parameters together with the identifier for the particular group. A sample output is given in Figure 4-38. The identifier is determined from the codes given in Paragraphs 4.6.1 and 4.6.2 at the aircraft and WUC levels, respectively. The analysis provides the following ouput parameters.



CORRELATION, REGRESSION STATISTICS PAGE 1

00101001010711	CC=	-.04449 A=	.07660 B=	-.00357 SER=	.00128 SEE=	.28005	.27980 F=	6.97283
	XBAR=	3.78614 XSIGMA=	3.53451 YBAR=	.05812 YSIGMA=			N= 3857	
00101001010731	CC=	-.00256 A=	.02467 B=	-.00005 SER=	.00065 SEE=	.12278	.12278 F=	.00639
	XBAR=	7.67518 XSIGMA=	6.06013 YBAR=	.02447 YSIGMA=			N= 979	
00101001010812	CC=	-.06437 A=	.02335 B=	-.00036 SER=	.00010 SEE=	.10766	.10744 F=	15.02769
	XBAR=	19.54909 XSIGMA=	18.45290 YBAR=	.01601 YSIGMA=			N= 3614	
00101001010832	CC=	-.03665 A=	.00966 B=	-.00006 SER=	.00005 SEE=	.05597	.05593 F=	1.28503
	XBAR=	33.46218 XSIGMA=	33.67157 YBAR=	.00782 YSIGMA=			N= 947	
00101001010913	CC=	-.05997 A=	.03299 B=	-.00063 SER=	.00023 SEE=	.14414	.14388 F=	13.03841
	XBAR=	11.39900 XSIGMA=	10.42252 YBAR=	.02354 YSIGMA=			N= 3614	
00101001010933	CC=	-.02691 A=	.01366 B=	-.00016 SER=	.00013 SEE=	.07570	.07567 F=	.66464
	XBAR=	19.63568 XSIGMA=	19.53676 YBAR=	.01178 YSIGMA=			N= 947	
00101001011014	CC=	-.05788 A=	.03612 B=	-.00096 SER=	.00028 SEE=	.18219	.18188 F=	12.13960
	XBAR=	11.61953 XSIGMA=	10.79339 YBAR=	.02477 YSIGMA=			N= 3614	
00101001011034	CC=	-.02836 A=	.01569 B=	-.00011 SER=	.00012 SEE=	.07570	.07567 F=	.76187
	XBAR=	20.02850 XSIGMA=	20.32906 YBAR=	.01177 YSIGMA=			N= 947	
00101001012011	CC=	.06719 A=	-.00053 B=	.00035 SER=	.00009 SEE=	.01698	.01694 F=	13.84725
	XBAR=	3.43044 XSIGMA=	3.23566 YBAR=	.00068 YSIGMA=			N= 3055	
00101001012012	CC=	.06291 A=	-.00046 B=	.00006 SER=	.00002 SEE=	.01535	.01532 F=	13.32035
	XBAR=	18.49876 XSIGMA=	17.72144 YBAR=	.00060 YSIGMA=			N= 3055	
00101001012013	CC=	.05909 A=	-.00038 B=	.00008 SER=	.00002 SEE=	.01294	.01292 F=	10.69848
	XBAR=	10.81848 XSIGMA=	9.98664 YBAR=	.00045 YSIGMA=			N= 3055	
00101001012014	CC=	.07720 A=	-.00071 B=	.00015 SER=	.00003 SEE=	.01957	.01951 F=	18.30397
	XBAR=	11.01637 XSIGMA=	10.29906 YBAR=	.00091 YSIGMA=			N= 3055	
00101001012031	CC=	.00000 A=	.00000 B=	.00000 SER=	.00000 SEE=	.00000	.00000 F=	.00000
	XBAR=	7.98782 XSIGMA=	.00000 YBAR=	.00000 YSIGMA=			N= 657	
00101001012032	CC=	.00000 A=	.00000 B=	.00000 SER=	.00000 SEE=	.00000	.00000 F=	.00000
	XBAR=	37.32019 XSIGMA=	.00000 YBAR=	.00000 YSIGMA=			N= 657	
00101001012033	CC=	.00000 A=	.00000 B=	.00000 SER=	.00000 SEE=	.00000	.00000 F=	.00000
	XBAR=	1.94215 XSIGMA=	.00000 YBAR=	.00000 YSIGMA=			N= 657	
00101001012034	CC=	.00000 A=	.00000 B=	.00000 SER=	.00000 SEE=	.00000	.00000 F=	.00000
	XBAR=	44.36530 XSIGMA=	.00000 YBAR=	.00000 YSIGMA=			N= 657	
00101001020711	CC=	.08301 A=	.00294 B=	.00378 SER=	.00310 SEE=	.12863	.12819 F=	1.48472
	XBAR=	5.26652 XSIGMA=	2.82547 YBAR=	.01489 YSIGMA=			N= 216	
00101001020731	CC=	.20459 A=	-.00323 B=	.00169 SER=	.00076 SEE=	.02291	.02209 F=	4.89303
	XBAR=	4.79104 XSIGMA=	3.56291 YBAR=	.00488 YSIGMA=			N= 67	
00101001020812	CC=	.16380 A=	-.00152 B=	.00023 SER=	.00009 SEE=	.01762	.01752 F=	6.85321
	XBAR=	16.81204 XSIGMA=	14.28759 YBAR=	.00234 YSIGMA=			N= 198	
00101001020832	CC=	.10410 A=	.00662 B=	.00004 SER=	.00005 SEE=	.00720	.00716 F=	.63545
	XBAR=	21.65994 XSIGMA=	20.43059 YBAR=	.00161 YSIGMA=			N= 60	

Figure 4-38. Sample Output — Correlation and Regression Analysis

Output Title	Description
CC	Correlation Coefficient
A	Intercept for Independent Variable
B	Slope of Independent Variable
SER	Standard Regression Coefficient
SEE	Standard Error Estimate
F	F-level for Regression
XBAR	Mean of Independent Variable
XSIGMA	Standard Deviation of Independent Variable
YBAR	Mean of Observation
YSIGMA	Standard Deviation of Observation
N	Number of Observations

The output report tape records consist of 130-character data records blocked 15 data records to a tape record. Output is provided by a call from the FORTRAN program to a COBOL entry, COBOT2.

A fleet of 150 F-106 aircraft required one minute of computer time to process 55,288 records in 54 groups at the Aircraft Level. At the WUC Level, it required 25 minutes of computer time to process 3,902,190 records in 4342 groups.

4.6.8 TREND ANALYSIS

4.6.8.1 Purpose. The purpose of this program is to determine the trend of various data bank variables and the effect of scheduled inspections on these trends. The analysis is performed at the aircraft and WUC levels using the same program.

4.6.8.2 Input Data and Procedures. A listing of the program (written in COBOL), the JCL for use on the IBM 370, and a sample of input data is shown in Paragraph 6.10.8. The input data consists of three files:

a. Sorted observations.
b. Frequency count of observations.
c. Cutoff and dependent axis titles.

} For either WUC or Aircraft Level

The generation of Files a and b has been covered previously. The data cards to create the third file have the following format.

Card	Column	Description
a	1-5	Printout Suppression Cutoff
b	1-80	Title used dependent axis, one card per title

A sample input, that used in the F-106 Scheduled Maintenance Study, is given in Figure 4-39.

The program is suitable for data from any USAF aircraft, with the following program dimension limitations.

Number of Dependent Titles	15 maximum
Number of Independent Intervals	200 maximum

The independent titles and the decoding for the dependent titles written into the program are compatible with the variables and codes generated in the measurement programs at both Aircraft and WUC Levels.

4.6.8.3 Output Description. The output is a plot for each group of input identifiers (Columns 3 through 16 of the input data) of the dependent versus independent variables. The structure of the plot tape consists of 130-character data records, blocked 15 to a tape record.

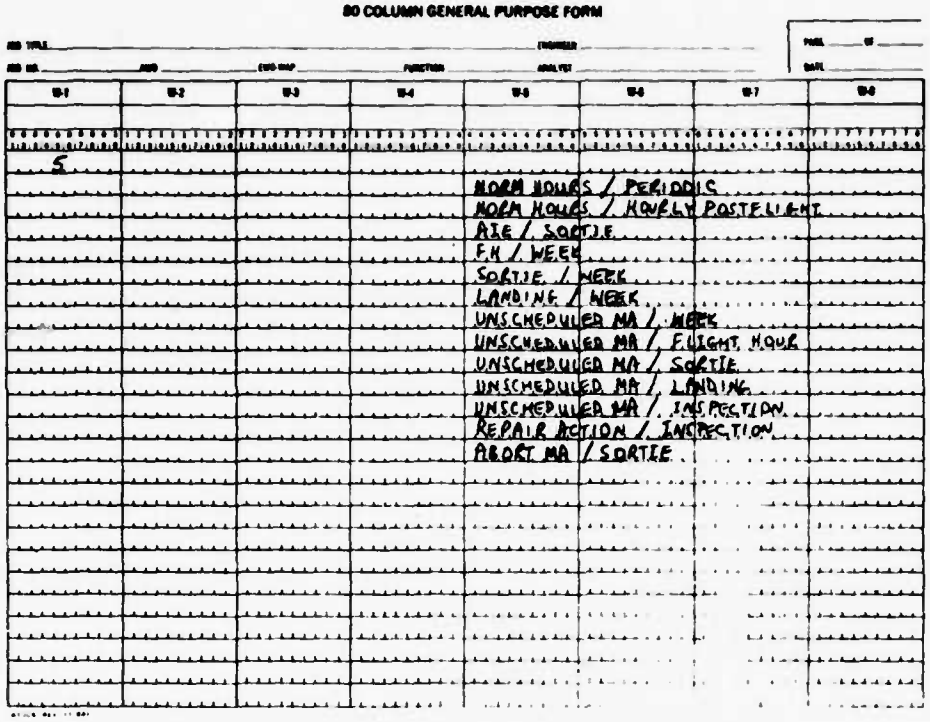


Figure 4-39. Sample Input — Trend Analysis

At the WUC Level, the values for printout suppression have a significant impact on output volume. The effect of cutoff on output volume is shown below, based on the F-106 experience for 150 aircraft.

Cutoff Values	Number of Plots at WUC Level
0	3680
5	2059

A fleet of 150 F-106 aircraft required three minutes to process 55,300 records and ten minutes to print the 54 plots at the Aircraft Level. At the WUC Level, it required 30 minutes to process 3,902,190 records and three hours to print the 2059 plots. A sample output from a recent F-106 run is shown in Figure 4-40.

4.7 REMOVAL ACTION ANALYSIS — TASK V

The objective of this task is to generate the cumulative distribution for the interval between removals on each WUC and to rank the codes in order of their frequencies of removal. A system of nine COBOL programs has been developed to perform this task. (See Figure 4-41 and the following page.)

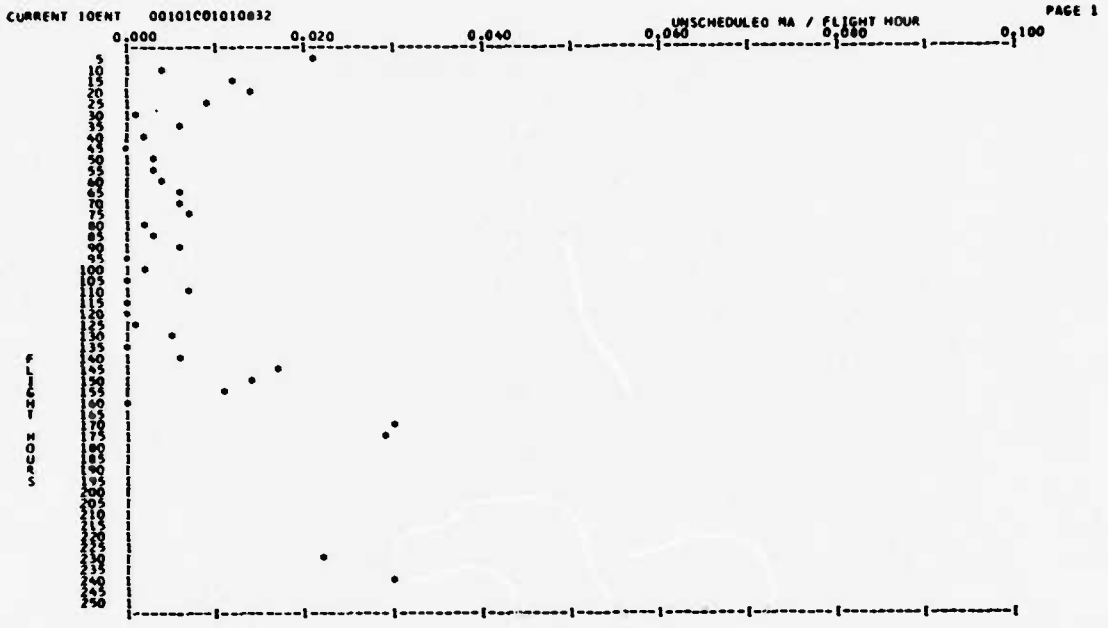


Figure 4-40. Sample Output — Trend Analysis

a. Task V Preprocessor.

b. Sort WUC Frequency.

c. Write WUC Frequency.

d. Sort Non-isochronal Frequency.

e. Write Non-isochronal Frequency.

f. Sort Isochronal Frequency.

g. Write Isochronal Frequency.

h. Sort Removal Intervals.

i. Cumulative Distribution of Removal Intervals

Paragraph 6.11 contains the listing of the source programs and the corresponding job control cards.

4.7.1 TASK V PREPROCESSOR

4.7.1.1 Purpose. The purpose of the Task V Preprocessor is to generate two output files for further processing, using the sorted data bank and the isochronal aircraft definition as input data.

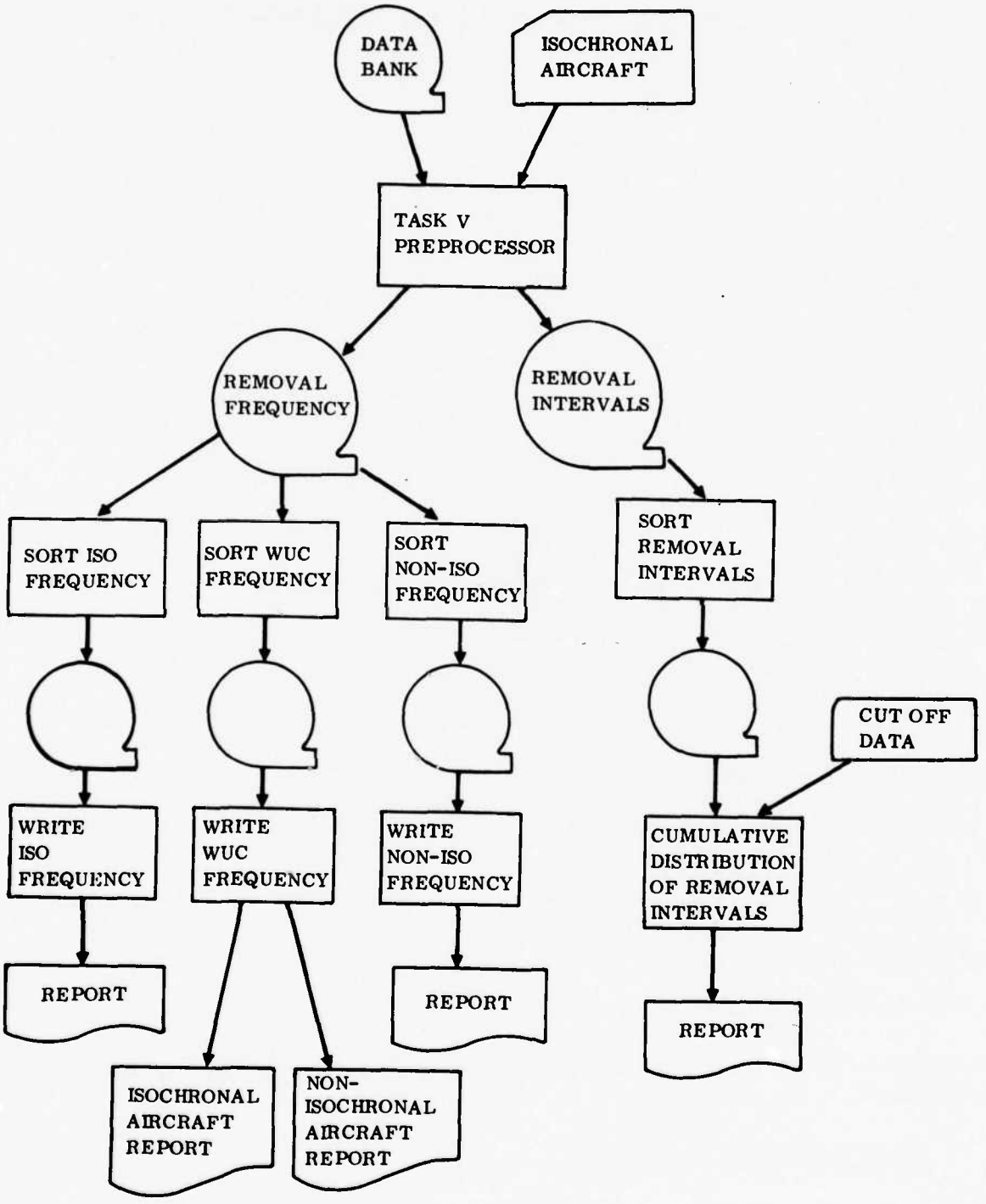


Figure 4-41. Logic Flow — Removal Action Analysis

4.7.1.2 Input Data and Procedures. There are two types of input data: tape and card deck. Tape data consists of a data bank sorted in the order of WUC, HMC, aircraft serial number, and week number. The tape record layout is shown in Figure 4-4. The data card deck has the following format.

Card	Column	Description
a	3-5	Number of isochronal aircraft.
b	3-10	Isochronal aircraft serial number (number of cards set by Card a).

A sample input data deck is shown in Figure 4-42.

The Removal Frequency file is generated by accumulating the maintenance actions (Type 3 record, Columns 44 through 46) for each WUC for the two aircraft subsets. The removal action intervals are measured between occurrances of removals of each WUC in terms of the number of weeks and the number of flight hours.

4.7.1.3 Output Description. The output consists of two tape files, both 20 characters to a data record and blocked 90 to a tape record. The format of the Removal Frequency file is:

Column	Description
1-5	Work Unit Code (WUC)
6-10	Isochronal Frequency
11-15	Non-isochronal Frequency
20	Record Mark

A sample output is shown in Figure 4-43.

The format of the Removal Intervals file is:

Column	Description
1-5	Work Unit Code (WUC)
10-15	Observation Data
17	Isochronal Indicator:
	=1 Isochronal Inspection
	=2 Non-isochronal Inspection

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
34							
570002361	331						
570002371	331						
570002431	324						
570002461	331						
570025451	331						
580007761	324						
580009911	331						
590000021	331						
590000031	331						
590000051	331						
590000061	331						
590000101	331						
590000121	331						
590000151	331						
590000181	331						
590000191	331						
590000261	331						
590000271	331						
590000541	324						
590000571	324						
590000581	324						
590000591	324						
590001041	331						
590001051	331						

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO _____ AWD _____ EWO WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
590001081	324						
590001101	324						
590001191	324						
590001411	324						
590001431	324						
590001441	324						
590001451	324						
590001471	324						
590001511	324						
590001521	324						

Figure 4-42. Sample Input — Task V Preprocessor

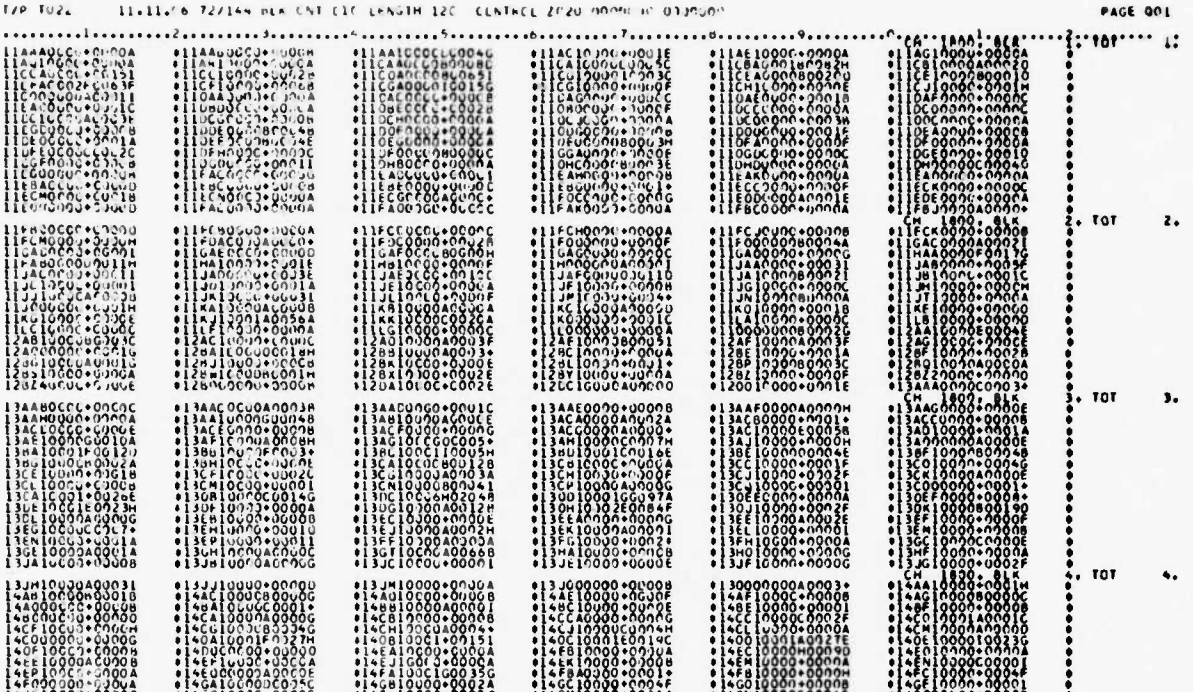


Figure 4-43. Sample Output — Removal Frequency

Column	Description
19	Data Type:
	=1 Interval in Weeks
	=2 Interval in Flight Hours
20	Record Mark

A sample output is shown in Figure 4-44.

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer time was eight minutes. A total of 1620 records were generated in the Removal Frequency file and 121,721 records in the Removal Interval file.

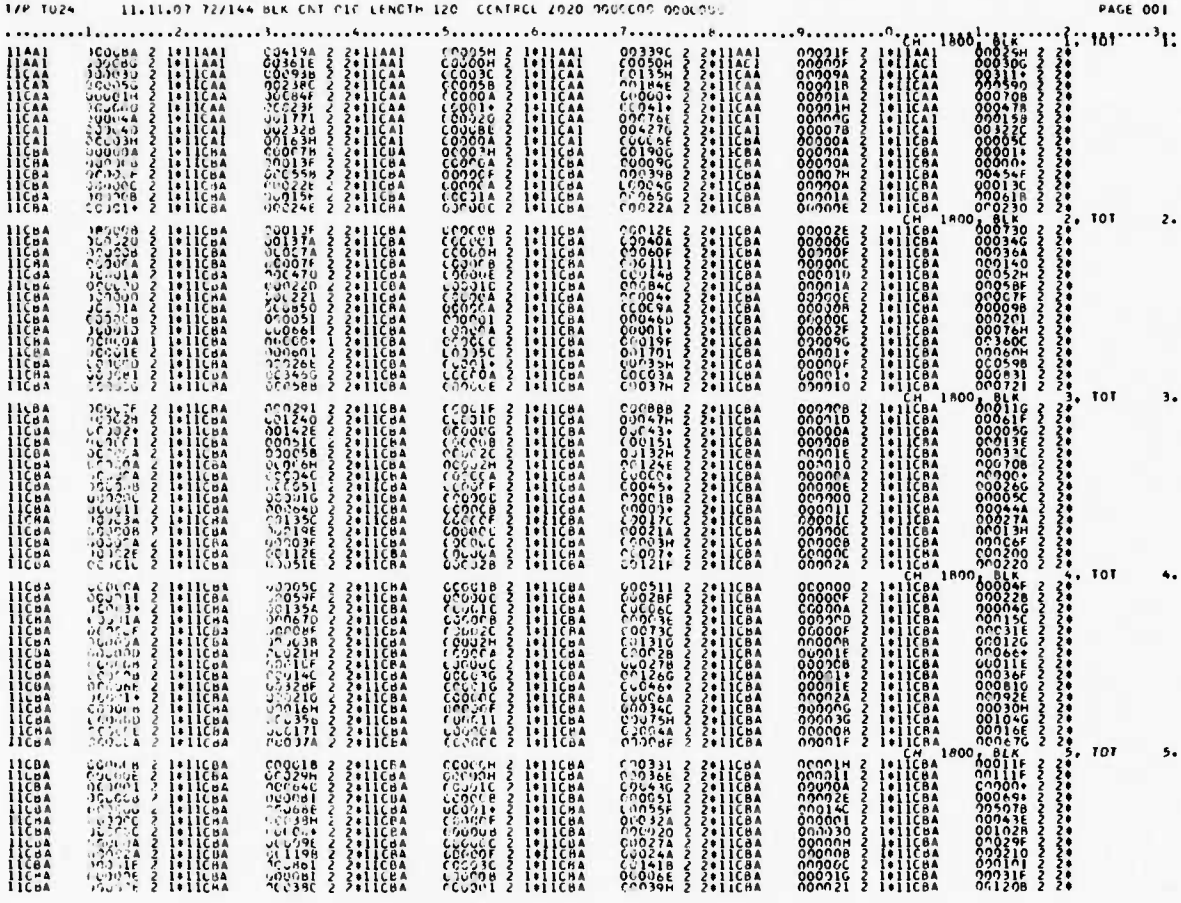


Figure 4-44. Sample Output — Removal Intervals

4.7.2 SORT WUC FREQUENCY

4.7.2.1 Purpose. The purpose of this program is to sort the output file Removal Frequency for further processing.

4.7.2.2 Input Data and Procedures. Input data consists of the tape file Removal Frequency as described in Paragraph 4.7.1.3.

4.7.2.3 Output Description. The output tape file, 20 characters to a data record blocked 90 to a tape record, consists of Isochronal and Non-isochronal WUC repair action frequency data, sorted according to the following key in ascending order.

Column	Description
1-5	WUC

It required about one minute on the IBM 370 to sort 1620 records for the 150-aircraft F-106 fleet.

LISTING OF WUC - FREQ PAGE 1
FOR NON-ISOCHRONAL AIRCRAFT

WUC	FREQ
11AA1	4
11AC1	2
11CAA	6
11CA1	5
11CBA	124
11CB1	1
11CCA	16
11CDA	49
11CD1	4
11CEA	26
11CFA	32
11CF1	8
11CGA	7
11CH1	1
11CJ1	4
11CAC	1
11CAF	1
11CAG	3
11CBE	1
11CCC	1
11CCG	2
11CCE	1
11CCD	2
11CDG	3
11CEC	2
11CEF	5
11CED	4
11CFC	3
11CGF	2
11CHC	7
11CFC	1
11CHC	2
11EAC	1
11EAK	1
11EBA	4
11ECC	2
11FAC	1
11FAK	1
11FCC	1
11GAC	2
11GAG	4
11GAF	2
11GAG	2
11HAA	12
11HAB	5
11JAF	18
11JJAF	15
11JC1	3
11JH1	2
11JK1	4
11JM1	7
11JJ1	1
11JJC	7
11KC1	1
11KF1	1
11KJ1	42
11KK1	17
12AA1	1
12AE1	4
12AC1	2
12AL1	9
12AF1	1
12AJ0	1
12BA1	56
12BB1	8
12BE1	1
12BF1	5
12BG1	1
12BL1	2
12BP1	43
12BK1	2
12CA1	8
12CC1	1
13AAA	1
13AAC	7
13AAF	1

Figure 4-45. Sample Output — Report of Removal Frequency

4.7.3 WRITE WUC FREQUENCY

4.7.3.1 Purpose. This program generates a report file listing the removal action by ascending WUC.

4.7.3.2 Input Data and Procedures. The input data consists of the output of the sort described in Paragraph 4.7.2.3.

4.7.3.3 Output Description. The output consists of two report files (one for Isochronal and one for Non-Isochronal data), both having 70 characters to a data record blocked 40 to a tape record. It required two minutes on the IBM 370 to generate and print both report files for the 1620 F-106 WUCs. A sample output is shown in Figure 4-45.

4.7.4 SORT NON-ISOCHRONAL FREQUENCY

4.7.4.1 Purpose. The purpose of this program is to sort the output file Removal Frequency for further processing.

4.7.4.2 Input Data and Procedures. The input data consists of the tape file Removal Frequency as described in Paragraph 4.7.1.3.

4.7.4.3 Output Description. The output tape file, 20 characters to a data record blocked 90 to a tape record, consists of the Isochronal and Non-Isochronal WUC repair action frequency data, sorted according to the following key in descending order.

Column	Description
11-15	Non-Isochronal Frequency

It required about one minute on the IBM 370 to sort 1620 records for the 150-aircraft F-106 fleet.

4.7.5 WRITE NON-ISOCHRONAL FREQUENCY

4.7.5.1 Purpose. This program generates a report file listing the Non-Isochronal WUC by decreasing removal action frequency.

4.7.5.2 Input Data and Procedures. The input data consists of the output of the sort described in Paragraph 4.7.4.3.

4.7.5.3 Output Description. The output consists of a report file, 70 characters to a data record blocked 40 to a tape record. It required two minutes on the IBM 370 to generate and print the report files for the 1620 F-106 WUCs. The output is very similar to that shown in Figure 4-45.

4.7.6 SORT ISOCHRONAL FREQUENCY

4.7.6.1 Purpose. The purpose of this program is to sort the output file Removal Frequency for further processing.

4.7.6.2 Input Data and Procedures. Input data consists of the tape file Removal Frequency as described in Paragraph 4.7.1.3.

4.7.6.3 Output Description. The output tape file, 20 characters to a data record blocked 90 to a tape record, consists of the Isochronal and Non-Isochronal WUC repair action frequency data, sorted according to the following key in descending order.

Column	Description
6-10	Isochronal Frequency

It required about one minute on the IBM 370 to sort 1620 records for the 150-aircraft F-106 fleet.

4.7.7 WRITE ISOCHRONAL FREQUENCY

4.7.7.1 Purpose. This program generates a report file, listing the Isochronal WUC by decreasing repair action frequency.

4.7.7.2 Input Data and Procedures. Input data consists of the output of the sort described in Paragraph 4.7.6.3.

4.7.7.3 Output Description. The output consists of a report file, 70 characters to a data record blocked 40 to a tape record. It requires two minutes on the IBM 370 to generate and print the report files for the 1620 F-106 WUCs. The output is very similar to that shown in Figure 4-45.

4.7.8 SORT REMOVAL INTERVALS

4.7.8.1 Purpose. This program is used to sort output file Removal Intervals for further processing.

4.7.8.2 Input Data and Procedures. The input data consists of the tape file Removal Intervals as described in Paragraph 4.7.1.3.

4.7.8.3 Output Description. The output tape files, 20 characters to a data record blocked 90 to a tape record, consists of removal intervals, in weeks and flight hours, sorted in the following ascending order.

Key	Column	Description
1	17	Isochronal Indicator
2	19	Data Type
3	1-5	Work Unit Code

It required about three minutes to sort the 121,721 records on the IBM 370 for the fleet of 150 F-106 aircraft.

4.7.9 CUMULATIVE DISTRIBUTION FOR REMOVAL INTERVALS

4.7.9.1 Purpose. This program generates cumulative distribution plots for removal intervals by WUC and isochronal subset type. The number of observations, maximum and minimum values, and the mean and variance of the observation are printed on the top of each plot.

4.7.9.2 Input Data and Procedures. The input data card has the following format.

Column	Description
1-5	Printout Suppression Cutoff for Non-Isochronal Subset
6-10	Printout Suppression Cutoff for Isochronal Subset

Figure 4-46 is a sample data card.

4.7.9.3 Output Description. Cumulative distribution plots by a printer contain:

a. Work Unit Code (WUC)

b. Output Data — One of two types:

Removal Interval Length in Weeks

Removal Interval Length in Flight Hours

c. Isochronal or Non-Isochronal Subset

d. Number of Observations

e. Maximum and Minimum Values

f. Mean and Variance

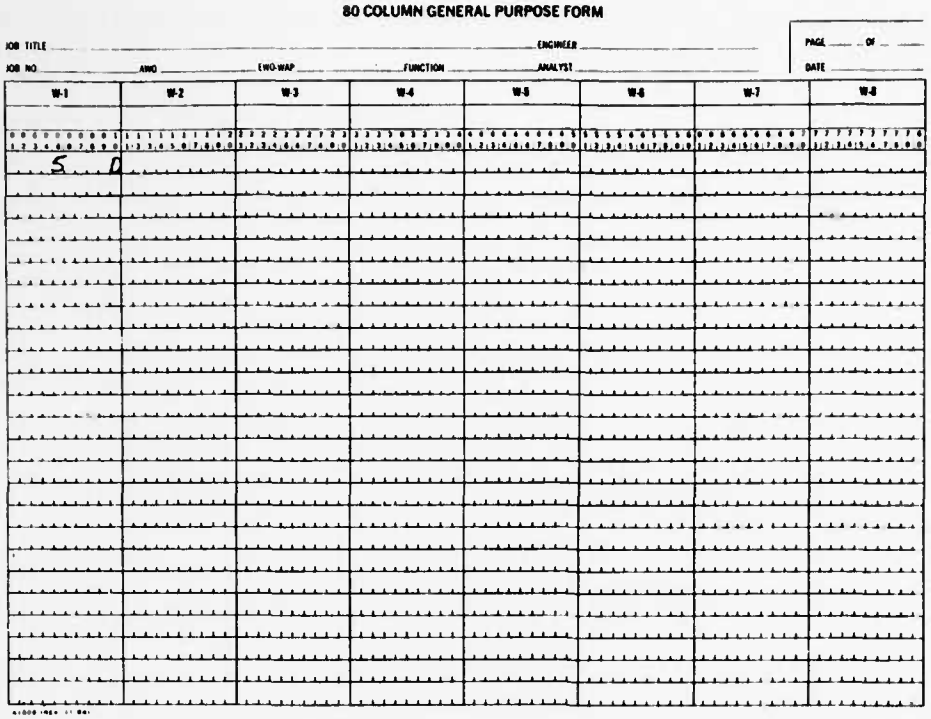


Figure 4-46. Sample Input — Cutoff for Removal Intervals

The plot tape consists of 130-character data records blocked 15 to a tape record. It took seven minutes on the IBM 370 to process 121,721 records for the F-106 fleet and one hour on the printer to make 1050 plots. A sample output from a recent F-106 run is shown in Figure 4-47.

4.8 AIRCRAFT INSPECTION HISTORIES

4.8.1 PURPOSE. The purpose of this task is to produce a plot of accumulated flying hours versus calendar time in weeks for inspections.

4.8.2 INPUT DATA AND PROCEDURES. The input data consists of plot titles, inspection WUCs, and plot symbols. The data card deck has the following format.

Card	Column	Description
1	1-80	Title describing the horizontal axis
2	1-80	Title describing the vertical axis
3	1	Number of Inspection Work Unit Code (WUC)
3	10-14	First Inspection WUC

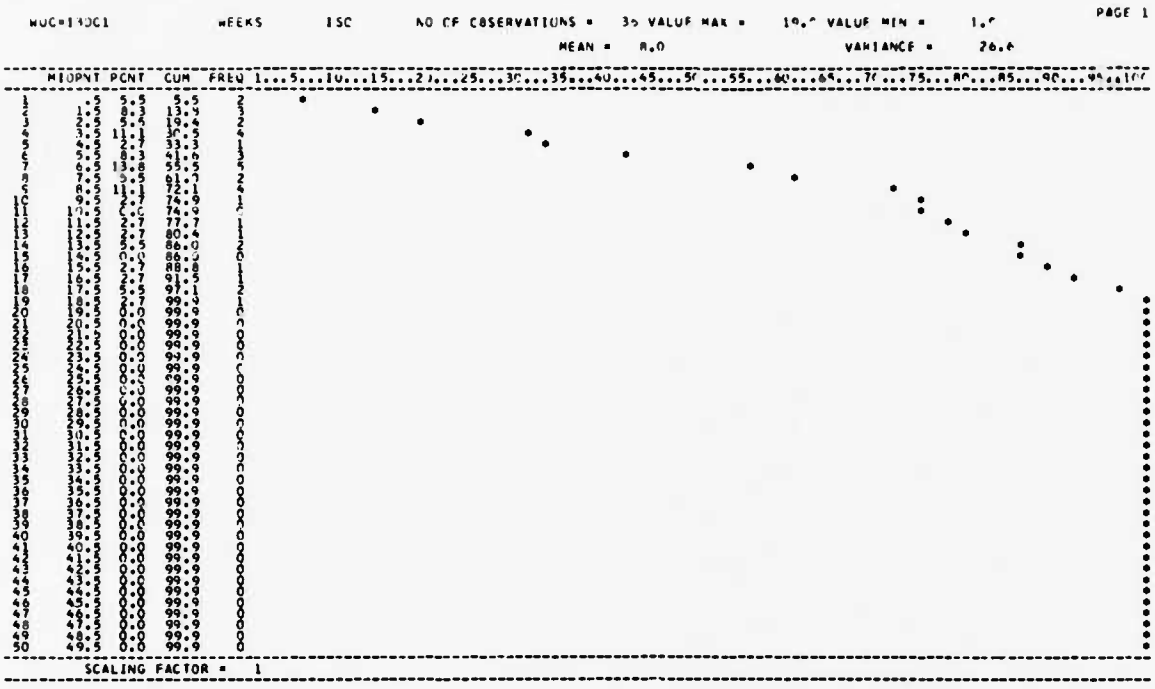


Figure 4-47. Sample Output — Cumulative Distribution for Removal Action Interval

Card	Column	Description
3	20-24	Second Inspection WUC
3	30-34	Third Inspection WUC
3	40-44	Fourth Inspection WUC
3	50-54	Fifth Inspection WUC
3	60-64	Sixth Inspection WUC
3	70	Plot symbol for first WUC
3	71	Plot symbol for second WUC
3	72	Plot symbol for third WUC
3	73	Plot symbol for fourth WUC
3	74	Plot symbol for fifth WUC
3	75	Plot symbol for sixth WUC

The current program handles up to six inspection WUCs. If fewer than six inspection WUCs are required, the unused columns should be left blank. A sample input data is shown in Figure 4-48.

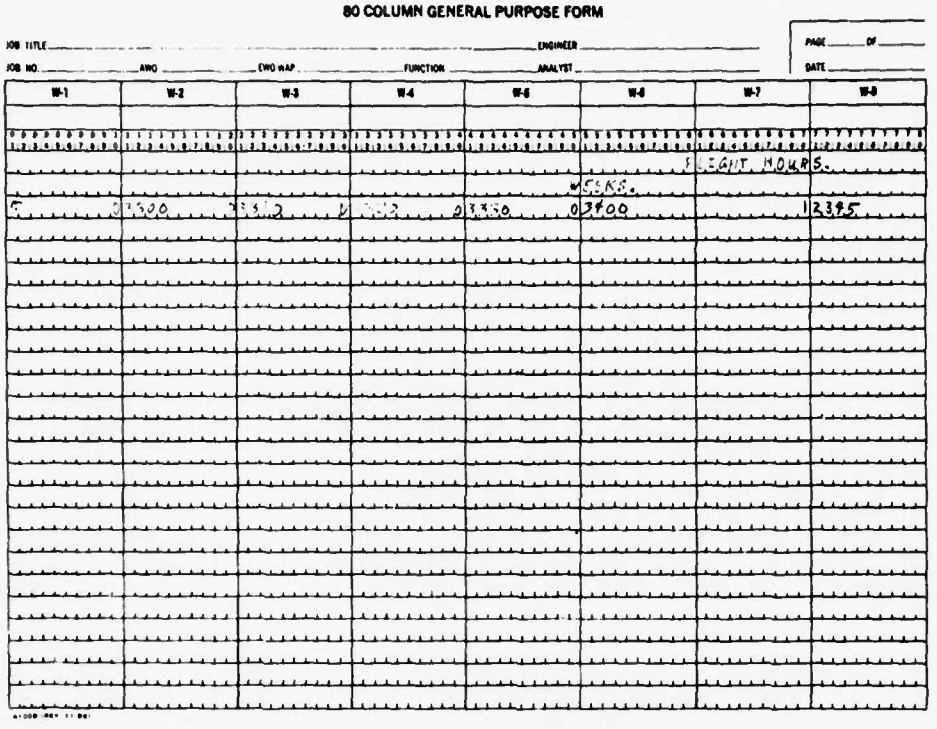


Figure 4-48. Sample Input — Aircraft Inspection Histories

4.8.3 OUTPUT DESCRIPTION. A sample output is shown in Figure 4-49. The aircraft serial number and a list of the plot symbols with matching inspection WUCs are printed on the top of each plot. An asterisk symbol will be printed if more than one inspection WUC occurs at the same week and flight hour. The 150-aircraft F-106 fleet took three minutes on the IBM 370 to produce 21,997 inspection history plots.

4.9 COMPUTER OUTPUT ANALYSIS

4.9.1 OUTPUT ANALYSIS — FREQUENCY ANALYSIS — TASK I. The purpose of this test is to determine what kinds of malfunctions occur on a WUC, and when they are discovered. These results are then compared with the definition of the scheduled inspections themselves. The results provide a basis for answering such questions as:

a. Do the inspections discover the discrepancies they look for or are these more often discovered in some other phase of aircraft operations?

b. Are there malfunctions discovered in other phases for which changes in the current inspection packages might be proposed?

The maintenance action frequency analyses were used extensively during the maintenance program analysis and definition process. Task I also supplied input data to the effectiveness analyses.

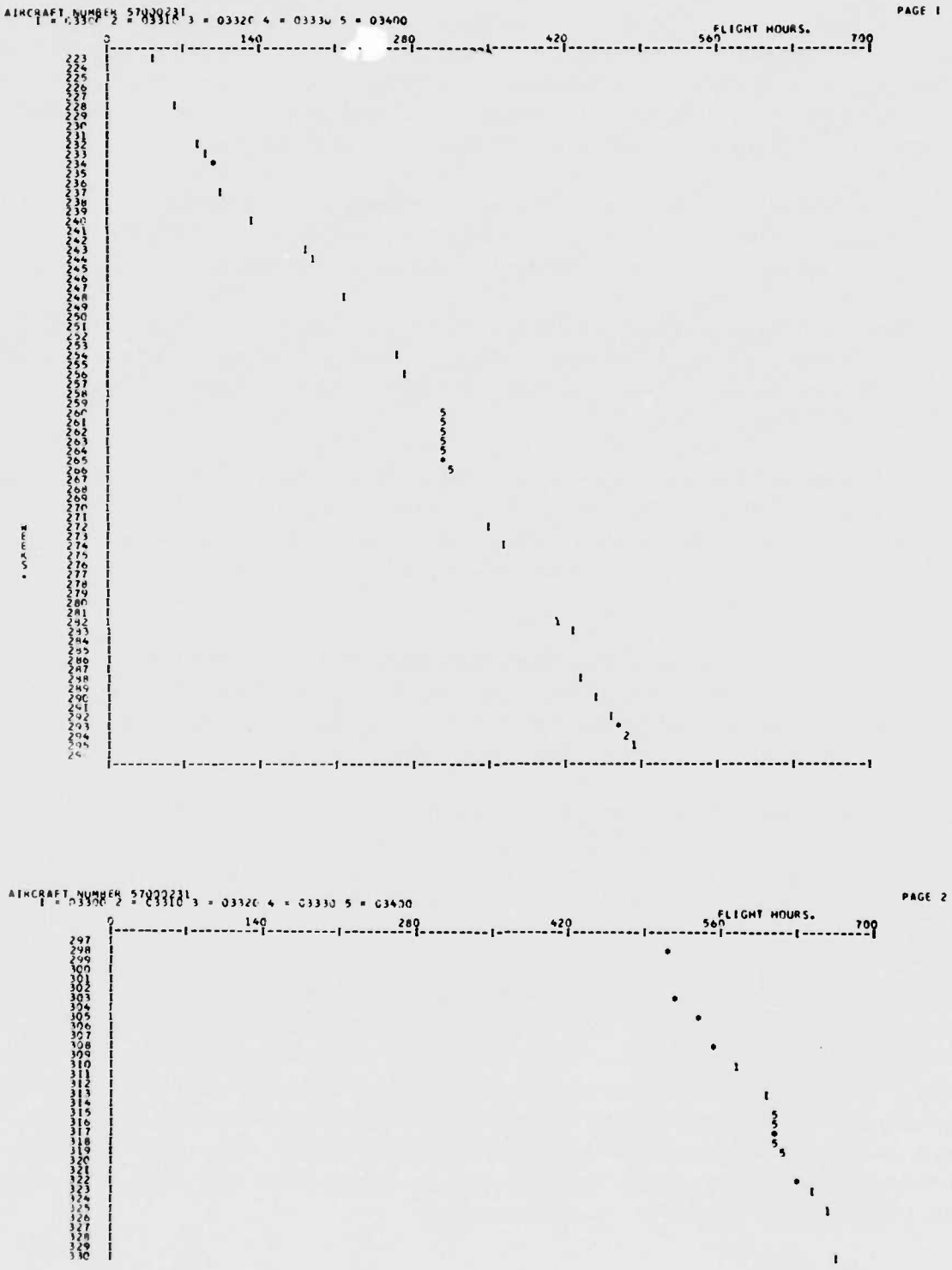


Figure 4-49. Sample Output — Aircraft Inspection Histories

4.9.2 OUTPUT ANALYSIS — MANHOUR AND NOR TIME ANALYSES — TASK II. The purpose of this task is to determine the variation in NORM hours and manhours charged to each type of scheduled or special inspection. Any NOR time charged during preflights and basic postflights is recorded as unscheduled maintenance. Manhours expended during the look phase of these inspections is charged as support general, however, so these inspections are included when calculating the look-phase manhour distributions.

For a given type of scheduled inspection, each occurrence of that inspection on an aircraft provides an observation of the NORM hours charged during the look and repair phases of the inspection and the manhours charged during the look phase.

In addition, this analysis calculated the number of manhours required for maintenance actions on specific WUCs, either repair actions stemming from inspections or unscheduled maintenance actions. Also, the NORM and NORS hours charged against specific WUCs are calculated.

The NORM hour per scheduled inspection distributions are used in conjunction with the Network Analysis Model to obtain estimates of network branch span times for use in evaluating the new scheduled inspection packages. The NORM and manhour per WUC maintenance action results are required for the effectiveness analyses of alternative maintenance programs.

From the NORM and manhour per maintenance action data, the corresponding rates for each WUC set are derived. These in turn are input to the effectiveness model so that the NORM hours and maintenance manhours accumulated for unscheduled maintenance during the intervals between inspections can be calculated.

4.9.3 OUTPUT ANALYSIS — INTERVAL LENGTH ANALYSIS — TASK III. The purpose of this analysis is to determine the inspection interval lengths actually experienced during the current maintenance program and also to determine interval variability. The WUC maintenance action interval distributions provided a basis for determining WUC failure characteristics.

4.9.4 OUTPUT ANALYSIS — EFFECT OF TIME AFTER INSPECTION — TASK IV. This analysis was performed to determine the trends of various data bank variables with time after scheduled inspections and the effects of scheduled inspections on these trends. The correlation and regression analyses provided linear empirical functions for the various parameters versus time after for use in the effectiveness analyses. These results were supplemented by the trend analysis scatter diagrams so that the validity of the linear regression analyses could be assessed and appropriate adjustments made when the time effect was clearly nonlinear.

4.9.5 OUTPUT ANALYSIS – REMOVAL ACTION FREQUENCIES AND INTERVAL LENGTH DISTRIBUTIONS. The purpose of these analyses was to provide a basis for determining the requirements for time changes and scheduled removals for the various WUCs. The suitability of the current time change specifications was assessed using this data in the maintenance program analysis process. These results, along with the results from Task III, were the basis for determining how well the current time change specifications agreed with the failure characteristics of the WUC.

4.9.6 OUTPUT ANALYSIS – AIRCRAFT INSPECTION HISTORIES. The inspection history analysis provided a plot of inspection events versus weeks and accumulated flying hours for each aircraft in the data bank. These provide a record of scheduled inspection events and intervals as they actually occurred for each aircraft. This analysis supplemented the other tasks in determining actual inspection flow times and intervals. This was necessary because recording anomalies and errors in the data system resulted in apparent gaps during the inspections and spurious short intervals that could be corrected manually. Improved logic for Tasks II and III was developed as a result of processing the results of this task.

SECTION 5

EFFECTIVENESS AND COST PROGRAMS

5.1 GENERAL DESCRIPTION

For the Phase III study, three sets of programs were developed:

a. Effectiveness Model

b. Network Analysis Model (NAM)

c. Manhour and Not Operational Ready — Maintenance (NORM) Data (for WUC sets)

Detailed discussions, sample input, sample output, and IBM 370 running statistics for these programs are in Paragraphs 5.2, 5.3, and 5.4, respectively. Listings of the programs, together with the control cards, are contained in Paragraphs 6.13, 6.14, and 6.15, respectively.

5.2 EFFECTIVENESS MODEL

5.2.1 PURPOSE. The purpose of the effectiveness model is to predict the impact on aircraft availability and mission reliability of maintenance program variations in scheduled inspection package content and interval lengths. The requirement to meet the flying hour program is treated as a constraint. This is done by inputting aircraft utilization to the effectiveness model along with the description of the alternative maintenance program. The model then calculates the effectiveness as a function of interval length over the maintenance program period, which is the time interval between occurrences of the major inspection of the maintenance program.

The basic approach of the effectiveness model is to calculate the values of certain measures that describe the impact of the maintenance program by a process of summation starting at the work unit code (WUC) set level. For this reason, the distributions of the basic variables involved in this process can be described merely in terms of their mean and standard deviations, since application of the "central limit" theorem implies that the sum variables calculated by the model will be approximately normally distributed independently of how the summands are distributed. Use of this fact in developing the model has vastly simplified its structure and minimized the need for manipulating probability distributions for the variables.

A general flow chart of the effectiveness model is shown in Figure 5-1. Calculations made by the model fall naturally into four major groupings. The first consists of those at the Inspection Task/WUC set level; results of these calculations are combined in the second step to produce aircraft-level values. The third step consists of those calculations

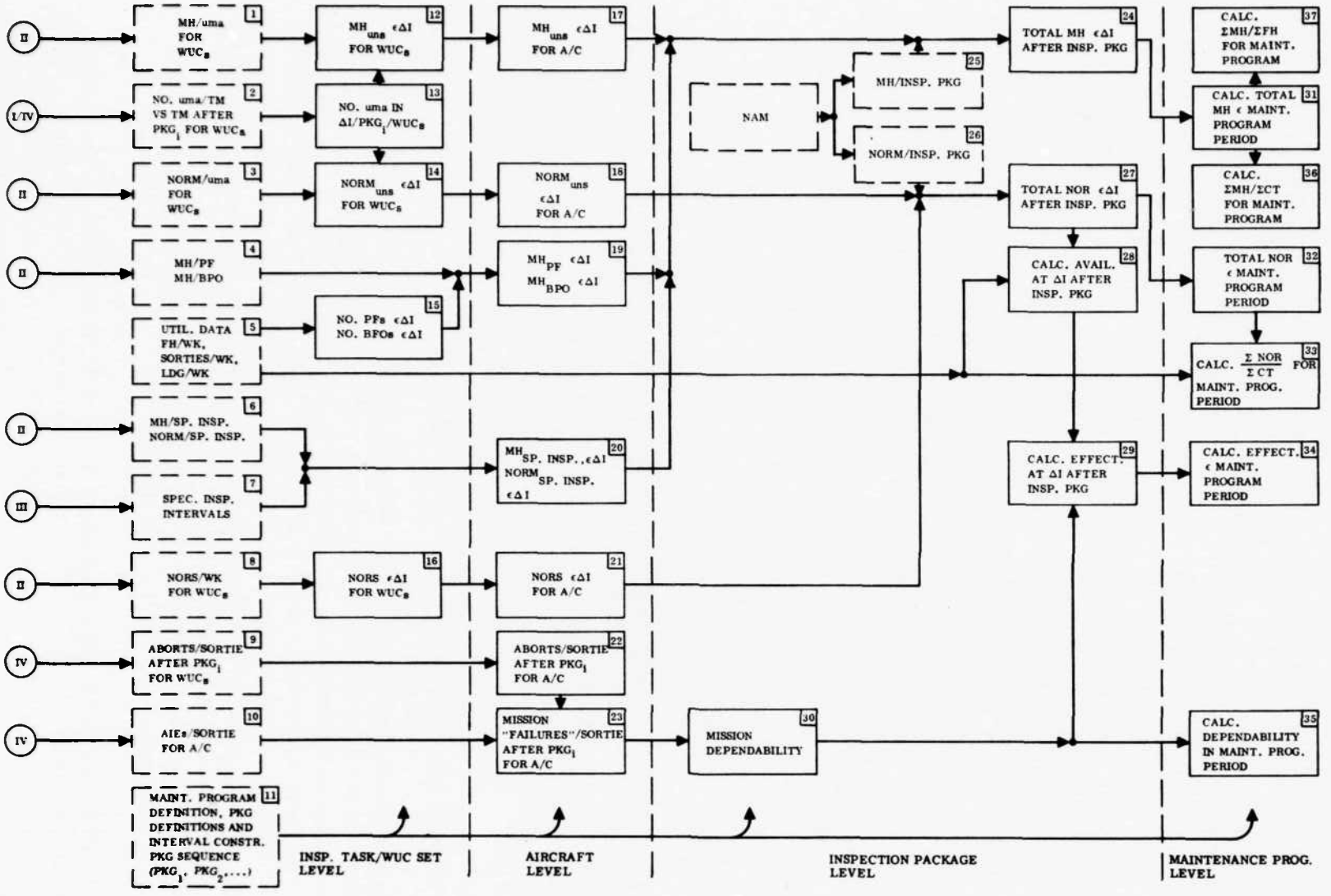


Figure 5-1. Effectiveness Model

pertaining to two consecutive inspection packages and the intervening interval, ΔI. At this level, total not operational ready – supply (NORS), availability, dependability, manhours, and effectiveness are evaluated parametrically as functions of inspection package type and interval length, ΔI. The final step consists of combining the results obtained in the third step to produce total manhours, NOR hours, availability, and effectiveness for the maintenance program period.

5.2.2 INPUT DATA AND PROCEDURES. In Figure 5-1, input values are represented by the blocks with dashed outlines. Unscheduled maintenance is described by data input in Blocks 1, 2, and 3. This includes the number of manhours per unscheduled maintenance action for each WUC set, the number of unscheduled maintenance actions per unit time for a WUC set versus time after the inspection package, and the number of NORM hours per unscheduled maintenance action for each WUC set.

In Block 4, the manhour distributions for preflight and basic postflight inspections are input. Total manhours for these inspections during ΔI are calculated using this data and the frequencies for these inspections as determined from the aircraft utilization specified in Block 5.

Special inspections are described in Blocks 6 and 7 in terms of the manhours and NORM hours per inspection and inspection intervals. NORS hours per week for each WUC set are input in Block 8.

Operational data on which a measure of dependability can be based is input in Blocks 9 and 10. This data includes the number of aborts per sortie following the different types of inspection packages at the WUC set level and the number of AIEs (accidents, incidents, and emergency unsatisfactory material reports, EUMRs) per sortie at the aircraft level.

Additional data describing the maintenance program, such as the inspection package sequence and constraints on the variability of ΔI, is input in Block 11. The distributions of manhours and NORM hours per inspection package, as calculated by NAM, are input in Blocks 25 and 26.

The effectiveness analysis procedure consists of the four major calculation steps mentioned earlier. These are described in detail in the following paragraphs.

5.2.2.1 Inspection Task and WUC Set Calculations. At the inspection task and WUC set level, distributions for the numbers of manhours and NORM hours during ΔI for each WUC set are calculated in Blocks 12 and 14 in Figure 5-1. This is accomplished by computing the expected number of unscheduled maintenance actions during ΔI for each WUC set following the different types of inspection packages in Block 13 and combining them with the manhours and NORM hours rates.

To calculate preflight and basic postflight inspection manhours, distribution of the number of sorties during ΔI is calculated from the utilization data in Block 5. This

results in an estimate for the distribution of the number of basic postflight inspections during ΔI and, using a derived ratio, r, for the number of preflights per postflight, an estimate for the distribution of the number of preflights in ΔI in Block 15. Combining these results with the input inspection manhours, distribution of the number of preflight and basic postflight manhours is calculated in Block 19.

The NORS hours during ΔI, by WUC set, are calculated in Block 16 using the rates input in Block 8.

5.2.2.2 Aircraft-Level Calculations. Unscheduled maintenance manhours and NORM hours during ΔI for the various WUC sets are aggregated to obtain the distributions for these parameters at the aircraft level in terms of their mean and standard deviations.

For special inspections, the distribution for the number of special inspections during ΔI is obtained from the interval distribution for each type of inspection. Manhours and NORM hours for each type of special inspection during ΔI are then calculated in Block 20 from the input manhours and NORM hours per inspection.

In Block 22, the aborts/sortie rates following different types of inspections are calculated for the total aircraft by summing the rates for the various WUC sets. The aircraft abort rate is combined with the AIEs/sortie rate in Block 23 to obtain a mission "failures" per sortie rate following the different types of inspections.

5.2.2.3 Inspection Packages and Intervening Interval, ΔI. Parametric results for the several variables for two consecutive inspection packages and the intervening interval are obtained as functions of ΔI.

The following calculations are included in this step: the distribution of the total manhours during ΔI following a given type of inspection package is calculated in Block 24 of Figure 5-1 by determining the distribution for the total of unscheduled maintenance manhours in ΔI, preflight and basic postflight manhours in ΔI, special inspection manhours in ΔI, and manhours in the following scheduled inspection.

Distribution for the total NOR hours during ΔI and the subsequent scheduled inspection is calculated in a similar way in Block 27 by determining the distribution for the total of the unscheduled NORM hours in ΔI, the special inspection NORM hours in ΔI, the total NORS hours in ΔI, and the NORM hours in the subsequent scheduled inspection.

From the utilization data input in Block 5, distribution of the length of ΔI in calendar time when ΔI is expressed in terms of one of the other three time bases – flying hours, sorties, and landings — is calculated. This parameter is required in order to calculate the distribution of availability in Block 28. Availability is the fraction of the time the aircraft is operationally ready, that is:

$$A_V = 1 - \frac{\Sigma NOR}{\Sigma CT}$$

where Σ CT is accumulated calendar time. This measure is calculated as a function of ΔI in Block 28.

From the mission "failure" rate (F/S/A) calculated in Block 23, the dependability parameter is calculated in Block 30. This is the probability that a mission "failure," that is, an abort or AIE, will not occur during the sortie:

$$D = \exp(-F/S/A).$$

Effectiveness as a function of ΔI for two consecutive inspection packages and the intervening interval is evaluated at Block 29. This consists of determining the probability distribution of the product of availability and dependability.

5.2.2.4 Distribution of Total Manhours. In the fourth and final step of the effectiveness analysis, distribution of the total manhours across the maintenance program is determined as a function of ΔI in Block 31. The NOR hours versus ΔI distributions for the consecutive packages are the basis for determining the NOR hours for the maintenance program as a function of ΔI in Block 32.

Distributions for total calendar time for the maintenance program period are calculated and used to calculate distributions for the manhours per unit time in Block 36, NOR hours per unit time in Block 33, and manhours per flight hour in Block 37.

Dependability during the maintenance program is calculated as a function of ΔI in Block 35, and the distribution of effectiveness as a function of ΔI is calculated in Block 34.

5.2.3 DETAILED DESCRIPTION OF EFFECTIVENESS MODEL. A detailed flow chart of the effectiveness model is shown in Figure 5-2. In the following discussion, the equations for the various steps in the analysis will be derived. Definitions of the parameters and variables in the model are given first.

The parameters that define the maintenance program and major inspections are input in Blocks 1 and 2 of Figure 5-2. These are:

DELI	The basic inspection interval length, ΔI.
KI	An integer specifying the time base for ΔI, KI = 1, 2, 3, 4 for ΔI in weeks, flight hours, sorties, and landings, respectively.
NSCT	The number of different types of scheduled inspection packages.
NFOL(I)	The number of types of scheduled inspection packages that can occur at the end of the interval ΔI(DELI) following an inspection package of Type I.
NSCH(I, J)	The number of intervals that begin with a Type I inspection package and end with a Type J.

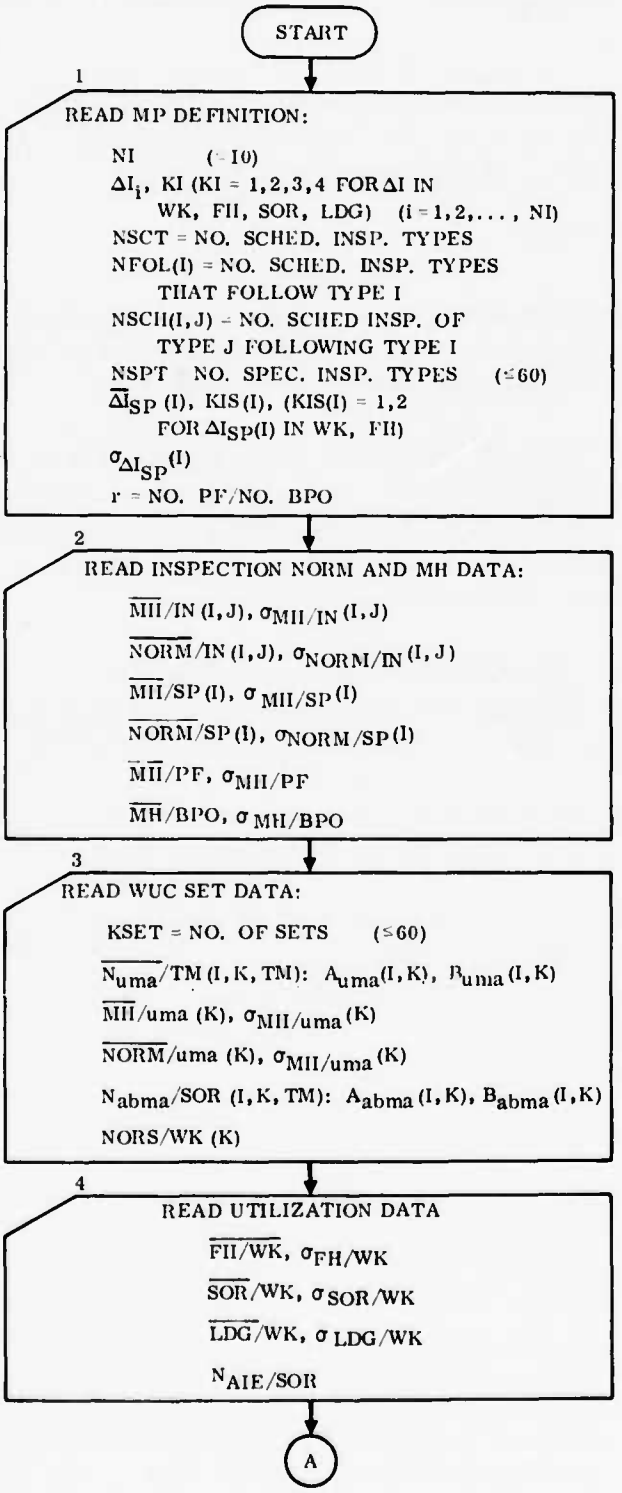


Figure 5-2. Detailed Effectiveness Model (Sheet 1)

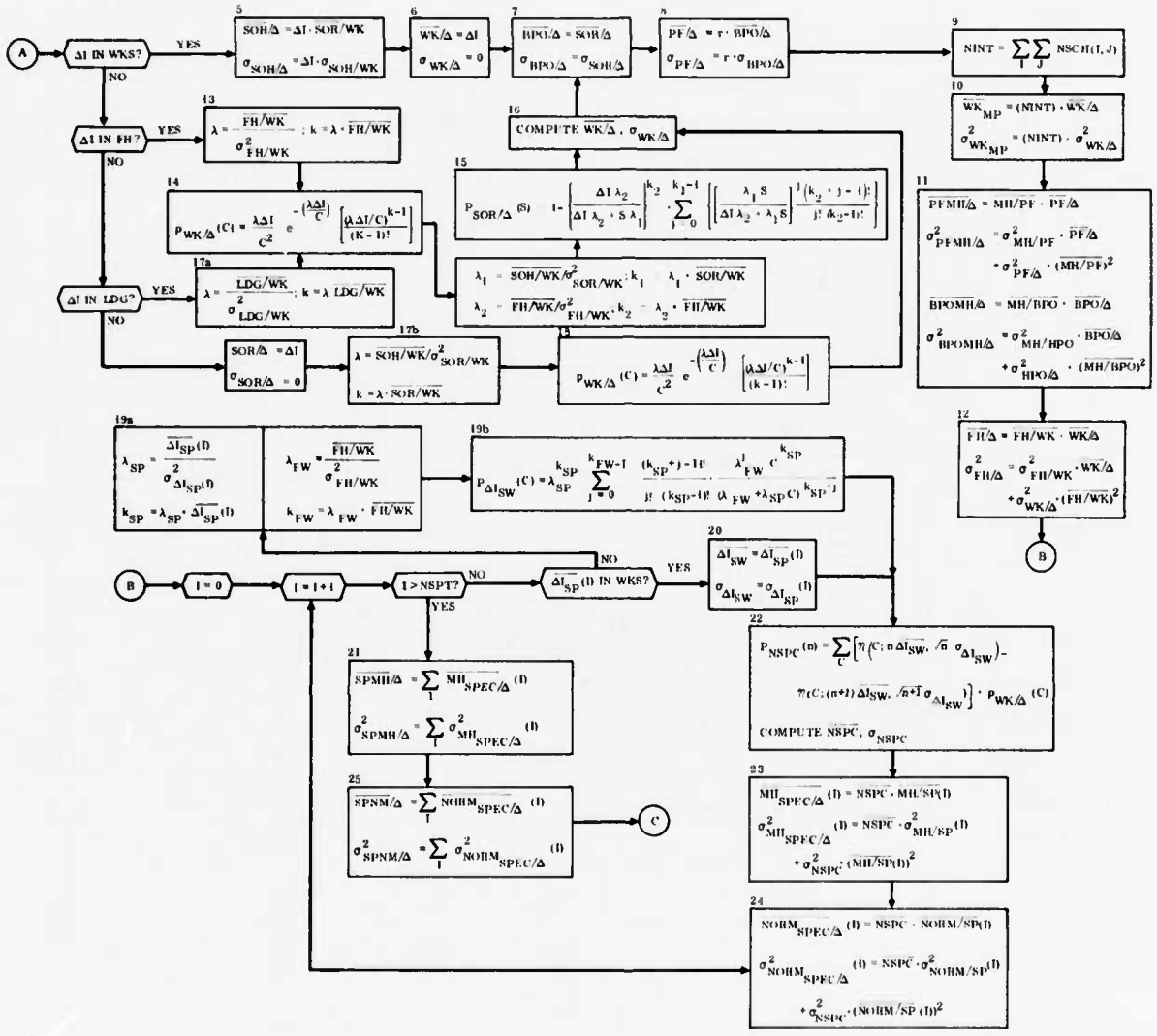


Figure 5-2. Detailed Effectiveness Model (Sheet 2)

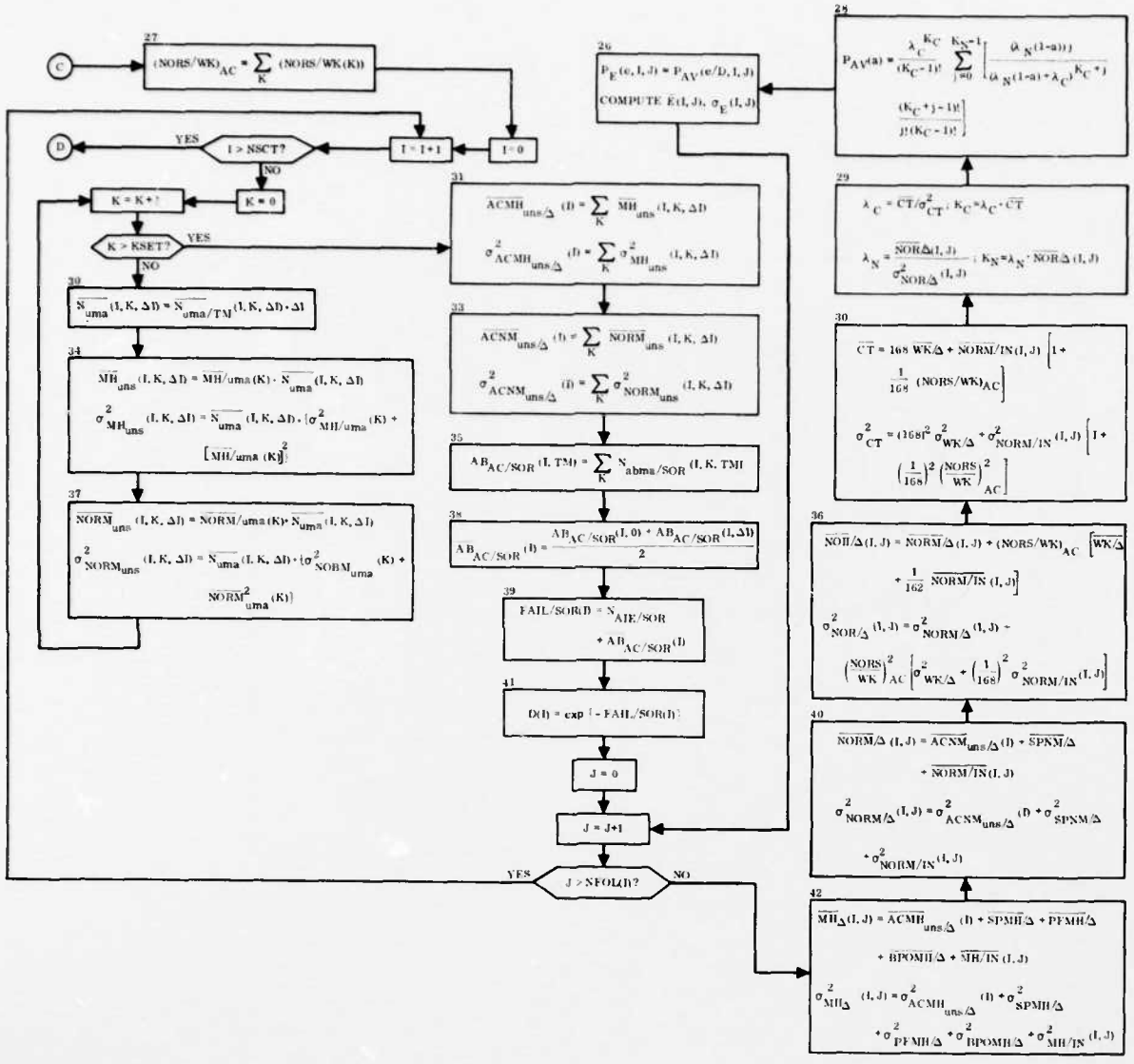


Figure 5-2. Detailed Effectiveness Model (Sheet 3)

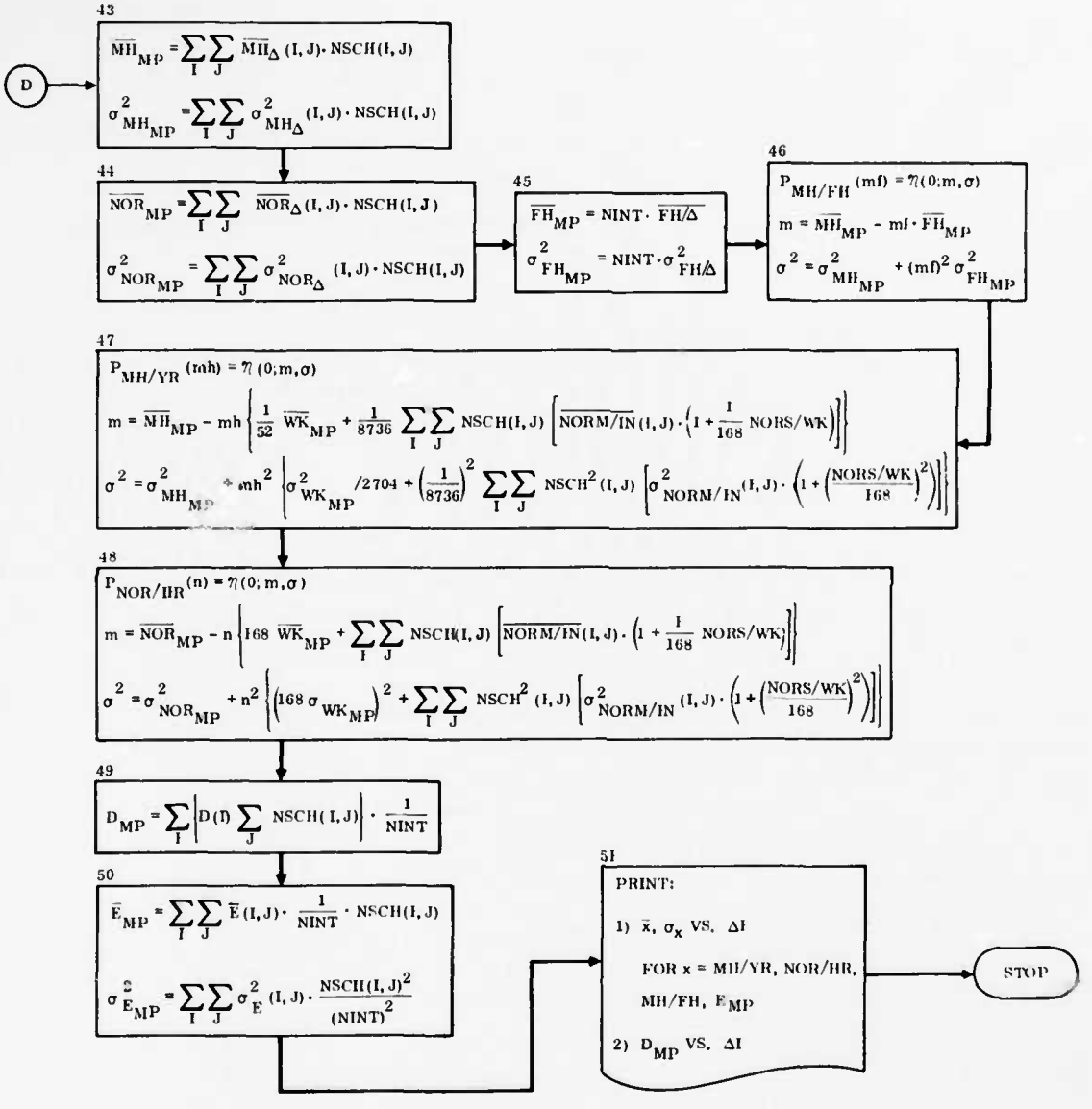


Figure 5-2. Detailed Effectiveness Model (Sheet 4)

EMHI(I, J)	The mean manhours for inspection package Type J when it follows inspection package Type I in Block 2.
AN(I, J), BN(I, J)	The coefficients of the linear regression function in Block 2 for the NORM hours in inspection package J versus time after the preceding inspection package I. That is, $\overline{NORM}/IN(I,J) = AN(I,J) + BN(I,J)\cdot(t)_{after\ I}$
SMHI(I, J)	The standard deviation of the manhours per inspection package J following inspection package I.
SNI(I, J)	The standard deviation of the NORM hours in inspection package J following inspection package I.
NI	The number of values of ΔI(DELI) to be used in the parametric evaluation.

Each pair of values I and J identifies a different type of inspection interval. The total number (NINT) of inspection intervals is then given by:

$$NINT = \sum_{I=1}^{NSCT} \sum_{J=1}^{NFOL(I)} NSCH(I,J),$$

and the length of the maintenance program period not counting inspection flow times is:

$$NINT \cdot \Delta I.$$

The linear regression function for NORM hours per inspection package is input for inspection packages retained from the current program. For new inspection packages, the network analysis model (NAM) provides the needed data.

Special inspections are described by the following parameters included in Blocks 1 and 2 of Figure 5-2.

NSPT	Number of different types of special inspections.
DISP, SISP	Mean and standard deviations of the interval length between inspections, ΔI_{SP}.
KIS	An integer specifying the time base in which DISP is measured. KIS = 1 or 2 for time in weeks or flight hours respectively (Block 1).
EMHS, SMHS	The mean and standard deviation, $\overline{MH}/SP(I)$ and $\sigma_{MH/SP}(I)$, in Block 2 of manhours in Ith special inspection.
ENS, SNS	The mean and standard deviation, $\overline{NORM}/SP(I)$ and $\sigma_{NORM/SP}(I)$, of the NORM hours per special inspection.

The preflight and basic postflight inspections are defined by the following parameters input in Blocks 1 and 2.

R	The ratio of the number of preflight inspections to basic postflight inspections.
EMHP, SMHP	The mean and standard deviation, MH/PF and $\sigma_{MH/PF}$, in Block 2 of the manhours per preflight inspection.
EMHB, SMHB	The mean and standard deviation, MH/BPO and $\sigma_{MH/BPO}$, in Block 2 of the manhours per basic postflight inspection.

Unscheduled maintenance data can be specified for up to 60 sets of WUCs. The number of sets to be used for a specific run is given by the value of KSET in Block 3. For each set, the following items are required.

EMHU, SMHU	The mean and standard deviation, MH/uma and $\sigma_{MH/uma}$, of manhours per unscheduled maintenance action in Block 3.
ENU, SNU	The mean and standard deviation of NORM per unscheduled maintenance action, NORM/uma and $\sigma_{NORM/uma}$, in Block 3.
ANU, BNU	The coefficients of the linear regression function for the number of unscheduled maintenance actions, $\overline{N_{uma}}$, per unit time versus time after the inspection in Block 3: $\overline{N_{uma}} = ANU(I,K) + BNU(I,K) \cdot (t)_{after\ I}$, for the Kth work unit code set and Ith inspection type.
UMAS	The minimum value for $\overline{N_{uma}}$.
DIK	Set equal to 1.0 when $(t)_{after\ I}$ is to be measured from the inspection at the beginning of the interval, and set equal to 3.0 when $(t)_{after\ I}$ is measured from the inspection at the start of the preceding interval.
ANAB, BNAB	The coefficients of the linear regression function for the number of abort maintenance actions per sortie versus time after inspection package I for the Kth work unit code set in Block 3: $N_{abort} = ANAB(I,K) + BNAB(I,K) \cdot (t)_{after\ I}$.
ENWK	The mean number of NORS hours per week charged to the set.

This input data is obtained from the corresponding data generated by the statistical analyses for all the WUCs included in the set. This is accomplished by a simple summation process except for manhours and NORM hours per maintenance action. These are obtained from:

$$EMHU(K) = \sum_{i=1}^{N} n_i \overline{(MH/uma)}_i \Big/ \sum_{i=1}^{N} n_i,$$

where

n_i is the number of unscheduled maintenance actions per unit time on WUC_i

$\overline{(MH/uma)}_i$ is the mean number of manhours per unscheduled maintenance action on WUC i

N is the number of WUCs in set K.

and

$$ENU(K) = \sum_{i=1}^{N} n_i \, \overline{(NORM/uma)}_i \Big/ \sum_{i=1}^{n} n_i$$

where

$\overline{(NORM/uma)}_i$ is the mean number of NORM hours per unscheduled maintenance action on WUC i.

The standard deviations for manhours and NORM per unscheduled maintenance action are given by:

$$SMHS(K) = \sum_{i=1}^{N} \left\{ n_i \left[(\sigma_{MH/uma})_i^2 + \left(\overline{(MH/uma)}_i - EMHU(K) \right)^2 \right] \right\} \Big/ \sum_{i=1}^{N} n_i$$

and

$$SNS(K) = \sum_{i=1}^{N} \left\{ n_i \left[(\sigma_{NORM/uma})_i^2 + \left(\overline{(NORM/uma)}_i - ENU(K) \right)^2 \right] \right\} \Big/ \sum_{i=1}^{N} n_i$$

where

$(\sigma_{MH/uma})_i$ and $(\sigma_{NORM/uma})_i$ are the standard deviations for WUC_i.

The values of n_i for the current maintenance program are the numbers of unscheduled maintenance actions encountered in the data bank. The unscheduled manhour and NORM data for each WUC are obtained from the statistical analysis of MH and NORM hours per maintenance action.

Utilization is specified by the following parameters in Block 4:

EFHW, SFHW — The mean and standard deviation of flight hours per week, $\overline{FH/WK}$ and $\sigma_{FH/WK}$.

ESOW, SSOW — The mean and standard deviation of sorties per week, $\overline{SOR/WK}$ and $\sigma_{SOR/WK}$.

ELDW, SLDW — The mean and standard deviation of landings per week, $\overline{LDG/WK}$ and $\sigma_{LDG/WK}$.

AIES — The number of accidents, incidents, and EUMRs per sortie, $N_{AIE/SOR}$.

The appropriate values for the current program can be obtained from the analysis of the effect of time after an inspection. Each of these utilization variables is correlated with time after a periodic inspection. The values obtained from the regression lines at a time approximately half-way between periodics can be taken as mean values independent of time. The corresponding standard deviation is the standard deviation of the regression obtained from the regression analysis.

At point A in Figure 5-2 (Sheet 2), the distribution $P_{WK/\Delta}$ for ΔI in weeks is derived for the cases in which the time base for ΔI is flight hours, sorties, or landings. For ΔI input in flying hours, for example:

$$P_{WK/\Delta}(C) = Pr\{\text{No. wks } \epsilon \Delta I \leq C\}$$

The distribution of flight hours per week is taken to be given by an Erlang distribution; hence, for Block 14 in Figure 5-2:

$$P_W(C) = \frac{\lambda \Delta I}{C^2} \; e^{-\left(\frac{\lambda \Delta I}{C}\right)} \left[\frac{(\lambda \Delta I/C)^{k-1}}{(k-1)}\right] ,$$

where

$$\lambda = \overline{FH/WK}/\sigma^2_{FH/WK}$$

and

$k = \left[\lambda \cdot \overline{FH/WK}\right]$ are obtained in Block 13.

Here $[a]$ indicates the greatest integer less than a. Values for p are actually calculated for k and k+1. The final result is found by interpolating between these results. This same procedure is used for all Erlang distribution calculations in the model.

The same distribution is used when ΔI is in sorties or landings, with λ and k being calculated in Blocks 17a or 17b.

To determine the number of basic postflights and preflights, the number of sorties in ΔI must be determined. For ΔI in flying hours or landings, $P_{WK/\Delta}$ is first obtained as above and the distribution for the number of sorties in ΔI is calculated in Block 15.

Taking both flight hours per week and sorties per week to have Erlang distribution, one obtains

$$P_{SOR/\Delta}(s) = \Pr\{\text{No. sorties } \epsilon\ \Delta I \le s\}$$

$$= 1 - \left\{\frac{\Delta I\lambda_2}{\Delta I\lambda_2 + s\lambda_1}\right\}^{k_2} \sum_{j=0}^{k_1-1} \left\{\left[\frac{\lambda_1 s}{\Delta I\lambda_2 + s\lambda_1}\right]^j \quad \frac{(k_2+j-1)!}{j!\,(k_2-1)!}\right\}$$

where $\lambda_1 = \overline{SOR/WK}/\sigma^2_{SOR/WK}$

$k_1 = \left[\lambda_1 \cdot \overline{SOR/WK}\right]$

$\lambda_2 = \overline{FH/WK}/\sigma^2_{FH/WK}$

$k_2 = \left[\lambda_2 \cdot \overline{FH/WK}\right]$

If ΔI is in weeks to begin with, then the calculation is simply that of Blocks 5 and 6. The mean and standard deviations of the distribution for the number of basic postflights and preflights are then calculated in Blocks 7 and 8. The mean and standard deviations of the total number of weeks in the maintenance program period are then calculated in Block 10.

Distributions for the number of preflight and basic postflight manhours in ΔI are calculated in Block 11. The variance in this case is that of the sum of a variable number of terms and is obtained as follows.

For some variable Z defined to be:

$$Z \equiv x_1 + x_2 + \ldots + x_n$$

Where x_i and n both are stochastic variables with x_i identically distributed, then Z has the probability distribution:

$$p_Z(u) = \sum_{N=1}^{\infty} p_N(n)\, p^{*n}(u)$$

where $p_N(n)$ is the probability distribution for n and p^{*n} is the nth-fold convolution of $p(x)$, with $E(x) = \bar{x}$ and $Var(x) = \sigma^2$.

Then

$$\bar{Z} = E(Z) = \bar{n} \cdot \bar{x}$$

and

$$\text{Var}(Z) = \int_0^\infty (u - \bar{Z})^2 \, p_Z(u) \, du$$

$$= \int_0^\infty (u - \bar{Z})^2 \sum_n p_N(n) \, p^{*n}(u) \, du$$

$$= \sum_n p_N(n) \int_0^\infty (u - \bar{Z})^2 \, p^{*n}(u) \, du$$

$$= \sum_n p_N(n) \, E(u - \bar{Z})^2 = \sum_n p_N(n) \, E(u - n\bar{x} + n\bar{x} - \bar{Z})^2$$

$$= \sum_n p_N(n) \, E(u - \bar{u} + a)^2$$

where:

$$a = n\bar{x} - \bar{Z}, \quad \text{and } \bar{u} = n\bar{x}$$

Since:

$$(u - \bar{u} + a)^2 = (u - \bar{u})^2 + 2a(u - \bar{u}) + a^2$$

we have:

$$E(u - \bar{u} + a)^2 = E(u - \bar{u})^2 + 2a \, E(u - \bar{u}) + a^2$$

$$= \text{Var}(u) + a^2$$

Hence:

$$\text{Var}(Z) = \sum_n p_N(n) \left[\text{Var}\left(\sum^n x_i \right) + (n\bar{x} - \bar{Z})^2 \right]$$

$$= \sum_n p_N(n) \left[n\sigma^2 + (n\bar{x} - \bar{n}\bar{x})^2 \right]$$

This reduces to:

$$\text{Var}(Z) = \bar{n}\sigma^2 + \sigma_n^2 \bar{x}^2$$

Applying this result in Block 11, the equations are as shown there for the variance of preflight and basic postflight manhours in ΔI. This result is also used in Block 12 when the mean and variance of flight hours in ΔI are computed.

At Point B in Figure 5-2 (Sheet 2), the distributions of special inspection manhours and NORM hours in ΔI are derived.

The first step at Block 19 is to obtain the distribution $P_{\Delta I_{SW}}$ for the special inspection interval ΔI_{SW} in weeks if the interval is specified in flying hours instead.

Using Erlang distributions for flight hours per week and the special inspection interval in flying hours, the distribution for the interval in weeks is given by the equation in Block 19b:

$$P_{\Delta I_{SW}}(C) = (\lambda_{SP}\, C)^{k_{SP}} \sum_{j=0}^{k_{FW}-1} (k_{SP}+j-1)!/\left[(j!)(k_{SP}-1)!\ (\lambda_{FW}+\lambda_{SP}C)\right]^{k_{SP}+j}$$

where λ_{SP}, k_{SP}, λ_{FW}, and k_{FW} are given by Block 19a:

$$\lambda_{SP} = \overline{\Delta I_{SP}}\,(I) \,/\, \sigma^2_{\Delta I_{SP}}(I)$$

$$k_{SP} = \lambda_{SP} \cdot \overline{\Delta I}_{SP}(I)$$

$$\lambda_{FW} = \overline{FH/WK}/\sigma^2_{FH/WK}$$

$$k_{FW} = \lambda_{FW} \cdot \overline{FH/WK}$$

The next step is to determine the distribution for the number of special inspections of Type I in ΔI, the inspection interval, in Block 22 of Figure 5-2. This distribution is derived as follows.

$$P_{NSPC}(n) = \Pr\{\text{No. inspections in } \Delta I = n\}$$
$$= \Pr\{\text{No. inspections in } \Delta I < n+1\} - \Pr\{\text{No. inspections in } \Delta I < n\}$$

The two probability distributions on the right are derived by determining the probability that the total time for n or n+1 inspections exceeds ΔI; that is:

$$\Pr\{\text{No. inspections in } \Delta I < n\} = \sum_C \Pr\left\{\sum_{I=1}^{n} \Delta I_{SW}(I) > C\right\} \cdot \Pr\{\Delta I = C\}$$

$$= \sum_C \left[1 - \Pr\left\{\sum_{I=1}^{n} \Delta I_{SW}(I) \le C\right\}\right] \Pr\{\Delta I = C\}$$

The first distribution on the right is the n-fold convolution of the distribution for $\Delta I_{SW}(I)$ which, as above, can be assumed normal. The second distribution on the right above is obtained from $p_{WK/\Delta}$. Hence:

$$\Pr\{\text{No. inspections in } \Delta I < n\} = \sum_C \left[1 - \eta(C; n\overline{\Delta I_{SW}}, \sqrt{n}\,\sigma_{\Delta I_{SW}})\right] p_{WK/\Delta}(C)$$

Consequently, the distribution for the number of Type I special inspections in ΔI is:

$$P_{NSPC}(n) = \sum_C \left[\eta(C; n\overline{\Delta I_{SW}}, \sqrt{n}\,\sigma_{\Delta I_{SW}}) - \eta(C; (n+1)\overline{\Delta I_{SW}}, \sqrt{n+1}\,\sigma_{\Delta I_{SW}})\right]$$

$$\cdot\, p_{WK/\Delta}(C)$$

The means and variances for manhours and NORM hours for special inspections of Type I in ΔI are calculated in Blocks 23 and 24.

After these calculations are completed for each type of special inspection, the distributions for the total manhours and NORM hours in all special inspections are calculated in Blocks 21 and 25. This completes the evaluation of the special inspections.

At Point C in Figure 5-2 (Sheet 3), the NORS hours-per-week rates for the WUC sets are summed to obtain an aircraft-level rate.

The next step is to calculate unscheduled maintenance manhours and NORM hours in ΔI. Starting at Block 30, the expected number of unscheduled maintenance actions in ΔI for WUC set K is calculated from the unscheduled maintenance action frequency $N_{uma/TM}(I, K, TM)$. The expected number and variance of manhours and NORM hours in ΔI are given by equations similar to those used for preflight and basic postflight manhours. That is, Block 34 gives:

$$\overline{MH}_{uma}(I, K, \Delta I) = \overline{MH}/uma(K) \cdot \overline{N}_{uma}(I, K, \Delta I)$$

For the variance, the equation is somewhat simplified, since the mean and variance of the number of unscheduled maintenance actions are equal. Hence:

$$\sigma^2_{MH_{uma}}(I, K, \Delta I) = \overline{N}_{uma}(I, K, \Delta I)\left[\sigma^2_{MH/uma}(K) + \left(\overline{MH}/uma(K)\right)^2\right]$$

In Block 37, similar equations for unscheduled NORM hours are used.

In Blocks 31 and 33, the distributions for total unscheduled manhours and NORM hours in ΔI are calculated by summing over the WUC sets.

The aborts-per-sortie rate at the aircraft level is calculated in Block 35 as a function of time (TM) after inspection package Type I by summing the WUC set rates. Then the average rate in ΔI is calculated in Block 38.

In Block 39, an aircraft "failures" per sortie rate is calculated by combining the abort and AIE rates. From this rate, the dependability D(I) following inspection package Type I is calculated as the probability that a "failure" does not occur in the sortie:

$$D(I) = \exp\{-\text{FAIL/SOR}(I)\}$$

In Block 42, the distribution of total manhours in an inspection interval for consecutive inspection package Types I and J is calculated by adding the means and variances of manhours for unscheduled maintenance, special inspections, preflight and postflight inspections, and inspection package manhours.

The distribution of total NORM hours in an I, J interval is calculated similarly in Block 40. The derivation of the distribution of total NOR hours in ΔI is somewhat more complicated in that NORS depends on the total calendar time for the interval. So, in the equation for NOR/Δ (I, J) in Block 36, the total of weeks per ΔI and elapsed time for the inspection package is multiplied by the NORS/WK rate for the aircraft.

The distribution for the total calendar time in the interval, calculated in Block 32, is similar in that the NORS hours accumulated during the inspection provide an additional term in the equations for CT and σ^2_{CT}.

In Blocks 28 and 29, the distribution for availability is calculated in a manner similar to that used in Block 19 for the special inspections. Thus:

$$P_{A_V}(a) = \frac{\lambda_C^{k_C}}{(k_C-1)!} \sum_{j=0}^{k_N-1} \left[\frac{(\lambda_N(1-a))^j}{(\lambda_N(1-a)+\lambda_C)^{k_C+j}} \cdot \frac{(k_C+j-1)!}{j!\,(k_C-1)!} \right]$$

The distribution for effectiveness, E, is easily obtained from this result, since:

$$E = A_V \cdot D(I)$$

and D(I) is not a stochastic variable. Therefore, in Block 26:

$$P_E(e, I, J) = \Pr\{E \le e\} = \Pr\{A_V \cdot D(I) \le e\}$$

$$= \Pr\{A_V \le e/D(I)\} = P_{A_V}\left(\frac{e}{D(I)}, I, J\right)$$

At Point D in Figure 5-2 (Sheet 4), the calculations described above are completed for all I, J values and results for the maintenance program period are obtained.

In Block 43, the distribution for the total manhours in M.P. is calculated by summing the means and variances of the manhours in ΔI over all I and J.

The derivation of the distributions for manhours per year and flight hour and for NOR/HR in the maintenance program period is complicated by the need to add in the elapsed time for NORM and NORS to obtain the total calendar time. If these totals are represented by CT/MP in Blocks 46, 47, and 48, then the distributions are obtained as follows. In Block 47:

$$P_{MH/YR}(mh) = Pr\{MH/YR \leq mh\} = Pr\left\{\frac{MH/MP}{CT/MP} \leq mh\right\}$$

$$= Pr\{MH/MP - (mh)(CT/MP) \leq 0\}$$

The mean and variance of the expression in the brackets are

$$m = \overline{MH/MP} - (mh)\,\overline{CT/MP}$$

$$\sigma^2 = \sigma^2_{MH/MP} + (mh)^2\,\sigma^2_{CT/MP}$$

and the result is given by the cumulative normal:

$$P_{MH/YR}(mh) = \eta\,(o;m,\sigma)$$

The distributions for MH/FH and NOR/HR in Blocks 46 and 48 are obtained similarly.

In Blocks 49 and 50, dependability and effectiveness of M.P. as functions of ΔI are calculated as time averages over the maintenance program period. As the last step in the program, the maintenance program parameters are output in Block 51.

A sample input data deck listing for the effectiveness model run is shown in Figure 5-3.

```
9999
SAMPLE RUN - INPUT DATA BASED ON RESULTS FOR 11 NON-ISO AIRCRAFT SAMPLE
   6.88000   2.00000   3.02000   1.05200   3.03000   1.04600   0.00709
   0.79000   1.42000   0.00000   2.74000   0.00000
   6    2    3    4    5
  25.00000  30.00000  35.00000  40.00000  45.00000  50.00000
   1    1    2
   2
  43.20000  26.70000   0.00000   0.00000   0.00000
   0.00161   0.00002   0.00000   0.00000   0.00000
   0.00000   0.00000   0.00000   0.00000
   0.01480  -0.00002   0.00000   0.00000
   0.24418  -0.00336   0.00000   0.00000   0.00000
   1.00000   1.00000   1.00000   1.00000
    .00000    .00000    .00744    .12209
  10
  43.20000  26.70000   0.00000   0.00000   0.00000
   0.02032  -0.00030   0.00000   0.00000   0.00000
   0.01066  -0.00030   0.00000   0.00000   0.00000
   0.09396  -0.00159   0.00000   0.00000   0.00000
   0.10571  -0.00106   0.00000   0.00000   0.00000
   1.00000   1.00000   1.00000   1.00000
    .01016    .00933    .04698    .05205
   0   10
 433.90000 417.00000 219.70000   5.00000 261.30000
  30.90000  39.40000  21.90000   0.33000  30.70000
   0.02016  -0.00030
   0.01042  -0.00030
   0.01011  -0.00159
   0.29232  -0.01105   0.00000   0.00000   0.00000
   3.00000   3.00000   3.00000   1.00000
    .01000    .00921    .00986    .14616
   1.10000   0.80000   5.00000  10.50000   0.00190
   3.50000   3.97000  13.30000  19.70000   0.27100
   0.00000   7.70000   3.30000   5.00000   0.16000
   1.70000   1.64000   0.00000   0.00000   0.00000
   7.70000   6.65000   0.00000   0.00000  50.00000  25.00000   2
  11.30000  13.50000   0.00000   0.00000  13.90000  10.10000   2
   6.00000   7.83000   0.00000   0.00000  29.00000  63.00000   0
   3.50000   0.10000   0.00000   0.00000  65.70000  65.30000   0
9999
```

Figure 5-3. Sample Data — Effectiveness Model

5.2.4 OUTPUT DESCRIPTION. As a result of the evaluation process, the impact of the maintenance program alternative is described by basically two measures: effectiveness and direct organizational manhours as functions of the length of the interval, ΔI, between consecutive inspection packages. Typically, these functions are as shown in Figure 5-4.

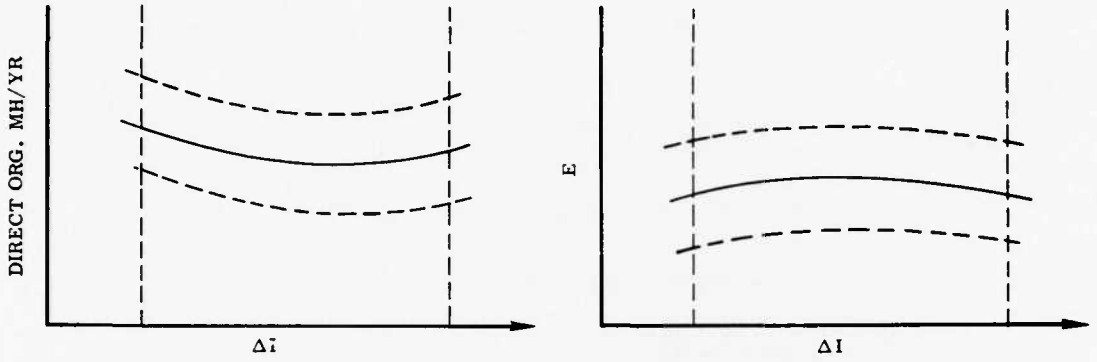


Figure 5-4. Typical Effectiveness Model Outputs

The solid-line curves are mean values of the functions; statistical variation in the function is indicated by dashed lines. The interval of variation of ΔI is constrained by data variability and by maintainability characteristics of the aircraft. These functions make it possible to select a ΔI interval that most probably maximizes effectiveness and minimizes cost within the constraints imposed.

A sample output is shown in Figure 5-5 for a run requiring six minutes on the IBM 370.

SAMPLE RUN - INPUT DATA BASED ON RESULTS FOR 11 NON-ISO AIRCRAFT SAMPLE

	MEAN	STD DEV
FH/WK	4.8800	2.0000
SOR/WK	3.0200	1.0520
LOG/WK	3.0300	1.0460
MH/FH	1.9200	0.0
MH/SOR	2.7600	0.0
R	0.7900	
AIRS/SOR	0.0073	

SCHEDULED INSPECTION DATA

I	J	MANHOURS MEAN	MANHOURS STD DEV	NORM A	NORM B	STD DEV	NO. INSP
1	1	43.2000	26.7000	0.0	0.0	0.0	2
2	1	43.2000	26.7000	0.0	0.0	0.0	10
3	1	433.8999	417.0000	219.7000	5.0000	261.2998	2
3	2	30.9000	39.4000	21.9000	0.3900	38.7000	10

WORK UNIT CODE SET DATA

I	K	UMA A	UMA B	SS	ABORTS A	ABORTS B
1	1	0.00161	0.00002	0.00080	0.0	0.0
1	2	0.0	0.0	0.0	0.0	0.0
1	3	0.014MB	-0.00002	0.00744	0.0	0.0
1	4	0.24418	-0.00336	0.12209	0.0	0.0
2	1	0.02032	-0.00010	0.01016	0.0	0.0
2	2	0.01866	-0.00030	0.00933	0.0	0.0
2	3	0.09396	-0.00159	0.04698	0.0	0.0
2	4	0.10571	-0.00186	0.05285	0.0	0.0
3	1	0.02016	-0.00030	0.01008	0.0	0.0
3	2	0.01842	-0.00010	0.00921	0.0	0.0
3	3	0.01811	-0.00159	0.00906	0.0	0.0
3	4	0.29232	-0.01105	0.14616	0.0	0.0

Figure 5-5. Sample Output — Effectiveness Model (Sheet 1)

K	MH/UMA MEAN	MH/UMA STD DEV	NORM/UMA MEAN	NORM/UMA STD DEV	NORS/MK
1	1.1000	0.8400	5.0000	14.5000	0.0019
2	3.5000	3.9700	13.3000	19.7000	0.2710
3	8.2000	7.7400	3.3000	5.4000	0.1600
4	1.7000	1.6400	2.8000	6.8000	0.0980

SPECIAL INSPECTION DATA

J	MANHOURS MEAN	MANHOURS STD DEV	NORM MEAN	NORM STD DEV	INTERVAL MEAN	INTERVAL STD DEV	KIS
1	7.7000	6.6500	0.0	0.0	50.0000	25.8000	2
2	11.3000	13.5200	0.0	0.0	13.9000	14.1000	2
3	6.8000	7.2300	0.0	0.0	29.8000	63.8003	7
4	3.5000	9.1000	0.0	0.0	25.7000	25.3000	2

INTERVAL RESULTS

INTERVAL = 25.

	MEAN	STD DEV
WEEKS	8.17	3.14
PREFLIGHT MANHOURS	31.30	18.28
BASIC POSTFLIGHT MANHOURS	56.54	33.03
SPEC. INSPECTION MANHOURS	27.66	32.38
SPEC. INSPECTION NORM	0.0	0.0
NO. OF UNSCHED. ACTIONS		
I = 1	4.42	
I = 2	3.43	
I = 3	4.26	
UNSCHED. MANHOURS		
I = 1	9.81	8.26
I = 2	14.96	13.75
I = 3	8.93	7.40
UNSCHED. NORM		
I = 1	12.66	15.60
I = 2	13.93	19.17
I = 3	14.41	16.89
TOTAL MANHOURS		
I = 1 J = 1	168.51	57.05
I = 2 J = 1	173.66	58.10
I = 3 J = 1	558.33	420.02
I = 3 J = 2	155.33	63.88
TOTAL NOR		
I = 1 J = 1	15.94	15.69
I = 2 J = 1	17.21	19.24
I = 3 J = 1	363.47	261.99
I = 3 J = 2	47.93	43.10
EFFECTIVENESS		
I = 1 J = 1	0.98613	0.02734
I = 2 J = 1	0.98105	0.03832
I = 3 J = 1	0.71247	0.25220
I = 3 J = 2	0.95489	0.07635
DEPLNDABILITY		
I = 1	0.99274	
I = 2	0.99274	
I = 3	0.99274	

INTERVAL = 30.

	MEAN	STD DEV
WEEKS	9.40	3.77
PREFLIGHT MANHOURS	36.95	21.90
BASIC POSTFLIGHT MANHOURS	66.75	34.55
SPEC. INSPECTION MANHOURS	32.25	34.85
SPEC. INSPECTION NORM	0.0	0.0
NO. OF UNSCHED. ACTIONS		
I = 1	4.80	
I = 2	3.67	
I = 3	5.20	
UNSCHED. MANHOURS		
I = 1	10.90	8.87
I = 2	15.64	14.03
I = 3	10.92	8.19
UNSCHED. NORM		
I = 1	13.79	16.29
I = 2	14.64	16.64
I = 3	18.12	21.54
TOTAL MANHOURS		
I = 1 J = 1	190.95	63.64
I = 2 J = 1	194.79	64.56
I = 3 J = 1	580.78	420.97
I = 3 J = 2	177.78	64.84

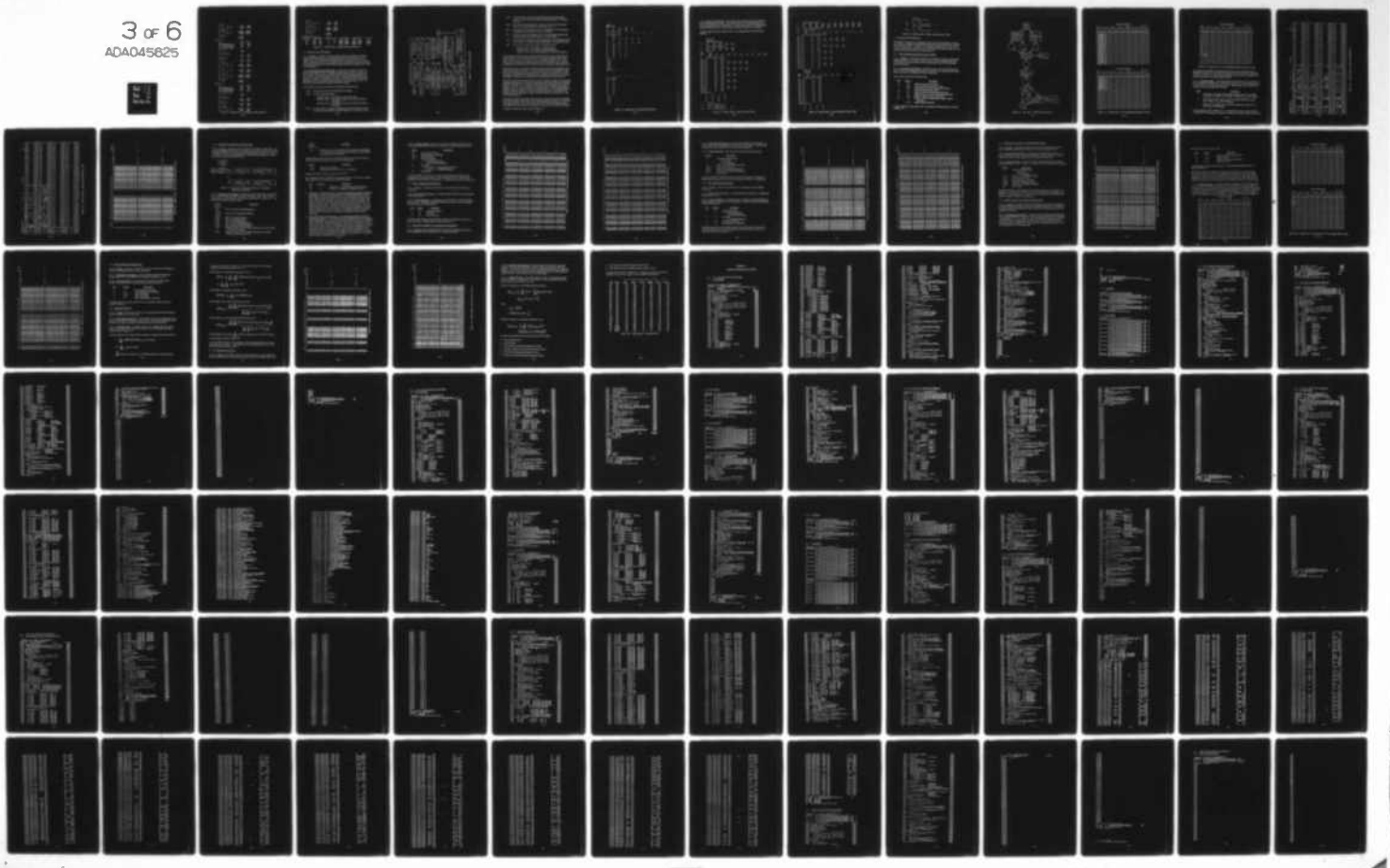
Figure 5-5. Sample Output — Effectiveness Model (Sheet 2)

```
      TOTAL NOR
      I =   1     J =   1          17.72          16.41
      I =   2     J =   1          18.57          19.74
      I =   3     J =   1         392.91         262.20
      I =   3     J =   2          53.95          44.34

      EFFECTIVENESS
      I =   1     J =   1        0.98716        0.02455
      I =   2     J =   1        0.98482        0.03034
      I =   3     J =   1        0.73207        0.23455
      I =   3     J =   2        0.95866        0.06848

      DEPENDABILITY
      I =   1                    0.99274
      I =   2                    0.99274
      I =   3                    0.99274

INTERVAL =  35.

                                    MEAN        STD DEV
      WEEKS                         8.64           4.39

      PREFLIGHT MANHOURS           42.60          25.50
      BASIC POSTFLIGHT MANHOURS    76.98          46.06

      SPEC. INSPECTION MANHOURS    36.97          37.24
      SPEC. INSPECTION NORM         0.0            0.0

      NO. OF UNSCHED. ACTIONS
      I =   1                       5.01
      I =   2                       4.18
      I =   3                       6.11

      UNSCHED. MANHOURS
      I =   1                      11.69           5.38
      I =   2                      18.16          15.14
      I =   3                      12.81           8.86

      UNSCHED. NORM
      I =   1                      14.45          16.69
      I =   2                      19.73          20.83
      I =   3                      21.42          23.55

      TOTAL MANHOURS
      I =   1     J =   1         211.41          70.42
      I =   2     J =   1         217.88          71.41
      I =   3     J =   1         603.24         422.05
      I =   3     J =   2         200.24          76.08

      TOTAL NOR
      I =   1     J =   1          19.03          16.85
      I =   2     J =   1          21.31          20.96
      I =   3     J =   1         421.95         262.37
      I =   3     J =   2          59.56          45.36

      EFFECTIVENESS
      I =   1     J =   1        0.98821        0.02171
      I =   2     J =   1        0.98674        0.02579
      I =   3     J =   1        0.74692        0.21913
      I =   3     J =   2        0.96216        0.06136

      DEPENDABILITY
      I =   1                    0.99274
      I =   2                    0.99274
      I =   3                    0.99274

INTERVAL =  40.

                                    MEAN        STD DEV
      WEEKS                         9.87           5.02

      PREFLIGHT MANHOURS           44.25          25.04
      BASIC POSTFLIGHT MANHOURS    87.16          52.53

      SPEC. INSPECTION MANHOURS    41.76          38.50
      SPEC. INSPECTION NORM         0.0            0.0

      NO. OF UNSCHED. ACTIONS
      I =   1                       5.54
      I =   2                       4.77
      I =   3                       6.98

      UNSCHED. MANHOURS
      I =   1                      13.03           9.95
      I =   2                      20.76          16.19
      I =   3                      14.64           9.48

      UNSCHED. NORM
      I =   1                      16.01          17.59
      I =   2                      19.12          22.27
      I =   3                      24.48          25.17

      TOTAL MANHOURS
      I =   1     J =   1         231.39          77.35
      I =   2     J =   1         241.13          78.39
      I =   3     J =   1         624.71         423.26
      I =   3     J =   2         222.71          82.54
```

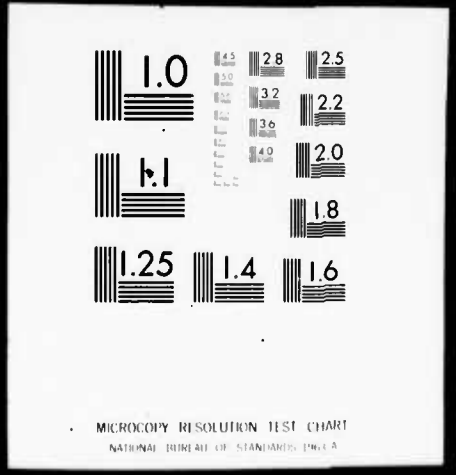
Figure 5-5. Sample Output – Effectiveness Model (Sheet 3)

AD-A045 625 GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV F/G 1/5
F-106 SCHEDULED MAINTENANCE STUDY. USER'S MANUAL,(U)
SEP 72 G WANG, R S GROTE , J R COOPER F41608-71-D-1383
UNCLASSIFIED GDCA-AHD72-006 NL

3 OF 6
ADA045625



3 OF 6
ADA045625



```
TOTAL NUR
I =  1     J =  1          21.24        17.79
I =  2     J =  1          24.36        22.43
I =  3     J =  1         450.75       262.52
I =  3     J =  2          64.93        46.24

EFFECTIVENESS
I =  1     J =  1         0.98866      0.02026
I =  2     J =  1         0.98686      0.02729
I =  3     J =  1         0.75958      0.22190
I =  3     J =  2         0.96539      0.05524

DEPENDABILITY
I =  1                    0.99274
I =  2                    0.99274
I =  3                    0.99274

INTERVAL =  45.

                                        MEAN      STD DEV
WEEKS                                  11.11        5.64

PREFLIGHT MANHOURS                     53.89       32.66
BASIC POSTFLIGHT MANHOURS              97.35       58.86

SPEC. INSPECTION MANHOURS              46.62       41.84
SPEC. INSPECTION NORM                   0.0         0.0

NO. OF UNSCHED. ACTIONS
I =  1                    6.24
I =  2                    5.37
I =  3                    7.85

UNSCHED. MANHOURS
I =  1                   14.62       10.53
I =  2                   23.35       17.17
I =  3                   16.47       10.05

UNSCHED. NORM
I =  1                   18.02       18.68
I =  2                   21.51       23.62
I =  3                   27.54       26.70

TOTAL MANHOURS
I =  1     J =  1         255.69       84.36
I =  2     J =  1         264.42       65.44
I =  3     J =  1         648.24      424.60
I =  3     J =  2         245.24       89.14

TOTAL NUR
I =  1     J =  1          23.92       18.92
I =  2     J =  1          27.40       23.81
I =  3     J =  1         479.54      262.68
I =  3     J =  2          70.30       47.11

EFFECTIVENESS
I =  1     J =  1         0.98845      0.01624
I =  2     J =  1         0.98706      0.02445
I =  3     J =  1         0.76867      0.19273
I =  3     J =  2         0.96725      0.05240

DEPENDABILITY
I =  1                    0.99274
I =  2                    0.99274
I =  3                    0.99274

INTERVAL =  50.

                                        MEAN      STD DEV
WEEKS                                  12.34        6.27

PREFLIGHT MANHOURS                     59.53       36.18
BASIC POSTFLIGHT MANHOURS             107.54       65.35

SPEC. INSPECTION MANHOURS              51.52       44.06
SPEC. INSPECTION NORM                   0.0         0.0

NO. OF UNSCHED. ACTIONS
I =  1                    6.93
I =  2                    5.97
I =  3                    8.73

UNSCHED. MANHOURS
I =  1                   16.21       11.07
I =  2                   25.95       18.10
I =  3                   18.30       10.59

UNSCHED. NORM
I =  1                   20.04       19.71
I =  2                   23.90       24.90
I =  3                   30.60       28.14

TOTAL MANHOURS
I =  1     J =  1         278.01       91.41
I =  2     J =  1         287.74       92.53
I =  3     J =  1         670.80      426.05
I =  3     J =  2         267.80       95.84
```

Figure 5-5. Sample Output — Effectiveness Model (Sheet 4)

TOTAL NOR

I =	1	J =	1	26.59	19.99
I =	2	J =	1	30.45	25.12
I =	3	J =	1	508.34	262.83
I =	3	J =	2	75.67	47.97

EFFECTIVENESS

I =	1	J =	1	0.96925	0.01822
I =	2	J =	1	0.98737	0.02348
I =	3	J =	1	0.77680	0.18259
I =	3	J =	2	0.96882	0.04463

DEPENDABILITY

I =	1	0.99274
I =	2	0.99274
I =	3	0.99274

MAINTENANCE PROGRAM RESULTS

INTERVAL (FLIGHT HOURS)	MANHOURS/YEAR MEAN	MANHOURS/YEAR STD DEV	MANHOURS/FLIGHT HOUR MEAN	MANHOURS/FLIGHT HOUR STD DEV	NOR HOURS/HOUR MEAN	NOR HOURS/HOUR STD DEV	EFFECTIVENESS MEAN	EFFECTIVENESS STD DEV	DEPENDABILITY
25.	1819.	463.	8.	2.	0.0812	0.0297	0.9462	0.0414	0.9927
30.	1704.	418.	7.	2.	0.0762	0.0273	0.9431	0.0369	0.9927
35.	1627.	381.	7.	2.	0.0726	0.0258	0.9556	0.0333	0.9927
40.	1569.	359.	7.	2.	0.0697	0.0248	0.9590	0.0304	0.9927
45.	1524.	342.	6.	1.	0.0672	0.0239	0.9608	0.0290	0.9927
50.	1488.	327.	6.	1.	0.0649	0.0229	0.9622	0.0275	0.9927

Figure 5-5. Sample Output — Effectiveness Model (Sheet 5)

5.3 NETWORK ANALYSIS MODEL

5.3.1 PURPOSE. NORM hours and maintenance manhours expended in scheduled inspections are calculated by a supporting submodel, the network analysis model (NAM). This is accomplished by developing a network description of the series and parallel organization of the various inspection tasks included in the inspection package. The model then calculates the total manhours involved and the distributions of flow time across the network.

5.3.2 INPUT DATA AND PROCEDURES. The flow chart in Figure 5-6 describes the network analysis process. Three types of input data are read from cards. The first consists of the empirical look-phase manhours and inspection package NORM hours in Step 1 of the block diagram. This data is input for existing inspection packages only. In Step 2, the branch data is read in. This data includes the probability distributions for branch manhours and the span time to manhour ratios, FHR. The third set of input data in Step 3 defines the network structure.

The card deck is composed of nine card sets with the following formats.

Set 1 One title card (80 characters printed as a heading)

Set 2 One card with three integers:

Columns 1 and 2 – The number of network branches
Columns 3 and 4 – The number of points in the empirical NORM distribution
Columns 5 and 6 – The number of points in the empirical manhour distribution

Set 3 As many cards as required to specify the NORM and probability values for all points in the empirical NORM distribution, 10 columns per value.

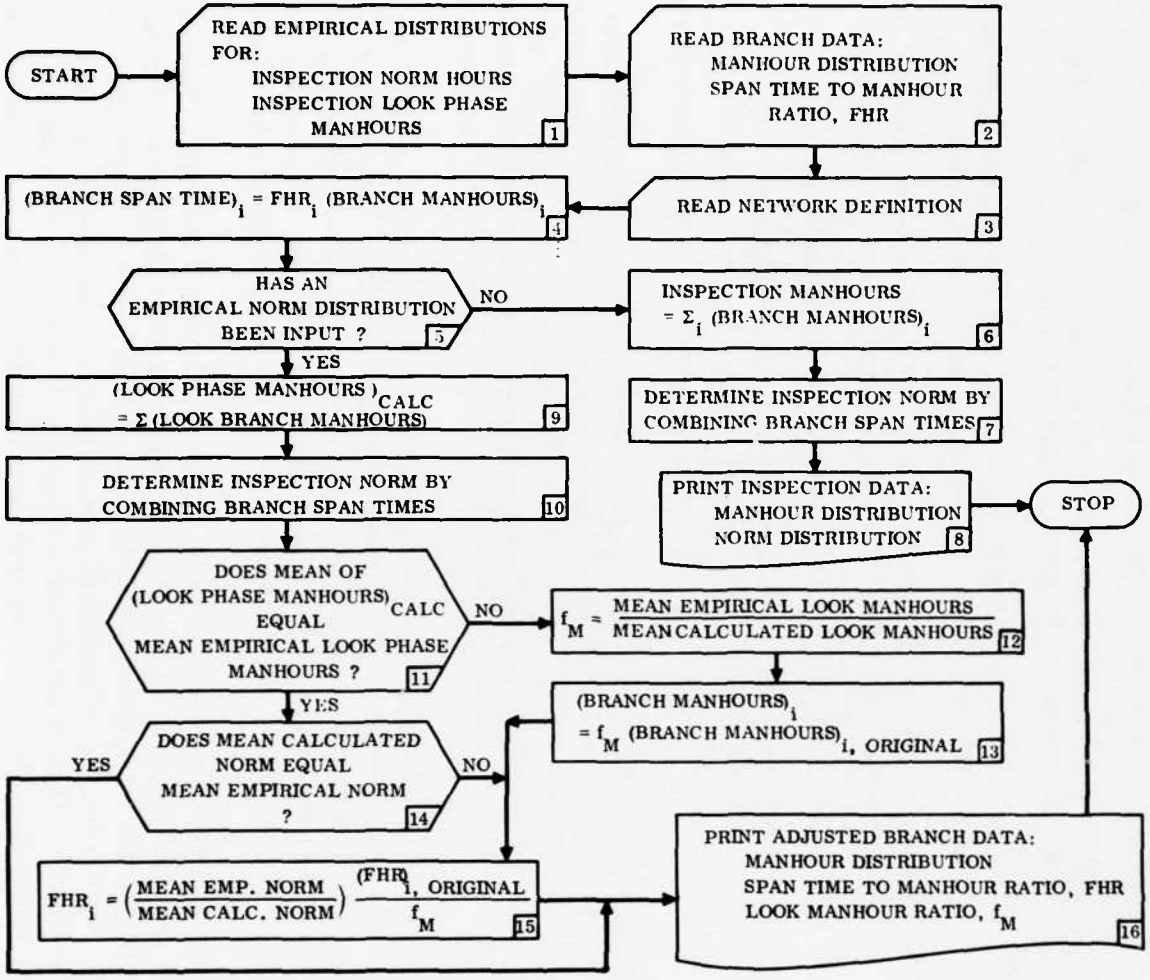


Figure 5-6. Network Analysis Model

Set 4 — As many cards as required to specify the manhours and probability values for all points in the empirical manhour distribution, 10 columns per value.

Set 5 — One card for each 40 branches or lines, with a 0 for each look branch and a 2 for each repair branch, 2 columns per value.

Set 6 — One card for each 8 branches or lines, containing the ratio of span time to manhours for each branch, fields of 10 columns.

Set 7 — One card for each 40 branches or lines, with the number of points used to define branch manhour distribution, in 2-column fields.

Set 8 — As many cards as required to specify the manhours and probability values for all points in the branch manhour distributions, 10 columns per value.

Set 9 — One card for each step in the network reduction process:

Columns 1 and 2 – The number of the first branch.
Columns 3 and 4 – The number of the second branch.
Column 6 – A zero for parallel branches; a 1 for series branches.

If an existing inspection package is being evaluated to scale inspection task manhours and man times, a "Yes" exit is taken at Step 5. If previously adjusted data is being used to predict flowtime and manhours for a new inspection package, a "No" exit is taken at Step 5 and inspection package manhours are accumulated at Step 6, followed by application of NAM to reduce the network at Step 7 to calculate the package flow time.

The reduction of sets of branches to equivalent branches involves the application of two different mathematical techniques. For two branches in series, the probability distribution for the total span time is the distribution for the sum of the span times. This distribution is obtained as the convolution of the individual distributions. For branches in parallel, the span time is the distribution for the maximum over the branches.

Inspection task manhours and span times are scaled in Steps 9 through 15 by calculating inspection package manhours in Step 9, reducing the network by using NAM to calculate the flow time in Step 10, and comparing calculated manhours with empirical manhours in Step 11. The ratio, f_M, of empirical look manhours to calculated look manhours is adjusted in Step 12. Branch manhours are adjusted in Step 13. When package manhour equality is achieved in Step 11, calculated package NORM hours are compared with empirically derived NORM hours in Step 14 and the spantime-to-manhour ratio, FHR, is calculated in Step 15.

When equality between empirically derived inspection package flow time and calculated flow time is achieved, the analysis of the inspection package is complete. At this point, NAM outputs the final values of the ratios f_M and FHR so that the adjusted values of task manhours and span times are available for evaluation of a new inspection package.

A listing of a sample data deck is shown in Figure 5-7.

```
9999
SAMPLE CASE 1
11 2 5
0.          3.          4.          4.2         6.
0.          .1          .5          .8          1.
0.          3.          4.          4.2         6.
0.          .1          .5          .8          1.
 0 2 0 2 0 2 0 2 0 2 0
4.          1.          1.          1.          .5          1.          .75         1.
.33         1.          1.
 2 6 2 6 2 4 2 6 2 4 2
0.          .5
0.          1.
0.          .2          .4          .6          .8          1.
0.          .2          .4          .6          .8          1.
0.          1.
0.          1.
0.          .2          .5          .9          1.4         2.0
0.          .2          .4          .6          .8          1.
0.          1.2
0.          1.
0.          .1          .2          .4
0.          .2          .6          1.
0.          .8
0.          1.
0.          .5          .7          .9
0.          .2          .6          1.
0.          1.5
0.          1.
0.          .2          .4          .5
0.          .4          .8          1.
0.          .8
0.          1.
 8 4 1
 7 8 1
 2 7 1
 2 3 0
 1 2 1
 5 6 1
 9 10 1
 5 9 0
 1 5 1
 11 1 1
SAMPLE CASE 2
 8

1.          1.          1.          1.          1.          1.          1.          1.
 2 2 2 2 2 2 2 2 2
0.          1.5
0.          1.
0.          3.
0.          1.
0.          4.
0.          1.
0.          5.
0.          1.
0.          6.
0.          1.
0.          3.5
0.          1.
0.          2.
0.          1.
0.          7.
0.          1.
 2 3 0
 4 5 0
 2 4 1
 2 7 0
 1 2 1
 1 6 1
 1 8 0
9999
```

Figure 5-7. Sample Data — Network Analysis Model

5.3.3 OUTPUT DESCRIPTION. Output includes the calculated inspection NORM and manhour distributions, the mean and standard deviations of these distributions, and the corresponding empirical distributions. Primary output consists of revised branch manhour distributions and revised span-time-to-manhour ratios for all branches.

A sample output is shown in Figure 5-8 for a run requiring about one minute on the IBM 370.

```
          SAMPLE CASE 1
          INPUT DATA
          EMPIRICAL INSPECTION NORM
T =       0.0       3.00      4.00      4.20      6.00
P =       0.0       0.10      0.50      0.80      1.00
          EMPIRICAL INSPECTION MANHOURS
T =       0.0       3.00      4.00      4.20      6.00
P =       0.0       0.10      0.50      0.80      1.00
          BRANCH DATA
NBR =          11
LKFX =          0
                0
FHR =        1.00      1.00      1.00      1.00      0.50      1.00      0.75      1.00      0.33      1.00
             1.00
          BRANCH MANHOURS AND SPAN TIMES
TMHI  1,J1 =          0.0       0.50
PMHI  1,J1 =          0.0       1.00
TMHI  2,J1 =          0.0       0.20      0.40      0.60      0.80      1.00
PMHI  2,J1 =          0.0       0.20      0.40      0.60      0.80      1.00
TMHI  3,J1 =          0.0       1.00
PMHI  3,J1 =          0.0       1.00
TMHI  4,J1 =          0.0       0.20      0.50      0.90      1.40      2.00
PMHI  4,J1 =          0.0       0.20      0.40      0.60      0.80      1.00
TMHI  5,J1 =          0.0       1.20
PMHI  5,J1 =          0.0       1.00
TMHI  6,J1 =          0.0       0.10      0.20      0.40
PMHI  6,J1 =          0.0       0.20      0.80      1.00
TMHI  7,J1 =          0.0       0.80
PMHI  7,J1 =          0.0       1.00
TMHI  8,J1 =          0.0       0.50      0.70      0.90
PMHI  8,J1 =          0.0       0.20      0.60      1.00
TMHI  9,J1 =          0.0       1.50
PMHI  9,J1 =          0.0       1.00
TMHI 10,J1 =          0.0       0.30      0.40      0.50
PMHI 10,J1 =          0.0       0.40      0.80      1.00
TMHI 11,J1 =          0.0       0.80
PMHI 11,J1 =          0.0       1.00
NETWORK DEFINITION
          1         3         4         1
          2         7         8         1
          3         2         7         1
          4         2         3         0
          5         1         2         1
          6         5         6         1
          7         9        10         1
          8         5         9         0
          9         1         5         1
         10         1        11         1
          OUTPUT DATA
          EMPIRICAL INSPECTION NORM
MEAN =       4.36      STANDARD DEVIATION =       0.88
          EMPIRICAL INSPECTION MANHOURS
MEAN =       4.36      STANDARD DEVIATION =       0.88
```

Figure 5-8. Sample Output – Network Analysis Model

```
          CALCULATED INSPECTION NORM
T =       0:0  3:38  3:28  3:38  3:55  3:78  3:88  3:88  4:12  4:18
          4:29 4:38  4:49  4:58  4:80  4:98  4:88  5:14  5:14  5:38
P =       8:2  8:09  8:01  8:01  8:04  8:08  8:13  8:12  8:27  8:27
          8:41 8:42  8:50  8:58  8:69  8:78  8:88  8:82  8:43  8:66
MEAN =      4.51      STANDARD DEVIATION =      0.45
          ADJUSTED BRANCH DATA
FM =      0.75
FHR =     1.29
          1.29      1.00      1.29      1.00      0.64      1.00      0.97      1.00      0.42      1.00
          ADJUSTED BRANCH MANHOURS AND SPAN TIMES
TMH( 1,J) =          0.0       0.38
PMH( 1,J) =          0.0       1.00
TMH( 2,J) =          0.0       0.20      0.40      0.60      0.80      1.00
PMH( 2,J) =          0.0       0.20      0.40      0.60      0.80      1.00
TMH( 3,J) =          0.0       0.75
PMH( 3,J) =          0.0       1.00
TMH( 4,J) =          0.0       0.20      0.50      0.90      1.40      2.00
PMH( 4,J) =          0.0       0.20      0.40      0.60      0.80      1.00
TMH( 5,J) =          0.0       0.90
PMH( 5,J) =          0.0       1.00
TMH( 6,J) =          0.0       0.10      0.20      0.40
PMH( 6,J) =          0.0       0.20      0.80      1.00
TMH( 7,J) =          0.0       0.60
PMH( 7,J) =          0.0       1.00
TMH( 8,J) =          0.0       0.50      0.70      0.90
PMH( 8,J) =          0.0       0.20      0.60      1.00
TMH( 9,J) =          0.0       1.13
PMH( 9,J) =          0.0       1.00
TMH( 10,J) =         0.0       0.30      0.40      0.50
PMH( 10,J) =         0.0       0.40      0.80      1.00
TMH( 11,J) =         0.0       0.60
PMH( 11,J) =         0.0       1.00
          SAMPLE CASE 2
          INPUT DATA
          BRANCH DATA
NBR =     8
LKFX =    0
FHR =     1.00      1.00      1.00      1.00      1.00      1.00      1.00      1.00
          BRANCH MANHOURS AND SPAN TIMES
TMH( 1,J) =          0.0       1.50
PMH( 1,J) =          0.0       1.00
TMH( 2,J) =          0.0       3.00
PMH( 2,J) =          0.0       1.00
TMH( 3,J) =          0.0       4.00
PMH( 3,J) =          0.0       1.00
TMH( 4,J) =          0.0       5.00
PMH( 4,J) =          0.0       1.00
TMH( 5,J) =          0.0       6.00
PMH( 5,J) =          0.0       1.00
TMH( 6,J) =          0.0       3.50
PMH( 6,J) =          0.0       1.00
TMH( 7,J) =          0.0       2.00
PMH( 7,J) =          0.0       1.00
TMH( 8,J) =          0.0       7.00
PMH( 8,J) =          0.0       1.00
NETWORK DEFINITION
          1  2      3  0
          2  4      5
          3  2      4  1
          4  2      7  0
          5  1      2  1
          6  1      6
          7  1      8  0
```

Figure 5-8. Sample Output – Network Analysis Model, Contd

```
          OUTPUT DATA
          CALCULATED INSPECTION NORM
T =       0.0        15.00
P =       0.0         1.00
MEAN =      15.00     STANDARD DEVIATION =        0.0
          CALCULATED INSPECTION MANHOURS
T =       0.0        32.00
P =       0.0         1.00
MEAN =      32.00     STANDARD DEVIATION =        0.0
```

Figure 5-8. Sample Output – Network Analysis Model, Contd

5.4 MANHOUR AND NORM DATA

The objective of this task is to generate for each work unit code (WUC) set, the mean and variance of manhours per unscheduled maintenance action and NORM per unscheduled maintenance action. In addition, the programs compute the mean value of span time for a repair action on each WUC set. The logic flow is shown in Figure 5-9, and the individual programs are listed in Paragraph 6.10.

5.4.1 SUM UNSCHEDULED MAINTENANCE ACTIONS

5.4.1.1 Purpose. The purpose of this task is to compute the number of unscheduled maintenance actions, the number of repair actions in hourly postflight inspections, and the number of repair actions in periodic inspections on each WUC by how-malfunction code (HMC).

5.4.1.2 Input Data and Procedures. The input consists of the sorted data bank tape and a deck of cards defining the isochronal aircraft group, the when-discovered codes (WDC), and the hourly postflight and periodic inspections.

The card data deck has the following format.

Card	Column	Description
a	3-5	Number of Isochronal Aircraft
b	3-10	Serial Number of Isochronal Aircraft
	13-15	Starting Week Number of Isochronal Inspection
c	5	When-Discovered Codes (WDC)
d	1-3	Number of WDC for Unscheduled Inspections
e	1-3	Position of Each WDC for Unscheduled Inspections
f	1-3	Number of Support General Inspections
g	1-3	Position of WDC Corresponding to Support General Inspection
	6-10	Support General Inspection

A sample input deck, that used for the F-106 Scheduled Maintenance Study, is shown in Figure 5-10.

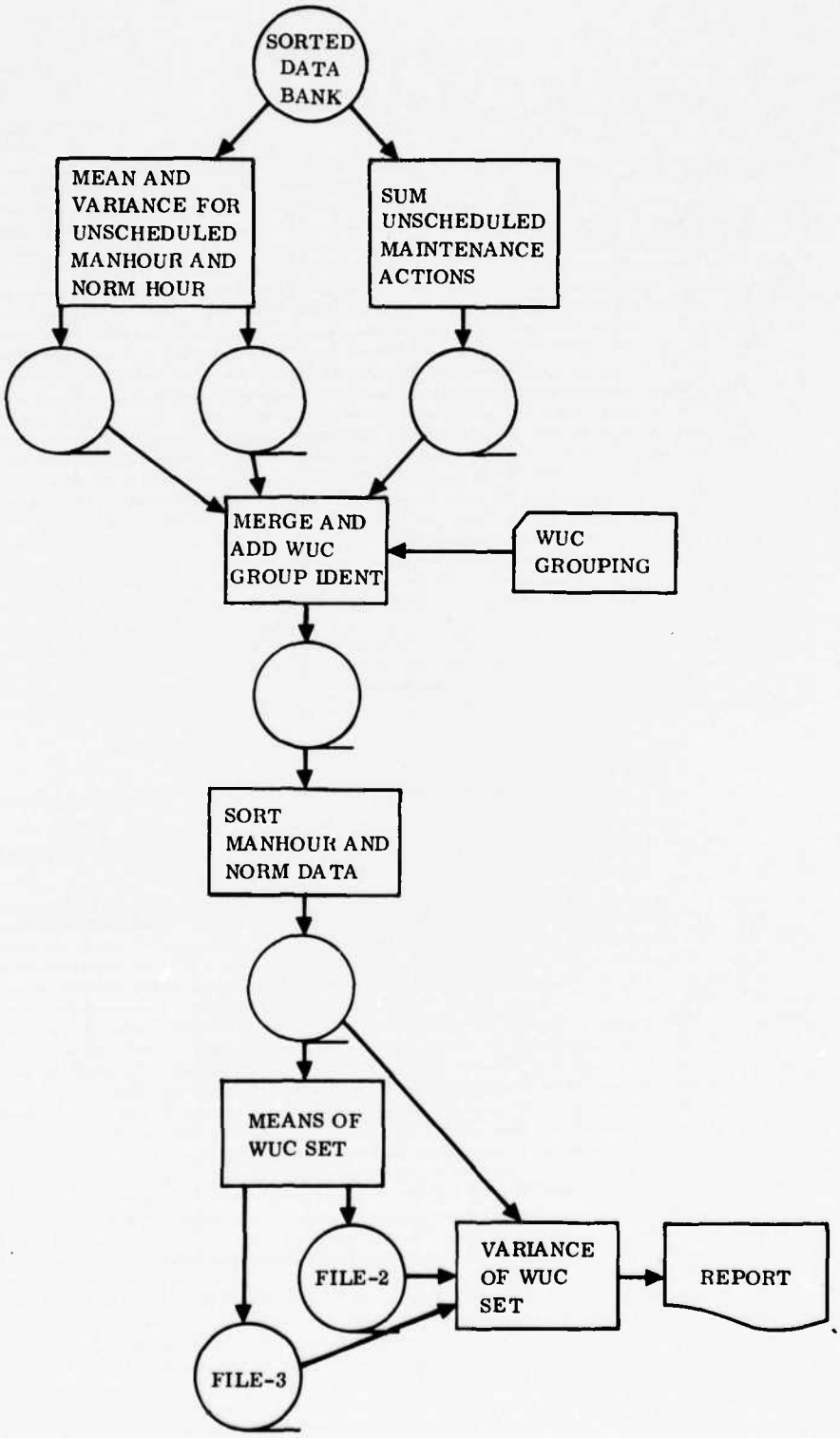


Figure 5-9. Logic Flow – Manhour and NORM Data

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
34							
57000236	331						
57000237	331						
57000243	324						
57000244	331						
57002545	331						
58000774	324						
58000991	331						
59999003	331						
59000003	331						
59000005	331						
59000006	331						
59000010	331						
59000012	331						
59000015	331						
59000018	331						
59000019	331						
59000026	331						
59000030	331						
59000054	324						
59000057	324						
59000058	324						
59000059	324						
59000104	331						
59000105	331						

61000 (REV. 11-84)

80 COLUMN GENERAL PURPOSE FORM

JOB TITLE _____ ENGINEER _____ PAGE ____ OF ____

JOB NO. _____ AWD _____ EWO-WAP _____ FUNCTION _____ ANALYST _____ DATE _____

W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8
59000108	324						
59000110	324						
59000119	324						
59000141	324						
59000143	324						
59000144	324						
59000145	324						
59000147	324						
59000151	324						
59000152	324						
A							
B							
C							
D							
E							
F							
G							
H							
J							
K							
M							
N							
P							
Q							
R							

61000 (REV. 11-84)

Figure 5-10. Sample Input – Sum Unscheduled Maintenance Actions

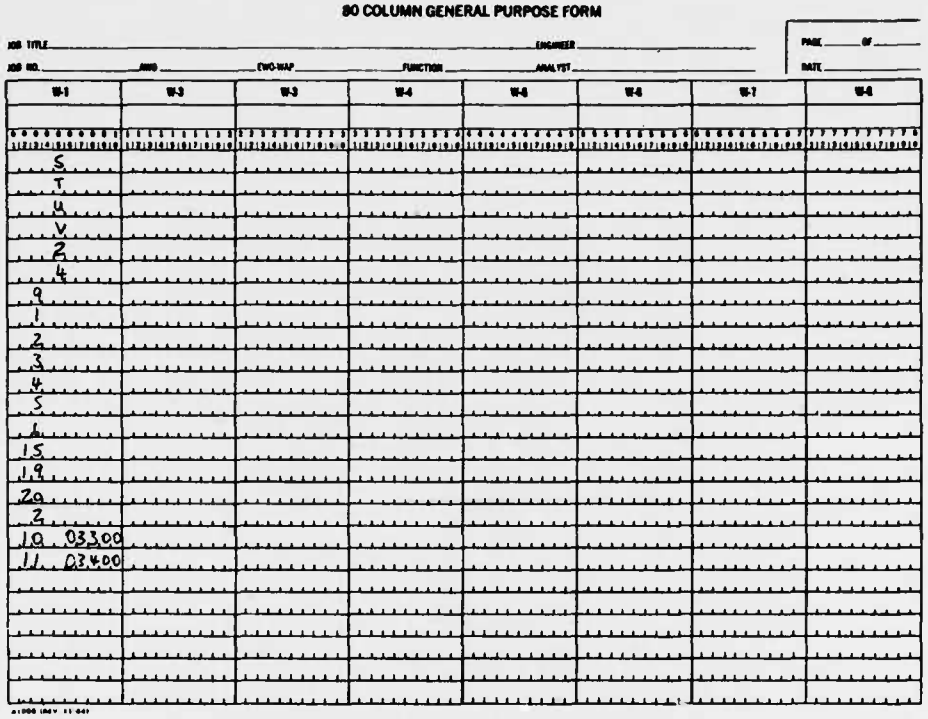


Figure 5-10. Sample Input – Sum Unscheduled Maintenance Actions, Contd

The program accumulates the maintenance actions from Type 4 data bank records (Columns 26 through 28) for both aircraft subsets and each WUC and HMC combination, and then writes the total of unscheduled maintenance actions and hourly postflight and periodic inspections on an output magnetic tape file.

5.4.1.3 Output Description. The output magnetic tape file record layout, Figure 5-11, has 50 characters to a data record, blocked 60 to a tape record. The aircraft subset is 1 for isochronal and 2 for non-isochronal aircraft. The three data fields contain the following, for the corresponding WUC and HMC.

Field	Description
1	The number of unscheduled maintenance actions on each WUC, by how-malfunction code (HMC). This number is denoted by N_{uma} (WUC, HMC).
2	The number of repair actions in hourly postflight inspections on each WUC, by HMC: $(N_{rep}\ (WUC, HMC))_{HPO}$
3	The number of repair actions in periodic inspections on each WUC, by HMC: $(N_{rep}\ (WUC, HMC))_{PE}$

A sample output is shown in Figure 5-12. A recent IBM 370 run for a fleet of 150 aircraft and 2201 WUCs required 10 minutes of computer time and generated 25,920 records.

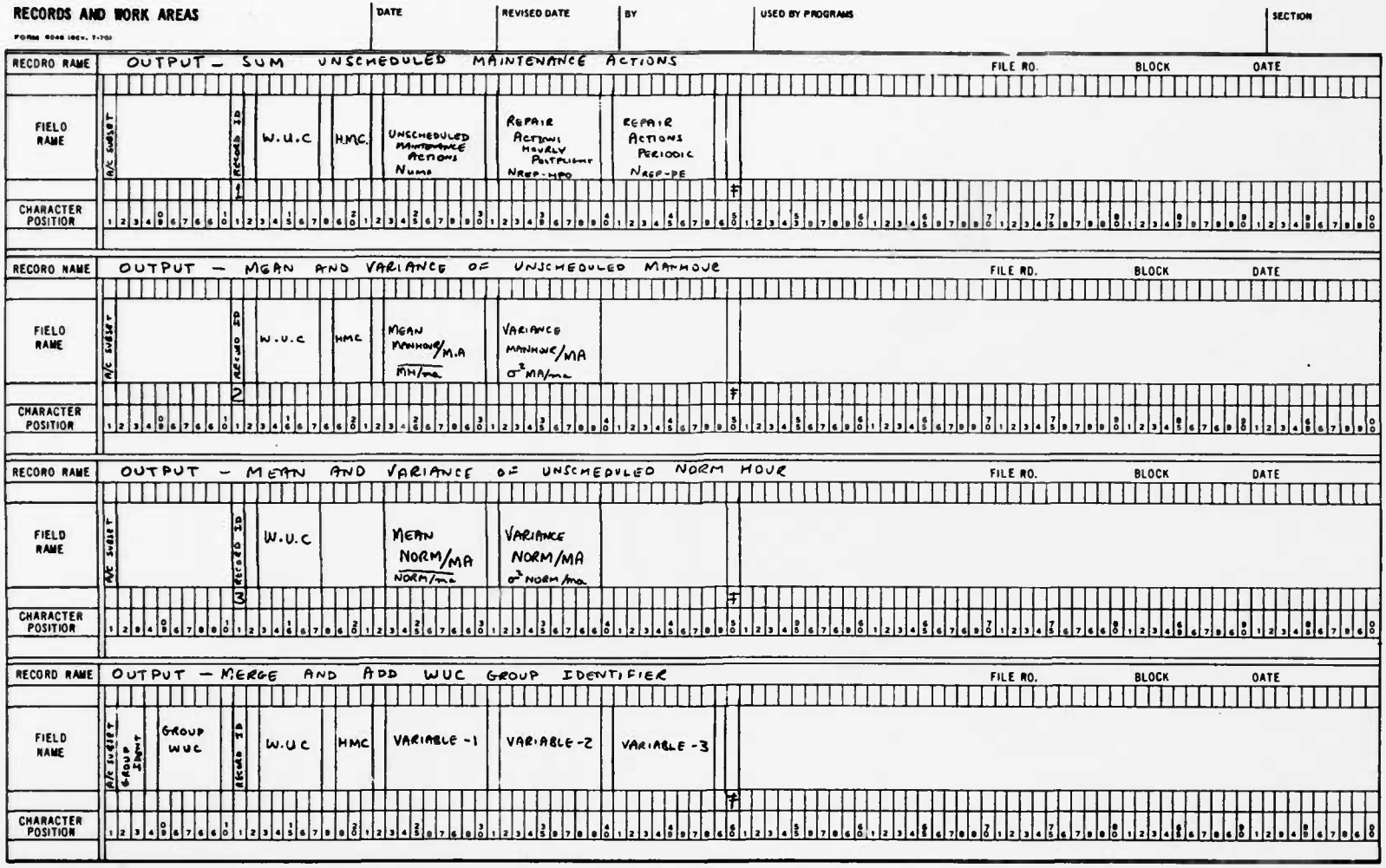


Figure 5-11. Record Layouts – Manhour and NORM Data

RECORDS AND WORK AREAS

DATE | REVISED DATE | BY | USED BY PROGRAMS | SECTION

RECORD NAME OUTPUT - MEANS OF WUC SET - FILE 2 — FILE NO. | BLOCK | DATE

FIELD NAME	A/C SUBSET	GROUP IDENT		W.U.C		VARIABLE N2	VARIABLE C		‡
CHARACTER POSITION	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

RECORD NAME OUTPUT - MEANS OF WUC SET - FILE 3 — FILE NO. | BLOCK | DATE

FIELD NAME	A/C SUBSET	GROUP IDENT	MEAN MANHOURS/UMA	VARIABLE N1	MEAN NORM/UMA	MEAN MANHOUR PER REPAIR ACTION PERIODIC	MEAN MANHOUR PER REPAIR ACTION MONTHLY POSTFLIGHT	‡
CHARACTER POSITION	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31 32 33 34 35	36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

RECORD NAME — FILE NO. | BLOCK | DATE

FIELD NAME	
CHARACTER POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

RECORD NAME — FILE NO. | BLOCK | DATE

FIELD NAME	
CHARACTER POSITION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

Figure 5-11. Record Layouts – Manhour and NORM Data, Contd

```
T/P TU13     15.52.53 72/228 BLK CNT 010 LENGTH 100  CONTROL Z050 0000000 0000000                    PAGE 001

.....1.....2.....3.....4.....5.....6.....7.....8.....9.....0.....1.....2.....3..
                                                                  CH  3000, BLK      1, TOT      1.
2   1 11AAA 106 00000020 00000000 00000000 -2   1 11AAA 840 00000010 00000000 00000000 -
2   1 11AAB 117 00000020 00000000 00000000 -2   1 11AA1 020 00000010 00000000 00000000 -
2   1 11AA1 070 00000040 00000000 00000000 -2   1 11AA1 105 00000220 00000010 00000030 -
1   1 11AA1 105 00000010 00000000 00000000 -2   1 11AA1 106 00000050 00000000 00000050 -
2   1 11AA1 108 00000010 00000000 00000000 -2   1 11AA1 117 00000000 00000000 00000010 -
2   1 11AA1 127 00000010 00000030 00000010 -2   1 11AA1 190 00000200 00000000 00000010 -
1   1 11AA1 190 00000010 00000000 00000000 -2   1 11AA1 230 00000000 00000010 00000000 -
2   1 11AA1 246 00000010 00000000 00000000 -2   1 11AA1 374 00000010 00000000 00000000 -
2   1 11AA1 602 00000010 00000000 00000000 -2   1 11AA1 605 00000010 00000000 00000000 -
1   1 11AA1 615 00000010 00000000 00000000 -2   1 11AA1 660 00000030 00000000 00000000 -
1   1 11AA1 730 00000010 00000000 00000000 -2   1 11AA1 750 00000010 00000000 00000000 -
2   1 11AA1 846 00000150 00000000 00000020 -1   1 11AA1 846 00000010 00000000 00000000 -
2   1 11AA1 865 00000000 00000000 00000010 -2   1 11AA1 900 00000010 00000000 00000000 -
2   1 11AC1 020 00000010 00000000 00000000 -2   1 11AC1 028 00000000 00000000 00000010 -
2   1 11AC1 070 00000040 00000000 00000010 -2   1 11AC1 105 00000210 00000010 00000020 -
2   1 11AC1 106 00000060 00000000 00000130 -2   1 11AC1 117 00000000 00000010 00000000 -
2   1 11AC1 127 00000020 00000000 00000030 -1   1 11AC1 127 00000010 00000000 00000000 -
4   1 11AC1 170 00000060 00000000 00000020 -2   1 11AC1 190 00000030 00000000 00000020 -
2   1 11AC1 230 00000000 00000040 00000010 -2   1 11AC1 246 00000000 00000000 00000010 -
2   1 11AC1 301 00000000 00000000 00000010 -2   1 11AC1 450 00000010 00000000 00000000 -
2   1 11AC1 561 00000000 00000000 00000010 -2   1 11AC1 585 00000000 00000000 00000010 -
2   1 11AC1 730 00000000 00000000 00000010 -2   1 11AC1 750 00000020 00000010 00000000 -
2   1 11AC1 780 00000010 00000000 00000000 -2   1 11AC1 846 00000080 00000000 00000010 -
2   1 11AC1 910 00000020 00000000 00000000 -2   1 11AC1 947 00000000 00000000 00000020 -
1   1 11AE1 070 00000000 00000000 00000010 -2   1 11AE1 105 00000010 00000000 00000010 -
2   1 11AE1 135 00000010 00000000 00000000 -2   1 11AE1 190 00000010 00000000 00000010 -
2   1 11AJ1 127 00000010 00000000 00000000 -2   1 11AQ1 169 00000010 00000000 00000000 -
2   1 11AR1 374 00000010 00000000 00000000 -2   1 11AR1 472 00000010 00000000 00000000 -
2   1 11AR1 900 00000010 00000000 00000000 -2   1 11CAA 020 00000130 00000020 00000080 -
2   1 11CAA 070 00000300 00000010 00000040 -1   1 11CAA 070 00000030 00000000 00000010 -
                                                                  CH  3000, BLK      2, TOT      2.
2   1 11CAA 105 00002510 00000110 00000310 -1   1 11CAA 105 00000120 00000010 00000010 -
2   1 11CAA 106 00001750 00000130 00000130 -1   1 11CAA 106 00000030 00000000 00000000 -
2   1 11CAA 117 00000010 00000000 00000000 -2   1 11CAA 127 00000040 00000000 00000010 -
2   1 11CAA 135 00000060 00000000 00000000 -2   1 11CAA 170 00000000 00000010 00000030 -
2   1 11CAA 190 00000220 00000040 00000150 -1   1 11CAA 190 00000000 00000000 00000010 -
2   1 11CAA 350 00000000 00000000 00000010 -2   1 11CAA 660 00000000 00000000 00000020 -
2   1 11CAA 669 00000000 00000020 00000000 -2   1 11CAA 730 00000000 00000000 00000040 -
4   1 11CAA 750 00000030 00000000 00000030 -2   1 11CAA 780 00000020 00000000 00000000 -
2   1 11CAA 865 00000010 00000000 00000000 -2   1 11CAA 932 00000020 00000000 00000000 -
2   1 11CA1 020 00000050 00000080 00000090 -1   1 11CA1 020 00000000 00000000 00000010 -
2   1 11CA1 070 00000300 00000020 00000110 -2   1 11CA1 080 00000000 00000060 00000000 -
2   1 11CA1 105 00000930 00000180 00000480 -1   1 11CA1 105 00000010 00000000 00000000 -
2   1 11CA1 106 00001250 00000100 00000490 -1   1 11CA1 106 00000020 00000000 00000000 -
2   1 11CA1 108 00000000 00000000 00000030 -2   1 11CA1 116 00000000 00000010 00000030 -
2   1 11CA1 117 00000180 00000040 00000120 -2   1 11CA1 127 00000150 00000000 00000040 -
1   1 11CA1 127 00000030 00000000 00000010 -2   1 11CA1 135 00000040 00000000 00000020 -
2   1 11CA1 170 00000010 00000000 00000000 -2   1 11CA1 190 00001040 00000130 00000370 -
1   1 11CA1 190 00000040 00000010 00000010 -2   1 11CA1 230 00000000 00000020 00000110 -
2   1 11CA1 246 00000000 00000000 00000040 -2   1 11CA1 301 00000000 00000010 00000000 -
4   1 11CA1 469 00000000 00000010 00000000 -2   1 11CA1 540 00000050 00000000 00000000 -
2   1 11CA1 660 00000000 00000000 00000010 -2   1 11CA1 700 00000010 00000000 00000000 -
4   1 11CA1 719 00000030 00000010 00000010 -2   1 11CA1 730 00000100 00000010 00000090 -
1   1 11CA1 730 00000000 00000000 00000010 -2   1 11CA1 750 00000100 00000010 00000050 -
2   1 11CA1 780 00000150 00000000 00000010 -1   1 11CA1 780 00000010 00000000 00000000 -
2   1 11CA1 804 00000110 00000020 00000030 -2   1 11CA1 910 00000010 00000000 00000000 -
2   1 11CA1 947 00000120 00000020 00000220 -1   1 11CA1 947 00000010 00000000 00000000 -
2   1 11CBA 020 00000120 00000000 00000070 -2   1 11CBA 070 00001640 00000080 00000120 -
1   1 11CBA 070 00000060 00000000 00000000 -2   1 11CBA 105 00017890 00000800 00001630 -
1   1 11CBA 105 00000540 00000040 00000050 -2   1 11CBA 106 00009690 00000720 00001260 -
1   1 11CBA 106 00000080 00000000 00000010 -2   1 11CBA 127 00000020 00000000 00000000 -
                                                                  CH  3000, BLK      3, TOT      3.
2   1 11CBA 135 00000010 00000000 00000000 -2   1 11CBA 190 00000050 00000000 00000050 -
2   1 11CBA 246 00000000 00000000 00000010 -2   1 11CBA 660 00000050 00000000 00000020 -
2   1 11CBA 750 00000150 00000000 00000000 -2   1 11CBA 932 00000090 00000000 00000000 -
2   1 11CBA 947 00000000 00000000 00000020 -2   1 11CB1 020 00000010 00000000 00000010 -
2   1 11CB1 070 00000240 00000020 00000050 -1   1 11CB1 070 00000020 00000000 00000000 -
2   1 11CB1 105 00001580 00000100 00000660 -1   1 11CB1 105 00000040 00000000 00000010 -
2   1 11CB1 106 00001290 00000240 00000260 -2   1 11CB1 117 00000040 00000000 00000010 -
2   1 11CB1 127 00000140 00000010 00000000 -2   1 11CB1 190 00000330 00000030 00000100 -
1   1 11CB1 190 00000010 00000000 00000000 -2   1 11CB1 230 00000000 00000010 00000020 -
2   1 11CB1 246 00000000 00000000 00000010 -2   1 11CB1 381 00000040 00000020 00000020 -
2   1 11CB1 518 00000000 00000010 00000000 -2   1 11CB1 600 00000040 00000000 00000000 -
2   1 11CB1 750 00000080 00000000 00000020 -2   1 11CB1 780 00000000 00000010 00000000 -
1   1 11CB1 780 00000010 00000000 00000000 -2   1 11CB1 804 00000100 00000000 00000020 -
2   1 11CB1 947 00000050 00000020 00000060 -2   1 11CCA 020 00000100 00000000 00000000 -
```

Figure 5-12. Sample Output – Sum Unscheduled Maintenance Actions

5.4.2 UNSCHEDULED MANHOUR AND NORM HOUR

5.4.2.1 Purpose. The purpose of this program is to generate two output files. One file contains unscheduled manhour-per-maintenance-action data, and the other contains unscheduled NORM hour per maintenance action data (Figures 5-9 and 5-13). Input to this program consists of sorted data bank, isochronal aircraft definition, a selected list of WUCs, and inspection criteria data.

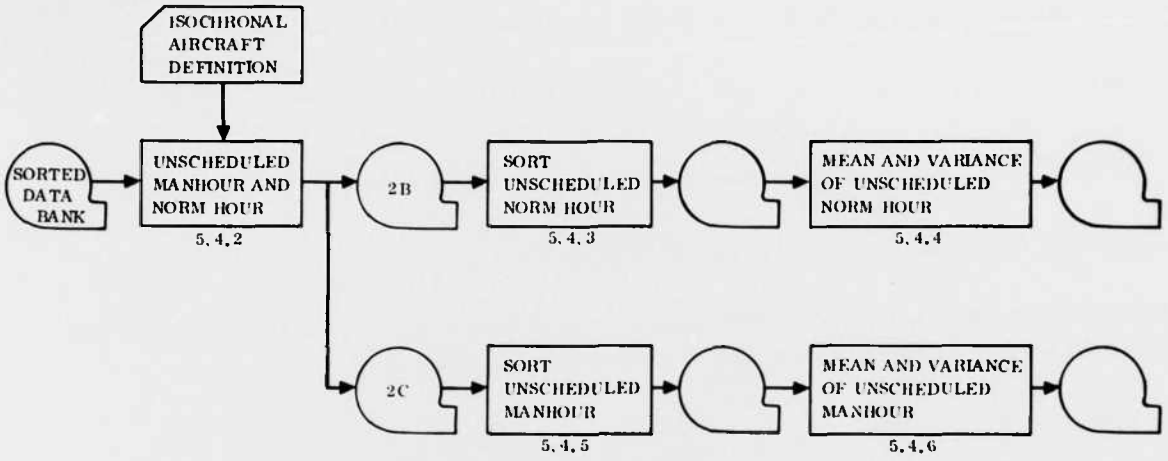


Figure 5-13. Logic Flow – Mean and Variance for Unscheduled Manhour and NORM Hour

5.4.2.2 Input Data and Procedures. There are two types of input data: tape and card deck. Tape data consists of data bank sorted in the order of WUC, HMC, aircraft serial number, and week number. For the tape record layout, see Figure 4-4 . The data card deck has the following formats.

Column	Description
Card No. 1:	
1-5	WUC for Hourly Post Flight Inspection
6-10, 11-15, 16-20	WUC for MA-1 Scheduled Calibration
21-25	WUC for Periodic Inspection
26-30	WUC for IRAN Depot Visit
31-35	WUC for Preflight Inspection
36-40	WUC for Basic Postflight Inspection
41-45	WUC for Special Hourly Postflight
46-47	Minimum number of weeks between inspections for the four WUCs in Columns 1 through 20
48-49	Minimum number of weeks between inspections for Periodic Inspection and IRAN Depot Visit

Column	Description
Card No. 2:	
3-5	Number of Isochronal Aircraft (Current program is dimensioned for a maximum of 36 isochronal aircraft, which may be increased by minor program modification.)

The following cards describe the isochronal aircraft fleet, one card per isochronal aircraft, and the serial numbers are sorted in ascending order.

Column	Description
3-10	Aircraft Serial Number
13-15	Starting Week Number for Isochronal Inspection

Sample input data deck listing is given in Figure 4-18.

The unscheduled manhour and NORM hour program (Figure 4-17) produces two output files, File 2B and 2C, containing the following information.

File	Data Type	Description
2B	3	NORM Hours – Unscheduled Maintenance Actions
2C	1	Manhours – Unscheduled Maintenance Actions

a. Procedures to Generate Manhours – Unscheduled Maintenance Action (for File 2C, Data Type 1). The manhour distributions are calculated separately for repair actions and unscheduled maintenance actions by accumulating the number of manhours charged against a specific WUC and a specific HMC for successive weeks until a week is encountered with a nonzero number of maintenance actions. The number of repair actions or unscheduled actions against the same WUC is accumulated at the same time. This data is obtained from Record Type 4. The ratio of these totals provides one observation of manhours-per-maintenance action for this WUC malfunction. Each occurrence of a maintenance action on an aircraft in the bank for the specific WUC malfunction combination provides another observation.

b. Procedures to Generate NORM Hours – Unscheduled Maintenance Actions (for File 2B, Data Types 3). The distribution for unscheduled NORM hours is obtained in the same fashion, except that only unscheduled maintenance actions are included. Again, NORM hours and maintenance action totals are accumulated from week to week until a nonzero number of maintenance action fields is encountered. The ratio of the two totals then provides one observation of unscheduled NORM hours per maintenance action for the specific WUC. Since the type of malfunction is not recorded in AFM 65-110 (through which NORM hours are recorded), it is not possible to calculate this distribution for a specific type of malfunction. The data for this calculation is obtained from Record Type 3.

5.4.2.3 Output Description. The output consists of two tape files (2B and 2C) with 20-character data records blocked 90 to a tape record, with the following formats.

Column	Description
1-5	Work Unit Code (WUC)
6-8	How-Malfunction Code (HMC)
10-15	Observation Data
17	Isochronal Indicator = 1 Isochronal Inspection = 2 Non-Isochronal Inspection
19	Data Type: For File 2B = 3 Unscheduled NORM Hours For File 2C = 1 Unscheduled Manhour
20	Record Mark

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer time was about 13 minutes. Records totaling 214,651 and 243,801 were generated for Files 2B and 2C, respectively. A sample output is shown in Figure 5-14.

5.4.3 SORT UNSCHEDULED NORM HOUR

5.4.3.1 Purpose. The purpose of this task is to sort output File 2B for further processing.

5.4.3.2 Input Data and Procedures. The input consists of tape File 2B, as described in Paragraph 5.4.2.3.

5.4.3.3 Output Description. An output tape, 20 characters per record with a blocking factor of 90, consisting of unscheduled NORM hour records is sorted according to the following keys in ascending order.

Key	Column	Description
1	17	Isochronal Indicator
2	19	Data Type
3	1-5	Work Unit Code

It took about three minutes on the IBM 370 to sort 214,651 records for the 150-aircraft F-106 fleet. A sample output is shown in Figure 5-15.

5.4.4 MEAN AND VARIANCE OF UNSCHEDULED NORM HOUR

5.4.4.1 Purpose. This program generates an output file containing mean and variance unscheduled NORM hour data by WUC, isochronal subset type.

```
                                                
```

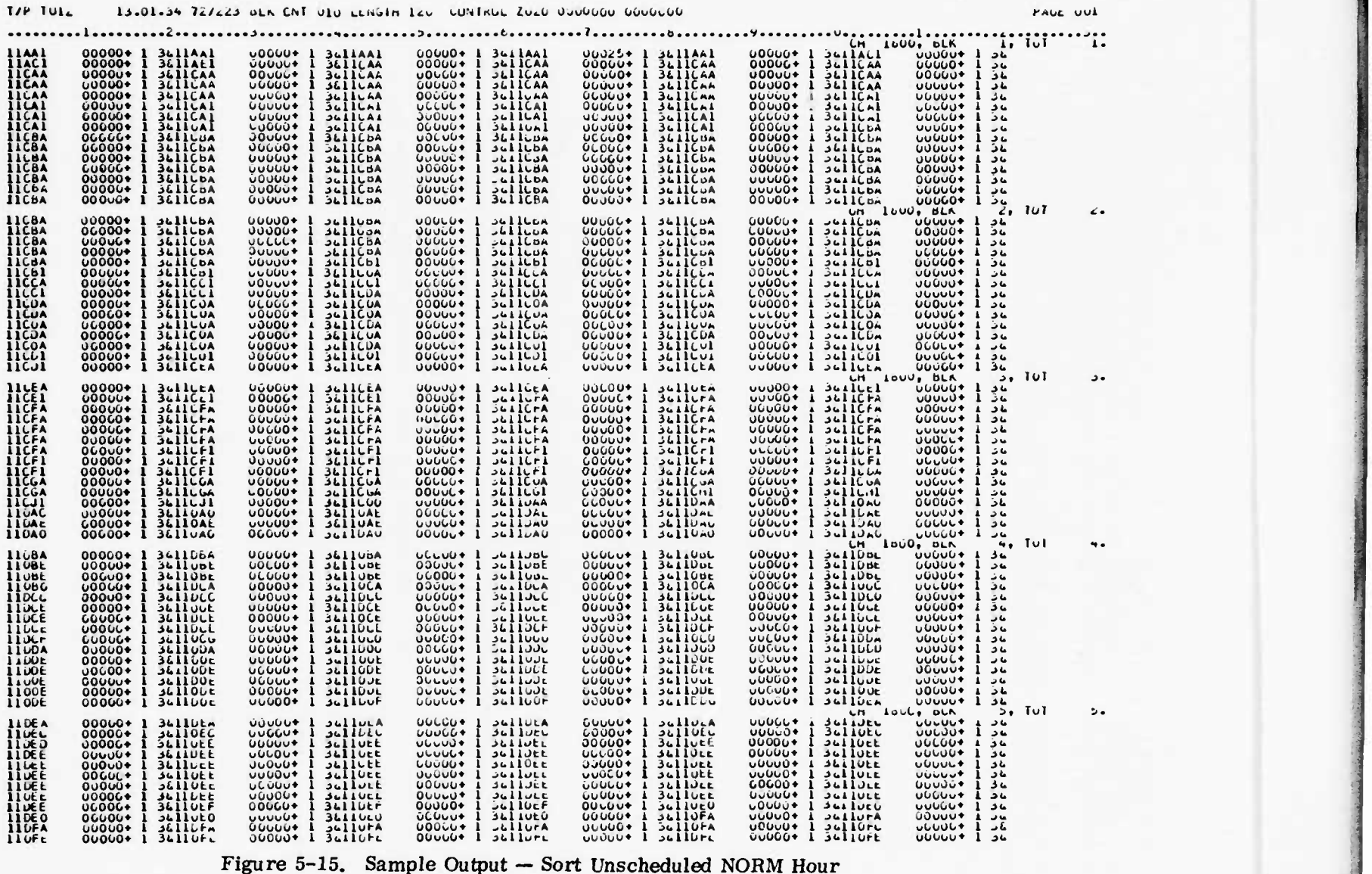


Figure 5-15. Sample Output — Sort Unscheduled NORM Hour

5.4.4.2 Input Data and Procedures. No input data is needed for this program. For a given WUC, data of unscheduled NORM hour will be accumulated. Values of mean and variance are then computed and are written on the output file.

5.4.4.3 Output Description. The output file has the following record format.

Column	Description
1	Isochronal Inspection Type = 1 Isochronal = 2 Non-Isochronal
11	Set to 3, for Unscheduled Norm Hour
13-17	Work Unit Code (WUC)
23-30	Mean for Unscheduled NORM Hour
32-39	Variance of Unscheduled NORM Hour
50	Record Mark

It took five minutes on the IBM 370 to process 2872 records for the F-106 fleet. A sample output and output format are shown in Figures 5-16 and 5-11, respectively.

5.4.5 SORT UNSCHEDULED MANHOUR

5.4.5.1 Purpose. The purpose of this task is to sort output File 2C for further processing.

5.4.5.2 Input Data and Procedures. The input consists of tape File 2C, as described in Paragraph 5.4.2.3.

5.4.5.3 Output Description. An output tape file, consisting of unscheduled manhours charged against a specific WUC and specific HMC, is sorted according to the following keys in ascending order.

Key	Column	Description
1	17	Isochronal Indicator = 1 Isochronal Subset = 2 Non-Isochronal Subset
2	19	Data Type = 1 Unscheduled Manhours
3	1-5	Work Unit Code (WUC)
4	6-8	How-Malfunction Code (HMC)

The output tape consists of 20-character data records, blocked 90 to a tape record. It took four minutes to sort 243,801 records for a fleet of 150 F-106 aircraft. A sample output is shown in Figure 5-17.

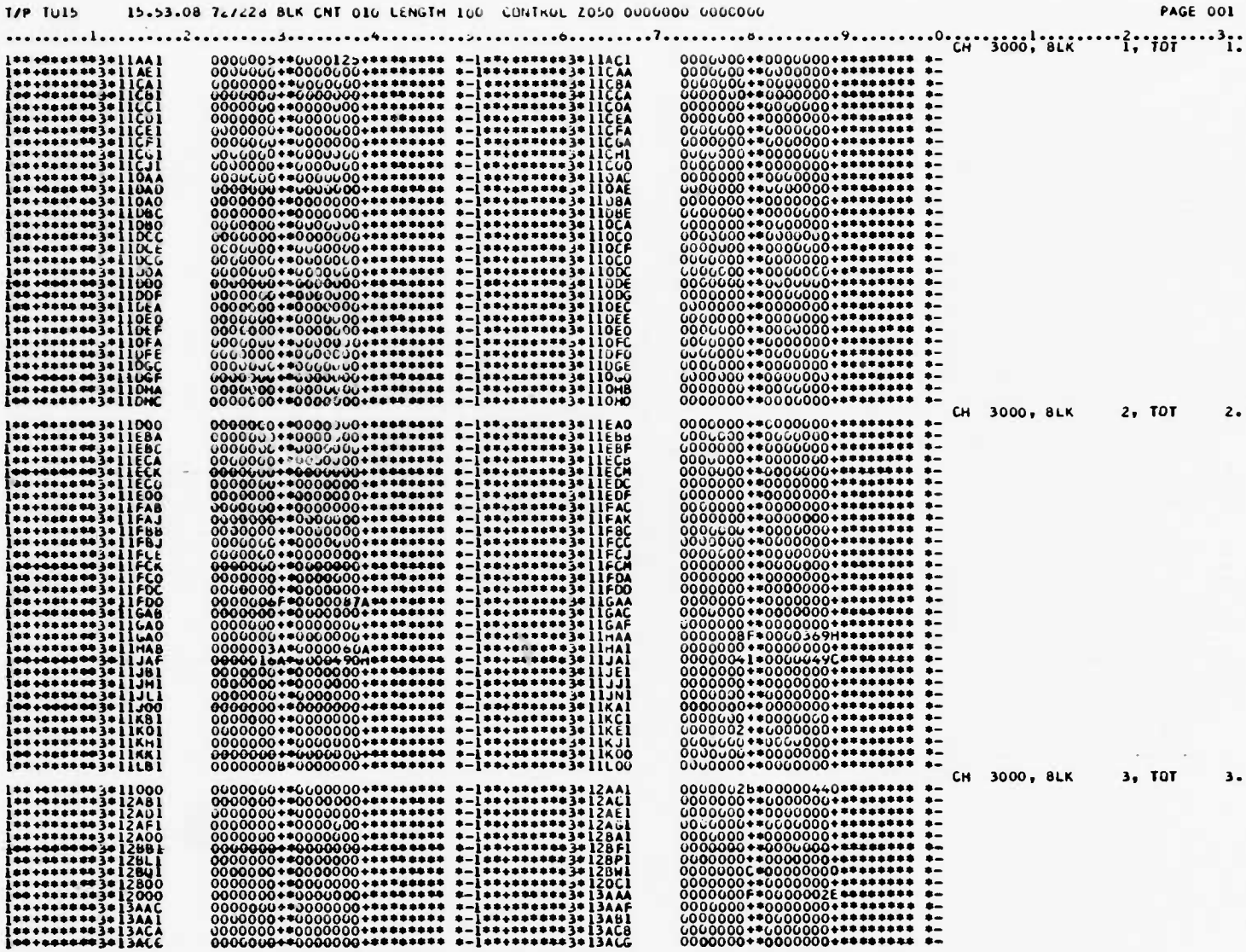


Figure 5-16. Sample Output — Mean and Variance of Unscheduled NORM Hour

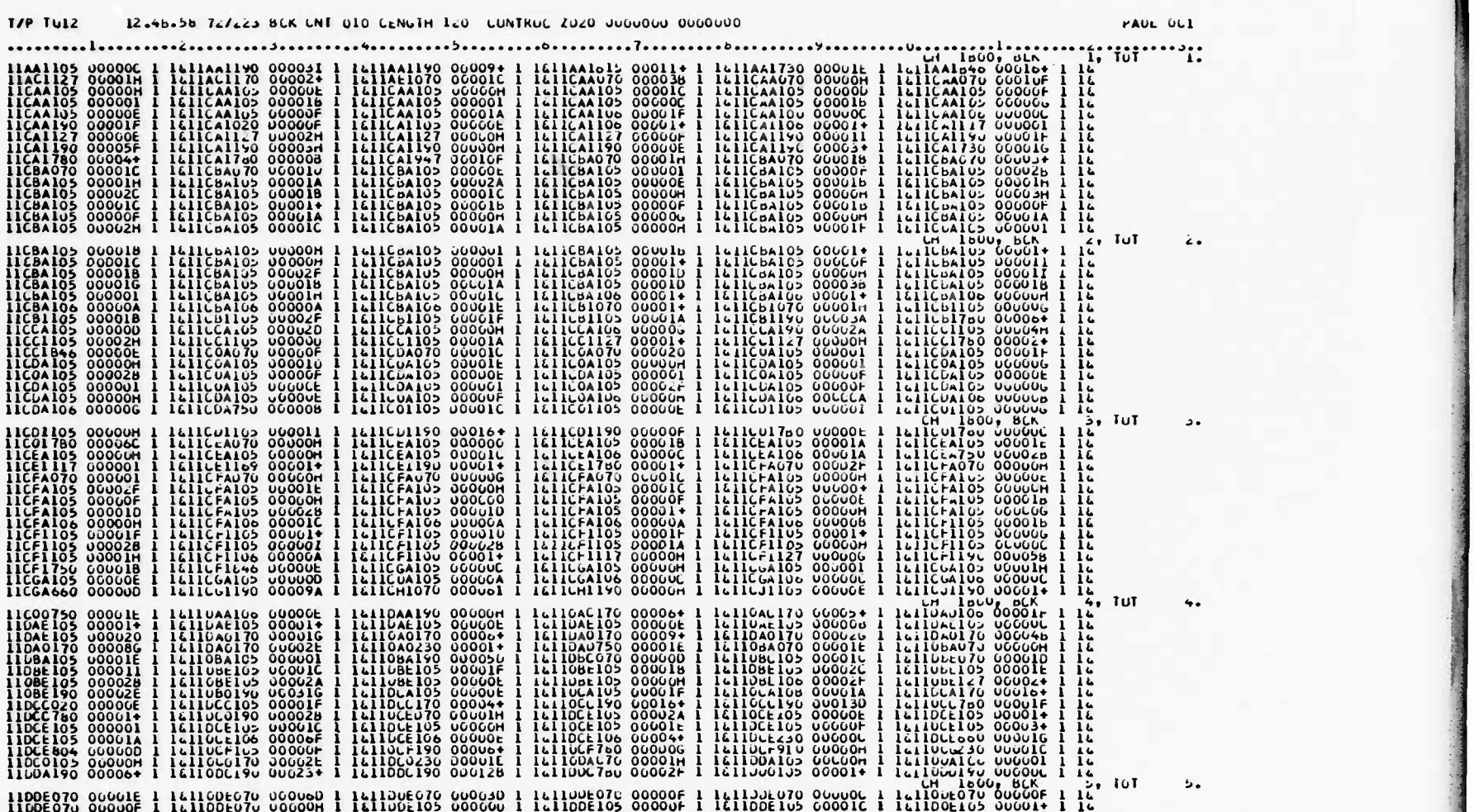


Figure 5-17. Sample Output – Sort Unscheduled Manhour

5.4.6 MEAN AND VARIANCE OF UNSCHEDULED MANHOUR

5.4.6.1 Purpose. This program generates an output file containing mean and variance of unscheduled manhour data by HMC, WUC, and isochronal subset type.

5.4.6.2 Input Data and Procedures. No input data is needed for this program. For a given WUC and HMC, data of unscheduled manhours will be accumulated. Values of mean and variance are then computed and are written on an output file.

5.4.6.3 Output Description. The output consists of values of mean and variance of unscheduled manhour, WUC, and HMC. The output file has the following record format.

Column	Description
1	Isochronal Inspection Type = 1 Isochronal = 2 Non-Isochronal
11	Set to 2, for Unscheduled Manhour
13-17	Work Unit Code (WUC)
19-21	How-Malfunction Code (HMC)
23-30	Mean for Unscheduled Manhour
32-39	Variance for Unscheduled Manhour
50	Record Mark

The tape file consists of 50-character data records, blocked 60 to a tape record. To generate 27,121 records for a fleet of 150 F-106 aircraft required six minutes on the IBM 370. A sample output from a recent F-106 run and the output record format are shown in Figures 5-18 and 5-11, respectively.

5.4.7 MERGE AND ADD WUC GROUP IDENTIFICATION

5.4.7.1 Purpose. The purpose of this COBOL program is to merge the output files of Manhour and NORM, Mean and Variance of Unscheduled NORM Hour, and Mean and Variance of Unscheduled Manhour data into one file and to classify each record into a particular WUC group.

5.4.7.2 Input Data and Procedures. The input consists of three data tape files and a deck of cards defining the WUC groups. The three input data tape files are described in Paragraphs 5.4.1, 5.4.4, and 5.4.6 and the record layouts are given in Figure 5-11. A full description of collecting WUC data into groups is given in Paragraph 4.2.2. Essentially, data is collected at the three-digit level for a defined set of WUCs and at the two-digit level for the remaining data.

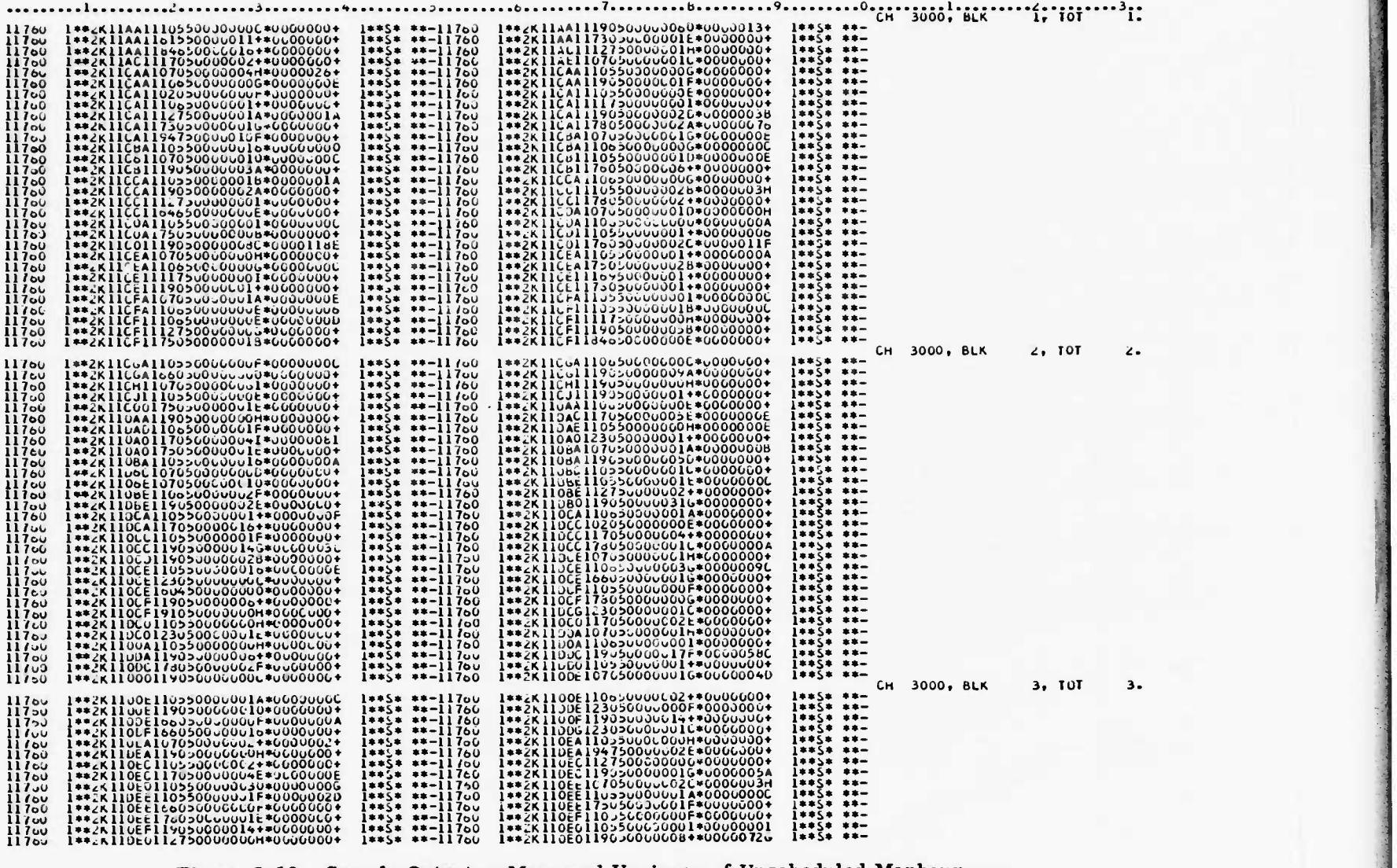


Figure 5-18. Sample Output — Mean and Variance of Unscheduled Manhour

The data deck has the following format.

Card	Column	Description
a	1-2	Number of WUCs in WUC Set No. 1
b	1-3	WUCs in Set No. 1
c	1-2	Number of WUCs in WUC Set No. 2
d	1-5	WUCs in Set No. 2

A sample input data deck, that used for the F-106 Scheduled Maintenance Study, is shown in Figure 5-19.

The program reads WUC group data and assigns a group identifier to each WUC set. The first input file record is read, the appropriate group identifier and corresponding group WUC is added to the record, and the record is written on an output file. This is continued for each input record, then for each record on the second and third input files. After the last input record, the output tape record is padded with nines to end the routine.

5.4.7.3 Output Description. The output consists of a magnetic tape file, 50 characters to a data record, blocked 60 to a tape record. The record layout is shown in Figure 5-11. The significance of each variable is determined by reference to the *RECORD ID in Column* 11; this was assigned during creation of the three input data files. A sample of output data is shown in Figure 5-20. On a recent IBM 370 run for a fleet of 150 aircraft and 2201 WUCs, total computer time was two minutes. A total of 55,853 records were generated.

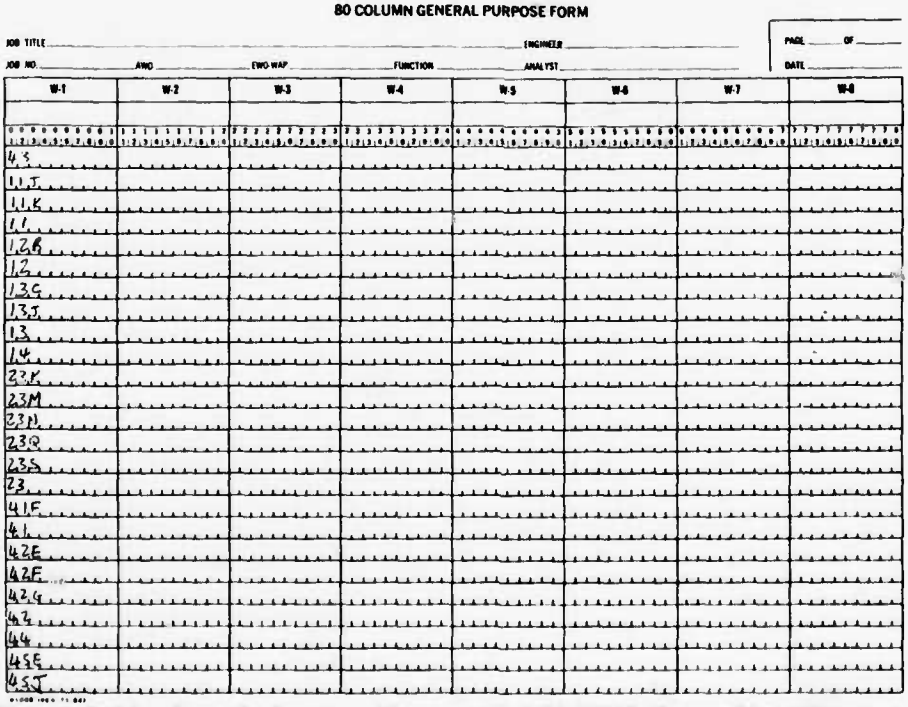
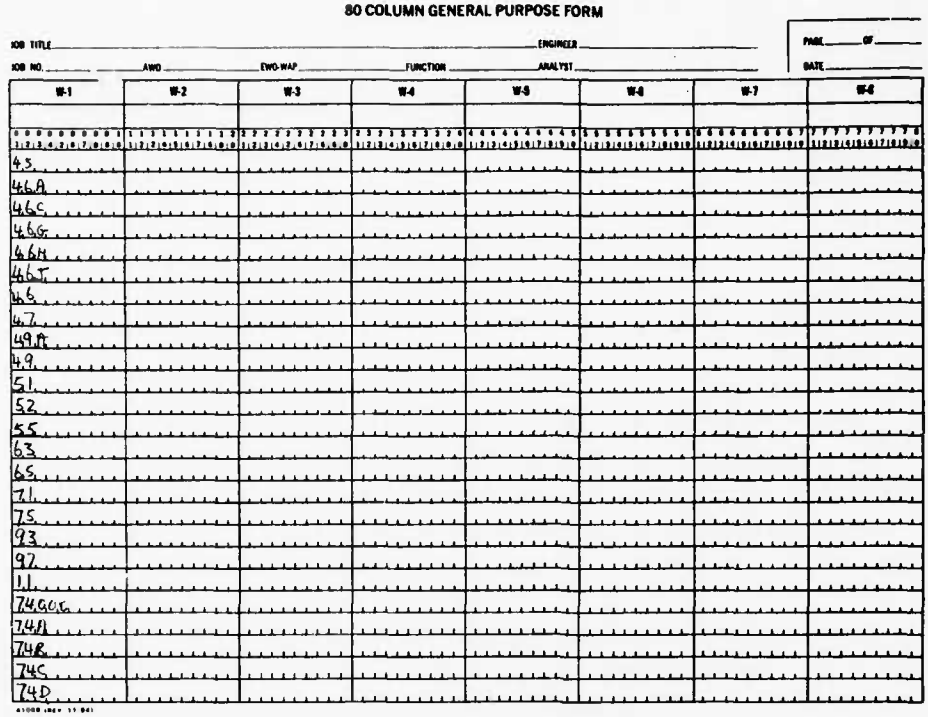


Figure 5-19. Sample Input – Merge and Add WUC Group Identification



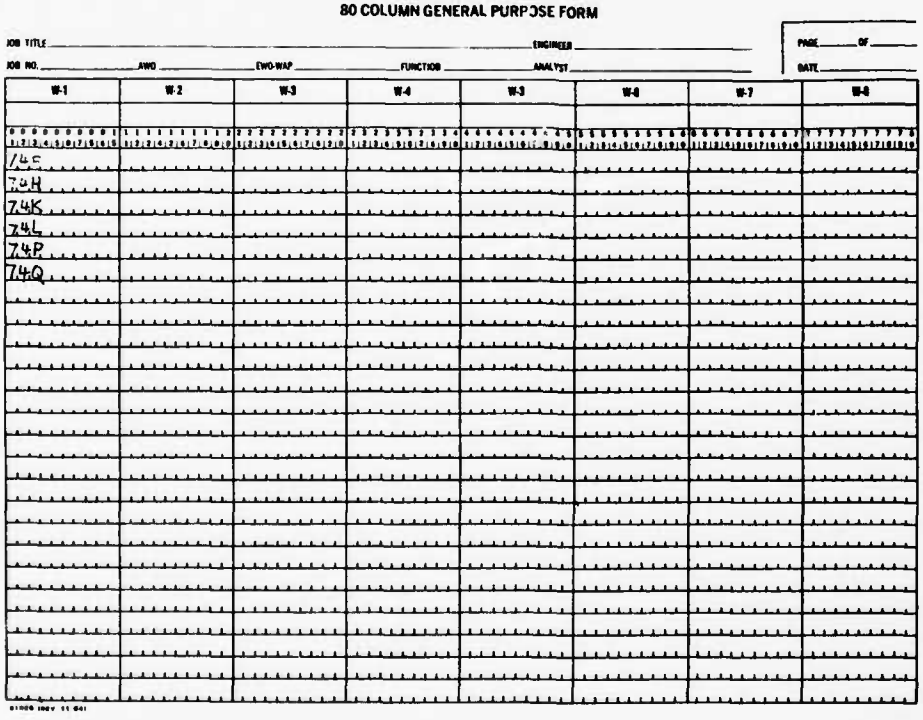


Figure 5-19. Sample Input – Merge and Add WUC Group Identification, Contd

```
T/P TU22     15.53.09 72/228 BLK CNT 010 LENGTH 100  CONTROL 2050 0000000 0000000                    PAGE 001
./../.....1.........2.........3.........4.........5.........6.........7.........8.........9.........0.........1.........2.........3..
                                                                                                  CH  3000, BLK      1, TOT      1.
203 11   1 11AAA 106 00000020 00000000 00000000 -203 11   1 11AAA 846 00000010 00000000 00000000 -
203 11   1 11AAB 117 00000020 00000000 00000000 -203 11   1 11AA1 020 00000010 00000000 00000000 -
203 11   1 11AA1 070 00000040 00000000 00000000 -203 11   1 11AA1 105 00000220 00000010 00000030 -
103 11   1 11AA1 105 00000010 00000000 00000000 -203 11   1 11AA1 106 00000050 00000000 00000050 -
203 11   1 11AA1 108 00000010 00000000 00000300 -203 11   1 11AA1 117 00000006 00000000 00000010 -
203 11   1 11AA1 127 00000010 00000030 00000010 -203 11   1 11AA1 190 00000200 00000000 00000010 -
103 11   1 11AA1 190 00000010 00000000 00000000 -203 11   1 11AA1 230 00000000 00000010 00000000 -
203 11   1 11AA1 246 00000010 00000000 00000000 -203 11   1 11AA1 374 00000010 00000000 00000000 -
203 11   1 11AA1 602 00000010 00000000 00000000 -203 11   1 11AA1 605 00000010 00000000 00000000 -
103 11   1 11AA1 615 00000010 00000000 00000000 -203 11   1 11AA1 660 00000030 00000000 00000000 -
103 11   1 11AA1 730 00000010 00000000 00000000 -203 11   1 11AA1 750 00000010 00000000 00000000 -
203 11   1 11AA1 846 00000150 00000000 00000020 -103 11   1 11AA1 846 00000010 00000000 00000000 -
203 11   1 11AA1 865 00000000 00000000 00000010 -203 11   1 11AA1 900 00000010 00000000 00000000 -
203 11   1 11AC1 020 00000010 00000000 00000000 -203 11   1 11AC1 020 00000000 00000000 00000010 -
203 11   1 11AC1 070 00000040 00000000 00000010 -203 11   1 11AC1 105 00000210 00000010 00000020 -
203 11   1 11AC1 106 00000060 00000000 00000130 -203 11   1 11AC1 117 00000000 00000010 00000000 -
203 11   1 11AC1 127 00000020 00000000 00000030 -103 11   1 11AC1 127 00000010 00000000 00000000 -
203 11   1 11AC1 170 00000060 00000000 00000020 -203 11   1 11AC1 190 00000030 00000000 00000020 -
203 11   1 11AC1 230 00000000 00000000 00000010 -203 11   1 11AC1 246 00000000 00000000 00000010 -
203 11   1 11AC1 301 00000000 00000000 00000010 -203 11   1 11AC1 450 00000010 00000000 00000000 -
203 11   1 11AC1 561 00000000 00000000 00000010 -203 11   1 11AC1 585 00000000 00000000 00000010 -
203 11   1 11AC1 730 00000000 00000000 00000010 -203 11   1 11AC1 750 00000020 00000010 00000000 -
203 11   1 11AC1 780 00000010 00000000 00000000 -203 11   1 11AC1 846 00000080 00000000 00000010 -
203 11   1 11AC1 910 00000020 00000000 00000000 -203 11   1 11AC1 947 00000000 00000000 00000020 -
103 11   1 11AE1 070 00000000 00000000 00000010 -203 11   1 11AE1 105 00000010 00000000 00000010 -
203 11   1 11AE1 135 00000010 00000000 00000000 -203 11   1 11AE1 190 00000010 00000000 00000010 -
203 11   1 11AJ1 127 00000010 00000000 00000000 -203 11   1 11AJ1 169 00000010 00000000 00000000 -
203 11   1 11AR1 374 00000010 00000000 00000000 -203 11   1 11AR1 472 00000010 00000000 00000000 -
203 11   1 11AR1 900 00000010 00000000 00000000 -203 11   1 11CAA 020 00000130 00000020 00000080 -
203 11   1 11CAA 070 00000300 00000010 00000040 -103 11   1 11CAA 070 00000030 00000000 00000010 -
                                                                                                  CH  3000, BLK      2, TOT      2.
203 11   1 11CAA 105 00002510 00000110 00000310 -103 11   1 11CAA 105 00000120 00000010 00000010 -
203 11   1 11CAA 106 00001750 00000130 00000130 -103 11   1 11CAA 106 00000030 00000000 00000000 -
203 11   1 11CAA 117 00000010 00000000 00000000 -203 11   1 11CAA 127 00000040 00000000 00000010 -
203 11   1 11CAA 135 00000060 00000000 00000000 -203 11   1 11CAA 170 00000000 00000010 00000030 -
203 11   1 11CAA 190 00000220 00000040 00000150 -103 11   1 11CAA 190 00000000 00000000 00000010 -
203 11   1 11CAA 350 00000000 00000000 00000010 -203 11   1 11CAA 660 00000000 00000000 00000020 -
203 11   1 11CAA 669 00000000 00000020 00000000 -203 11   1 11CAA 730 00000000 00000000 00000040 -
203 11   1 11CAA 750 00000030 00000000 00000030 -203 11   1 11CAA 780 00000020 00000000 00000000 -
203 11   1 11CAA 865 00000010 00000000 00000000 -203 11   1 11CAA 932 00000020 00000000 00000000 -
203 11   1 11CA1 020 00000050 00000080 00000090 -103 11   1 11CA1 020 00000000 00000000 00000010 -
203 11   1 11CA1 070 00000300 00000020 00000110 -203 11   1 11CA1 080 00000000 00000060 00000000 -
203 11   1 11CA1 105 00000930 00000180 00000480 -103 11   1 11CA1 105 00000010 00000000 00000000 -
203 11   1 11CA1 106 00001250 00000100 00000490 -103 11   1 11CA1 106 00000020 00000000 00000000 -
203 11   1 11CA1 108 00000000 00000000 00000030 -203 11   1 11CA1 116 00000000 00000010 00000030 -
203 11   1 11CA1 117 00000180 00000040 00000120 -203 11   1 11CA1 127 00000150 00000000 00000040 -
103 11   1 11CA1 127 00000030 00000000 00000010 -203 11   1 11CA1 135 00000040 00000000 00000020 -
203 11   1 11CA1 170 00000010 00000000 00000000 -203 11   1 11CA1 190 00001040 00000130 00000370 -
103 11   1 11CA1 190 00000040 00000010 00000010 -203 11   1 11CA1 230 00000000 00000020 00000110 -
203 11   1 11CA1 246 00000000 00000000 00000040 -203 11   1 11CA1 301 00000000 00000010 00000000 -
203 11   1 11CA1 469 00000000 00000010 00000000 -203 11   1 11CA1 540 00000050 00000000 00000000 -
203 11   1 11CA1 660 00000000 00000000 00000010 -203 11   1 11CA1 700 00000010 00000000 00000000 -
203 11   1 11CA1 719 00000030 00000010 00000010 -203 11   1 11CA1 730 00000100 00000010 00000090 -
103 11   1 11CA1 730 00000000 00000000 00000010 -203 11   1 11CA1 750 00000100 00000010 00000050 -
203 11   1 11CA1 780 00000150 00000000 00000010 -103 11   1 11CA1 780 00000010 00000000 00000000 -
203 11   1 11CA1 804 00000110 00000020 00000030 -203 11   1 11CA1 910 00000010 00000000 00000000 -
203 11   1 11CA1 947 00000120 00000020 00000220 -103 11   1 11CA1 947 00000010 00000000 00000000 -
203 11   1 11CBA 020 00000120 00000000 00000070 -203 11   1 11CBA 070 00001040 00000080 00000120 -
103 11   1 11CBA 070 00000000 00000000 00000000 -203 11   1 11CBA 105 00017090 00000800 00001630 -
103 11   1 11CBA 105 00000540 00000040 00000050 -203 11   1 11CBA 106 00009690 00000720 00001280 -
103 11   1 11CBA 106 00000080 00000000 00000010 -203 11   1 11CBA 127 00000020 00000000 00000000 -
                                                                                                  CH  3000, BLK      3, TOT      3.
203 11   1 11CBA 135 00000010 00000000 00000000 -203 11   1 11CBA 190 00000050 00000000 00000050 -
203 11   1 11CBA 246 00000000 00000000 00000010 -203 11   1 11CBA 660 00000050 00000000 00000020 -
203 11   1 11CBA 750 00000150 00000000 00000000 -203 11   1 11CBA 932 00000090 00000000 00000000 -
203 11   1 11CBA 947 00000000 00000000 00000020 -203 11   1 11CB1 020 00000010 00000000 00000010 -
203 11   1 11CB1 070 00000240 00000020 00000050 -103 11   1 11CB1 070 00000020 00000000 00000000 -
203 11   1 11CB1 105 00001560 00000100 00000860 -103 11   1 11CB1 105 00000040 00000000 00000010 -
203 11   1 11CB1 106 00001290 00000240 00000260 -203 11   1 11CB1 117 00000040 00000000 00000010 -
203 11   1 11CB1 127 00000140 00000010 00000000 -203 11   1 11CB1 190 00000330 00000030 00000100 -
103 11   1 11CB1 190 00000010 00000000 00000000 -203 11   1 11CB1 230 00000000 00000010 00000020 -
203 11   1 11CB1 246 00000000 00000000 00000010 -203 11   1 11CB1 381 00000040 00000020 00000020 -
203 11   1 11CB1 518 00000000 00000010 00000000 -203 11   1 11CB1 660 00000040 00000000 00000000 -
203 11   1 11CB1 750 00000080 00000000 00000020 -203 11   1 11CB1 780 00000000 00000010 00000000 -
103 11   1 11CB1 780 00000010 00000000 00000300 -203 11   1 11CB1 804 00000100 00000000 00000020 -
203 11   1 11CB1 947 00000050 00000020 00000000 -203 11   1 11CBA 020 00000160 00000000 00000000 -
```

Figure 5-20. Sample Output – Merge and Add WUC Group Identification

5.4.8 SORT MANHOUR AND NORM DATA

5.4.8.1 Purpose. The purpose of this task is to sort the output file from Merge and Add WUC Group Identification for further processing.

5.4.8.2 Input Data and Procedures. The input consists of the tape file from the Merge and Add WUC Group Identification described in Paragraph 5.4.7.3.

5.4.8.3 Output Description. The output file, 50 characters to the data record, blocked 60 to a tape record, is sorted according to the following keys.

Key	Column	Description
1	1	Aircraft Subset (Ascending)
2	2-3	Group Identification (Ascending)
3	13-17	WUC (Ascending)
4	19-21	HMC (Descending)
5	11	Record Identification (Ascending)

It required about two minutes on the IBM 370 to sort 55,860 records for the 150-aircraft F-106 fleet.

5.4.9 MEANS OF WUC SET

5.4.9.1 Purpose. The purpose of this task is to compute the mean values of various data from the data bank, by WUC group.

5.4.9.2 Input Data and Procedures. The input data consists of the sorted output of the data at the five-digit WUC level previously described. The program generates two output files: data at the five-digit WUC level and data at the WUC group level.

5.4.9.3 Output Description. The output consists of two magnetic tape files, both 50 characters to a data record, blocked 60 to a tape record. The format of each data record is shown in Figure 5-11.

At the five-digit WUC level, the following variables are computed and written on File-2.

$$C = \sum_{HMC} [\overline{MH/ma(WUC, HMC)} \cdot N_{uma}(WUC, HMC)]$$

$$N_2 = \sum_{HMC} N_{uma}(WUC, HMC)$$

$\sum_{HMC}$ indicates a summation over all HMCs applicable to a particular WUC.

A sample output is shown in Figure 5-21. At the WUC group level, the following variables are computed and written on File - 3.

Mean manhours per unscheduled maintenance action:

$$\overline{MH/uma} = \frac{1}{N_1} \sum_{WUC} \left\{ \sum_{HMC} \left[\overline{MH/ma}(WUC, HMC) \cdot N_{uma}(WUC, HMC) \right] \right\}$$

$$N_1 = \sum_{WUC} \sum_{HMC} N_{uma}(WUC, HMC)$$

Mean NORM per unscheduled maintenance action:

$$\overline{NORM/uma} = \frac{1}{N_1} \sum_{WUC} \left| N_2 \cdot \overline{NORM/ma}(WUC) \right|$$

Mean manhours per periodic inspection repair action:

$$(\overline{MH/rep})_{PE} = \frac{\sum_{WUC} \left\{ \sum_{HMC} \left[MH/ma(WUC, HMC) \cdot N_{rep}(WUC, HMC)_{PE} \right] \right\}}{\sum_{WUC} \sum_{HMC} \left[N_{rep}(WUC, HMC)_{PE} \right]}$$

Mean manhours per hourly postflight inspection repair action:

$$(\overline{MH/rep})_{HPO} = \frac{\sum_{WUC} \left\{ \sum_{HMC} \left[MH/ma(WUC, HMC) \cdot N_{rep}(WUC, HMC)_{HPO} \right] \right\}}{\sum_{WUC} \sum_{HMC} \left[N_{rep}(WUC, HMC)_{HPO} \right]}$$

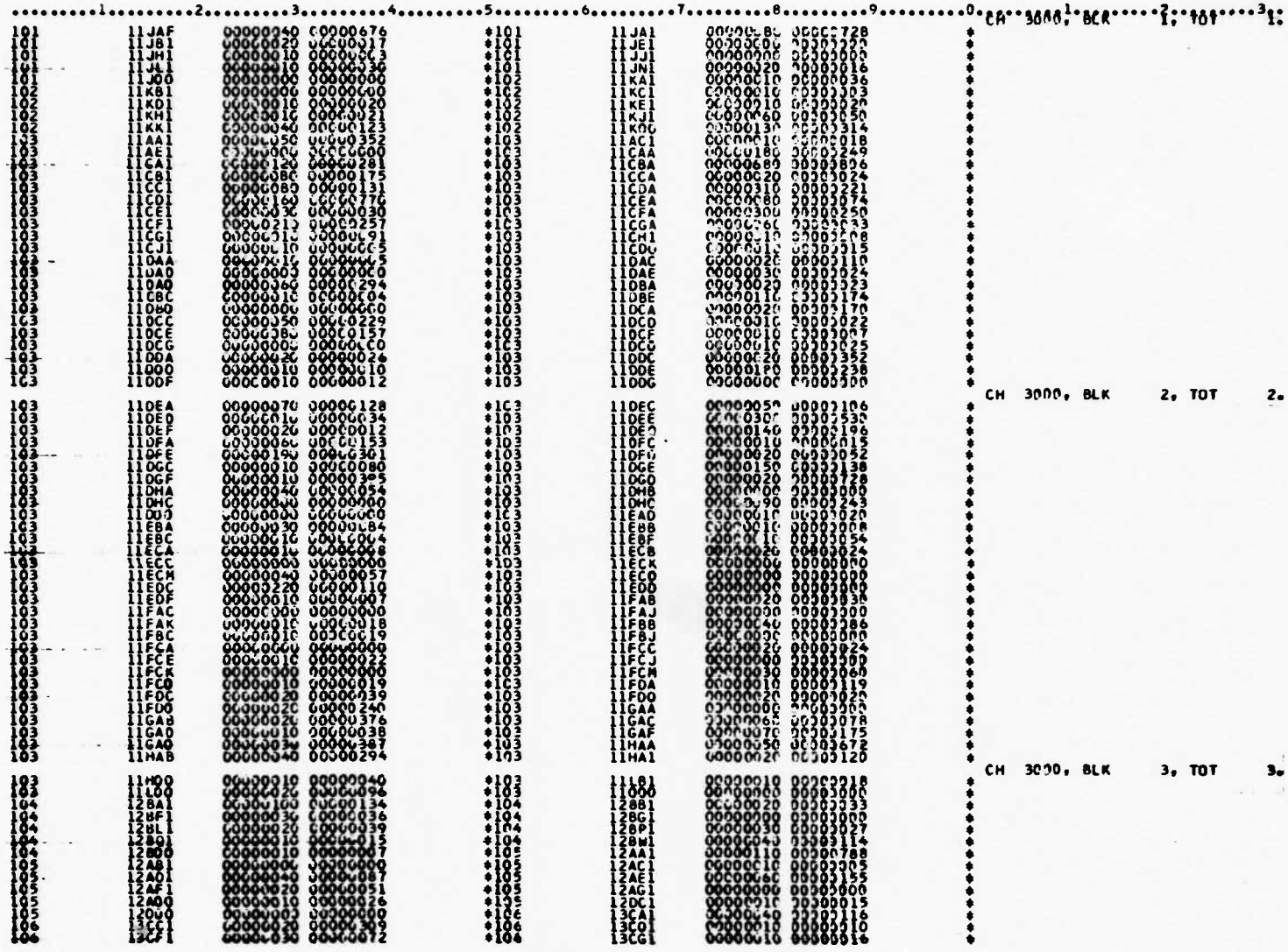
In these equations, the symbol $\sum_{WUC}$ indicates a summation over all WUCs in the set.

A sample output is shown in Figure 5-22.

On a recent IBM 370 run for an F-106 fleet of 150 aircraft and 2201 WUCs, total computer time was two minutes. A total of 2886 records were generated on File -2 and 108 records were generated on File - 3.

5.4.10 VARIANCE OF WUC SET

5.4.10.1 Purpose. This COBOL program computes the variance of various data from the data bank and prints the final mean and variance results in convenient tabular form.



CH 3000, BLK 1, TOT 1.
CH 3000, BLK 2, TOT 2.
CH 3000, BLK 3, TOT 3.

Figure 5-21. Sample Output — Mean of WUC Set, File-2

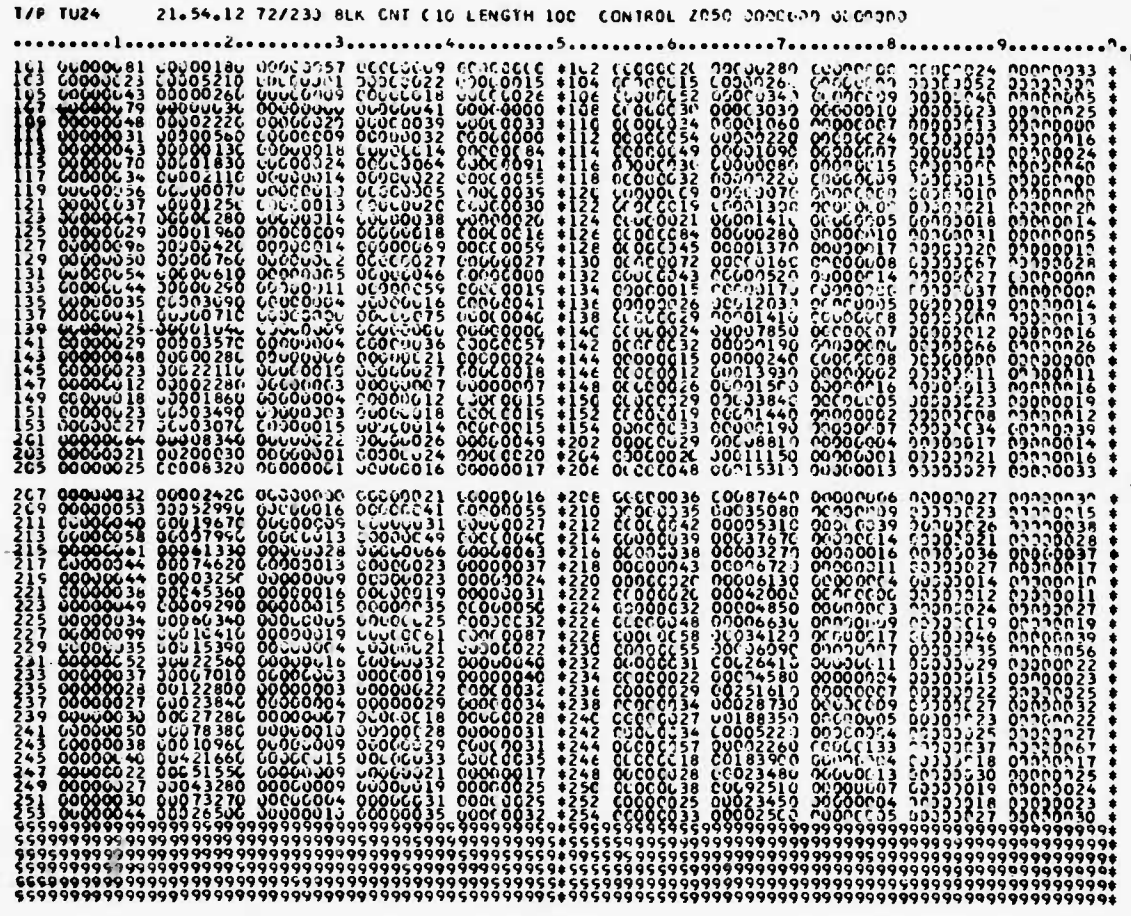


Figure 5-22. Sample Output – Mean of WUC Set, File-3

5.4.10.2 Input Data and Procedures. The input consists of three files: the sorted output data at the five-digit WUC level and the two files from the Mean of WUC Set program. The program computes the variance of NORM and manhours per unscheduled maintenance action, leads in the previously computed mean values, and then prints out six data results for each WUC group of each aircraft subset.

5.4.10.3 Output Description. The output consists of a file, 100 characters to a data record, blocked 20 to a tape record. The variances are first computed for the WUC group using all three input files as follows.

Variance of manhours per unscheduled maintenance action:

$$\sigma^2_{MH/uma} = \frac{1}{N_1} \sum_{WUC} \left\{ N_2 \cdot A^2 + \sum_{HMC} \left[N_{uma}(WUC, HMC) \cdot \sigma^2_{MH/ma}(WUC, HMC) + B^2 \right] \right\}$$

where:

$$A = \frac{C}{N_2} - \overline{MH/uma}$$

$$B = \overline{MH/ma}(WUC, HMC) - \frac{C}{N_2}$$

Variance of NORM per unscheduled maintenance action:

$$\sigma^2_{NORM/uma} = \frac{1}{N_1} \sum_{WUC} N_2 \left\{ \sigma^2_{NORM/ma}(WUC) + \left[\overline{NORM/ma}(WUC) - \overline{NORM/uma} \right]^2 \right\}$$

For each aircraft subset and WUC group, the output file contains:

a. WUC group descriptor.

b. Aircraft Subset.

c. Mean Manhours/Unscheduled Maintenance Action.

d. Variance of Manhours/Unscheduled Maintenance Action.

e. Mean NORM/Unscheduled Maintenance Action.

f. Variance of NORM/Unscheduled Maintenance Action.

g. Mean Manhours/Periodic Inspection Repair Action.

h. Mean Manhours/Hourly Postflight Inspection Repair Action.

A sample output is shown in Figure 5-23. It required two minutes to process the input files for 150 F-106 aircraft; 114 lines of output were generated.

RESULTS OF PROCESSING MAINTENANCE MANHOUR AND NORM DATA PAGE 1

WUC GROUP	AIRCRAFT SUBSET	MEAN MH/OMA	VARIANCE MH/OMA	MEAN NORM/OMA	VARIANCE NORM/OMA	MEAN (MH/REP) PE	MEAN (MH/REP) HPO
11J	ISO	8.1	66.2	5.7	166.1	.9	.0
11K	ISO	2.0	3.1	.0	.1	2.4	3.3
11	ISO	2.3	26.5	.1	6.7	2.2	1.5
12B	ISO	1.5	1.3	.0	.0	5.2	.0
12	ISO	4.3	17.8	.9	19.9	1.8	2.6
13C	ISO	5.2	43.8	.9	11.7	4.0	.5
13J	ISO	7.9	32.5	.0	.0	4.1	.0
13	ISO	3.0	11.2	1.0	29.9	2.3	2.5
14	ISO	4.8	121.9	2.0	62.2	3.9	3.3
23K	ISO	3.4	7.7	.7	11.6	1.3	.0
23M	ISO	3.1	9.3	.9	34.0	3.2	.0
23N	ISO	5.4	16.0	2.4	19.0	.0	1.6
23Q	ISO	4.3	12.0	1.8	18.1	1.4	8.4
23S	ISO	4.9	33.2	.7	9.8	1.0	2.4
23	ISO	7.0	82.4	2.4	82.6	6.4	9.1
41F	ISO	3.0	3.6	1.5	12.7	.0	4.0
41	ISO	3.4	8.5	1.4	29.0	2.2	5.5
42E	ISO	3.2	3.9	.9	7.3	1.5	.0
42F	ISO	5.6	41.9	1.0	9.7	.5	3.9
42G	ISO	.9	1.0	.0	.0	1.0	.0
42	ISO	3.7	13.4	1.3	14.6	2.0	3.0
44	ISO	1.9	2.6	.0	.0	2.1	2.0
45E	ISO	4.7	38.2	1.4	29.2	3.8	2.0
45J	ISO	2.1	2.3	.5	7.8	1.8	1.4
45	ISO	2.9	18.2	.9	6.3	1.8	1.6
46A	ISO	8.4	105.1	1.0	23.2	3.1	.5
46C	ISO	9.6	61.3	1.4	13.6	6.9	5.9
46G	ISO	4.5	47.4	1.7	19.0	2.0	1.0
46H	ISO	5.0	96.9	.2	2.7	2.7	2.7
46J	ISO	7.2	46.5	.8	4.8	6.7	2.8
46	ISO	5.4	32.3	.5	5.5	4.6	.0
47	ISO	4.3	15.6	1.4	17.4	2.7	.0
49A	ISO	4.4	30.4	1.1	16.8	5.9	1.9
49	ISO	1.5	1.3	.0	.1	3.7	.0
51	ISO	3.5	37.0	.4	10.7	1.6	4.1
52	ISO	2.6	22.3	.5	6.2	1.9	1.4
55	ISO	4.1	29.2	.0	.0	7.5	4.0
63	ISO	2.9	26.8	.8	6.9	.0	1.3
65	ISO	2.5	6.3	.9	13.9	.0	.0
71	ISO	2.4	12.5	.7	17.1	1.2	1.6
75	ISO	2.9	21.7	.4	8.6	3.6	2.7
93	ISO	3.2	14.8	.0	.0	6.6	2.6
97	ISO	4.8	44.5	.6	1.9	2.1	2.4
74GJO	ISO	1.5	2.6	.8	3.9	.0	.0
74A	ISO	2.3	23.1	1.0	25.6	2.7	1.8
74B	ISO	1.2	1.8	.2	4.1	1.1	1.1
74C	ISO	1.2	1.4	.3	4.0	.7	.7
74D	ISO	2.6	41.1	1.6	23.0	1.3	1.6
74F	ISO	1.8	7.3	.4	5.1	1.2	1.5
74H	ISO	2.9	32.1	.5	4.6	2.3	1.9
74K	ISO	2.3	9.5	.3	17.1	1.8	1.9
74L	ISO	1.9	3.9	.2	1.7	.8	1.2
74P	ISO	2.7	54.1	1.5	58.9	1.4	1.5
74Q	ISO	3.3	11.5	.7	5.3	3.4	3.9
11J	NON-ISO	6.4	61.4	2.2	123.3	2.6	4.9
11K	NON-ISO	2.9	30.1	.4	8.7	1.7	1.4
11	NON-ISO	2.1	35.0	.1	7.3	2.4	2.0
12B	NON-ISO	2.0	4.4	.1	1.5	2.1	1.6
12	NON-ISO	2.5	13.3	.1	5.1	1.6	1.7
13C	NON-ISO	4.8	41.9	1.3	38.6	2.7	3.3
13J	NON-ISO	3.2	21.2	.0	.1	2.1	1.6

Figure 5-23. Sample Output – Variance of WUC

SECTION 6

COMPUTER SOURCE DECK LISTINGS

6.1 66-1 FILE GENERATION PROGRAMS

6.1.1 66-1 SCREEN

```
//T9897P JOB   01,'  6. WANG     ',PRTY>02,TYPRUN>HOLD
//C9897C EXEC  PROCSL,TIME>02,ACCT>D35322107
//CHG.IU13     DD   DISP>(,PASS),UNIT>(T+F2,1,DEFER),DSN>+B.9895402,   CT13    1
//               LABEL>(,NL),                                          C
//               VOL>SER>+F1                                            T13
//CHG.IU22     DD   DSN>+P.9895403,SPACE>(CYL,(022,002))              D22-OUT
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                               1440 CDS
00000          COMPILE                    6. WANG.                      C98970
01040  DATE-WRITTEN.  5 JAN 72.                                         C98970
01050  REMARKS.                                                         C98970
01060          PROGRAM SCREENS  66-1  DATA TAPE.                        C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120      SELECT INFILE                  ASSIGN TO UT-S-TU13           C98970
02130          RESERVE 1 ALTERNATE AREA.                                C98970
02140      SELECT OUTFILE                 ASSIGN TO UT-S-TU22           C98970
02150          RESERVE 1 ALTERNATE AREA.                                C98970
02160      SELECT SC-FLE                  ASSIGN TO DA-S-DT01           C98970
02170          RESERVE 1 ALTERNATE AREA.                                C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
10100  FD  INFILE                                                       C98970
10120      RECORDING MODE IS F                                          C98970
10130      BLOCK CONTAINS 30 RECORDS                                    C98970
10140      RECORD CONTAINS 90          CHARACTERS                       C98970
10150      LABEL RECORDS ARE OMITTED                                    C98970
10160      DATA RECORDS ARE INDATA.                                     C98970
10170  01  INDATA SYNC.                                                C98970
10178   02 DATA8.                                                       C98970
10180   03 DATA1           PICTURE XX.                                  C98970
10190   03 TIPL            PICTURE X(4).                                C98970
10200   03 DATA2           PICTURE X(8).                                C98970
10210   02 SER-NO          PICTURE X(8).                                C98970
10220   02 DATA3           PICTURE X(18).                               C98970
10228   02 DATE-IN.                                                     C98970
10230   03 DAY             PICTURE 99.                                  C98970
10240   03 MONTH           PICTURE 99.                                  C98970
10250   03 YEAR            PICTURE  9.                                  C98970
10258   02 DATA7.                                                       C98970
10260   03 WUC             PICTURE X(5).                                C98970
10270   03 ACTION          PICTURE X.                                   C98970
10280   03 WD              PICTURE X.                                   C98970
10290   03 NOW-MAL         PICTURE X(3).                                C98970
10300   03 DATA4           PICTURE X(27).                               C98970
10310   03 REC-ID          PICTURE X.                                   C98970
10320   03 THM             PICTURE X.                                   C98970
10330   03 DATA5           PICTURE X.                                   C98970
10340   02 FILLER          PICTURE XXXX.                                C98970
10350   02 DATA6           PICTURE X.                                   C98970
11100  FD  OUTFILE                                                      C98970
11120      RECORDING MODE IS F                                          C98970
11130      BLOCK CONTAINS 30 RECORDS                                    C98970
11140      RECORD CONTAINS 90          CHARACTERS                       C98970
11150      LABEL RECORDS ARE OMITTED                                    C98970
11160      DATA RECORDS ARE OUTDATA.                                    C98970
11170  01  OUTDATA SYNC.                                               C98970
```

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11178   02 DATA8-OUT.                                                   C98970
11180   03 DATA1-OUT          PICTURE XX.                               C98970
11190   03 TYPE-OUT           PICTURE X[4].                             C98970
11200   03 DATA2-OUT          PICTURE X[8].                             C98970
11210   02 SER-NO-OUT         PICTURE X[8].                             C98970
11220   02 DATA3-OUT          PICTURE X[18].                            C98970
11228   02 DATE-OUT.                                                    C98970
11230   03 DAY-OUT            PICTURE 99.                               C98970
11240   03 MONTH-OUT          PICTURE 99.                               C98970
11250   03 YEAR-OUT           PICTURE  9.                               C98970
11258   02 DATA7-OUT.                                                   C98970
11260   03 WUC-OUT            PICTURE X[5].                             C98970
11270   03 ACTION-OUT         PICTURE X.                                C98970
11280   03 WD-OUT             PICTURE X.                                C98970
11290   03 HOW-MAL-OUT        PICTURE XXX.                              C98970
11300   03 DATA4-OUT          PICTURE X[27].                            C98970
11310   03 REC-ID-OUT         PICTURE X.                                C98970
11320   03 THM-OUT            PICTURE X.                                C98970
11330   03 DATA5-OUT          PICTURE    X.                             C98970
11340   02 JDAY               PICTURE 9999.                             C98970
11350   02 DATA6-OUT          PICTURE X.                                C98970
11500 FD  SC-FILE                                                       C98970
11510     RECORDING MODE IS F                                           C98970
11520     BLOCK CONTAINS 20 RECORDS                                     C98970
11530     RECORD CONTAINS 80          CHARACTERS                        C98970
11540     LABEL RECORDS ARE STANDARD                                    C98970
11550     DATA RECORDS ARE DATA-IN.                                     C98970
11600 01  DATA-IN SYNC.                                                 C98970
11610     02  SCREEN-DATA      PICTURE X[80].                           C98970
11620     02  FILLER REDEFINES SCREEN-DATA.                             C98970
11630         03  DATA-1       PICTURE X[4].                            C98970
11640         03  FILLER       PICTURE X[76].                           C98970
11650     02  FILLER REDEFINES SCREEN-DATA.                             C98970
11660         03  DATA-2       PICTURE X.                               C98970
11670         03  FILLER       PICTURE X[79].                           C98970
11680     02  FILLER REDEFINES SCREEN-DATA.                             C98970
11690         03  DATA-3       PICTURE 99.                              C98970
11700         03  FILLER       PICTURE X[78].                           C98970
11710     02  FILLER REDEFINES SCREEN-DATA.                             C98970
11720         03  DATA-4       PICTURE X[8].                            C98970
11730         03  FILLER       PICTURE X[72].                           C98970
11740     02  FILLER REDEFINES SCREEN-DATA.                             C98970
11750         03  DATA-5       PICTURE X[3].                            C98970
11760         03  FILLER       PICTURE X[77].                           C98970
30000 WORKING-STORAGE SECTION.                                          C98970
30010 01  NINE SYNC.                                                    C98970
30020   02 FILLER             PICTURE XX            VALUE '99'.         C98970
30030   02 FILLER             PICTURE X[4]          VALUE '99999'.      C98970
30040   02 FILLER             PICTURE X[8]          VALUE '99999999'.   C98970
30050   02 FILLER             PICTURE X[8]          VALUE '99999999'.   C98970
30060   02 FILLER             PICTURE X[18]         VALUE
30070                          '999999999999999999'.                    C98970
30080   02 FILLER             PICTURE 99            VALUE 99.           C98970
30090   02 FILLER             PICTURE 99            VALUE 99.           C98970
30100   02 FILLER             PICTURE 9             VALUE 9.            C98970
30110   02 FILLER             PICTURE X[5]          VALUE '99999'.      C98970
30120   02 FILLER             PICTURE X             VALUE '9'.          C98970
30130   02 FILLER             PICTURE X             VALUE '9'.          C98970
30140   02 FILLER             PICTURE XXX           VALUE '999'.        C98970
30150   02 FILLER             PICTURE X[27]         VALUE
30160                          '999999999999999999999999999'.           C98970
30170   02 FILLER             PICTURE X             VALUE '9'.          C98970
30180   02 FILLER             PICTURE X             VALUE '9'.          C98970
30190   02 FILLER             PICTURE X             VALUE '9'.          C98970
30200   02 FILLER             PICTURE 9999          VALUE 9999.         C98970
30210   02 FILLER             PICTURE X             VALUE '9'.          C98970
30350 01  TABLE-HMC SYNC.                                               C98970
30360     02  HOW-MAL-REJ      PICTURE XXX OCCURS 8 TIMES DEPENDING     C98970
30370                          ON NO-REJ-HMC.                           C98970
30400 01  DAYS-IN-YEAR SYNC.                                            C98970
30410   02 FILLER             PICTURE 999           VALUE   0.          C98970
30420   02 FILLER             PICTURE 999           VALUE  31.          C98970
30430   02 FILLER             PICTURE 999           VALUE  59.          C98970
30440   02 FILLER             PICTURE 999           VALUE  90.          C98970
30450   02 FILLER             PICTURE 999           VALUE 120.          C98970
30460   02 FILLER             PICTURE 999           VALUE 151.          C98970
30470   02 FILLER             PICTURE 999           VALUE 181.          C98970
30480   02 FILLER             PICTURE 999           VALUE 212.          C98970
30490   02 FILLER             PICTURE 999           VALUE 243.          C98970
30500   02 FILLER             PICTURE 999           VALUE 273.          C98970
30510   02 FILLER             PICTURE 999           VALUE 304.          C98970
30520   02 FILLER             PICTURE 999           VALUE 334.          C98970
30530 01  NO-DAYS-IN-YEAR, REDEFINES DAYS-IN-YEAR SYNC.                 C98970
30540   02 KDAYS  OCCURS 12 TIMES                                       C98970
30550                         PICTURE 999.                             C98970
30600 01  DAYS-IN-YEARS SYNC.                                           C98970
30610   02 FILLER             PICTURE 9[4]          VALUE    0.         C98970
```

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30620   02 FILLER          PICTURE 9(4)          VALUE  365.          C90970
30630   02 FILLER          PICTURE 9(4)          VALUE  730.          C90970
30640   02 FILLER          PICTURE 9(4)          VALUE 1095.          C90970
30650   02 FILLER          PICTURE 9(4)          VALUE 1461.          C90970
30660   02 FILLER          PICTURE 9(4)          VALUE 1826.          C98970
30670   02 FILLER          PICTURE 9(4)          VALUE 2191.          C98970
30680   02 FILLER          PICTURE 9(4)          VALUE 2556.          C90970
30690 01  DAY-IN-YEAR-TABLE REDEFINES DAYS-IN-YEARS SYNC.             C90970
30700   02 DAY-YEAR OCCURS 8 TIMES                                    C98970
30710                      PICTURE 9(4).                             C98970
30800 01  SER-NO-A          PICTURE X(8)    SYNC.                     C98970
30810 01  TABLE-S-N, REDEFINES SER-NO-A SYNC.                         C98970
30820   02 LISTS-S-N,       OCCURS 8 TIMES,                           C90970
30830                      PICTURE X.                                C90970
30890 01  LIT-ZERO          PICTURE XXX     SYNC  VALUE '0001.        C90970
30900 01  KOUNT             PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC. C98970
30910 01  KNT               PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC. C90970
30920 01  LOW-S-N SYNC          PICTURE X(8).                         C90970
30930 01  HIGH-S-N SYNC         PICTURE X(8).                         C90970
30940 01  LEAP-YEAR-68      PICTURE 9       SYNC  VALUE 4.            C98970
30950 01  LEAP-YEAR-72      PICTURE 9       SYNC  VALUE 8.            C98970
30960 01  A-C-TYPE  SYNC        PICTURE X(4).                         C98970
30970 01  RECORDS-READ      PICTURE 9(6)    SYNC  VALUE ZERO.         C98970
30980 01  RECORDS-PASS      PICTURE 9(6)    SYNC  VALUE ZERO.         C98970
30990 01  REC-IDENT SYNC        PICTURE X.                            C90970
31010 01  NO-REJ-A-C SYNC       PICTURE 99.                           C90970
31020 01  NO-REJ-HMC SYNC       PICTURE 99.                           C90970
31030 01  NO-REJ-ACTION SYNC    PICTURE 99.                           C90970
31140 01  REJ-S-N SYNC.                                               C90970
31150       02  R-S-N OCCURS 25 TIMES DEPENDING ON NO-REJ-A-C,        C90970
31160                          PICTURE X(8).                         C90970
31250 01  TABLE-ACTION-REJ SYNC.                                      C90970
31260       02  ACTION-REJ OCCURS 8 TIMES DEPENDING ON NO-REJ-ACTION, C90970
31270                          PICTURE X.                            C98970
50000 PROCEDURE DIVISION.                                            C90970
50010 OPEN-FILES.                                                    C90970
50020       OPEN INPUT INFILE, SC-FLE.                               C90970
50030       OPEN OUTPUT OUTFILE.                                     C98970
50035       PERFORM SCREEN-DATA-IN THRU END-S-D-I.                   C98970
50040 READ1.                                                         C98970
50050       READ INFILE                                              C90970
50060             AT END GO TO BLOCK-CHECK.                          C98970
50070       ADD 1 TO RECORDS-READ.                                   C98970
50080       IF TYPE NOT EQUAL TO A-C-TYPE GO TO READ1.               C98970
50090       IF REC-ID NOT EQUAL TO REC-IDENT GO TO READ1.            C98970
50100       IF HOW-MAL LESS THAN LIT-ZERO GO TO READ1.               C98970
50110       IF DAY NOT GREATER THAN ZERO GO TO READ1.                C98970
50120       IF SER-NO EQUAL TO SPACE GO TO READ1.                    C90970
50200 SPECIAL-SCREEN.                                                C90970
50210       MOVE ZERO TO KOUNT.                                      C98970
50220 CHECK1.                                                        C90970
50230       ADD 1 TO KOUNT.                                          C90970
50240       IF HOW-MAL IS EQUAL TO HOW-MAL-REJ (KOUNT) GO TO READ1.  C90970
50250       IF KOUNT IS LESS THAN NO-REJ-HMC GO TO CHECK1.           C90970
50300       MOVE ZERO TO KOUNT.                                      C90970
50310 CHECK2.                                                        C90970
50320       ADD 1 TO KOUNT.                                          C98970
50330       IF ACTION EQUAL TO ACTION-REJ (KOUNT) GO TO READ1.       C90970
50340       IF KOUNT IS LESS THAN NO-REJ-ACTION GO TO CHECK2.        C98970
50400 CHECK-S-N-FOR-8-DIGITS.                                        C90970
50410       MOVE SER-NO TO SER-NO-A.                                 C90970
50420       IF LISTS-S-N (8) NOT EQUAL SPACE GO TO CHECK-S-N.        C90970
50430       MOVE 7 TO KOUNT.                                         C90970
50440       MOVE 8 TO KNT.                                           C90970
50450 LOOP1.                                                         C90970
50460       MOVE LISTS-S-N (KOUNT) TO LISTS-S-N (KNT).               C98970
50470       IF KOUNT EQUAL TO 3 GO TO END-LOOP1.                     C90970
50480       SUBTRACT 1 FROM KOUNT.                                   C98970
50490       SUBTRACT 1 FROM KNT.                                     C90970
50500       GO TO LOOP1.                                             C90970
50510 END-LOOP1.                                                     C98970
50520       MOVE ZERO TO LISTS-S-N (KOUNT).                          C98970
50600 CHECK-S-N.                                                     C98970
50610       IF SER-NO-A IS LESS THAN LOW-S-N GO TO READ1.            C90970
50620       IF SER-NO-A IS GREATER THAN HIGH-S-N GO TO READ1.        C90970
50700 TEST-S-N.                                                      C90970
50710       MOVE ZERO TO KOUNT.                                      C98970
50720 LOOP2.                                                         C90970
50730       ADD 1 TO KOUNT.                                          C90970
50740       IF SER-NO-A IS EQUAL TO R-S-N (KOUNT) GO TO READ1.       C98970
50750       IF KOUNT IS LESS THAN NO-REJ-A-C GO TO LOOP2.            C90970
50800 CAL-DATE.                                                      C90970
50810       COMPUTE   KOUNT > YEAR - 4.                              C90970
50820       IF KOUNT IS LESS THAN 1 THEN ADD 10 TO KOUNT.            C90970
50830       MOVE MONTH TO KNT.                                       C90970
50840       COMPUTE   JDAY > DAY < KDAYS (KNT)   < DAY-YEAR (KOUNT). C98970
50850       IF KOUNT EQUAL LEAP-YEAR-68 GO TO LEAP-YEAR.             C98970
50860       IF KOUNT EQUAL LEAP-YEAR-72 GO TO LEAP-YEAR.             C98970
```

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50870       GO TO WRITE-OUTPUT.                                              C98970
50900   LEAP-YEAR.                                                           C98970
50910       IF MONTH IS GREATER THAN 2 THEN ADD 1 TO JDAY.                   C98970
51000   WRITE-OUTPUT.                                                        C98970
51010       MOVE DATA8    TO DATA8-OUT.                                      C98970
51040       MOVE SER-NO-A TO SER-NO-OUT.                                     C98970
51050       MOVE DATA3    TO DATA3-OUT.                                      C98970
51060       MOVE DATE-IN TO DATE-OUT.                                        C98970
51090       MOVE DATA7    TO DATA7-OUT.                                      C98970
51162       MOVE DATA6    TO DATA6-OUT.                                      C98970
51170       WRITE OUTDATA.                                                   C98970
51180       ADD 1 TO RECORDS-PASS.                                           C98970
51190       GO TO READ1.                                                     C98970
52000   BLOCK-CHECK.                                                         C98970
52010       COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 30) * 30).       C98970
52020       IF KOUNT EQUAL ZERO GO TO CLOSE-FILES.                           C98970
52040   LOOP3.                                                               C98970
52050       WRITE OUTDATA FROM NINE.                                         C98970
52060       ADD 1 TO KOUNT.                                                  C98970
52070       IF KOUNT IS LESS THAN 30 GO TO LOOP3.                            C98970
52100   CLOSE-FILES.                                                         C98970
52110       CLOSE INFILE WITH LOCK, SC-FLE WITH LOCK.                        C98970
52120       CLOSE OUTFILE WITH LOCK.                                         C98970
52140       DISPLAY ' NUMBER OF RECORDS READ ' RECORDS-READ                  C98970
52150                                          UPON CONSOLE.                 C98970
52160       DISPLAY ' NUMBER OF RECORDS PASSED ' RECORDS-PASS                C98970
52170                                          UPON CONSOLE.                 C98970
52180       DISPLAY ' EOJ C9897 ' UPON CONSOLE.                              C98970
52190       GOBACK.                                                          C98970
53000   SCREEN-DATA-IN.                                                      C98970
53010       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53020       MOVE DATA-1 TO A-C-TYPE.                                         C98970
53050       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53060       MOVE DATA-2 TO REC-IDENT.                                        C98970
53070       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53080       MOVE DATA-3 TO NO-REJ-A-C.                                       C98970
53090       MOVE ZERO TO KOUNT.                                              C98970
53100   S-D-I-1.                                                             C98970
53110       ADD 1 TO KOUNT.                                                  C98970
53120       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53130       MOVE DATA-4 TO H-S-N (KOUNT).                                    C98970
53140       IF KOUNT IS LESS THAN NO-REJ-A-C GO TO S-D-I-1.                  C98970
53150       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53160       MOVE DATA-4 TO LOW-S-N.                                          C98970
53170       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53180       MOVE DATA-4 TO HIGH-S-N.                                         C98970
53190       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53200       MOVE DATA-3 TO NO-REJ-HMC.                                       C98970
53210       MOVE ZERO TO KOUNT.                                              C98970
53220   S-D-I-2.                                                             C98970
53230       ADD 1 TO KOUNT.                                                  C98970
53240       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53250       MOVE DATA-5 TO HOW-MAL-REJ (KOUNT).                              C98970
53260       IF KOUNT IS LESS THAN NO-REJ-HMC GO TO S-D-I-2.                  C98970
53300       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53310       MOVE DATA-3 TO NO-REJ-ACTION.                                    C98970
53320       MOVE ZERO TO KOUNT.                                              C98970
53330   S-D-I-3.                                                             C98970
53340       ADD 1 TO KOUNT.                                                  C98970
53350       READ SC-FLE AT END GO TO END-S-D-I.                              C98970
53360       MOVE DATA-2 TO ACTION-REJ (KOUNT).                               C98970
53370       IF KOUNT IS LESS THAN NO-REJ-ACTION GO TO S-D-I-3.               C98970
53400   END-S-D-I. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                                     1440 CDS
TFG  DT01    11  020Z080
F106       A-C TYPE
J          RECORD IDENT
13         NO REJ A/C
57000234
57000239
57000240
57001543
57002507
57002513
57002516
57002519
57002523
57002529
58000795
59000061
59000150
57000001
59999999
04         NO REJ HMC
799
800
```

```
80S
812
04          NO REJ ACTION
H
J
T
U
*END
/*        PLACE TFG DATA BEFORE THIS CARD
//TPR.TU13      DD   DISP>(OLD,KEEP),VOL>SER>+F2,UNIT>T+F2,LABEL>(,NL)
//TPR.TU22      DD   DISP>(OLD,PASS)                                          D22-PASS
//TPR.TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  DT01     1010080Z080
T/P  TU22     1020090Z090
/*
```

6.1.2 66-1 SORT

```
//C9897S EXEC   P9622N,W>010,TIME>03,ACCT>D35322107
//CHG,SORT1N    DD    DSN>+P,9895403,DISP>(OLD,DELETE),
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>000)
//CHG,SORTOUT   DD    DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9895405,    CT12    1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//              DCB>(LRECL>0090,BLKSIZE>2700)
//CHG,SYS1N     DD    *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(015,008,CH,A,086,004,CH,A,046,005,CH,A,053,003,CH,A,     C
               051,002,CH,A,056,029,CH,A,023,023,CH,A),SIZE>E0050000
 MODS  E15>(E15,008,SORTLIB,N),E18>(E18,024,SORTLIB,N)
/*
//C9897P EXEC   C9603N,TIME>01,ACCT>D35322107
//CHG,TU12      DD    DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9895405,    CT12    1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//              1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12     3
//CHG,TPRIN     DD    *,SPACE>(TRK,(1,1))
T/P  TU12     1020090Z090
/*        PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.1.3 66-1 MERGE

```
//C9897M JOB    01,: G, WANG     :,PRTY>02,TYPRUN>HOLD
//C9897  EXEC   P9623N,TIME>10,ACCT>D35323007
//CHG,SORT1N01  DD    DISP>(,KEEP),UNIT>(T+F5,1,DEFER),DSN>+E,9895405,    CT22    1
//              VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,    CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORT1N02  DD    DISP>(,KEEP),UNIT>(T+F6,1,DEFER),DSN>+F,9895405,    CT23    1
//              VOL>SER>(+F6,A+F6,B+F6,C+F6,D+F6,E+F6,F+F6,G+F6,H+F6,    CT23    2
//              1+F6,J+F6,K+F6,L+F6,M+F6,N+F6,O+F6,P+F6,Q+F6,R+F6,S+F6),CT23    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORT1N03  DD    DISP>(,KEEP),UNIT>(T+F7,1,DEFER),DSN>+G,9895405,    CT24    1
//              VOL>SER>(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,    CT24    2
//              1+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7),CT24    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORT1N04  DD    DISP>(,KEEP),UNIT>(T+F8,1,DEFER),DSN>+H,9895405,    CT25    1
//              VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,    CT25    2
//              1+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8),CT25    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORTIN05  DD    DISP>(,KEEP),UNIT>(T+F2,1,DEFER),DSN>+B,9895405,    CT13    1
//              VOL>SER>(+F2,A+F2,B+F2,C+F2,D+F2,E+F2,F+F2,G+F2,H+F2,    CT13    2
//              1+F2,J+F2,K+F2,L+F2,M+F2,N+F2,O+F2,P+F2,Q+F2,R+F2,S+F2),CT13    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORT1N06  DD    DISP>(,KEEP),UNIT>(T+F3,1,DEFER),DSN>+C,9895405,    CT14    1
//              VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,    CT14    2
//              1+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3),CT14    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORT1N07  DD    DISP>(,KEEP),UNIT>(T+F4,1,DEFER),DSN>+D,9895405,    CT15    1
//              VOL>SER>(+F4,A+F4,B+F4,C+F4,D+F4,E+F4,F+F4,G+F4,H+F4,    CT15    2
//              1+F4,J+F4,K+F4,L+F4,M+F4,N+F4,O+F4,P+F4,Q+F4,R+F4,S+F4),CT15    3
//              DCB>(LRECL>0090,BLKSIZE>2700),LABEL>(,NSL,RETPD>001)
//CHG,SORTOUT   DD    DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9895420,    CT12    1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//              1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//              DCB>(LRECL>0090,BLKSIZE>2700)
//CHG,SYS1N     DD    *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 MERGE FIELDS>(015,008,CH,A,086,004,CH,A,046,005,CH,A,053,003,CH,A,     C
               051,002,CH,A,056,029,CH,A,023,023,CH,A)
/*
```

6.1.4 66-1 ELIMINATE DUPLICATE RECORDS

```
//C9897E JOB   01,: G. WANG.   :,PRTY>04,TYPRUN>HOLD
//C9897Z EXEC  P9655E,TIME>20,ACCT>D35323007
//CHG.TU12     DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9895440,   CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+FI,F+FI,G+F1,H+F1,   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+FI,O+F1,P+F1,Q+F1,R+F1,S+FI] T12    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[A+F5,2,DEFER],DSN>+E.9895440,   CT22/23 1
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5] T22    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                1440 CDS
00000          COMBINE     COMPILE                 G, WANG.            C98970
01050  DATE-WRITTEN. 27 DEC 71.                                        C98970
01060  REMARKS. PROGRAM SIFTS 66-1 FILE TO ELIMINATE DUPLICATE          C98970
01070      ADJACENT RECORDS.                                           C98970
02000  ENVIRONMENT DIVISION.                                           C98970
02010  CONFIGURATION SECTION.                                          C98970
02020  SOURCE-COMPUTER. IBM-360.                                       C98970
02030  OBJECT-COMPUTER. IBM-360.                                       C98970
02100  INPUT-OUTPUT SECTION.                                           C98970
02110  FILE-CONTROL.                                                   C98970
02120      SELECT INFILE                  ASSIGN TO UT-S-TU12          C98970
02130          RESERVE 1 ALTERNATE AREA.                               C98970
02140      SELECT OUTFILE                 ASSIGN TO UT-S-TU22          C98970
02150          RESERVE 1 ALTERNATE AREA.                               C98970
10000  DATA DIVISION.                                                  C98970
10010  FILE SECTION.                                                   C98970
10020  FD  INFILE                                                      C98970
10030      RECORDING MODE IS F                                         C98970
10040      BLOCK CONTAINS 30 RECORDS                                   C98970
10050      RECORD CONTAINS 90          CHARACTERS                      C98970
10060      LABEL RECORDS ARE OMITTED                                   C98970
10070      DATA RECORDS ARE INREC.                                     C98970
10080  01  INREC       PICTURE X(90) SYNC.                            C98970
10100  FD  OUTFILE                                                     C98970
10110      RECORDING MODE IS F                                         C98970
10120      BLOCK CONTAINS 30 RECORDS                                   C98970
10130      RECORD CONTAINS 90          CHARACTERS                      C98970
10140      LABEL RECORDS ARE OMITTED                                   C98970
10150      DATA RECORDS ARE OUTREC.                                    C98970
10160  01  OUTREC      PICTURE X(90) SYNC.                            C98970
30000  WORKING-STORAGE SECTION.                                        C98970
30010  01  NUMBER-DUPS     PICTURE 9(07) SYNC.                        C98970
30020  01  TEMPREC     PICTURE X(90) SYNC.                            C98970
30030  01  NINES                SYNC    PICTURE X(98) VALUE   !9999999999  C98970
30040 -    !99999999999999999999999999999999999999999999999999999999999999  C98970
30041 -    !99999999999999999999!.                                     C98970
30050  01  RECORDS-PASS         SYNC    PICTURE 9(7) VALUE ZERO.       C98970
30060  01  KNT     COMPUTATIONAL SYNC  PICTURE S999 VALUE ZERO.        C98970
50000  PROCEDURE DIVISION.                                             C98970
50010  BEGIN.                                                          C98970
50020      OPEN INPUT INFILE.                                          C98970
50030      OPEN OUTPUT OUTFILE.                                        C98970
50040      MOVE ZERO TO NUMBER-DUPS.                                   C98970
50050      READ INFILE                                                 C98970
50060          AT END GO TO CLOSE-FILES.                               C98970
50070      MOVE INREC TO TEMPREC.                                      C98970
50080      READ INFILE                                                 C98970
50090          AT END GO TO CLOSE-FILES.                               C98970
50100  COMPARE.                                                        C98970
50110      IF INREC > TEMPREC GO TO COUNT-DUPS.                        C98970
50120      WRITE OUTREC FROM TEMPREC.                                  C98970
50125      ADD 1 TO RECORDS-PASS.                                      C98970
50130      MOVE INREC TO TEMPREC.                                      C98970
50140      READ INFILE                                                 C98970
50150          AT END GO TO WRITE-LAST.                                C98970
50160      GO TO COMPARE.                                              C98970
50170  COUNT-DUPS.                                                     C98970
50175      IF INREC IS EQUAL TO NINES GO TO BLOCK-CHECK.               C98970
50180      ADD 1 TO NUMBER-DUPS.                                       C98970
50190      READ INFILE                                                 C98970
50200          AT END GO TO WRITE-LAST.                                C98970
50210      GO TO COMPARE.                                              C98970
50220  WRITE-LAST.                                                     C98970
50230      WRITE OUTREC FROM TEMPREC.                                  C98970
50235      ADD 1 TO RECORDS-PASS.                                      C98970
50240  CLOSE-FILES.                                                    C98970
50250      CLOSE INFILE WITH LOCK.                                     C98970
50260      CLOSE OUTFILE WITH LOCK.                                    C98970
50270      DISPLAY !NO. DUPS ! NUMBER-DUPS UPON CONSOLE.               C98970
50280      DISPLAY !EOJ 9897 ! UPON CONSOLE.                           C98970
50290      GOBACK.                                                     C98970
50400  BLOCK-CHECK.                                                    C98970
50410      COMPUTE KNT > RECORDS-PASS - RECORDS-PASS / 30 * 30.        C98970
50420      IF KNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                  C98970
50430  NINE-FILL.                                                      C98970
```

```
50440       WRITE OUTREC  FROM NINES.                                        C98970
50450       ADD 1 TO KNT.                                                   C98970
50460       IF KNT IS LESS THAN 30 GO TO NINE-FILL.                         C98970
50470       GO TO CLOSE-FILES.                                              C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE>[CYL,[1,1]]                                   1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>[OLD,KEEP],VOL>SER>+F1,UNIT>T+F1                 T12
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5                 T22
//TPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU22    10100902090
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.1.5 66-1 COPY ACCEPTABLE AIRCRAFT

```
//19897F JOB   01,: G. WANG.   :,PRTY>02,TYPRUN>HOLD
//C9897G EXEC  P9655L,TIME>10,ACCT>D35323007
//CHG.TU14      DD   DISP>[,KEEP],UNIT>[T+F3,1,DEFER],DSN>+C.9895&&0,    CT14    1
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,    CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14     3
//CHG.TU22      DD   DISP>[,PASS],UNIT>[T+F5,1,DEFER],DSN>+E.9895&&0,    CT22    1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,    CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22     3
//CHG.INPUT     DD   *,SPACE>[CYL,[1,1]]                                 1440 CDS
00000         COMBINE      COMPILE                  G. WANG.              C98970
01040  DATE-WRITTEN.  5 JAN 72.                                           C98970
01050  REMARKS.                                                           C98970
01060         66-1 COPY ACCEPTABLE AIRCRAFT.                              C98970
02000  ENVIRONMENT DIVISION.                                              C98970
02010  CONFIGURATION SECTION.                                             C98970
02020  SOURCE-COMPUTER. IBM-360.                                          C98970
02030  OBJECT-COMPUTER. IBM-360.                                          C98970
02100  INPUT-OUTPUT SECTION.                                              C98970
02110  FILE-CONTROL.                                                      C98970
02120      SELECT INFILE                ASSIGN TO UT-S-TU14              C98970
02130          RESERVE 1 ALTERNATE AREA.                                  C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU22              C98970
02150          RESERVE 1 ALTERNATE AREA.                                  C98970
02160      SELECT ACCEPT-FILE           ASSIGN TO DA-S-DT01              C98970
02170          RESERVE 1 ALTERNATE AREA.                                  C98970
10000  DATA DIVISION.                                                     C98970
10010  FILE SECTION.                                                      C98970
10100  FD  INFILE                                                         C98970
10120      RECORDING MODE IS F                                            C98970
10130      BLOCK CONTAINS 30 RECORDS                                      C98970
10140      RECORD CONTAINS 90           CHARACTERS                        C98970
10150      LABEL RECORDS ARE OMITTED                                      C98970
10160      DATA RECORDS ARE INDATA.                                       C98970
10170  01  INDATA SYNC.                                                  C98970
10178   02 DATA8.                                                         C98970
10180   03 DATA1          PICTURE XX.                                     C98970
10190   03 TIPE           PICTURE X(4).                                   C98970
10200   03 DATA2          PICTURE X(8).                                   C98970
10210   02 SER-NO         PICTURE X(8).                                   C98970
10220   02 DATA3          PICTURE X(18).                                  C98970
10228   02 DATE-IN.                                                       C98970
10230   03 DAY            PICTURE 99.                                     C98970
10240   03 MONTH          PICTURE 99.                                     C98970
10250   03 YEAR           PICTURE  9.                                     C98970
10258   02 DATA7.                                                         C98970
10260   03 WUC            PICTURE X(5).                                   C98970
10270   03 ACTION         PICTURE X.                                      C98970
10280   03 WD             PICTURE X.                                      C98970
10290   03 HOW-MAL        PICTURE X(3).                                   C98970
10300   03 DATA4          PICTURE X(27).                                  C98970
10310   03 REC-ID         PICTURE X.                                      C98970
10320   03 THM            PICTURE X.                                      C98970
10330   03 DATA5          PICTURE X.                                      C98970
10340   02 FILLER         PICTURE XXXX.                                   C98970
10350   02 DATA6          PICTURE X.                                      C98970
11100  FD  OUTFILE                                                        C98970
11120      RECORDING MODE IS F                                            C98970
11130      BLOCK CONTAINS 30 RECORDS                                      C98970
11140      RECORD CONTAINS 90           CHARACTERS                        C98970
11150      LABEL RECORDS ARE OMITTED                                      C98970
11160      DATA RECORDS ARE OUTDATA.                                      C98970
11170  01  OUTDATA SYNC.                                                 C98970
11178   02 DATA8-OUT.                                                     C98970
11180   03 DATA1-OUT      PICTURE XX.                                     C98970
11190   03 TYPE-OUT       PICTURE X(4).                                   C98970
11200   03 DATA2-OUT      PICTURE X(8).                                   C98970
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11210   02 SER-NO-OUT       PICTURE X(8).                                  C98970
11220   02 DATA3-OUT        PICTURE X(18).                                 C98970
11228   02 DATE-OUT.                                                       C98970
11230   03 DAY-OUT          PICTURE 99.                                    C98970
11240   03 MONTH-OUT        PICTURE 99.                                    C98970
11250   03 YEAR-OUT         PICTURE  9.                                    C98970
11258   02 DATA7-OUT.                                                      C98970
11260   03 WUC-OUT          PICTURE X(5).                                  C98970
11270   03 ACTION-OUT       PICTURE X.                                     C98970
11280   03 WD-OUT           PICTURE X.                                     C98970
11290   03 HOW-MAL-OUT      PICTURE XXX.                                   C98970
11300   03 DATA4-OUT        PICTURE X(27).                                 C98970
11310   03 REC-NO-OUT       PICTURE X.                                     C98970
11320   03 THM-OUT          PICTURE X.                                     C98970
11330   03 DATA5-OUT        PICTURE    X.                                  C98970
11340   02 JDAY             PICTURE 9999.                                  C98970
11350   02 DATA6-OUT        PICTURE X.                                     C98970
11400 FD  ACCEPT-FILE                                                      C98970
11410     RECORDING MODE IS F                                              C98970
11420     BLOCK CONTAINS 20 RECORDS                                        C98970
11430     RECORD CONTAINS 80          CHARACTERS                           C98970
11440     LABEL RECORDS ARE STANDARD                                       C98970
11450     DATA RECORDS ARE ACCEPT-REC.                                     C98970
11460 01  ACCEPT-REC SYNC.                                                  C98970
11470     02  ACCEPT-DATA            PICTURE X(80).                       C98970
11480     02  FILLER REDEFINES ACCEPT-DATA.                               C98970
11490         03  DATA-1             PICTURE 999.                         C98970
11500         03  FILLER             PICTURE X(77).                       C98970
11510     02  FILLER REDEFINES ACCEPT-DATA.                               C98970
11520         03  DATA-2             PICTURE X(8).                        C98970
11530         03  FILLER             PICTURE X(72).                       C98970
30000 WORKING-STORAGE SECTION.                                             C98970
30010 01  NINE SYNC.                                                        C98970
30020   02 FILLER           PICTURE XX            VALUE '9'.               C98970
30030   02 FILLER           PICTURE X(4)          VALUE '9999'.            C98970
30040   02 FILLER           PICTURE X(8)          VALUE '99999999'.        C98970
30050   02 FILLER           PICTURE X(8)          VALUE '99999999'.        C98970
30060   02 FILLER           PICTURE X(18)         VALUE
30070                        '999999999999999999'.                          C98970
30080   02 FILLER           PICTURE 99            VALUE 99.                C98970
30090   02 FILLER           PICTURE 99            VALUE 99.                C98970
30100   02 FILLER           PICTURE 9             VALUE 9.                 C98970
30110   02 FILLER           PICTURE X(5)          VALUE '99999'.           C98970
30120   02 FILLER           PICTURE X             VALUE '9'.               C98970
30130   02 FILLER           PICTURE X             VALUE '9'.               C98970
30140   02 FILLER           PICTURE XXX           VALUE '999'.             C98970
30150   02 FILLER           PICTURE X(27)         VALUE
30160                        '999999999999999999999999999'.                 C98970
30170   02 FILLER           PICTURE X             VALUE '9'.               C98970
30180   02 FILLER           PICTURE X             VALUE '9'.               C98970
30190   02 FILLER           PICTURE X             VALUE '9'.               C98970
30200   02 FILLER           PICTURE 9999          VALUE 9999.              C98970
30210   02 FILLER           PICTURE X             VALUE '9'.               C98970
30900 01  KOUNT              PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC.    C98970
30910 01  KNT                PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC.    C98970
30940 01  LEAP-YEAR-68       PICTURE 9       SYNC  VALUE 4.                 C98970
30950 01  LEAP-YEAR-72       PICTURE 9       SYNC  VALUE 8.                 C98970
30970 01  RECORDS-READ       PICTURE 9(6)    SYNC  VALUE ZERO.              C98970
30980 01  RECORDS-PASS       PICTURE 9(6)    SYNC  VALUE ZERO.              C98970
40000 01  TABLE-ACCEPT-A-C SYNC.                                            C98970
40010     02  ACCEPT-A-C OCCURS  250 TIMES DEPENDING ON NO-ACCEPT-A-C       C98970
40020                              PICTURE X(8).                            C98970
40030 01  NO-ACCEPT-A-C SYNC       PICTURE 999.                             C98970
40040 01  TEMP-ACCEPT-A-C   SYNC   PICTURE X(8).                           C98970
40050 01  INC SYNC COMPUTATIONAL   PICTURE S999 VALUE +1.                   C98970
50000 PROCEDURE DIVISION.                                                  C98970
50010 OPEN-FILES.                                                          C98970
50020     OPEN INPUT INFILE, ACCEPT-FILE.                                  C98970
50030     OPEN OUTPUT OUTFILE.                                             C98970
50032     PERFORM READ-ACCEPT-DATA THRU END-R-A-D.                         C98970
50040 READ1.                                                               C98970
50050     READ INFILE                                                      C98970
50060             AT END GO TO BLOCK-CHECK.                                C98970
50070     ADD 1 TO RECORDS-READ.                                           C98970
50620 TEST1.                                                               C98970
50621     IF SER-NO IS LESS THAN TEMP-ACCEPT-A-C GO TO READ1.              C98970
50622     IF SER-NO IS EQUAL TO  TEMP-ACCEPT-A-C GO TO CAL-DATE.           C98970
50623     ADD 1 TO INC.                                                    C98970
50624     IF INC IS GREATER THAN NO-ACCEPT-A-C GO TO BLOCK-CHECK.          C98970
50625     MOVE ACCEPT-A-C (INC) TO TEMP-ACCEPT-A-C.                        C98970
50626     GO TO TEST1.                                                     C98970
50800 CAL-DATE.                                                            C98970
51170     WRITE OUTDATA FROM INDATA.                                       C98970
51180     ADD 1 TO RECORDS-PASS.                                           C98970
51190     GO TO READ1.                                                     C98970
52000 BLOCK-CHECK.                                                         C98970
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52010       COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 30) * 30).      C98970
52020       IF KOUNT EQUAL ZERO GO TO CLOSE-FILES.                          C98970
52040  LOOP3.                                                               C98970
52050       WRITE OUTDATA FROM NINE.                                        C98970
52060       ADD 1 TO KOUNT.                                                 C98970
52070       IF KOUNT IS LESS THAN 30 GO TO LOOP3.                           C98970
52100  CLOSE-FILES.                                                         C98970
52110       CLOSE INFILE WITH LOCK. ACCEPT-FILE WITH LOCK.                  C98970
52120       CLOSE OUTFILE WITH LOCK.                                        C98970
52140       DISPLAY ' NUMBER OF RECORDS READ ' RECORDS-READ.                C98970
52150                                          UPON CONSOLE.                C98970
52160       DISPLAY ' NUMBER OF RECORDS PASSED ' RECORDS-PASS               C98970
52170                                          UPON CONSOLE.                C98970
52180       DISPLAY ' EOJ C9897 ' UPON CONSOLE.                             C98970
52190       GOBACK.                                                         C98970
70000  READ-ACCEPT-DATA.                                                    C98970
70010       READ ACCEPT-FILE AT END GO TO END-R-A-D.                        C98970
70020       MOVE DATA-1 TO NO-ACCEPT-A-C.                                   C98970
70030       MOVE ZERO TO KNT.                                               C98970
70040  RAD-1.                                                               C98970
70050       ADD 1 TO KNT.                                                   C98970
70060       READ ACCEPT-FILE AT END GO TO END-R-A-D.                        C98970
70070       MOVE DATA-2 TO ACCEPT-A-C (KNT).                                C98970
70080       IF KNT IS LESS THAN NO-ACCEPT-A-C GO TO RAD-1.                  C98970
70090       MOVE ACCEPT-A-C (1) TO TEMP-ACCEPT-A-C.                         C98970
70100  END-R-A-D. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
TFG  DT01    11  0202080
150
57000231
57000232
57000235
57000236
57000237
57000243
57000244
57002455
57002456
57002458
57002459
57002463
57002470
57002473
57002476
57002477
57002482
57002483
57002485
57002486
57002490
57002491
57002493
57002494
57002496
57002503
57002504
57002505
57002508
57002509
57002515
57002517
57002520
57002524
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57002537
57002538
57002540
57002543
57002545
57002546
58000760
58000766
58000767
58000772
58000773
58000776
58000777
58000778
58000780
58000781
58000783
58000785
58000786
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58000788
58000792
58000797
58000900
58000901
58000903
58000904
59000002
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59000008
59000010
59000012
59000015
59000016
59000018
59000019
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59000164
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR,TU14      DD   DISP>(OLD,KEEP),VOL>SER>+F3,UNIT>T+F3                T14
//TPR,TU22      DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5                T22
//TPR,TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  DT01    1020080Z080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.2 65-110 FILE GENERATION PROGRAMS

6.2.1 65-110 SCREEN

```
//C98976 JOB   01,: G  WANG    1,PRTY>02,TYPRUN>HOLD
//C9097M EXEC  PW655L,TIME>01,ACCT>D3S323QU7
//CHG.TU22     DD   UISP>(,PASS),UNIT>(T+F5,1,DEFER),DSN>*E.9895410,   CT22    1
//             VOL>SER>(+F5),DCB>(DEN>2,TRTCH>ET,EROPT>SKP),LABEL>(,NL)
//CHG.INPUT    DU   *,SPACE>(CYL,(1,1))                                1440 CDS
00000             COMBINE     COMPILE                  8, WANG.                C98970
01U40  DATE-WRITTEN. 29 DEC 71.                                                C98970
U1U5U  REMARKS.                                                                C98970
U1U60          SCREEN  65-110  DATA  TAPE.                                     C98970
U2U00  ENVIRONMENT DIVISION.                                                   C98970
U2U10  CONFIGURATION SECTION.                                                  C98970
U2U20  SOURCE-COMPUTER. IBM-360.                                               C98970
U2U3U  OBJECT-COMPUTER. IBM-360.                                               C98970
U2IOU  INPUT-OUTPUT SECTION.                                                   C98970
U211U  FILE-CONTROL.                                                           C98970
U212U      SELECT INFILE                  ASSIGN TO UT-S-TU22                  C98970
U213U          RESERVE 1 ALTERNATE AREA.                                       C98970
02140      SELECT OUTFILE                 ASSIGN TO DA-S-DT02                  C98970
U215U          RESERVE 1 ALTERNATE AREA.                                       C98970
U216U      SELECT INDATA                  ASSIGN TO DA-S-DT01                  C98970
U2170          RESERVE 1 ALTERNATE AREA.                                       C98970
10000  DATA DIVISION.                                                          C98970
10010  FILE SECTION.                                                           C98970
10100  FD  INFILE                                                              C98970
10110                                                                          C98970
10120      RECORDING MODE IS F                                                 C98970
10130      BLOCK CONTAINS 50 RECORDS                                           C98970
10140      RECORD CONTAINS 60          CHARACTERS                              C98970
10150      LABEL RECORDS ARE OMITTED                                           C98970
10160      DATA RECORDS ARE INREC.                                             C98970
10170  01  INREC SYNC.                                                        C98970
10180   U2 TYPE            PICTURE X(4).                                       C98970
10190      U2  DATA1.                                                          C98970
10192          03  FILLER              PICTURE X(24).                         C98970
10194          03  MC                  PICTURE X.                             C98970
10196          03  FILLER              PICTURE X(4).                          C98970
10198          03  WUC                 PICTURE X(5).                          C98970
10200   U2 SER-NO          PICTURE X(8).                                       C98970
10210   U2 DATA3           PICTURE XX.                                         C98970
10212   U2 FILLER          PICTURE XXXX.                                       C98970
10214   U2 DATA4           PICTURE X.                                          C98970
10220   U2 YEAR            PICTURE 99.                                         C98970
10225      02  YEARC REDEFINES YEAR    PICTURE XX.                            C98970
10226      U2  FILLER REDEFINES YEAR.                                          C98970
10227          03  FILLER              PICTURE X.                             C98970
10228          03  YEAR1               PICTURE 9.                             C98970
10230   U2 DAY             PICTURE 999.                                        C98970
10231      U2  DAYC  REDEFINES DAY      PICTURE XXX.                           C98970
10232      U2  FILLER REDEFINES DAY.                                           C98970
10233          03   FILLER              PICTURE X.                             C98970
10234          03  DAY2                PICTURE 99.                            C98970
10235      U2  FILLER REDEFINES DAY.                                           C98970
10236          03  FILLER              PICTURE XX.                            C98970
10237          03  DAY1                PICTURE 9.                             C98970
10240   U2 DATA5           PICTURE XX.                                         C98970
10300  FD  OUTFILE                                                             C98970
10310      RECORDING MODE IS F                                                 C98970
10320      BLOCK CONTAINS 50 RECORDS                                           C98970
10330      RECORD CONTAINS 60          CHARACTERS                              C98970
10340      LABEL RECORDS ARE STANDARD                                          C98970
10350      DATA RECORDS ARE OUTREC.                                            C98970
10360  01  OUTREC SYNC.                                                       C98970
10370   02 TYPE-OUT        PICTURE X(4).                                       C98970
10380   02 DATA1-OUT       PICTURE X(36).                                      C98970
10390   02 SER-OUT         PICTURE X(8).                                       C98970
10400   02 DATA3-OUT       PICTURE XX.                                         C98970
10410   02 JDAY-OUT        PICTURE 9999.                                       C98970
10420   02 DATA4-OUT       PICTURE X.                                          C98970
10430   02 YEAR-OUT        PICTURE 99.                                         C98970
10440   02 DAY-OUT         PICTURE 999.                                        C98970
10450   02 DATA5-OUT       PICTURE XX.                                         C98970
11U00  FD  INDATA                                                              C98970
11U10      RECORDING MODE IS F                                                 C98970
11U20      BLOCK CONTAINS 20 RECORDS                                           C98970
11U30      RECORD CONTAINS 80          CHARACTERS                              C98970
11040      LABEL RECORDS ARE STANDARD                                          C98970
11050      DATA RECORDS ARE DATA-IN.                                           C98970
11100  01  DATA-IN SYNC.                                                      C98970
11110      02  SCREEN-DATA-IN  PICTURE X(80).                                 C98970
11120      02  FILLER          REDEFINES SCREEN-DATA-IN.                      C98970
11130          03  DATA-I        PICTURE X(4).                                C98970
11140          03  FILLER        PICTURE X(76).                               C98970
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11150       02  FILLER          REDEFINES SCREEN-DATA-IN.                    C98970
11160           03  DATA-2        PICTURE 99.                                C98970
11170           03  FILLER        PICTURE X[78].                             C98970
11180       02  FILLER          REDEFINES SCREEN-DATA-IN.                    C98970
11190           03  TAIL-NO       PICTURE X[8].                              C98970
11200           03  FILLER        PICTURE X[72].                             C98970
30000  WORKING-STORAGE SECTION.                                              C98970
30200  01  YEAR-DAYS SYNC.                                                   C98970
30210    02 FILLER              PICTURE 9999  VALUE   0.                     C98970
30220    02 FILLER              PICTURE 9999  VALUE  365.                    C98970
30230    02 FILLER              PICTURE 9999  VALUE  730.                    C98970
30240    02 FILLER              PICTURE 9999  VALUE 1095.                    C98970
30250    02 FILLER              PICTURE 9999  VALUE 1461.                    C98970
30260    02 FILLER              PICTURE 9999  VALUE 1826.                    C98970
30270    02 FILLER              PICTURE 9999  VALUE 2191.                    C98970
30280    02 FILLER              PICTURE 9999  VALUE 2556.                    C98970
30300  01  TABLE-YEAR-DAYS, REDEFINES YEAR-DAYS SYNC.                        C98970
30310    02 NDAY. OCCURS  8 TIMES.                                          C98970
30320                          PICTURE 9999.                                 C98970
30400  01  RECORDS-READ         PICTURE 9[6]  VALUE ZERO          SYNC.      C98970
30410  01  KOUNT                PICTURE S999  VALUE ZERO COMPUTATIONAL SYNC.  C98970
30420  01  JDAY                 PICTURE 9[4]  VALUE ZERO          SYNC.      C98970
30430  01  RECORDS-PASS         PICTURE 9[6]  VALUE ZERO          SYNC.      C98970
30500  01  A-C-TYPE SYNC            PICTURE X[4].                             C98970
30510  01  LOW-S-N SYNC             PICTURE X[8].                             C98970
30520  01  HIGH-S-N SYNC            PICTURE X[8].                             C98970
30540  01  NO-A-C                   PICTURE 99.                               C98970
30590  01  NINE SYNC.                                                        C98970
30600    02 FILLER              PICTURE X[4]  VALUE :9999:.                  C98970
30610    02 FILLER              PICTURE X[34] VALUE                          C98970
30620          :9999999999999999999999999999999999:.                         C98970
30630    02 FILLER              PICTURE X[8]  VALUE :99999999:.              C98970
30640    02 FILLER              PICTURE XX    VALUE :99:.                    C98970
30650    02 FILLER              PICTURE 9999  VALUE 9999.                    C98970
30660    02 FILLER              PICTURE X     VALUE :9:.                     C98970
30670    02 FILLER              PICTURE 99    VALUE 99.                      C98970
30680    02 FILLER              PICTURE 999   VALUE 999.                     C98970
30690    02 FILLER              PICTURE XX    VALUE :99:.                    C98970
30750  01  TABLE-REJ-S-N SYNC.                                               C98970
30760      02  REJ-S-N OCCURS 25 TIMES DEPENDING ON NO-A-C,                  C98970
30770                            PICTURE X[8].                               C98970
31000  01  MC-WUC-REC SYNC.                                                  C98970
31010      05  MC-1                       PICTURE X.                        C98970
31020      05  PERIODIC-INSP              PICTURE X[5].                     C98970
31030      05  FILLER                     PICTURE X[4].                     C98970
31040      05  MC-2                       PICTURE X.                        C98970
31050      05  HRLY-P-F-INSP              PICTURE X[5].                     C98970
31060      05  FILLER                     PICTURE X[64].                    C98970
50000  PROCEDURE DIVISION.                                                 C98970
50010  OPEN-FILES.                                                         C98970
50020      OPEN INPUT INFILE, INDATA.                                      C98970
50030      OPEN OUTPUT OUTFILE.                                            C98970
50035      PERFORM SCREEN-DATA THRU END-S-D.                               C98970
50040  READ1.                                                              C98970
50050      READ INFILE                                                     C98970
50060           AT END GO TO BLOCK-CHECK.                                  C98970
50070      ADD 1 TO RECORDS-READ.                                          C98970
50080      IF TYPE IS NOT EQUAL TO A-C-TYPE GO TO READ1.                   C98970
50090      IF DAY IS EQUAL TO ZERO GO TO READ1.                            C98970
50100      IF SER-NO IS EQUAL TO SPACE GO TO READ1.                        C98970
50110      IF SER-NO IS LESS THAN LOW-S-N GO TO READ1.                     C98970
50120      IF SER-NO IS GREATER THAN HIGH-S-N GO TO READ1.                 C98970
50200  SCREEN-S-N.                                                         C98970
50210      MOVE ZERO TO KOUNT.                                             C98970
50220  REPEAT-TEST.                                                        C98970
50230      ADD 1 TO KOUNT.                                                 C98970
50240      IF SER-NO EQUAL TO REJ-S-N [KOUNT] GO TO READ1.                 C98970
50250      IF KOUNT IS LESS THAN NO-A-C GO TO REPEAT-TEST.                 C98970
50300  CALCULATE-J-DAY.                                                    C98970
50302      IF YEARC IS LESS THAN :101 ADD 60    YEAR1 GIVING YEAR.         C98970
50305      IF YEARC IS NOT GREATER THAN 1641 GO TO READ1.                  C98970
50310      COMPUTE KOUNT > YEAR - 64.                                      C98970
50322      IF DAYC IS LESS THAN : 10: MOVE DAY1 TO DAY.                    C98970
50324      IF DAYC IS LESS THAN :100: MOVE DAY2 TO DAY.                    C98970
50330      COMPUTE JDAY > DAY < NDAY [KOUNT].                              C98970
50340      IF WUC IS EQUAL TO SPACE THEN PERFORM INSERT-WUC.                C98970
50400  WRITE1.                                                             C98970
50410      MOVE TYPE TO TYPE-OUT.                                          C98970
50420      MOVE DATA1 TO DATA1-OUT.                                        C98970
50430      MOVE SER-NO TO SER-OUT.                                         C98970
50440      MOVE DATA3 TO DATA3-OUT.                                        C98970
50450      MOVE JDAY TO JDAY-OUT.                                          C98970
50460      MOVE DATA4 TO DATA4-OUT.                                        C98970
```

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50470       MOVE YEAR TO YEAR-OUT.                                          C98970
50480       MOVE DAY TO DAY-OUT.                                            C98970
50490       MOVE DATA5 TO DATA5-OUT.                                        C98970
50500       WRITE OUTREC.                                                   C98970
50510       ADD 1 TO RECORDS-PASS.                                          C98970
50515       IF RECORDS-PASS IS GREATER THAN 100 GO TO BLOCK-CHECK.          C98970
50520       GO TO READ1.                                                    C98970
50600   BLOCK-CHECK.                                                        C98970
50610       COMPUTE KOUNT > RECORDS-PASS - [[RECORDS-PASS / 50] * 50].      C98970
50620       IF KOUNT EQUAL ZERO GO TO CLOSE-FILES.                          C98970
50640   LOOP1.                                                              C98970
50650       WRITE OUTREC FROM NINE.                                         C98970
50660       ADD 1 TO KOUNT.                                                 C98970
50670       IF KOUNT IS LESS THAN 50 THEN GO TO LOOP1.                      C98970
50800   CLOSE-FILES.                                                        C98970
50810       CLOSE INFILE WITH LOCK, INDATA WITH LOCK.                       C98970
50820       CLOSE OUTFILE WITH LOCK.                                        C98970
50840       DISPLAY : NUMBER RECORDS READ : RECORDS-READ UPON CONSOLE.      C98970
50850       DISPLAY : NUMBER RECORDS PASS : RECORDS-PASS UPON CONSOLE.      C98970
50860       DISPLAY : EOJ 9897 : UPON CONSOLE.                              C98970
50870       GOBACK.                                                         C98970
51000   SCREEN-DATA.                                                        C98970
51010       READ INDATA AT END GO TO END-S-D.                               C98970
51020       MOVE DATA-1 TO A-C-TYPE.                                        C98970
51050       READ INDATA AT END GO TO END-S-D.                               C98970
51060       MOVE DATA-2 TO NO-A-C.                                          C98970
51070       MOVE ZERO TO KOUNT.                                             C98970
51080   S-D-1.                                                              C98970
51090       ADD 1 TO KOUNT.                                                 C98970
51100       READ INDATA AT END GO TO END-S-D.                               C98970
51110       MOVE TAIL-NO TO REJ-S-N [KOUNT].                                C98970
51120       IF KOUNT IS LESS THAN NO-A-C GO TO S-D-1.                       C98970
51130       READ INDATA AT END GO TO END-S-D.                               C98970
51140       MOVE TAIL-NO TO LOW-S-N.                                        C98970
51150       READ INDATA AT END GO TO END-S-D.                               C98970
51160       MOVE TAIL-NO TO HIGH-S-N.                                       C98970
51170       READ INDATA INTO MC-WUC-REC, AT END GO TO END-S-D.              C98970
51190   END-S-D. EXIT.                                                      C98970
80000   INSERT-WUC.                                                         C98970
80010       IF MC IS EQUAL TO MC-1 THEN MOVE PERIODIC-INSP TO WUC.          C98970
80020       IF MC IS EQUAL TO MC-2 THEN MOVE MRLY-P-F-INSP TO WUC.          C98970
/*        PLACE COBOL SOURCE BEFORE THIS CARD
//CH6.TFGIN     DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000             GET TFG                                 WANG            C98970'T
0I000I 01999  REPLACE                                                       'T
TFG  DT01     11  020Z080
F106        A-C TYPE
13          NUMBER REJ A-C
57000234
57000239
57000240
57001523
57002507
57002513
57002516
57002519
57002523
57002529
58000795
59000061
59000150
57000001  LOW S-N
59999999  HIGH S-N
C03400    DU33U0
*END
/*        PLACE TFG DATA BEFORE THIS CARD
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5,               CT22
//                DCB>[DEN>2,TRTCH>ET,EROPT>SKP],LABEL>[,NL]
//TPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  DT01     10100802080
T/P  DT02     10200602060
/*        PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.2.2 65-110 SORT

```
//T9897L JOB   01,: G. WANG    :,PRTY>02,TYPRUN>HOLD
//C9897S EXEC  P9622N,W>199,TIME>03,ACCT>D35323007
//CHG.SORTIN   DD   DISP>[,KEEP],UNIT>[T+F5,1,DEFER],                    CT22    1
//             DSN>+E,9895415,                                           CT22    2
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//             DCB>[LRECL>0060,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A,9895425,     CT12    1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//             DCB>[LRECL>0060,BLKSIZE>3000]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[039,008,CH,A,049,004,CH,A,059,001,CH,A,034,005,CH,A,     C
             029,008,CH,A,001,028,CH,A,030,004,CH,A],SIZE>E0500000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
//C9897P EXEC  C9603N,TIME>01,ACCT>D35322107
//CHG.TU12     DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A,9895425,     CT12    1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]   T12    3
//CHG.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  TU12    1020060Z060
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
                                                                          -
```

6.2.3 65-110 MERGE

```
//C9897N JOB   01,: G. WANG,   :,PRTY>02,TYPRUN>HOLD
//C9897  EXEC  P9625N,TIME>03,ACCT>D35323007
//CHG.SORTIN01 DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],DSN>+E,9895425,     CT22/23 1
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    2
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    3
//             DCB>[LRECL>0060,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG,SORTIN02 DD   DISP>[,KEEP],UNIT>[A+F7,2,DEFER],DSN>+G,9895425,     CT24/25 1
//             VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,     CT24    2
//             I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7],CT24    3
//             DCB>[LRECL>0060,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG,SORTIN03 DD   DISP>[,KEEP],UNIT>[A+F3,2,DEFER],DSN>+C,9895430,     CT14/15 1
//             VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,     CT14    2
//             I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3],CT14    3
//             DCB>[LRECL>0060,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG,SORTOUT  DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A,9895430,     CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//             DCB>[LRECL>0060,BLKSIZE>3000]
//CHG,SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 MERGE FIELDS>[039,008,CH,A,049,004,CH,A,059,001,CH,A,034,005,CH,A,     C
             029,001,CH,A]
/*
                                                                          -
```

6.2.4 65-110 ELIMINATE DUPLICATE RECORDS

```
//C9897P JOB   01,:  WANG       :,PRTY>02,TYPRUN>HOLD
//C9897D JOB   01,: G. WANG     :,PRTY>02,TYPRUN>HOLD
//C9897D EXEC  P9655L,TIME>10,ACCT>D35323007
//CHG.TU12     DD   DISP>[,PASS],UNIT>[T+F1,1,DEFER],DSN>+A,9895430,     CT12    1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]   T12    3
//CHG,TU14     DD   DISP>[,PASS],UNIT>[T+F3,1,DEFER],DSN>+C,9895440,     CT14    1
//             VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,     CT14    2
//             I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]   T14    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000        COMBINE     COMPILE                  0, WANG,                C98970
01050  DATE-WRITTEN, 27 DEC 71,                                           C98970
01060  REMARKS, PROGRAM SIFTS 65-110 FILE TO ELIMINATE DUPLICATE          C98970
01070      ADJACENT RECORDS,                                              C98970
02000  ENVIRONMENT DIVISION,                                              C98970
02010  CONFIGURATION SECTION,                                             C98970
02020  SOURCE-COMPUTER, IBM-360,                                          C98970
02030  OBJECT-COMPUTER, IBM-360,                                          C98970
02100  INPUT-OUTPUT SECTION,                                              C98970
02110  FILE-CONTROL,                                                      C98970
02120      SELECT INFILE                ASSIGN TO UT-S-TU12               C98970
02130          RESERVE 1 ALTERNATE AREA,                                  C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU14               C98970
02150          RESERVE 1 ALTERNATE AREA,                                  C98970
```

```
10000  DATA DIVISION.                                                          C98970
10010  FILE SECTION.                                                           C98970
10020  FD  INFILE                                                              C98970
10030      RECORDING MODE IS F                                                 C98970
10040      BLOCK CONTAINS 50 RECORDS                                           C98970
10050      RECORD CONTAINS 60           CHARACTERS                             C98970
10060      LABEL RECORDS ARE OMITTED                                           C98970
10070      DATA RECORDS ARE INREC.                                             C98970
10080  01  INREC       PICTURE X(60) SYNC.                                     C98970
10100  FD  OUTFILE                                                             C98970
10110      RECORDING MODE IS F                                                 C98970
10120      BLOCK CONTAINS 50 RECORDS                                           C98970
10130      RECORD CONTAINS 60           CHARACTERS                             C98970
10140      LABEL RECORDS ARE OMITTED                                           C98970
10150      DATA RECORDS ARE OUTREC.                                            C98970
10160  01  OUTREC      PICTURE X(60) SYNC.                                     C98970
30000  WORKING-STORAGE SECTION.                                                C98970
30010  01  NUMBER-DUPS     PICTURE 9(07) SYNC.                                 C98970
30020  01  TEMPREC     PICTURE X(60) SYNC.                                     C98970
30030  01  NINES                SYNC    PICTURE X(60) VALUE   !9999999999     C98970
30040 -    :99999999999999999999999999999999999999999999999999999!.           C98970
30050  01  RECORDS-PASS         SYNC    PICTURE 9(7) VALUE ZERO.                C98970
30060  01  KNT     COMPUTATIONAL SYNC  PICTURE S999 VALUE ZERO.                C98970
50000  PROCEDURE DIVISION.                                                     C98970
50010  BEGIN.                                                                  C98970
50020      OPEN INPUT INFILE.                                                  C98970
50030      OPEN OUTPUT OUTFILE.                                                C98970
50040      MOVE ZERO TO NUMBER-DUPS.                                           C98970
50050      READ INFILE                                                         C98970
50060          AT END GO TO CLOSE-FILES.                                       C98970
50070      MOVE INREC TO TEMPREC.                                              C98970
50080      READ INFILE                                                         C98970
50090          AT END GO TO CLOSE-FILES.                                       C98970
50100  COMPARE.                                                                C98970
50110      IF INREC > TEMPREC GO TO COUNT-DUPS.                                C98970
50120      WRITE OUTREC FROM TEMPREC.                                          C98970
50125      ADD 1 TO RECORDS-PASS.                                              C98970
50130      MOVE INREC TO TEMPREC.                                              C98970
50140      READ INFILE                                                         C98970
50150          AT END GO TO WRITE-LAST.                                        C98970
50160      GO TO COMPARE.                                                      C98970
50170  COUNT-DUPS.                                                             C98970
50175      IF INREC IS EQUAL TO NINES GO TO BLOCK-CHECK.                       C98970
50180      ADD 1 TO NUMBER-DUPS.                                               C98970
50190      READ INFILE                                                         C98970
50200          AT END GO TO WRITE-LAST.                                        C98970
50210      GO TO COMPARE.                                                      C98970
50220  WRITE-LAST.                                                             C98970
50230      WRITE OUTREC FROM TEMPREC.                                          C98970
50235      ADD 1 TO RECORDS-PASS.                                              C98970
50240  CLOSE-FILES.                                                            C98970
50250      CLOSE INFILE WITH LOCK.                                             C98970
50260      CLOSE OUTFILE WITH LOCK.                                            C98970
50270      DISPLAY :NO. DUPS : NUMBER-DUPS UPON CONSOLE.                       C98970
50280      DISPLAY :EOJ 9897 : UPON CONSOLE.                                   C98970
50290      GOBACK.                                                             C98970
50400  BLOCK-CHECK.                                                            C98970
50410      COMPUTE KNT > RECORDS-PASS - RECORDS-PASS / 50 * 50.                C98970
50420      IF KNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                          C98970
50430  NINE-FILL.                                                              C98970
50440      WRITE OUTREC  FROM NINES.                                           C98970
50450      ADD 1 TO KNT.                                                       C98970
50460      IF KNT IS LESS THAN 50 GO TO NINE-FILL.                             C98970
50470      GO TO CLOSE-FILES.                                                  C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CH8.TF0IN    DD   *,SPACE>[CYL,[1,1]]                                       I440 CDS
/*       PLACE TF0 DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP>[OLD,KEEP],VOL>SER>+F1,UNIT>T+F1                     T12
//TPR.TU14     DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3                     T14
//TPR.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  TU14    1010060Z060
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.2.5 65-110 COPY ACCEPTABLE AIRCRAFT

```
//C9897P JOB   01,'G. WANG     1',PRTY=04,TYPRUN=HOLD
//C9897  EXEC  P9655L,TIME=05,ACCT=D35323007
//CHG.TU12     DD   DISP=(,PASS),UNIT=(T+F1,1,DEFER),DSN=*.A.9895435,   C712    1
//               VOL=SER=(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   C712    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU14     DD   DISP=(,PASS),UNIT=(T+F3,1,DEFER),DSN=*.C.9895460,   CT14    1
//               VOL=SER=(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//               I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.INPUT    DD   *,SPACE=(CYL,(1,1))                                 1440 COS
00000          COMLINE     COMPILE                  G. WANG.            C90970
01040  DATE-WRITTEN. 29 DEC 71.                                         C90970
01050  REMARKS.                                                         C90970
01060          65-110 COPY ACCEPTABLE AIRCRAFT.                         C90970
02000  ENVIRONMENT DIVISION.                                            C90970
02010  CONFIGURATION SECTION.                                           C90970
02020  SOURCE-COMPUTER. IBM-360.                                        C90970
02030  OBJECT-COMPUTER. IBM-360.                                        C90970
02100  INPUT-OUTPUT SECTION.                                            C90970
02110  FILE-CONTROL.                                                    C90970
02120      SELECT INFILE                    ASSIGN TO UT-S-TU14         C90970
02130          RESERVE 1 ALTERNATE AREA.                                C90970
02140      SELECT OUTFILE                   ASSIGN TO UT-S-TU12         C90970
02150          RESERVE 1 ALTERNATE AREA.                                C90970
02160      SELECT ACCEPT-FILE               ASSIGN TO DA-S-0781         C90970
02170          RESERVE 1 ALTERNATE AREA.                                C90970
10000  DATA DIVISION.                                                   C90970
10010  FILE SECTION.                                                    C90970
10100  FD  INFILE                                                       C90970
10110                                                                   C90970
10120      RECORDING MODE IS F                                          C90970
10130      BLOCK CONTAINS 50 RECORDS                                    C90970
10140      RECORD CONTAINS 60           CHARACTERS                      C90970
10150      LABEL RECORDS ARE OMITTED                                    C90970
10160      DATA RECORDS ARE INREC.                                      C90970
10170  01  INREC SYNC.                                                 C90970
10180    02 TYPE              PICTURE X(4).                            C90970
10190       02  DATA1.                                                 C90970
10192           03  FILLER                PICTURE X(24).               C90970
10194           03  MC                    PICTURE X.                   C90970
10196           03  FILLER                PICTURE X(4).                C90970
10198           03  WUC                   PICTURE X(5).                C90970
10200    02 SER-NO            PICTURE X(6).                            C90970
10210    02 DATA3             PICTURE XX.                              C90970
10212    02 FILLER            PICTURE XXXX.                            C90970
10214    02 DATA4             PICTURE X.                               C90970
10220    02 YEAR              PICTURE 99.                              C90970
10225       02  YEARC REDEFINES YEAR     PICTURE XX.                   C90970
10226       02  FILLER REDEFINES YEAR.                                 C90970
10227           03  FILLER                PICTURE X.                   C90970
10228           03  YEAR1                 PICTURE 9.                   C90970
10230    02 DAY               PICTURE 999.                             C90970
10231       02  DAYC  REDEFINES DAY      PICTURE XXX.                  C90970
10232       02  FILLER REDEFINES DAY.                                  C90970
10233           03   FILLER                PICTURE X.                   C90970
10234           03  DAY2                  PICTURE 99.                  C90970
10235       02  FILLER REDEFINES DAY.                                  C90970
10236           03  FILLER                PICTURE XX.                  C90970
10237           03  DAY1                  PICTURE 9.                   C90970
10240    02 DATA5             PICTURE XX.                              C90970
10300  FD  OUTFILE                                                      C90970
10310      RECORDING MODE IS F                                          C90970
10320      BLOCK CONTAINS 50 RECORDS                                    C90970
10330      RECORD CONTAINS 60           CHARACTERS                      C90970
10340      LABEL RECORDS ARE OMITTED                                    C90970
10350      DATA RECORDS ARE OUTREC.                                     C90970
10360  01  OUTREC SYNC.                                                C90970
10370    02 TYPE-OUT          PICTURE X(4).                            C90970
10380    02 DATA1-OUT         PICTURE X(34).                           C90970
10390    02 SER-OUT           PICTURE X(6).                            C90970
10400    02 DATA3-OUT         PICTURE XX.                              C90970
10410    02 JDAY-OUT          PICTURE 9999.                            C90970
10420    02 DATA4-OUT         PICTURE X.                               C90970
10430    02 YEAR-OUT          PICTURE 99.                              C90970
10440    02 DAY-OUT           PICTURE 999.                             C90970
10450    02 DATA5-OUT         PICTURE XX.                              C90970
11400  FD  ACCEPT-FILE                                                  C90970
11410      RECORDING MODE IS F                                          C90970
11420      BLOCK CONTAINS 20 RECORDS                                    C90970
11430      RECORD CONTAINS 80           CHARACTERS                      C90970
11440      LABEL RECORDS ARE STANDARD                                   C90970
11450      DATA RECORDS ARE ACCEPT-REC.                                 C90970
11460  01  ACCEPT-REC SYNC.                                            C90970
11470      02  ACCEPT-DATA             PICTURE X(80).                  C90970
11480      02  FILLER REDEFINES ACCEPT-DATA.                           C90970
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11490          03  DATA-1                PICTURE 999.                          C98970
11500          03  FILLER                PICTURE X(77).                        C98970
11510      02  FILLER REDEFINES ACCEPT-DATA.                                   C98970
11520          03  DATA-2                PICTURE X(8).                         C98970
11530          03  FILLER                PICTURE X(72).                        C98970
30000  WORKING-STORAGE SECTION.                                                C98970
30200  01  YEAR-DAYS SYNC.                                                     C98970
30210   02 FILLER           PICTURE 9999  VALUE   0.                           C98970
30220   02 FILLER           PICTURE 9999  VALUE  365.                          C98970
30230   02 FILLER           PICTURE 9999  VALUE  730.                          C98970
30240   02 FILLER           PICTURE 9999  VALUE 1095.                          C98970
30250   02 FILLER           PICTURE 9999  VALUE 1461.                          C98970
30260   02 FILLER           PICTURE 9999  VALUE 1826.                          C98970
30270   02 FILLER           PICTURE 9999  VALUE 2191.                          C98970
30280   02 FILLER           PICTURE 9999  VALUE 2556.                          C98970
30300  01  TABLE-YEAR-DAYS, REDEFINES YEAR-DAYS SYNC.                          C98970
30310   02 NDAY, OCCURS  8 TIMES,                                             C98970
30320                      PICTURE 9999.                                       C98970
30400  01  RECORDS-READ     PICTURE 9(6)  VALUE ZERO        SYNC.             C98970
30410  01  KOUNT            PICTURE S999  VALUE ZERO COMPUTATIONAL SYNC.      C98970
30420  01  JDAY             PICTURE 9(4)  VALUE ZERO        SYNC.             C98970
30430  01  RECORDS-PASS     PICTURE 9(6)  VALUE ZERO        SYNC.             C98970
30590  01  NINE SYNC.                                                          C98970
30600   02 FILLER           PICTURE X(4)  VALUE :99991.                        C98970
30610   02 FILLER           PICTURE X(34) VALUE                                C98970
30620        !9999999999999999999999999999999999!.                           C98970
30630   02 FILLER           PICTURE X(8)  VALUE :99999999:.                    C98970
30640   02 FILLER           PICTURE XX    VALUE :99:.                          C98970
30650   02 FILLER           PICTURE 9999  VALUE 9999.                          C98970
30660   02 FILLER           PICTURE X     VALUE :9:.                           C98970
30670   02 FILLER           PICTURE 99    VALUE 99.                            C98970
30680   02 FILLER           PICTURE 999   VALUE 999.                           C98970
30690   02 FILLER           PICTURE XX    VALUE :99:.                          C98970
40000  01  TABLE-ACCEPT-A-C SYNC.                                              C98970
40010      02  ACCEPT-A-C OCCURS  250 TIMES DEPENDING ON NO-ACCEPT-A-C         C98970
40020                                  PICTURE X(8).                           C98970
40030  01  NO-ACCEPT-A-C SYNC          PICTURE 999.                            C98970
40040  01  TEMP-ACCEPT-A-C   SYNC      PICTURE X(8).                           C98970
40050  01  INC SYNC COMPUTATIONAL      PICTURE S999 VALUE <1.                  C98970
40060  01  KNT SYNC COMPUTATIONAL      PICTURE S999.                           C98970
50000  PROCEDURE DIVISION.                                                     C98970
50010  OPEN-FILES.                                                             C98970
50020      OPEN INPUT INFILE, ACCEPT-FILE.                                     C98970
50030      OPEN OUTPUT OUTFILE.                                                C98970
50032      PERFORM READ-ACCEPT-DATA THRU END-R-A-D.                            C98970
50040  READ1.                                                                  C98970
50050      READ INFILE                                                         C98970
50060           AT END GO TO BLOCK-CHECK.                                      C98970
50070      ADD 1 TO RECORDS-READ.                                              C98970
50220  TEST1.                                                                  C98970
50221      IF SEK-NO IS LESS THAN TEMP-ACCEPT-A-C GO TO READ1.                 C98970
50222      IF SEK-NO IS EQUAL TO  TEMP-ACCEPT-A-C GO TO CALCULATE-J-DAY.       C98970
50223      ADD 1 TO INC.                                                       C98970
50224      IF INC IS GREATER THAN NO-ACCEPT-A-C GO TO BLOCK-CHECK.             C98970
50225      MOVE ACCEPT-A-C (INC) TO TEMP-ACCEPT-A-C.                           C98970
50226      GO TO TEST1.                                                        C98970
50300  CALCULATE-J-DAY.                                                        C98970
50302      IF YEARC IS LESS THAN :10: ADD 60    YEAR1 GIVING YEAR.             C98970
50305      IF YEARC IS NOT GREATER THAN :64: GO TO READ1.                      C98970
50310      COMPUTE KOUNT > YEAR - 64.                                          C98970
50322      IF DAYC IS LESS THAN : 10: MOVE DAY1 TO DAY.                        C98970
50324      IF DAYC IS LESS THAN :100: MOVE DAY2 TO DAY.                        C98970
50330      COMPUTE JDAY > DAY < NDAY (KOUNT).                                  C98970
50400  WRITE1.                                                                 C98970
50410      MOVE TYPE TO TYPE-OUT.                                              C98970
50420      MOVE DATA1 TO DATA1-OUT.                                            C98970
50430      MOVE SEK-NO TO SEK-OUT.                                             C98970
50440      MOVE DATA3 TO DATA3-OUT.                                            C98970
50450      MOVE JDAY TO JDAY-OUT.                                              C98970
50460      MOVE DATA4 TO DATA4-OUT.                                            C98970
50470      MOVE YEAR TO YEAR-OUT.                                              C98970
50480      MOVE DAY TO DAY-OUT.                                                C98970
50490      MOVE DATA5 TO DATA5-OUT.                                            C98970
50500      WRITE OUTREC.                                                       C98970
50510      ADD 1 TO RECORDS-PASS.                                              C98970
50520      GO TO READ1.                                                        C98970
50600  BLOCK-CHECK.                                                            C98970
50610      COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 50) * 50).          C98970
50620      IF KOUNT EQUAL ZERO GO TO CLOSE-FILES.                              C98970
50640  LOOP1.                                                                  C98970
50650      WRITE OUTREC FROM NINE.                                             C98970
50660      ADD 1 TO KOUNT.                                                     C98970
50670      IF KOUNT IS LESS THAN 50 THEN GO TO LOOP1.                          C98970
50800  CLOSE-FILES.                                                            C98970
50810      CLOSE INFILE WITH LOCK, ACCEPT-FILE WITH LOCK.                      C98970
50820      CLOSE OUTFILE WITH LOCK.                                            C98970
50840      DISPLAY : NUMBER RECORDS READ : RECORDS-READ UPON CONSOLE.          C98970
```

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50850       DISPLAY : NUMBER RECORDS PASS : RECORDS-PASS UPON CONSOLE.      C98970
50860       DISPLAY : EOJ 9897 : UPON CONSOLE.                             C98970
50870       GOBACK.                                                        C98970
70000  READ-ACCEPT-DATA.                                                   C98970
70010       READ ACCEPT-FILE AT END GO TO END-R-A-D.                       C98970
70020       MOVE DATA-1 TO NO-ACCEPT-A-C.                                  C98970
70030       MOVE ZERO TO KNT.                                              C98970
70040  RAD-1.                                                              C98970
70050       ADD 1 TO KNT.                                                  C98970
70060       READ ACCEPT-FILE AT END GO TO END-R-A-D.                       C98970
70070       MOVE DATA-2 TO ACCEPT-A-C (KNT).                               C98970
70080       IF KNT IS LESS THAN NO-ACCEPT-A-C GO TO RAD-1.                 C98970
70090       MOVE ACCEPT-A-C (1) TO TEMP-ACCEPT-A-C.                        C98970
70100  END-R-A-D. EXIT.                                                    C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFG1N    DD   *,SPACE=(CYL,(1,1))                                   1440 CDS
TFG  DT01    11  020Z080
150
57000231
57000232
57000235
57000236
57000237
57000243
57000244
57002455
57002456
57002458
57002459
57002463
57002470
57002473
57002476
57002477
57002482
57002483
57002485
57002486
57002490
57002491
57002493
57002494
57002496
57002503
57002504
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57002515
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57002520
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57002543
57002545
57002546
58000760
58000766
58000767
58000772
58000773
58000776
58000777
58000778
58000780
58000781
58000783
58000785
58000786
58000788
58000792
58000797
58000900
58000901
58000903
58000904
59000002
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59000006
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59000007
59000008
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59000103
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59000115
59000116
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59000126
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59000128
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59000132
59000133
59000137
59000138
59000140
59000141
59000143
59000144
59000145
59000146
59000147
59000149
59000151
59000152
59000153
59000155
59000157
59000164
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1              T12
//TPR.TU14     DD   DISP>(OLD,KEEP),VOL>SER>+F3,UNIT>T+F3              T14
//TPR.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  DT01    1020080Z080
T/P  TU12    :ALL060Z060
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.3 AIE FILE GENERATION PROGRAMS

6.3.1 AI FORMATTER

```
//19897C JOB   01,: G. WANG    1,PRTY>02,TYPRUN>HOLD
//C9897R EXEC  P9655L,TIME>02,ACCT>D35323007
//CHG.IU14     DD   DSN>+P.9895451,SPACE>[CYL,[010,001]]                    D14-OUT
//CHG.IU22     DD   DSN>+P.9895453,SPACE>[CYL,[010,001]]                    D22-OUT
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                     1440 COS
00000          COMBINE      COMPILE                  G. WANG,               C98970
01040  DATE-WRITTEN. 26 JAN 72.                                             C98970
01050  REMARKS.PROGRAM NAME-AIE CARD DECK FORMATTER[REF. GOCA-AJM71-001     C98970
01060      PGS 2-[54-56].//PURPOSE-READS AIE CARD DATA SUPPLIED BY SAAMA    C98970
01070       AND COPIES RELEVANT DATA FIELDS TO AN OUTPUT TAPE. [1] IDENT    C98970
01080      IFY OUTPUT FROM CARD SOURCE. [2]CHG  SER  TO 8-DIGIT. [3]CONV    C98970
01090      ERT DATES TO DAY NUMBERS.                                        C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02120      SELECT INCARD                ASSIGN TO UT-S-TU14              C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU22              C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
02160      SELECT EXCPTFILE             ASSIGN TO DA-S-DT01              C98970
02170          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
10100  FD   INCARD                                                          C98970
10120      RECORDING MODE IS F                                              C98970
10130      BLOCK CONTAINS 30 RECORDS                                        C98970
10140      RECORD CONTAINS 80           CHARACTERS                          C98970
10150      LABEL RECORDS ARE OMITTED                                        C98970
10160      DATA RECORDS ARE INCARD-AIE.                                     C98970
10200  01   INCARD-AIE SYNC.                                                C98970
10210       02  FILLER          PICTURE X.                                  C98970
10220       02  SER-2-3         PICTURE XX.                                 C98970
10230       02  FILLER          PICTURE X.                                  C98970
10240       02  SER-C5          PICTURE X.                                  C98970
10250       02  SER-C6          PICTURE X.                                  C98970
10260       02  SER-C7          PICTURE X.                                  C98970
10270       02  SER-C8          PICTURE X.                                  C98970
10280       02  FILLER          PICTURE X.                                  C98970
10290       02  DAY-MO-YR.                                                  C98970
10300           05  DA          PICTURE 99.                                 C98970
10310           05  MONTH       PICTURE XXX.                                C98970
10320           05  YR          PICTURE 99.                                 C98970
10330       02  FILLER          PICTURE XX.                                 C98970
10340       02  REPORT-CODE     PICTURE X.                                  C98970
10350       02  FILLER          PICTURE X.                                  C98970
10360       02  WUC             PICTURE XXXXX.                              C98970
10370       02  FILLER          PICTURE X[55].                              C98970
11100  FD   OUTFILE                                                         C98970
11120       RECORDING MODE IS F                                             C98970
11130       BLOCK CONTAINS 60 RECORDS                                       C98970
11140       RECORD CONTAINS 50           CHARACTERS                         C98970
11150       LABEL RECORDS ARE OMITTED                                       C98970
11160       DATA RECORDS ARE OUTFILE-AIE.                                   C98970
11200  01   OUTFILE-AIE SYNC.                                               C98970
11210       02  FILLER          PICTURE X[50].                              C98970
12100  FD   EXCPTFILE                                                       C98970
12120       RECORDING MODE IS F                                             C98970
12130       BLOCK CONTAINS 01 RECORDS                                       C98970
12140       RECORD CONTAINS 80           CHARACTERS                         C98970
12150       LABEL RECORDS ARE STANDARD                                      C98970
12160       DATA RECORDS ARE EXCPTFILE-MO.                                  C98970
12200  01   EXCPTFILE-MO SYNC.                                              C98970
12210       02  FILLER          PICTURE X[80].                              C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30030  01   NINE SYNC.                                                      C98970
30040       02  FILLER          PICTURE X[25]   VALUE                       C98970
30050                             :999999999999999999999999991.            C98970
30060       02  FILLER          PICTURE X[25]   VALUE                       C98970
30070                             :999999999999999999999999991.            C98970
30080  01   DAYS-IN-YEAR SYNC.                                              C98970
30090       02  FILLER          PICTURE 999     VALUE   0.                  C98970
30100       02  FILLER          PICTURE 999     VALUE  31.                  C98970
30110       02  FILLER          PICTURE 999     VALUE  59.                  C98970
30120       02  FILLER          PICTURE 999     VALUE  90.                  C98970
30130       02  FILLER          PICTURE 999     VALUE 120.                  C98970
30140       02  FILLER          PICTURE 999     VALUE 151.                  C98970
30150       02  FILLER          PICTURE 999     VALUE 181.                  C98970
30160       02  FILLER          PICTURE 999     VALUE 212.                  C98970
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30170      02  FILLER              PICTURE 999      VALUE 243.                C98970
30180      02  FILLER              PICTURE 999      VALUE 273.                C98970
30190      02  FILLER              PICTURE 999      VALUE 304.                C98970
30200      02  FILLER              PICTURE 999      VALUE 334.                C98970
30210  01  NO-DAYS-IN-YEAR  REDEFINES DAYS-IN-YEAR SYNC.                      C98970
30220      02  KDAYS OCCURS 12 TIMES                                          C98970
30230                           PICTURE 999.                                 C98970
30240  01  DAYS-IN-YEARS SYNC.                                                C98970
30250      02  FILLER              PICTURE 9999     VALUE    0.              C98970
30260      02  FILLER              PICTURE 9999     VALUE  365.              C98970
30270      02  FILLER              PICTURE 9999     VALUE  730.              C98970
30280      02  FILLER              PICTURE 9999     VALUE 1095.              C98970
30290      02  FILLER              PICTURE 9999     VALUE 1461.              C98970
30300      02  FILLER              PICTURE 9999     VALUE 1826.              C98970
30310      02  FILLER              PICTURE 9999     VALUE 2191.              C98970
30320      02  FILLER              PICTURE 9999     VALUE 2556.              C98970
30330      02  FILLER              PICTURE 9999     VALUE 2922.              C98970
30340      02  FILLER              PICTURE 9999     VALUE 3287.              C98970
30350      02  FILLER              PICTURE 9999     VALUE 3652.              C98970
30360      02  FILLER              PICTURE 9999     VALUE 4017.              C98970
30370  01  DAY-IN-YEAR-TABLE REDEFINES DAYS-IN-YEARS SYNC.                    C98970
30380      02  DAY-YEAR OCCURS 12 TIMES                                       C98970
30390                           PICTURE 9999.                                C98970
30400  01  KOUNT    PICTURE S999  COMPUTATIONAL VALUE ZERO SYNC.              C98970
30410  01  KNT      PICTURE S999  COMPUTATIONAL VALUE ZERO SYNC.              C98970
30430  01  KYEAR    PICTURE S99   COMPUTATIONAL VALUE ZERO SYNC.              C98970
30440  01  DAYS     PICTURE S999  COMPUTATIONAL VALUE ZERO SYNC.              C98970
30450  01  RECORDS-READ            PICTURE 9(6) SYNC VALUE ZERO.              C98970
30460  01  RECORDS-PASS            PICTURE 9(6) SYNC VALUE ZERO.              C98970
30470  01  GMD-KNT                 PICTURE 999 SYNC VALUE ZERO.               C98970
30500  01  SER-8-DIGIT SYNC.                                                  C98970
30510      02  POS-1-2             PICTURE XX.                                C98970
30520      02  POS-3-4             PICTURE XX       VALUE :00:.               C98970
30530      02  POS-5               PICTURE X.                                 C98970
30540      02  POS-6               PICTURE X.                                 C98970
30550      02  POS-7               PICTURE X.                                 C98970
30560      02  POS-8               PICTURE X.                                 C98970
30570  01  MONTHS-IN-YEAR SYNC.                                               C98970
30580      02  FILLER              PICTURE XXX      VALUE :JAN:.              C98970
30590      02  FILLER              PICTURE XXX      VALUE :FEB:.              C98970
30600      02  FILLER              PICTURE XXX      VALUE :MAR:.              C98970
30610      02  FILLER              PICTURE XXX      VALUE :APR:.              C98970
30620      02  FILLER              PICTURE XXX      VALUE :MAY:.              C98970
30630      02  FILLER              PICTURE XXX      VALUE :JUN:.              C98970
30640      02  FILLER              PICTURE XXX      VALUE :JUL:.              C98970
30650      02  FILLER              PICTURE XXX      VALUE :AUG:.              C98970
30660      02  FILLER              PICTURE XXX      VALUE :SEP:.              C98970
30670      02  FILLER              PICTURE XXX      VALUE :OCT:.              C98970
30680      02  FILLER              PICTURE XXX      VALUE :NOV:.              C98970
30690      02  FILLER              PICTURE XXX      VALUE :DEC:.              C98970
30700  01  NO-MONTHS-IN-YEAR REDEFINES MONTHS-IN-YEAR SYNC.                   C98970
30710      02  KMO OCCURS 12 TIMES                                            C98970
30720                           PICTURE XXX.                                 C98970
34000  01  OUTFILE-AIE-WORK SYNC.                                             C98970
34010      02  FILLER              PICTURE X(9)     VALUE SPACE.              C98970
34020      02  WUC-OUT             PICTURE X(5)     VALUE SPACE.              C98970
34030      02  FILLER              PICTURE X(8)     VALUE SPACE.              C98970
34040      02  REPORT-CODE-OUT     PICTURE X        VALUE SPACE.              C98970
34050      02  FILLER              PICTURE X        VALUE SPACE.              C98970
34060      02  SER-8-DIG-OUT       PICTURE X(8)     VALUE SPACE.              C98970
34070      02  FILLER              PICTURE X(10)    VALUE SPACE.              C98970
34080      02  DOLLAR-SIGN         PICTURE XX       VALUE :$ :.               C98970
34090      02  DAY-NO              PICTURE 9(4)     VALUE ZEROS.              C98970
34100      02  FILLER              PICTURE X        VALUE SPACE.              C98970
34110      02  RCDMK-O             PICTURE X        VALUE :#:.                C98970
35000  01  EXCPTFILE-WORK-1 SYNC.                                             C98970
35010      02  FILLER              PICTURE X        VALUE SPACE.              C98970
35020      02  BAD-M               PICTURE X(25)    VALUE                     C98970
35030                                 : UNRECOGNIZABLE MONTH =< 1.           C98970
35040      02  SER-8-D-EXC         PICTURE X(8)     VALUE SPACE.              C98970
35050      02  FILLER              PICTURE X(2)     VALUE SPACE.              C98970
35060      02  DAY-MO-YR-EXC       PICTURE X(7)     VALUE SPACE.              C98970
35070      02  FILLER              PICTURE X(36)    VALUE SPACE.              C98970
35080      02  RECMAR              PICTURE X        VALUE I#I.                C98970
35100  01  EXCPTFILE-WORK-2 SYNC.                                             C98970
35110      02  FILLER              PICTURE X(43)    VALUE SPACE.              C98970
35120      02  REC-READ            PICTURE X(6)     VALUE IRC-IN>I.           C98970
35130      02  RCDS-IN             PICTURE 9(6).                              C98970
35140      02  REC-PASS            PICTURE X(9)     VALUE I/RCD-OUT>I.        C98970
35150      02  RCDS-OUT            PICTURE 9(6).                              C98970
35160      02  BAD-MONTHS          PICTURE X(6)     VALUE I/0-MO>I.           C98970
35170      02  O-MOS               PICTURE 9(3).                              C98970
35180      02  RKDMK               PICTURE X        VALUE I#I.                C98970
50000  PROCEDURE DIVISION.                                                    C98970
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S0010  OPEN-FILES.                                                      C98970
S0020      OPEN INPUT INCARD.                                           C98970
S0030      OPEN OUTPUT OUTFILE.                                         C98970
S0035      OPEN OUTPUT EXCPTFILE.                                       C98970
S0040  READ1.                                                           C98970
S0050      READ INCARD                                                  C98970
S0060          AT END GO TO BLOCK-CHECK.                                C98970
S0070      ADD 1 TO RECORDS-READ.                                       C98970
S0080  TEST-SER-NO-COLS-5-8.                                            C98970
S0090      IF SER-C5 EQUAL SPACE                                        C98970
S0100          MOVE ZERO TO SER-C5.                                     C98970
S0110      IF SER-C6 EQUAL SPACE                                        C98970
S0120          MOVE ZERO TO SER-C6.                                     C98970
S0130      IF SER-C7 EQUAL SPACE                                        C98970
S0140          MOVE ZERO TO SER-C7.                                     C98970
S0150      IF SER-C8 EQUAL SPACE                                        C98970
S0160          MOVE ZERO TO SER-C8.                                     C98970
S0170      MOVE SER-2-5 TO POS-1-2.                                     C98970
S0180      MOVE SER-C5 TO POS-5.                                        C98970
S0190      MOVE SER-C6 TO POS-6.                                        C98970
S0200      MOVE SER-C7 TO POS-7.                                        C98970
S0210      MOVE SER-C8 TO POS-8.                                        C98970
S0220  DECODE-MONTH.                                                    C98970
S0230      MOVE 1 TO KNT.                                               C98970
S0240  MO-LOOP.                                                         C98970
S0250      IF KMO (KNT) EQUAL MONTH GO TO DATE-TO-DAYS.                 C98970
S0260      ADD 1 TO KNT.                                                C98970
S0270      IF KNT IS LESS THAN 13 GO TO MO-LOOP.                        C98970
S0280  BAD-MONTH.                                                       C98970
S0290      MOVE SER-8-DIGIT TO SER-8-D-EXC.                             C98970
S0300      MOVE DAY-MO-YR TO DAY-MO-YR-EXC.                             C98970
S0310      ADD 1 TO QMO-KNT.                                            C98970
S0320      WRITE EXCPTFILE-MO FROM EXCPTFILE-WORK-1.                    C98970
S0330      GO TO READ1.                                                 C98970
S0400  DATE-TO-DAYS.                                                    C98970
S0410      COMPUTE KYEAR > YR - 60.                                     C98970
S0420      COMPUTE DAYS  > DA < KDAYS (KNT).                            C98970
S0430      IF KYEAR EQUAL 4  GO TO LEAP-YEAR.                           C98970
S0440      IF KYEAR EQUAL 8  GO TO LEAP-YEAR.                           C98970
S0450      IF KYEAR EQUAL 12 GO TO LEAP-YEAR.                           C98970
S0460      GO TO JULIAN-DAYS.                                           C98970
S0500  LEAP-YEAR.                                                       C98970
S0510      IF KNT IS LESS THAN 3 GO TO JULIAN-DAYS.                     C98970
S0520      ADD 1 TO DAYS.                                               C98970
S0540  JULIAN-DAYS.                                                     C98970
S0550      COMPUTE DAY-NO > DAY-YEAR (KYEAR) < DAYS - 1461.             C98970
S1000  WRITE-OUTPUT.                                                    C98970
S1010      MOVE WUC TO WUC-OUT.                                         C98970
S1020      MOVE REPORT-CODE TO REPORT-CODE-OUT.                         C98970
S1030      MOVE SER-8-DIGIT TO SER-8-DIG-OUT.                           C98970
S1040      WRITE OUTFILE-AIE FROM OUTFILE-AIE-WORK.                     C98970
S1050      ADD 1 TO RECORDS-PASS.                                       C98970
S1060      GO TO READ1.                                                 C98970
S2000  BLOCK-CHECK.                                                     C98970
S2010      COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 60) * 60).   C98970
S2020      IF KOUNT EQUAL ZERO GO TO WRITE-RECORD-KP.                   C98970
S2040  LOOP3.                                                           C98970
S2050      WRITE OUTFILE-AIE FROM NINE.                                 C98970
S2060      ADD 1 TO KOUNT.                                              C98970
S2070      IF KOUNT IS LESS THAN 60 GO TO LOOP3.                        C98970
S2100  WRITE-RECORD-KP.                                                 C98970
S2140      MOVE RECORDS-READ TO RCDS-IN.                                C98970
S2150      MOVE RECORDS-PASS TO RCDS-OUT.                               C98970
S2160      MOVE QMO-KNT TO Q-MOS.                                       C98970
S2180      WRITE EXCPTFILE-MO FROM EXCPTFILE-WORK-2.                    C98970
S4000  CLOSE-FILES.                                                     C98970
S4010      CLOSE  INCARD WITH LOCK.                                     C98970
S4020      CLOSE EXCPTFILE WITH LOCK.                                   C98970
S4030      CLOSE OUTFILE WITH LOCK.                                     C98970
S4040      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                          C98970
S4050      GOBACK.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//LNG.IFGIN    DD   *,SPACE=(CYL,(1,1))                                1440 CDS
IFG  TUI4     11  0302080
 56- 456 14JUN65 A1 13000  A RH MLG FAILURE,ACFT DESTROYED
 56- 459  6MAR67  1 75BE1  A SELECTOR VALVE FAILURE
 56- 461 17OCT65  1 51E00  A ADI MATERIAL FAILURE
 56-0461 14AUG66  1 14DC1  A HEP VALVE LEAK
 56- 462 26JUL67  1 52DE1  A SHORTED FLT MODE CONTROL
 56- 463 10MAY67  1 46HB1  A EJECTOR HOUSING ASSY MAT'L FAILURE
 56-0463 15FEB68  1 13BB1  A MALFUNCTION NG ACTUATING CYL
 56- 465  1NOV67  1 45BA1  A SECOND HYD SYS ACCUMULATOR PUMP, FAILURE
 57- 232 12JUL65  1 45EM1  A ACTUATOR FAILURE,PRESSURE LINE BROKE
 57- 232  7OCT65  1 51EC1  A DISPLACEMENT GYRO MALFUNCTION
 57-0235  3MAR66  1 46LA1  A PYLON ASSY MATERIAL FAILURE
 57-0241 23FEB67  1 14JF1  A ACTUATOR FAILURE
 57- 243 19AUG66  1 14JB1  A SPEED BRAKE & DRAG CHUTE LOST
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57-0482	29JUN67	I	75GE1	A	MB-1 EJECTOR RACK MALFUNCTION
57-0781	11MAY66	I	42BA1	A	DC GENERATOR FAILURE
57-2303	19DEC66	1	13BD1	A	NG DOOR ACTUATOR MATERIAL FAILURE
57-2431	200CT65	1	13DH1	A	LEAKING BRAKE RELAY ABORT
57-2453	22MAR67	1	45EM1	A	'B'NUT FAILURE
57-2455	23SEP65	1	71C00	A	TACAN MALFUNCTION
57-2456	28JUN67	I	75GE1	A	MB-1 EJECTOR RACK MALFUNCTION
57-2457	3DEC66	1	14EA1	A	BLEED AIR DUCT MATERIAL FAILURE
57-2457	22APR69	A1	23JB0	A	MAIN GEAR ASSY HOUSING DESTROYED
57-2458	28SEP65	I	51AH1	A	ADI FAILURE
57-2459	29JUL66	1	14JB1	A	LOST SPEED BRAKES AND DRAG CHUTE
57-2461	1SEP65	1	51E00	A	ADI FAILURE
57-2461	70CT69	I	46CV1	A	PILOT FLOAT VALVE MALFUNCTION
57-2464	6DEC67	I	14JA1	A	LOST RH SPEED BRAKE
57-2465	21NOV67	A2	13HD1	A	LH MLG, MATERIAL FAILURE EYEBOLT ASSY PN 60245
57-2467	6DEC67	I	14JA1	A	RH SPEED BRAKE MAT'L FAILURE
57-2467	16FEB70	I	13BA1	A	EYEBOLT ASSY FAILURE MLG
57-2469	7DEC67	A1	23BD0	A	N-2 COMPRESSOR SECTION FAILURE, ACFT DESTROYED
57-2472	7JAN67	I	23JA0	A	QUICK DISCONNECT FAILURE
57-2475	17JAN67	I	23JA0	A	QUICK DISCONNECT FAILURE
57-2476	240CT66	I	13AAF	A	GEAR LOCKING MECHANISM FAILURE
57-2478	13APR65	1	14JA1	A	LOST SPEED BRAKES AND DRAG CHUTE
57-2478	30SEP65	1	51AJ1	A	ADI FAILURE
57-2480	9SEP65	1	51E00	A	ADI FAILURE
57-2482	27APR66	1	42BA1	A	DC GENERATOR FAILURE
57-2482	9JUN67	I	42BA1	A	056 GENERATOR FAILURE
57-2483	13SEP65	1	51E00	A	ADI FAILURE
57-2485	14SEP65	1	51AJ1	A	SWITCHING GYRO FAILURE
57-2487	80CT65	1	51AH1	A	ADI MATERIAL FAILURE
57-2491	240CT66	1	93AEA	A	DRAG CHUTE MOVABLE JAW MALFUNCTION
57-2492	12JUL65	I	23HAD	A	FUEL CONTROL MALFUNCTION
57-2492	3SEP65	1	51E00	A	ADI FAILURE
57-2492	11JUN70	A1	13BA1	A	EYEBOLT ASSY FAILURE RH MLG
57-2499	15APR69	1	23SR0	A	CSD OIL STARVATION
57-2500	27APR65	1	52C00	A	AIR DATA COMP MALFUNCTION
57-2500	29NOV68	1	460A1	A	LH FUEL SHUT-OFF VALVE FAILURE
57-2509	25EP65	1	51EC1	A	DISPL GYRO FAILURE
57-2514	40CT65	1	51EA1	A	ADI FAILURE
57-2514	11DEC69	1	23N0E	A	THROTTLE TELEFLEX CABLE BENT
57-2515	26JUN69	1	52CA1	A	AIR DATA COMPUTER MALFUNCTION
57-2520	7SEP65	I	51AH1	A	MD-1 GYRO REPLACED
57-2520	11SEP68	1	13EF1	A	SWITCH ROLLER MLG MATERIAL FAILURE
57-2522	22AUG68	1	14CD1	A	HOUSING, ELEVON TORQUE TUBE FAILURE
57-2523	15SEP65	I	51EC1	A	DISPLACEMENT GYRO FAILURE
57-2526	26NOV65	I	23HAD	G	MATERIAL MALFUNCTION
57-2526	110CT66	1	23DC1	A	HEP VALVE MALFUNCTION
57-2532	250CT65	1	51AG1	A	MALFUNCTION ATTITUDE INDICATOR
57-2535	50CT65	I	51EA1	A	ADI FAILURE
57-2535	1NOV66	I	75BD1	A	FWD PNEUMATIC SELECTOR VALVE FAILURE
57-2536	23MAY66	A1	45EE1	G	FWD AIR FLASK MATERIAL FAILURE
57-2538	10MAR65	1	23GQR	A	ENGINE EYELID ACTUATOR MALFUNCTION
57-2539	270CT65	1	51AH1	A	MATERIAL FAILURE
57-2543	23JUL68	1	45CB1	A	RAT DOOR FELL OUT
57-2546	13MAY67	1	14JE1	A	HYD RELIEF VALVE
57-2547	10JUN66	I	45CA1	A	BROKEN PRI HYD LINE RAT DOOR
58- 090	28MAR69	1	45EC1	A	PRIORITY CHECK VALVE
58- 759	4JAN66	I	46EAA	A	EJECTOR ASSY FAILURE
58- 759	11APR67	A1	23JBC	A	SCAVENGE PUMP FAILURE, ACFT DESTROYED
58- 760	170CT65	1	51E00	A	ADI MATERIAL FAILURE
58- 765	8AUG65	1	51E00	A	ADI MALFUNCTION
58- 766	21JAN65	I	51E00	A	ADI FAILURE
58- 767	6MAY66	I	42BA1	A	DC GENERATOR FAILURE
58-0768	2SEP69	A1	460A1	A	RH MAIN FUEL SHUT-OFF VALVE PN132305-1 DESTROYED
58- 769	10MAR66	A1	74JE1	A	MA-1 DIGITAL COMPUTER FAILURE, ACFT DESTROYED
58- 773	6MAR65	I	14GE1	A	THIM SWITCH MATERIAL FAILURE
58- 776	1SEP65	1	14AC1	G	BELL CRANK FAILURE
58-0779	1JUN70	I	23HAD	G	FUEL VALVE DEFECTIVE
58- 781	4APR67	2	11HAB	A	WINSHEILD FAILED
58-0783	6DEC66	I	75BF1	G	AFT SELECTOR VALVE MATERIAL FAILURE
58- 789	17MAR66	A1	14D00	A	ELEVON PLUMBING MATERIAL FAILURE, ACFT DESTROYED
58- 790	18MAR67	I	41EA1	A	MARMAN CLAMP CAME OFF
58- 902	60CT67	I	75GE1	A	MB-1 EJECTOR RACK MALFUNCTION
59-0006	17FEB66	1	23HAD	A	FUEL CONTROL MALFUNCTION
59- 008	280CT65	I	51AH1	A	MATERIAL FAILURE
59- 009	18JUN66	1	52AA1	A	STABILITY AUGMENTATION AMPLIFIER FAILED
59- 009	16JUL66	A1	13AAD	A	LH MLG SIDE BRACE MATERIAL FAILURE
59- 011	10SEP65	A1	13AAA	A	RH MLG STRUT FAILURE
59- 012	16MAR65	1	11H00	A	CANOPY SEPARATED
59- 014	2NOV65	I	13DH1	A	MATERIAL FAILURE-BRAKE RELAY VALVE
59- 014	24JAN66	1	23HAD	G	FUEL CONTROL MALFUNCTION
59-0014	10MAR69	A1	14000	A	FLT CONTROL SYS MATERIAL FAILURE
59- 021	3NOV68	1	13BR1	A	FWD ACTUATOR MLG FAILURE
59-0023	29AUG68	I	45BF1	A	SEC. HYD PUMP FAILED
59- 026	21NOV68	I	14JB1	A	LOST SPEED BRAKE AND ACTUATORS
59- 027	10FEB67	I	46HA1	A	RELIEF VALVE FAILURE
59- 033	130CT65	I	51E00	A	ADI MATERIAL FAILURE
59- 033	18MAR69	I	14JA1	A	SPEED BRAKE SEPARATED FROM ACFT

59- 036	4NOV65	I	45A00	A	BRAKE SYSTEM MALFUNCTION
59- 036	12JUN67	I	75GE1	A	MB-1 EJECTOR RACK MATERIAL FAILURE
59-0040	8SEP67	I	14FA1	A	HYD RUDDER PACKAGE VALVE FAILURE
59- 041	7SEP65	A1	13AAA	A	LH MLG STRUT FAILURE,ACFT DESTROYED
59- 042	150CT65	I	42AG1	A	FAULTY WIRING
59- 044	28SEP65	I	13DH1	A	BRAKE RELAY FAILURE
59- 044	3NOV65	I	14A00	A	MATERIAL FAILURE
59-0044	27MAR68	I	51EA1	A	ATTITUDE INDICATOR MALFUNCTION
59-0047	1APR68	I	51EA1	A	GYRO FAILURE
59-0052	1DEC66	I	14JB1	A	LOST SPEED BRAKES AND DRAG CHUTE
59- 053	1JUN66	1	23HAD	G	MALFUNCTION FUEL CONTROL
59- 054	30AUG65	I	14JA1	A	LOST SPEED BRAKES AND DRAG CHUTE
59- 056	23FEB67	1	14JR1	A	LOST SPEED BRAKES
59- 057	19JUL67	1	14JK1	A	LIMIT SWITCH FAILURE
59- 062	16MAR65	1	51EB1	A	TURN RATE XMTR MALFUNCTION
59- 065	15MAR65	1	23JHD	A	OIL SCAVENGER PUMP FAIL
59-0065	27MAY70	1	14DC1	A	HEP VALVE MALFUNCTION
59- 067	140CT65	1	51E00	A	ADI MATERIAL FAILURE
59-0068	13SEP67	A1	46GA1	A	FUEL SHUT-OFF VALVE FAILURE,PN132305-1,DESTROYED
59- 074	26JUL68	I	52AE1	A	POS.POTENTIOMETER,AILERON,DEFECTIVE
59- 074	9AUG68	1	14FA1	A	HYD PACKAGE DEFECTIVE
59- 076	130CT65	1	51E00	A	ADI MATERIAL FAILURE
59- 080	13OCT65	1	51E00	A	ADI MATERIAL FAILURE
59- 082	190CT65	1	51C00	A	ADI MATERIAL FAILURE
59- 083	50CT65	I	51EC1	A	DISPLACEMENT GYRO FAILURE
59-0085	10SEP69	1	14AD1	A	DAMPER AMPLIFIER DEFECTIVE
59- 089	22DEC67	1	14JA1	A	LOST SPEED BRAKES
59- 090	18MAR65	1	45BF1	A	SECONDARY HYDRAULIC PUMP
59- 090	30JUN65	1	11H00	A	CANOPY SEPARATED FROM ACFT
59- 091	5JUL67	A2	13ACE	A	NOSE GEAR PISTON,FAILURE
59- 092	23JUN65	1	23JBD	A	MAIN OIL PUMP
59- 096	7JAN70	A2	13000	A	LANDING GEAR FAILURE
59- 097	6JUN67	I	75GE1	A	MB-1 EJECTOR RACK MATERIAL FAILURE
59- 100	16APR70	A1	13AA1	A	LH MLG UPPER CYLINDER MATERIAL FAILURE
59- 101	8FEB68	1	13BE1	A	FAILURE MLG ACTUATING CYL
59- 101	7AUG68	I	13BE1	A	SELECTOR VALVE MLG INTERNAL FAILURE
59- 102	13DEC66	1	14JF1	A	LH SPEED BRAKE CYLINDER FAILURE
59- 104	10NOV66	A2	45000	A	MLG'S FOLDED INBD
59- 109	2JUN67	I	23SR0	A	CSD FAILURE
59-0112	18MAR68	I	52AF1	A	PITCH-TRIM POTENTIOMETER FAILURE
59-0121	15MAR68	I	13BE1	A	SELECTOR VALVE MLG
59- 129	10CT65	1	51EC1	A	DISPLACEMENT GYRO FAILURE
59- 133	140CT66	I	14JB1	A	SPEED BRAKE DOOR & ACTUATOR LOST
59-0133	15NOV66	1	44FP1	G	NOSE DOOR OPEN SOLENOID
59- 133	29DEC68	I	51EC1	A	MALFUNCTION ATTITUDE INDICATOR
59-0133	300CT69	1	235RD	A	BAFFLE PLATE,OIL COOLER
59- 134	28NOV67	I	14JA1	A	LOST RH SPEED BRAKE
59- 143	95EP65	1	51E00	A	ADI FAILURE
59- 157	26JUL67	I	41B00	A	T-BOLT MARMAN CLAMPS FAILURE
59- 158	29DEC68	I	51EC1	A	MALFUNCTION ATTITUDE INDICATOR
59- 159	9MAR65	1	23DC1	A	HEP VALVE MALFUNCTION
59- 160	31JAN67	1	13EJ1	A	LH MLG SWICH FAILURE
59-0161	26MAY69	I	13MB1	A	MLG SAFETY SWITCH MALFUNCTION
59- 458	2MAY67	I	46HA1	A	PRESSURE RELIEF VALVE MALFUNCTION
59-0164	21DEC70	1	97000		MAINTENANCE
58-0783	17DEC70	I	45C00		MATERIAL
58-0458	14DEC70	I	14J00		MAT.
57-2482	04DEC70	I	13000		PILOT
57-2496	03DEC70	1	23000		MAIN
59-0004	25NOV70	1	97000		PERSONNEL
59-0081	17NOV70	I	13000		MAT
59-0038	16NOV70	I	13000		MAIN
57-2509	12NOV70	1	13000		
59-0031	170CT70	I	13000		
59-0109	080CT70	1	75000		
59-0123	080CT70	1	93000		
57-2487	29SEP70	1	13000		
57-2470	25SEP70	1	14000		
59-0060	24SEP70	I	23000		
59-0085	15SEP70	I	13000		
59-0104	04SEP70	I	13AG1		
59-0155	23AUG70	I	13000		
58-0903	13AUG70	I	45000		MAIN
58-0777	03AUG70	1	46000		
58-0776	28JUL70	1	45000		
59-0149	14JUL70	1	46000		
58-0772	01JUL70	1	47000		
59-0085	15JUN70	1	13000		BRAKES
57-2535	08JUN70	1	45000		
58-0774	01JUN70	I	23HB0		FUEL VALVE
59-0016	28MAY70	I	93000		
59-0065	27MAY70	I	14000		HEP VALVE
57-2401	25MAY70	I	93000		
57-2549	22MAY70	I	93000		
58-0902	21MAY70	1	75000		MAT.
59-0059	01MAY70	I	46000		MAIN.
58-0782	30APR70	I	13000		DRAG CHUTE

57-2967	23APR70	1	14000	
57-0232	22APR70	1	11000	
59-0026	18APR70	1	52000	PILOT
59-0145	17APR70	1	75000	MAIN
57-2494	16APR70	1	93000	MAIN
59-0241	13APR70	1	14000	SPREED BRAKES
59-0129	09APR70	1	75000	MAIN
59-0090	27MAR70	1	13000	MAT
58-0453	21MAR70	1	93000	
60-0453	20MAR70	1	93000	
57-0237	17MAR70	1	46000	PILOT
59-0028	04MAR70	1	13000	MAT
57-2466	02MAR70	1	13000	MAT
59-0024	26FEB70	1	93000	
57-2539	25FEB70	1	13000	MAIN
57-2467	16FEB70	1	13000	MAT
58-0453	09FEB70	1	93000	DRAG CHUTE
59-0058	05FEB70	1	13000	OPERATOR
59-0131	01FEB70	1	11000	CANOPY
59-0161	28JAN70	1	75000	MAT
57-2466	27JAN70	1	75000	MAT
59-0063	23JAN70	1	46000	PER.
57-2521	21JAN70	1	93000	DRAG CHUTE
59-0103	21JAN70	1	14000	
59-0037	19JAN70	1	13000	PER.
57-2538	11JAN70	1	93000	MAT
57-0465	09JAN70	1	93000	DRAG CHUTE
59-0018	21DEC71	1	93000	
59-0149	16DEC71	1	13000	
59-0132	15DEC71	1	13AHJ	
59-0003	05DEC71	1	93AF1	
59-0003	26NOV71	1	93000	DRAG CHUTE
59-0159	13NOV71	1	14J00	SPEED BRAKES
58-0509	10NOV71	1	43000	DRAG CHUTE
59-0463	07NOV71	1	11FDA	MAT
59-0016	04NOV71	1	13000	MAIN
59-0062	08NOV71	1	52FA1	CPU111/2V
58-0785	20OCT71	1	23000	FLAMEOUT
57-2506	20OCT71	1	46000	MAT
58-0781	14OCT71	1	13000	MLG SELECTOR VALVE
59-0096	04OCT71	1	93000	MAIN
59-0046	04OCT71	1	97000	MAIN
59-0091	21SEP71	1	97000	PILOT
57-2524	15SEP71	1	75BF1	MAT
59-0060	07SEP71	1	40000	
59-0005	31AUG71	1	11000	PILOT
57-0465	03SEP71	1	97000	MAIN
59-0158	26AUG71	1	13000	DRAG CHUTE
59-0019	30AUG71	1	13000	
59-0006	18AUG71	1	23000	MAT
56-0459	16AUG71	1	93000	PILOT
58-0778	30JUL71	1	12000	PILOT
58-0778	30JUL71	1	12000	PILOT
57-0460	25JUL71	1	13AJ1	
59-0160	09JUL71	1	97000	SUPERVISORY
57-2505	08JUL71	1	14FA1	MAT
59-0059	06JUL71	1	13000	MAT
56-0458	06JUL71	1	23HAD	MAIN
59-0015	14JUN71	1	11000	MAIN
57-2523	11JUN71	1	23000	MAIN
59-0091	10JUN71	1	13000	MAT
59-0141	26MAY71	1	13000	MAT
58-0778	19MAY71	1	93000	MAIN
57-2533	18MAY71	1	23EB0	MAT
57-0018	17MAY71	1	13AE1	MAT
59-0071	17MAY71	1	46000	MAT
57-2473	13MAY71	1	97000	MAIN
59-0165	30APR71	1	23EBC	MAT
57-2543	29APR71	1	74K01	MAT
57-2536	26APR71	1	46000	MAT
59-0143	15APR71	1	46000	MAIN
57-2466	15APR71	1	11FCC	MAIN
59-0112	09APR71	1	93000	MAIN
57-2463	24MAR71	1	13000	
59-0034	11MAR71	1	93AP1	MAIN
59-0063	09MAR71	1	11000	PILOT
57-2519	08MAR71	1	52000	MAT
59-0032	01MAR71	1	13000	
58-0787	24FEB71	1	75000	
59-0027	22FEB71	1	46000	MAIN
56-0465	22FEB71	1	23000	MAIN
59-0044	03FEB71	1	97000	PERSONNEL
59-0129	02FEB71	1	23000	MAIN
58-0785	15JAN71	1	14JR1	MAT
59-0038	08JAN71	1	47AK1	PERSONNEL
58-0785	18JAN71	A1	23000	AFTER RUNNER PROBLEM

```
 58-0902 05AUG70 A1 136F1  RH MLG DOOR SHUTTLE VALVE
 59-0116 28MAY70 A1 46HDD  WING TANK RELEASE SWITCH
 59-0100 16APR70 A1 13A00  LMG UPPER CYLINDER
 59-0096 07JAN70 A1 13000  MLG
 59-0163 30SEP71 A1 23AA0  P/N 318616
 57-2544 29MAR71 A1 14JA1  RH SPEED BRAKE
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14     DD   DISP>(OLD,PASS)                                    D14-PASS
//TPR.TU22     DD   DISP>(OLD,PASS)                                    D22-PASS
//TPR.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  DT01    1020080Z080
T/P  TU14    1020080Z080
T/P  TU22    .020050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897S EXEC  P9622N,W>010,TIME>01,ACCT>D35323007
//CHG.SORTIN   DD   DSN>*P.9895453,DISP>(OLD,PASS),                    CD22/23 1
//             DCB>(LRECL>0050,BLKSIZE>3000),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>*A.9895455,   CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0050,BLKSIZE>3000)
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(025,008,CH,A,045,004,CH,A,010,005,CH,A),SIZE>E0002000
 MODS  E15>(E15,008,SORTLIB,N),E18>(E18,024,SORTLIB,N)
/*
//C9897P EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU12     DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>*A.9895455,   CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU12    .020050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.3.2 AIE SCREEN

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//T9897P JOB   01,: G. WANG    :,PRTY>02,TYPRUN>HOLD
//C9897Q EXEC  P9655L,TIME>01,ACCT>D35323007
//CHG.TU14     DD   DISP>(,PASS),UNIT>(T+F3,1,DEFER),DSN>*C.9897413,   CT14    1
//             VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//             I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.TU22     DD   DSN>*P.9895953,SPACE>(CYL,(022,002))                D22-OUT
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
00000            COMBINE     COMPILE                  G. WANG,          C98970
01040  DATE-WRITTEN. 14 JAN 72.                                         C98970
01050  REMARKS.                                                         C98970
01060            SCREENS  AIE DATA TAPE.                                C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120      SELECT INFILE                ASSIGN TO UT-S-TU14             C98970
02130          RESERVE 1 ALTERNATE AREA.                                C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU22             C98970
02150          RESERVE 1 ALTERNATE AREA.                                C98970
02160      SELECT SCREEN-FILE           ASSIGN TO DA-S-DT01             C98970
02170          RESERVE 1 ALTERNATE AREA.                                C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
10100  FD  INFILE                                                       C98970
10110                                                                   C98970
10120      RECORDING MODE IS F                                          C98970
10130      BLOCK CONTAINS 60 RECORDS                                    C98970
10140      RECORD CONTAINS 50           CHARACTERS                      C98970
10150      LABEL RECORDS ARE OMITTED                                    C98970
10160      DATA RECORDS ARE INREC.                                      C98970
10170  01  INREC SYNC.                                                 C98970
10180    02     DATAA.                                                  C98970
10190      03   DATAB        PICTURE X(4).                             C98970
10200      03   TIPL         PICTURE X(4).                             C98970
10210      03   DATAC        PICTURE X(9).                             C98970
10220    02     DATE-IN.                                                C98970
10230      03   YEAR         PICTURE 9.                                C98970
10240      03   MONTH        PICTURE 99.                               C98970
10250      03   DAY-IN       PICTURE 99.                               C98970
10252    02     DATEGRP REDEFINES DATE-IN PICTURE 9(5).                 C98970
10260    02     DATAD.                                                  C98970
10270      03   DATAE        PICTURE XX.                               C98970
10280      03   S-N          PICTURE X(8).                             C98970
10290      03   DATAF        PICTURE X(12).                            C98970
10300    02     FILLER       PICTURE X(4).                             C98970
10310    02     DATAG        PICTURE XX.                               C98970
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11100  FD  OUTFILE                                                          C98970
11110                                                                       C98970
11120      RECORDING MODE IS F                                              C98970
11130      BLOCK CONTAINS 60 RECORDS                                        C98970
11140      RECORD CONTAINS 50          CHARACTERS                           C98970
11150      LABEL RECORDS ARE OMITTED                                        C98970
11160      DATA RECORDS ARE OUTREC.                                         C98970
11170  01  OUTREC SYNC.                                                    C98970
11180   02     DATA1       PICTURE X(17).                                  C98970
11190   02     DATE-OUT    PICTURE 9(5).                                   C98970
11200   02     DATA2       PICTURE X(22).                                  C98970
11210   02     JDAY        PICTURE 9(4).                                   C98970
11220   02     DATA3       PICTURE XX.                                     C98970
12000  FD  SCREEN-FILE                                                      C98970
12010      RECORDING MODE IS F                                              C98970
12020      BLOCK CONTAINS 20 RECORDS                                        C98970
12030      RECORD CONTAINS 80          CHARACTERS                           C98970
12040      LABEL RECORDS ARE STANDARD                                       C98970
12050      DATA RECORDS ARE SCREEN-REC.                                     C98970
12060  01  SCREEN-REC SYNC.                                                C98970
12070      02  SCREEN-DATA             PICTURE X(80).                      C98970
12080      02  FILLER REDEFINES SCREEN-DATA.                               C98970
12090          03  DATA-1              PICTURE X(4).                       C98970
12100          03  FILLER              PICTURE X(76).                      C98970
12110      02  FILLER REDEFINES SCREEN-DATA.                               C98970
12120          03  DATA-2              PICTURE 99.                         C98970
12130          03  FILLER              PICTURE X(78).                      C98970
12140      02  FILLER REDEFINES SCREEN-DATA.                               C98970
12150          03  DATA-3              PICTURE X(8).                       C98970
12160          03  FILLER              PICTURE X(72).                      C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30010  01  NINE SYNC.                                                      C98970
30020   02     FILLER      PICTURE X(17)   VALUE                           C98970
30030                        :999999999999999991.                           C98970
30040   02     FILLER      PICTURE 9(5)    VALUE 99999.                    C98970
30050   02     FILLER      PICTURE X(22)   VALUE                           C98970
30060                        :9999999999999999999991.                       C98970
30070   02     FILLER      PICTURE 9(4)    VALUE 9999.                     C98970
30080   02     FILLER      PICTURE XX      VALUE :99:.                     C98970
30400  01  DAYS-IN-YEAR SYNC.                                              C98970
30410   02 FILLER          PICTURE 999             VALUE   0.              C98970
30420   02 FILLER          PICTURE 999             VALUE  31.              C98970
30430   02 FILLER          PICTURE 999             VALUE  59.              C98970
30440   02 FILLER          PICTURE 999             VALUE  90.              C98970
30450   02 FILLER          PICTURE 999             VALUE 120.              C98970
30460   02 FILLER          PICTURE 999             VALUE 151.              C98970
30470   02 FILLER          PICTURE 999             VALUE 181.              C98970
30480   02 FILLER          PICTURE 999             VALUE 212.              C98970
30490   02 FILLER          PICTURE 999             VALUE 243.              C98970
30500   02 FILLER          PICTURE 999             VALUE 273.              C98970
30510   02 FILLER          PICTURE 999             VALUE 304.              C98970
30520   02 FILLER          PICTURE 999             VALUE 334.              C98970
30530  01  NO-DAYS-IN-YEAR REDEFINES DAYS-IN-YEAR SYNC.                    C98970
30540   02 NDAYS  OCCURS 12 TIMES                                           C98970
30550                      PICTURE 999.                                     C98970
30600  01  DAYS-IN-YEARS SYNC.                                             C98970
30610   02 FILLER          PICTURE 9(4)            VALUE    0.             C98970
30620   02 FILLER          PICTURE 9(4)            VALUE  365.             C98970
30630   02 FILLER          PICTURE 9(4)            VALUE, 730.             C98970
30640   02 FILLER          PICTURE 9(4)            VALUE 1095.             C98970
30650   02 FILLER          PICTURE 9(4)            VALUE 1461.             C98970
30660   02 FILLER          PICTURE 9(4)            VALUE 1826.             C98970
30670   02 FILLER          PICTURE 9(4)            VALUE 2191.             C98970
30680   02 FILLER          PICTURE 9(4)            VALUE 2556.             C98970
30690  01  DAY-IN-YEAR-TABLE REDEFINES DAYS-IN-YEARS SYNC.                 C98970
30700   02 DAY-YEAR OCCURS 8 TIMES                                          C98970
30710                      PICTURE 9(4).                                    C98970
30900  01  KOUNT          PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC.      C98970
30910  01  KNT            PICTURE S999 COMPUTATIONAL VALUE ZERO SYNC.      C98970
30920  01  LOW-S-N                     PICTURE X(8).                       C98970
30930  01  HIGH-S-N                    PICTURE X(8).                       C98970
30940  01  LEAP-YEAR-68    PICTURE 9       SYNC  VALUE 4.                  C98970
30950  01  LEAP-YEAR-72    PICTURE 9       SYNC  VALUE 8.                  C98970
30960  01  TYPE-A-C                    PICTURE X(4).                       C98970
30970  01  RECORDS-READ    PICTURE 9(6)    SYNC  VALUE ZERO.               C98970
30980  01  RECORDS-PASS    PICTURE 9(6)    SYNC  VALUE ZERO.               C98970
30990  01  NO-REJ-A-C                  PICTURE 99.                         C98970
31140  01  REJ-S-N SYNC.                                                   C98970
31150      02  R-S-N OCCURS 25 TIMES DEPENDING ON NO-REJ-A-C,              C98970
31160                                   PICTURE X(8).                      C98970
50000  PROCEDURE DIVISION.                                                  C98970
50010  OPEN-FILES.                                                          C98970
50020      OPEN INPUT INFILE, SCREEN-FILE, OUTPUT OUTFILE.                  C98970
50030      PERFORM SCREEN-IN THRU END-SC-IN.                                C98970
50100  READ-INPUT.                                                          C98970
50110      READ INFILE                                                      C98970
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50120               AT END GO TO BLOCK-CHECK.                                C98970
50130       ADD 1 TO RECORDS-READ.                                           C98970
50140       IF TYPE IS NOT EQUAL TO TYPE-A-C THEN GO TO READ-INPUT.          C98970
50150       IF DAY-IN IS LESS THAN 1 THEN GO TO READ-INPUT.                  C98970
50160       IF S-N IS LESS THAN LOW-S-N THEN GO TO READ-INPUT.               C98970
50170       IF S-N IS GREATER THAN HIGH-S-N THEN GO TO READ-INPUT.           C98970
50190       MOVE ZERO TO KOUNT.                                              C98970
50200   LOOP1.                                                               C98970
50210       ADD 1 TO KOUNT.                                                  C98970
50220       IF S-N IS EQUAL TO R-S-N (KOUNT) GO TO READ-INPUT.               C98970
50230       IF KOUNT IS LESS THAN NO-REJ-A-C GO TO LOOP1.                    C98970
50300   CAL-DATE.                                                            C98970
50310       COMPUTE KOUNT > YEAR - 4.                                        C98970
50320       IF KOUNT IS LESS THAN 1 THEN ADD 10 TO KOUNT.                    C98970
50330       MOVE MONTH TO KNT.                                               C98970
50340       COMPUTE JDAY > DAY-IN < KDAYS (KNT) < DAY-YEAR (KOUNT).          C98970
50350       IF KOUNT EQUAL TO LEAP-YEAR-68 THEN GO TO LEAP-YEAR.             C98970
50360       IF KOUNT EQUAL TO LEAP-YEAR-72 THEN GO TO LEAP-YEAR.             C98970
50370       GO TO WRITE-OUTPUT.                                              C98970
50400   LEAP-YEAR.                                                           C98970
50410       IF MONTH IS GREATER THAN 2 THEN ADD 1 TO JDAY.                   C98970
50500   WRITE-OUTPUT.                                                        C98970
50510       MOVE DATAA TO DATA1.                                             C98970
50520       MOVE DATEGRP TO DATE-OUT.                                        C98970
50530       MOVE DATAD TO DATA2.                                             C98970
50540       MOVE DATAG TO DATA3.                                             C98970
50550       WRITE OUTREC.                                                    C98970
50560       ADD 1 TO RECORDS-PASS.                                           C98970
50570       GO TO READ-INPUT.                                                C98970
50600   BLOCK-CHECK.                                                         C98970
50610       COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 60) * 60).       C98970
50620       IF KOUNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                     C98970
50630   LOOP2.                                                               C98970
50640       WRITE OUTREC FROM NINE.                                          C98970
50650       ADD 1 TO KOUNT.                                                  C98970
50660       IF KOUNT IS LESS THAN 60 GO TO LOOP2.                            C98970
50700   CLOSE-FILES.                                                         C98970
50710       CLOSE INFILE WITH LOCK.                                          C98970
50720       CLOSE OUTFILE WITH LOCK.                                         C98970
50740       DISPLAY ' NUMBER OF RECS-READ ' RECORDS-READ UPON CONSOLE.       C98970
50750       DISPLAY ' NUMBER OF RECS-PASS ' RECORDS-PASS UPON CONSOLE.       C98970
50760       DISPLAY ' EOJ 9897 ' UPON CONSOLE.                               C98970
50770       GOBACK.                                                          C98970
50800   SCREEN-IN.                                                           C98970
50810       READ SCREEN-FILE AT END GO TO CLOSE-FILES.                       C98970
50820       MOVE DATA-1 TO TYPE-A-C.                                         C98970
50830       READ SCREEN-FILE AT END GO TO CLOSE-FILES.                       C98970
50840       MOVE DATA-2 TO NO-REJ-A-C.                                       C98970
50900       MOVE ZERO TO KOUNT.                                              C98970
50910       S-I-1.                                                           C98970
50920       ADD 1 TO KOUNT.                                                  C98970
50930       READ SCREEN-FILE AT END GO TO CLOSE-FILES.                       C98970
50940       MOVE DATA-3 TO R-S-N (KOUNT).                                    C98970
50950       IF KOUNT IS LESS THAN NO-REJ-A-C GO TO S-I-1.                    C98970
50960       READ SCREEN-FILE AT END GO TO CLOSE-FILES.                       C98970
50970       MOVE DATA-3 TO LOW-S-N.                                          C98970
50980       READ SCREEN-FILE AT END GO TO CLOSE-FILES.                       C98970
50990       MOVE DATA-3 TO HIGH-S-N.                                         C98970
51000   END-SCREEN. EXIT.                                                    C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
TFG  DT01     11  020Z080
F106       A-C TYPE
13         NO REJ A/C
57000234
57000239
57000240
57001523
57002507
57002513
57002516
57 02519
57002523
57002529
58000795
59000061
59000150
57000001
59999999
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP=(OLD,KEEP),VOL=SER=*.F3,UNIT=T*F3                 T14
//TPR.TU22      DD   DISP=(OLD,PASS)                                        D22-PASS
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  DT01     10100802080
T/P  TU14     10500502050
T/P  TU22     10200502050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.3.3 AIE SORT

```
//C9897R EXEC  P9622N,#>010,TIME>01,ACCT>D35323007
//CHG.SORTIN   DD   DSN>+P.9895953,DISP>[OLD,DELETE],                    CD22/23 1
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>000]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A.9895455,     CT12    1
//              VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//              DCB>[LRECL>0050,BLKSIZE>3000]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[025,008,CH,A,045,004,CH,A,010,005,CH,A,001,050,CH,A],    C
               SIZE>E0010000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
//C9897Y EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU12     DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A.9895455,     CT12    1
//              VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TPR1N    DD   *,SPACE>[TRK,[1,1]]
T/P  TU12    10%0050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.3.4 AIE MERGE

```
//T9897M JOB   (1,: G. WANG    :,PRTY>02,TYPRUN>HOLD
//C9897N EXEC  P9623N,TIME>02,ACCT>D35323007
//CHG.SORTIN01 DD   DISP>[,KEEP],UNIT>[T+F5,1,DEFER],DSN>+E.9895455,     CT22    1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN02 DD   DISP>[,KEEP],UNIT>[T+F6,1,DEFER],DSN>+F.9895455,     CT23    1
//              VOL>SER>[+F6,A+F6,B+F6,C+F6,D+F6,E+F6,F+F6,G+F6,H+F6,     CT23    2
//              I+F6,J+F6,K+F6,L+F6,M+F6,N+F6,O+F6,P+F6,Q+F6,R+F6,S+F6],CT23    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN03 DD   DISP>[,KEEP],UNIT>[T+F7,1,DEFER],DSN>+G.9895455,     CT24    1
//              VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,     CT24    2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7],CT24    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORT1N04 DD   DISP>[,KEEP],UNIT>[T+F8,1,DEFER],DSN>+H.9895455,     CT25    1
//              VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,     CT25    2
//              I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8],CT25    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN05 DD   DISP>[,KEEP],UNIT>[T+F2,1,DEFER],DSN>+B.9895455,     CT13    1
//              VOL>SER>[+F2,A+F2,B+F2,C+F2,D+F2,E+F2,F+F2,G+F2,H+F2,     CT13    2
//              I+F2,J+F2,K+F2,L+F2,M+F2,N+F2,O+F2,P+F2,Q+F2,R+F2,S+F2],CT13    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORT1N06 DD   DISP>[,KEEP],UNIT>[T+F3,1,DEFER],DSN>+C.9895455,     CT14    1
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,     CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3],CT14    3
//              DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A.9895455,     CT12    1
//              VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//              DCB>[LRECL>0050,BLKSIZE>3000]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 MERGE FIELDS>[025,008,CH,A,045,004,CH,A,010,005,CH,A]
/*
//C9897P EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU12     DD   DISP>[,KEEP],UNIT>[T+F1,1,DEFER],DSN>+A.9895455,     CT12    1
//              VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU13     DD   DISP>[,KEEP],UNIT>[T+F2,1,DEFER],DSN>+B.9895455,     CT13    1
//              VOL>SER>[+F2,A+F2,B+F2,C+F2,D+F2,E+F2,F+F2,G+F2,H+F2,     CT13    2
//              I+F2,J+F2,K+F2,L+F2,M+F2,N+F2,O+F2,P+F2,Q+F2,R+F2,S+F2]  T13    3
//CHG.TU14     DD   DISP>[,KEEP],UNIT>[T+F3,1,DEFER],DSN>+C.9895455,     CT14    1
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,     CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU22     DD   DISP>[,KEEP],UNIT>[T+F5,1,DEFER],DSN>+E.9895455,     CT22    1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.TU23     DD   DISP>[,KEEP],UNIT>[T+F6,1,DEFER],DSN>+F.9895455,     CT23    1
//              VOL>SER>[+F6,A+F6,B+F6,C+F6,D+F6,E+F6,F+F6,G+F6,H+F6,     CT23    2
//              I+F6,J+F6,K+F6,L+F6,M+F6,N+F6,O+F6,P+F6,Q+F6,R+F6,S+F6]  T23    3
//CHG.TU24     DD   DISP>[,KEEP],UNIT>[T+F7,1,DEFER],DSN>+G.9895455,     CT24    1
//              VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,     CT24    2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.TU25     DD   DISP>[,KEEP],UNIT>[T+F8,1,DEFER],DSN>+H.9895455,     CT25    1
//              VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,     CT25    2
//              I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8]  T25    3
```

```
//CHG.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  TU12     I100050Z050
T/P  TU13     I02U050Z050
T/P  TU14     1U2J050Z050
T/P  TU22     IU240050Z050
T/P  TU23     1U200050Z050
T/P  TU24     IU2U050Z050
T/P  TU25     102P050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//I9897A JOB   O[ ;   G WANG    :,PRTY>02,TYPRUN>HOLD
//C9897B EXEC  P9625N,TIME>02,ACCT>D35323007
//CHG.SORTIN01 DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],DSN>+E,9895455,   CT22/23 1
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//             1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    3
//             DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN02 DD   DISP>[,KEEP],UNIT>[A+F7,2,DEFER],DSN>+G,9895455,   CT24/25 1
//             VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//             I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7],CT24    3
//             DCB>[LRECL>0050,BLKSIZE>3000],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DSN>+P,9895456,DISP>[,PASS],SPACE>[CYL,[009,001]], CD  -OUT
//             DCB>[LRECL>0050,BLKSIZE>3000]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>00A0,SPACE>[TRK,[1,1]]
 MERGE
```

6.3.5 AIE ELIMINATE DUPLICATE RECORDS

```
/*
//C9897Z EXEC  P9625C,TIME>20,ACCT>D35323007
//CHG.IUI2     DD   DSN>+P,9895456,DISP>[OLD,PASS]                      D12-IN
//CHG.TU14     DD   DISP>[,PASS],UNIT>[T+F3,1,DEFER],DSN>+C,9895455,   CT14    1
//             VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//             1+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3] T14    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                 I440 CDS
00000          COMBINE     COMPILE                  G. WANG,             C98970
01050  DATE-WRITTEN. 27 DEC 7I.                                          C98970
01060  REMARKS. PROGRAM SIFTS AIE  FILE TO ELIMINATE DUPLICATE           C98970
01070      ADJACENT RECORDS.                                             C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT INFILE                ASSIGN TO UT-S-TU12           C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU14           C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
10020  FD  INFILE                                                        C98970
10030      RECORDING MODE IS F                                           C98970
10040      BLOCK CONTAINS 60 RECORDS                                     C98970
10050      RECORD CONTAINS 50           CHARACTERS                       C98970
10060      LABEL RECORDS ARE OMITTED                                     C98970
10070      DATA RECORDS ARE INREC.                                       C98970
10080  01  INREC       PICTURE X[50] SYNC.                              C98970
10100  FD  OUTFILE                                                       C98970
10110      RECORDING MODE IS F                                           C98970
10120      BLOCK CONTAINS 60 RECORDS                                     C98970
10130      RECORD CONTAINS 50           CHARACTERS                       C98970
10140      LABEL RECORDS ARE OMITTED                                     C98970
10150      DATA RECORDS ARE OUTREC.                                      C98970
10160  01  OUTREC      PICTURE X[50] SYNC.                              C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  01  NUMBER-DUPS     PICTURE 9[07] SYNC.                          C98970
30020  01  TEMPREC     PICTURE X[50] SYNC.                              C98970
30030  01  NINES                SYNC    PICTURE X[50] VALUE   I9999999999  C98970
30040 -    !99999999999999999999999999999999999999I.                     C98970
30050  01  RECORDS-PASS        SYNC    PICTURE 9[7] VALUE ZERO.         C98970
30060  01  KNT     COMPUTATIONAL SYNC  PICTURE S999 VALUE ZERO.         C98970
50000  PROCEDURE DIVISION.                                               C98970
50010  BEGIN.                                                            C98970
50020      OPEN INPUT INFILE.                                            C98970
50030      OPEN OUTPUT OUTFILE.                                          C98970
50040      MOVE ZERO TO NUMBER-DUPS.                                     C98970
50050      READ INFILE                                                   C98970
50060          AT END GO TO CLOSE-FILES.                                 C98970
50070      MOVE INREC TO TEMPREC.                                        C98970
50080      READ INFILE                                                   C98970
50090          AT END GO TO CLOSE-FILES.                                 C98970
50100  COMPARE.                                                          C98970
50110      IF INREC > TEMPREC GO TO COUNT-DUPS.                          C98970
50120      WRITE OUTREC FROM TEMPREC.                                    C98970
50125      ADD 1 TO RECORDS-PASS.                                        C98970
```

```
50130       MOVE INREC TO TEMPREC.                                          C98970
50140       READ INFILE                                                     C98970
50150           AT END GO TO WRITE-LAST.                                    C98970
50160       GO TO COMPARE.                                                  C98970
50170   COUNT-DUPS.                                                         C98970
50175       IF INREC IS EQUAL TO NINES GO TO BLOCK-CHECK.                   C98970
50180       ADD 1 TO NUMBER-DUPS.                                           C98970
50190       READ INFILE                                                     C98970
50200           AT END GO TO WRITE-LAST.                                    C98970
50210       GO TO COMPARE.                                                  C98970
50220   WRITE-LAST.                                                         C98970
50230       WRITE OUTREC FROM TEMPREC.                                      C98970
50235       ADD 1 TO RECORDS-PASS.                                          C98970
50240   CLOSE-FILES.                                                        C98970
50250       CLOSE INFILE WITH LOCK.                                         C98970
50260       CLOSE OUTFILE WITH LOCK.                                        C98970
50270       DISPLAY 'NO. DUPS : NUMBER-DUPS UPON CONSOLE.                   C98970
50280       DISPLAY 'EOJ 9897 : UPON CONSOLE.                               C98970
50290       GOBACK.                                                         C98970
50400   BLOCK-CHECK.                                                        C98970
50410       COMPUTE KNT > RECORDS-PASS - RECORDS-PASS / 60 * 60.            C98970
50420       IF KNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                      C98970
50430   NINE-FILL.                                                          C98970
50440       WRITE OUTREC  FROM NINES.                                       C98970
50450       ADD 1 TO KNT.                                                   C98970
50460       IF KNT IS LESS THAN 60 GO TO NINE-FILL.                         C98970
50470       GO TO CLOSE-FILES.                                              C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE>[CYL,[1,1]]                                   1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//IPR.TU14      DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3                 T14
//IPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU14    1040090Z090
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.3.6 AIE COPY ACCEPTABLE AIRCRAFT

```
//C98971 JOB   01,; G  WANG    :,PRTY>02,TYPRUN>HOLD
//C9897  EXEC  PGM=SL,TIME>01,ACCT>D35323007
//CHG.TU12      DD   DISP>1,PASS],UNIT>17+F1,1,DEFER],DSN>+A.9895455,   CT12    1
//                VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//                1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU22      DD   DISP>[,PASS],UNIT>[T+F5,1,DEFER],DSN>+E.9895455,   CT22    1
//                VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//                1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.INPUT     DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000           CONFINE     COMPILE                  G. WANG,               C98970
01040   DATE-WRITTEN. 27 DEC 71.                                            C98970
01050   REMARKS.                                                            C98970
01060           AIE  COPY ACCEPTABLE AIRCRAFT.                              C98970
02000   ENVIRONMENT DIVISION.                                               C98970
02010   CONFIGURATION SECTION.                                              C98970
02020   SOURCE-COMPUTER. IBM-360.                                           C98970
02030   OBJECT-COMPUTER. IBM-360.                                           C98970
02100   INPUT-OUTPUT SECTION.                                               C98970
02110   FILE-CONTROL.                                                       C98970
02120       SELECT INFILE                ASSIGN TO UT-S-TU12            C98970
02130           RESERVE 1 ALTERNATE AREA.                                   C98970
02140       SELECT OUTFILE               ASSIGN TO UT-S-TU22            C98970
02150           RESERVE 1 ALTERNATE AREA.                                   C98970
02160       SELECT ACCEPT-FILE           ASSIGN TO DA-S-DT01            C98970
02170           RESERVE 1 ALTERNATE AREA.                                   C98970
10000   DATA DIVISION.                                                      C98970
10010   FILE SECTION.                                                       C98970
10020   FD  INFILE                                                          C98970
10030       RECORDING MODE IS F                                             C98970
10040       BLOCK CONTAINS 60 RECORDS                                       C98970
10050       RECORD CONTAINS 50           CHARACTERS                     C98970
10060       LABEL RECORDS ARE OMITTED                                       C98970
10070       DATA RECORDS ARE INREC.                                         C98970
10080   01  INREC SYNC.                                                    C98970
10090       02  FILLER                  PICTURE X[50].                 C98970
10100   FD  OUTFILE                                                         C98970
10110       RECORDING MODE IS F                                             C98970
10120       BLOCK CONTAINS 60 RECORDS                                       C98970
10130       RECORD CONTAINS 50           CHARACTERS                     C98970
10140       LABEL RECORDS ARE OMITTED                                       C98970
10150       DATA RECORDS ARE OUTREC.                                        C98970
10160   01  OUTREC SYNC.                                                   C98970
10170       02  FILLER                  PICTURE X[50].                 C98970
11400   FD  ACCEPT-FILE                                                     C98970
11410       RECORDING MODE IS F                                             C98970
11420       BLOCK CONTAINS 20 RECORDS
```

```
11430      RECORD CONTAINS 80          CHARACTERS                          C98970
11440      LABEL RECORDS ARE STANDARD                                      C98970
11450      DATA RECORDS ARE ACCEPT-REC.                                    C98970
11460  01  ACCEPT-REC SYNC.                                               C98970
11470      02  ACCEPT-DATA             PICTURE X[80].                     C98970
11480      02  FILLER REDEFINES ACCEPT-DATA.                              C98970
11490          03  DATA-I              PICTURE 999.                       C98970
11500          03  FILLER              PICTURE X[77].                     C98970
11510      02  FILLER REDEFINES ACCEPT-DATA.                              C98970
11520          03  DATA-2              PICTURE X[8].                      C98970
11530          03  FILLER              PICTURE X[72].                     C98970
30000  WORKING-STORAGE SECTION.                                            C98970
30100  01  DATA-IN SYNC.                                                  C98970
30105      02  FILLER                  PICTURE X[24].                     C98970
30110      02  SER-NO                  PICTURE X[8].                      C98970
30120      02  FILLER                  PICTURE X[18].                     C98970
30130  01  KNT SYNC COMPUTATIONAL      PICTURE S999.                      C98970
30140  01  NUMBER-RECORDS-PASS SYNC    PICTURE 9[6] VALUE ZERO.           C98970
35000  01  NINE SYNC                   PICTURE X[50] VALUE                C98970
35010          :9999999999999999999999999999999999999999999999999:.       C98970
40000  01  TABLE-ACCEPT-A-C SYNC.                                         C98970
40010      02  ACCEPT-A-C OCCURS  250 TIMES DEPENDING ON NO-ACCEPT-A-C    C98970
40020                               PICTURE X[8].                          C98970
40030  01  NO-ACCEPT-A-C SYNC          PICTURE 999.                       C98970
40040  01  TEMP-ACCEPT-A-C   SYNC      PICTURE X[8].                      C98970
40050  01  INC SYNC COMPUTATIONAL      PICTURE S999 VALUE <1.             C98970
50000  PROCEDURE DIVISION.                                                C98970
50010  BEGIN.                                                             C98970
50020      OPEN INPUT INFILE, ACCEPT-FILE.                                C98970
50030      OPEN OUTPUT OUTFILE.                                           C98970
50040      PERFORM READ-ACCEPT-DATA THRU END-R-A-D.                       C98970
50090  READ-FILES.                                                        C98970
50100      READ INFILE AT END GO TO CLOSE-FILES.                          C98970
50110      MOVE INREC TO DATA-IN.                                         C98970
50120  TEST1.                                                             C98970
50121      IF SER-NO IS LESS THAN TEMP-ACCEPT-A-C GO TO READ-FILES.       C98970
50122      IF SER-NO IS EQUAL TO  TEMP-ACCEPT-A-C GO TO WRITE-DATA.       C98970
50123      ADD 1 TO INC.                                                  C98970
50124      IF INC IS GREATER THAN NO-ACCEPT-A-C GO TO BLOCK-CHECK.        C98970
50125      MOVE ACCEPT-A-C [INC] TO TEMP-ACCEPT-A-C.                      C98970
50126      GO TO TEST1.                                                   C98970
50200  WRITE-DATA.                                                        C98970
50210      WRITE OUTREC FROM DATA-IN.                                     C98970
50215      ADD 1 TO NUMBER-RECORDS-PASS.                                  C98970
50220      GO TO READ-FILES.                                              C98970
50222  BLOCK-CHECK.                                                       C98970
50224      COMPUTE KNT > NUMBER-RECORDS-PASS - [[NUMBER-RECORDS-PASS /    C98970
50226                                  60] * 60].                         C98970
50228      IF KNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                     C98970
50230  LOOP1.                                                             C98970
50232      WRITE OUTREC FROM NINE.                                        C98970
50234      ADD 1 TO KNT.                                                  C98970
50236      IF KNT IS LESS THAN 60 GO TO LOOP1.                            C98970
50240  CLOSE-FILES.                                                       C98970
50250      CLOSE INFILE WITH LOCK, ACCEPT-FILE WITH LOCK.                 C98970.
50260      CLOSE OUTFILE WITH LOCK.                                       C98970
50270      DISPLAY NUMBER-RECORDS-PASS UPON CONSOLE.                      C98970
50280      DISPLAY 'EOJ 9897 ' UPON CONSOLE.                              C98970
50290      GOBACK.                                                        C98970
70000  READ-ACCEPT-DATA.                                                  C98970
70010      READ ACCEPT-FILE AT END GO TO END-R-A-D.                       C98970
70020      MOVE DATA-I TO NO-ACCEPT-A-C.                                  C98970
70030      MOVE ZERO TO KNT.                                              C98970
70040  RAD-1.                                                             C98970
70050      ADD 1 TO KNT.                                                  C98970
70060      READ ACCEPT-FILE AT END GO TO END-R-A-D.                       C98970
70070      MOVE DATA-2 TO ACCEPT-A-C [KNT].                               C98970
70080      IF KNT IS LESS THAN NO-ACCEPT-A-C GO TO RAD-1.                 C98970
70090      MOVE ACCEPT-A-C [1] TO TEMP-ACCEPT-A-C.                        C98970
70100  END-R-A-D. EXIT.                                                   C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.IFGIN    DD   *,SPACE=[CYL,[1,1]]                                  1440 CDS
IFG  0101    11  0100080
150
57000231
57000232
57000235
57000236
57000237
57000243
57000244
57002455
57002456
57002458
57002459
57002463
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57002470
57002473
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57002503
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57002545
57002546
58000760
58000766
58000767
58000772
58000773
58000776
58000777
58000778
58000780
58000781
58000783
58000785
58000786
58000788
58000792
58000797
58000900
58000901
58000903
58000904
59000002
59000003
59000004
59000005
59000006
59000007
59000008
59000010
59000012
59000015
59000016
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59000064
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59000108
59000109
59000110
59000115
59000116
59000119
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59000132
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59000140
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59000149
59000151
59000152
59000153
59000155
59000157
59000164
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                T12
//TPR.TU22     DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5                T22
//TPR.TPRIN    DD   *,SPACE>(TRK,(1,1))

T/P  DT01    102008^Z080
T/P  TU22    1050050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.4 IRAN FILE GENERATION PROGRAMS

6.4.1 IRAN FORMATTER OF ACCEPTANCE DATA

```
//T9897X JOB   01,; G. WANG,   ;,PRTY>02,TYPRUN>HOLD
//C9897X EXEC  P9655L,TIME>02,ACCT>D35323007
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                    1440 COS
<00000          COMBINE     COMPILE                  G. WANG.              C98970
01040  DATE-WRITTEN. 31 JAN 72.                                            C98970
01050  REMARKS. PROGRAM NAME- IRAN ACCEPTANCE DATE DATA PREPROCESSOR.       C98970
01060      INPUT -IRAN ACCEPTANCE DATE DATA CARDS.                          C98970
01070      OUTPUT-IRAN ACCEPTANCE DATE DATA TAPE(8-DIG.SER.<JDATE).         C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02120      SELECT INCARDA                ASSIGN TO UT-S-TU12              C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT FILEACCPT              ASSIGN TO UT-S-TU13              C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
10100  FD  INCARDA                                                          C98970
10120      RECORDING MODE IS F                                              C98970
10130      BLOCK CONTAINS 01 RECORDS                                        C98970
10140      RECORD CONTAINS 80            CHARACTERS                         C98970
10150      LABEL RECORDS ARE OMITTED                                        C98970
10160      DATA RECORDS ARE INCARDA-IRAN.                                   C98970
10200  01  INCARDA-IRAN SYNC.                                              C98970
10210      02  SER-1-2          PICTURE 99.                                C98970
10220      02  SER-3-6          PICTURE 9999.                              C98970
10230      02  FILLER           PICTURE X(10).                             C98970
10240      02  MO               PICTURE 99.                                C98970
10250      02  DA               PICTURE 99.                                C98970
10260      02  YR               PICTURE 99.                                C98970
10270      02  FILLER           PICTURE X(58).                             C98970
11100  FD  FILEACCPT                                                        C98970
11120      RECORDING MODE IS F                                              C98970
11130      BLOCK CONTAINS 01 RECORDS                                        C98970
11140      RECORD CONTAINS 80            CHARACTERS                         C98970
11150      LABEL RECORDS ARE OMITTED                                        C98970
11160      DATA RECORDS ARE FILEACCPT-IRAN.                                 C98970
11200  01  FILLACCPT-IRAN SYNC.                                            C98970
11210      02  FILLER           PICTURE X(80).                             C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30020  01  JYR      PICTURE S99     COMPUTATIONAL VALUE ZERO SYNC.           C98970
30030  01  IYR      PICTURE S99     COMPUTATIONAL VALUE ZERO SYNC.           C98970
30040  01  IMO      PICTURE S99     COMPUTATIONAL VALUE ZERO SYNC.           C98970
30050  01  IDA      PICTURE S99     COMPUTATIONAL VALUE ZERO SYNC.           C98970
30060  01  JDAY     PICTURE S999    COMPUTATIONAL VALUE ZERO SYNC.           C98970
30100  01  RECORDS-READ         PICTURE 9(6) SYNC VALUE ZERO.              C98970
30110  01  RECORDS-PASS         PICTURE 9(6) SYNC VALUE ZERO.              C98970
31000  01  DAYS-IN-YEAR SYNC.                                              C98970
31010      02  FILLER           PICTURE 999     VALUE   0.                C98970
31020      02  FILLER           PICTURE 999     VALUE  31.                C98970
31030      02  FILLER           PICTURE 999     VALUE  59.                C98970
31040      02  FILLER           PICTURE 999     VALUE  90.                C98970
31050      02  FILLER           PICTURE 999     VALUE 120.                C98970
31060      02  FILLER           PICTURE 999     VALUE 151.                C98970
31070      02  FILLER           PICTURE 999     VALUE 181.                C98970
31080      02  FILLER           PICTURE 999     VALUE 212.                C98970
31090      02  FILLER           PICTURE 999     VALUE 243.                C98970
31100      02  FILLER           PICTURE 999     VALUE 273.                C98970
31110      02  FILLER           PICTURE 999     VALUE 304.                C98970
31120      02  FILLER           PICTURE 999     VALUE 334.                C98970
31130  01  NO-DAYS-IN-YEAR REDEFINES DAYS-IN-YEAR SYNC.                    C98970
31140      02  KDAYS OCCURS 12 TIMES                                       C98970
31150                           PICTURE 999.                               C98970
32000  01  DAYS-IN-YEARS SYNC.                                             C98970
32010      02  FILLER           PICTURE 9999    VALUE    0.               C98970
32020      02  FILLER           PICTURE 9999    VALUE  365.               C98970
32030      02  FILLER           PICTURE 9999    VALUE  730.               C98970
32040      02  FILLER           PICTURE 9999    VALUE 1095.               C98970
32050      02  FILLER           PICTURE 9999    VALUE 1461.               C98970
32060      02  FILLER           PICTURE 9999    VALUE 1826.               C98970
32070      02  FILLER           PICTURE 9999    VALUE 2191.               C98970
32080      02  FILLER           PICTURE 9999    VALUE 2556.               C98970
32090      02  FILLER           PICTURE 9999    VALUE 2922.               C98970
32100      02  FILLER           PICTURE 9999    VALUE 3287.               C98970
32110      02  FILLER           PICTURE 9999    VALUE 3652.               C98970
32120      02  FILLER           PICTURE 9999    VALUE 4017.               C98970
32130      02  FILLER           PICTURE 9999    VALUE 4383.               C98970
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32140       02  FILLER           PICTURE 9999    VALUE 4748.              C98970
32150       02  FILLER           PICTURE 9999    VALUE 5113.              C98970
32160       02  FILLER           PICTURE 9999    VALUE 5478.              C98970
32170       02  FILLER           PICTURE 9999    VALUE 5844.              C98970
32180       02  FILLER           PICTURE 9999    VALUE 6209.              C98970
32190       02  FILLER           PICTURE 9999    VALUE 6574.              C98970
32200       02  FILLER           PICTURE 9999    VALUE 6939.              C98970
32210       02  FILLER           PICTURE 9999    VALUE 7305.              C98970
32220   01  DAY-IN-YEAR-TABLE REDEFINES DAYS-IN-YEARS SYNC.               C98970
32230       02  DAY-YEAR OCCURS 21 TIMES                                  C98970
32235                            PICTURE 9999.                           C98970
36000   01  FILLACCPT-IRAN-WORK SYNC.                                     C98970
36010       02  SERIAL           PICTURE 9(8).                            C98970
36020       02  FILLER           PICTURE XX      VALUE SPACE.             C98970
36030       02  DAY-NO     PICTURE S9(4).                                 C98970
36040       02  FILLER           PICTURE X(65)   VALUE SPACE.             C98970
36050       02  RCDMK-O          PICTURE X       VALUE I#1.               C98970
50000  PROCEDURE DIVISION.                                               C98970
50010  OPEN-FILES.                                                       C98970
50020       OPEN INPUT INCARDA.                                          C98970
50050       OPEN OUTPUT FILEACCPT.                                       C98970
50200  READ1.                                                            C98970
50210       READ INCARDA                                                 C98970
50220            AT END GO TO BLOCK-CHECK.                               C98970
50230       ADD 1 TO RECORDS-READ.                                       C98970
50400  CONVERT-SERIAL-NO.                                                C98970
50410       COMPUTE SERIAL       > SER-1-2 * 1000000 < SER-3-6.          C98970
50500  JDAY-SETUP1.                                                      C98970
50510       MOVE DA TO  IDA.                                             C98970
50520       MOVE MO TO  IMO.                                             C98970
50530       MOVE YR TO  IYR.                                             C98970
50540       GO TO CONVERT-DATE.                                          C98970
50700  CONVERT-DATE.                                                     C98970
50710       PERFORM DAYS-BEFORE-AFTER-DEC-31-64 THRU DAYS-END.           C98970
50720       GO TO WRITE-OUTPUT.                                          C98970
51000  DAYS-BEFORE-AFTER-DEC-31-64.                                      C98970
51010       COMPUTE JYR      >   IYR - 56.                               C98970
51020       COMPUTE JDAY     >   IDA < KDAYS (IMO).                      C98970
51030       IF JYR EQUAL  0 GO TO LEAP-YEAR.                             C98970
51040       IF JYR EQUAL  4 GO TO LEAP-YEAR.                             C98970
51050       IF JYR EQUAL  8 GO TO LEAP-YEAR.                             C98970
51060       IF JYR EQUAL 12 GO TO LEAP-YEAR.                             C98970
51070       IF JYR EQUAL 16 GO TO LEAP-YEAR.                             C98970
51080       IF JYR EQUAL 20 GO TO LEAP-YEAR.                             C98970
51090       GO TO JULIAN-DAYS.                                           C98970
51100  LEAP-YEAR.                                                        C98970
51110       IF IMO IS LESS THAN 3 GO TO JULIAN-DAYS.                     C98970
51120       ADD 1 TO JDAY.                                               C98970
51130  JULIAN-DAYS.                                                      C98970
51140       COMPUTE DAY-NO  >   DAY-YEAR (JYR) < JDAY - 2922.            C98970
51150  DAYS-END.                    EXIT.                                C98970
60000  WRITE-OUTPUT.                                                     C98970
60010       WRITE FILEACCPT-IRAN FROM FILEACCPT-IRAN-WORK.               C98970
60020       ADD 1 TO RECORDS-PASS.                                       C98970
60030       GO TO READ1.                                                 C98970
60200  BLOCK-CHECK.                                                      C98970
60210       GO TO CLOSE-FILES.                                           C98970
60300  CLOSE-FILES.                                                      C98970
60310       CLOSE INCARDA   WITH LOCK.                                   C98970
60320       CLOSE FILEACCPT WITH LOCK.                                   C98970
60330       DISPLAY ' CARDS READ ' RECORDS-READ UPON CONSOLE.            C98970
60340       DISPLAY ' RECORDS-OT ' RECORDS-PASS UPON CONSOLE.            C98970
60350       DISPLAY ' EOJ C9697 ' UPON CONSOLE.                          C98970
60360       GOBACK.                                                      C98970
/*      PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.IFG1N    DD   *,SPACE=(CYL,(1,1))                                 1440 CDS
IFG  TU12     11  0012080
57 229 0         7 158 1 1
57 230 0         6 158 1 1
57 231 0         7 158 1 1
57 232 0         7 158 1 1
57 235 0         8 158 1 1
57 236 0         9 158 1 1
57 237 0         9 158 1 1
57 241 0         9 158 1 1
57 243 0        10 158 1 1
57 244 0        12 158 1 1
57 245 0        11 158 1 1
57 246 0         3 159 1 1
572453 0         4 159 1 1
572455 0         4 159 1 1
572456 0         5 159 1 1
572457 0         4 159 1 1
572458 0         4 159 1 1
572459 0         5 159 1 1
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572460 0        4 159 1 1
572461 0        5 159 1 1
572463 0        5 159 1 1
572464 0        5 159 1 1
572465 0        6 159 1 1
572466 0        4 159 1 1
572467 0        5 159 1 1
572469 0        5 159 1 1
572470 0        5 159 1 1
572472 0        5 159 1 1
572473 0        5 159 1 1
572475 0        6 159 1 1
572476 0        6 159 1 1
572477 0        6 159 1 1
572478 0        6 159 1 1
572480 0        6 159 1 1
572481 0        6 159 1 1
572482 0        6 159 1 1
572483 0        7 159 1 1
572485 0        7 159 1 1
572486 0        7 159 1 1
572487 0        7 159 1 1
572490 0        8 159 1 1
572491 0        7 159 1 1
572492 0        7 159 1 1
572493 0        8 159 1 1
572494 0        7 159 1 1
572495 0        7 159 1 1
572496 0        9 159 1 1
572497 0        8 159 1 1
572498 0        9 159 1 1
572499 0        9 159 1 1
572500 0        9 159 1 1
572501 0        9 159 1 1
572502 0        9 159 1 1
572503 0        9 159 1 1
572504 0        9 159 1 1
572505 0        9 159 1 1
572506 0        9 159 1 1
572508 0        9 158 1 1
572509 0        7 158 1 1
572510 0        9 158 1 1
572512 0       11 158 1 1
572514 0       10 158 1 1
572515 0       12 158 1 1
572517 0        5 159 1 1
572518 0        8 159 1 1
572520 0        7 159 1 1
572521 0        7 159 1 1
572522 0        7 159 1 1
572524 0        7 159 1 1
572526 0        9 159 1 1
572527 0        7 159 1 1
572528 0        7 159 1 1
572530 0        9 159 1 1
572531 0        9 159 1 1
572532 0       10 159 1 1
572533 0       10 159 1 1
572535 0       11 159 1 1
572536 0       11 159 1 1
572537 0       12 159 1 1
572538 0       12 159 1 1
572539 0       12 159 1 1
572540 0       12 159 1 1
572541 0       12 159 1 1
572543 0       12 159 1 1
572544 0        2 160 1 1
572545 0        2 160 1 1
572546 0        3 160 1 1
572547 0        4 160 1 1
58 759 0       10 159 1 1
58 760 0        9 159 1 1
58 764 0        9 159 1 1
58 765 0        9 159 1 1
58 766 0       10 159 1 1
58 767 0       10 159 1 1
58 768 0        9 159 1 1
58 769 0        9 159 1 1
58 772 0       10 159 1 1
58 773 0       10 159 1 1
58 774 0       10 159 1 1
58 775 0        9 159 1 1
58 776 0       10 159 1 1
58 777 0       10 159 1 1
58 778 0       11 159 1 1
58 779 0       10 159 1 1
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58 780 0        11 159 1 1
58 781 0        11 159 1 1
58 782 0        11 159 1 1
58 783 0        11 159 1 1
58 784 0        10 159 1 1
58 785 0        11 159 1 1
58 786 0        11 159 1 1
58 787 0        11 159 1 1
58 788 0        10 159 1 1
58 789 0        10 159 1 1
58 730 0        11 159 1 1
58 791 0        12 159 1 1
58 732 0        11 159 1 1
58 793 0        12 159 1 1
58 737 0        11 159 1 1
58 738 0        11 159 1 1
58 900 0         3 160 1 1
58 901 0         4 160 1 1
58 902 0         5 160 1 1
58 903 0         6 160 1 1
58 904 0         6 160 1 1
59 001 0        11 159 1 1
59 002 0        11 159 1 1
59 003 0        11 159 1 1
59 004 0        11 159 1 1
59 005 0        11 159 1 1
59 006 0        12 159 1 1
59 007 0        12 159 1 1
59 008 0        12 159 1 1
59 009 0        12 159 1 1
59 010 0        12 159 1 1
59 011 0        12 159 1 1
59 012 0        12 159 1 1
59 014 0        12 159 1 1
59 015 0        12 159 1 1
59 016 0        12 159 1 1
59 018 0        12 159 1 1
59 019 0         1 160 1 1
59 020 0         1 160 1 1
59 021 0         1 160 1 1
59 022 0         1 160 1 1
59 023 0         2 160 1 1
59 024 0         1 160 1 1
59 025 0         1 160 1 1
59 026 0         1 160 1 1
59 027 0         2 160 1 1
59 028 0         1 160 1 1
59 030 0         1 160 1 1
59 031 0         2 160 1 1
59 032 0         2 160 1 1
59 033 0         1 160 1 1
59 034 0         2 160 1 1
59 035 0         3 160 1 1
59 036 0         2 160 1 1
59 037 0         3 160 1 1
59 038 0         2 160 1 1
59 040 0         2 160 1 1
59 042 0         3 160 1 1
59 043 0         2 160 1 1
59 044 0         3 160 1 1
59 046 0         2 160 1 1
59 047 0         3 160 1 1
59 048 0         3 160 1 1
59 049 0         3 160 1 1
59 051 0         3 160 1 1
59 052 0         3 160 1 1
59 053 0         4 160 1 1
59 054 0         3 160 1 1
59 056 0         3 160 1 1
59 057 0         4 160 1 1
59 058 0         4 160 1 1
59 059 0         3 160 1 1
59 060 0         4 160 1 1
59 062 0         4 160 1 1
59 063 0         5 160 1 1
59 064 0         5 160 1 1
59 065 0         4 160 1 1
59 066 0         4 160 1 1
59 067 0         5 160 1 1
59 068 0         5 160 1 1
59 069 0         5 160 1 1
59 071 0         5 160 1 1
59 072 0         5 160 1 1
59 074 0         6 160 1 1
59 075 0         6 160 1 1
59 076 0         6 160 1 1
59 077 0         6 160 1 1
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59 078 0          6 160 1 1
59 079 0          6 160 1 1
59 080 0          6 160 1 1
59 081 0          6 160 1 1
59 082 0          6 160 1 1
59 083 0          6 160 1 1
59 084 0          6 160 1 1
59 085 0          6 160 1 1
59 086 0          6 160 1 1
59 088 0          7 160 1 1
59 089 0          7 160 1 1
59 090 0          7 160 1 1
59 091 0          7 160 1 1
59 092 0          7 160 1 1
59 093 0          8 160 1 1
59 094 0          7 160 1 1
59 095 0          7 160 1 1
59 096 0          8 160 1 1
59 097 0          7 160 1 1
59 099 0          8 160 1 1
59 100 0          8 160 1 1
59 101 0          7 160 1 1
59 102 0          8 160 1 1
59 103 0          8 160 1 1
59 104 0          7 160 1 1
59 105 0          8 160 1 1
59 106 0          8 160 1 1
59 108 0          8 160 1 1
59 109 0          8 160 1 1
59 110 0          8 160 1 1
59 112 0         10 160 1 1
59 115 0         11 160 1 1
59 116 0         11 160 1 1
59 118 0         11 160 1 1
59 119 0         11 160 1 1
59 121 0          9 160 1 1
59 122 0         11 160 1 1
59 123 0         11 160 1 1
59 125 0         11 160 1 1
59 126 0         11 160 1 1
59 127 0          9 160 1 1
59 128 0         11 160 1 1
59 129 0         12 160 1 1
59 130 0         11 160 1 1
59 131 0         11 160 1 1
59 132 0         11 160 1 1
59 133 0         12 160 1 1
59 134 0          1 161 1 1
59 135 0         12 160 1 1
59 136 0          1 161 1 1
59 137 0          1 161 1 1
59 138 0          1 161 1 1
59 140 0          1 161 1 1
59 141 0          1 161 1 1
59 143 0          1 161 1 1
59 144 0          1 161 1 1
59 145 0          2 161 1 1
59 146 0          1 161 1 1
59 147 0          2 161 1 1
59 148 0          1 161 1 1
59 149 0          6 160 1 1
59 151 0          6 160 1 1
59 152 0          7 160 1 1
59 153 0          7 160 1 1
59 155 0          8 160 1 1
59 157 0          8 160 1 1
59 158 0         10 160 1 1
59 159 0          9 160 1 1
59 160 0         11 160 1 1
59 161 0          9 160 1 1
59 162 0         12 160 1 1
59 163 0         12 160 1 1
59 164 0          1 161 1 1
59 165 0          1 161 1 1
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU13     DD   DISP>(OLD,PASS)                                  013-PASS
//TPR.TPR1N    DD   *,SPACE>(TRK,(1,1))
T/P  TU12    1200080Z080
T/P  TU13    1200080Z080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.4.2 IRAN PREPROCESSOR

```
//C9897Y EXEC  P9655L,TIME=02,ACCT=D35323007
//CHG.TU13     DD   DISP=(,,PASS)                                          D13-OUT
//CHG.TU22     DD   DISP=(,PASS),UNIT=(T+F5,1,DEFER),DSN=*E.9895422,    CT22    1
//               VOL=SER=(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,  CT22    2
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5) T22    3
//CHG.INPUT    DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
-00000         COMBINE     COMPILE                  0, WANG.                C98970
_01040  DATE-WRITTEN. 07 FEB 72.                                            C98970
 01050  REMARKS. PROGRAM NAME- IRAN EVENT DATA PREPROCESSOR.                C98970
 01060        INPUT -ACCEPTANCE DATE DATA (CONVERTED SER. # DATE) TAPE.     C98970
 01070              -EVENT DATA CARDS.                                      C98970
 01080        OUTPUT-MAG. TAPE WITH CALCULATED EVENT VALUES.                C98970
 01090              -PRINTED IRAN EVENT REPORT.                             C98970
 02000  ENVIRONMENT DIVISION.                                               C98970
 02010  CONFIGURATION SECTION.                                              C98970
 02020  SOURCE-COMPUTER. IBM-360.                                           C98970
 02030  OBJECT-COMPUTER. IBM-360.                                           C98970
 02100  INPUT-OUTPUT SECTION.                                               C98970
 02110  FILE-CONTROL.                                                       C98970
 02120      SELECT FILEACCPT              ASSIGN TO UT-S-TU13               C98970
 02130          RESERVE 1 ALTERNATE AREA.                                   C98970
 02140      SELECT FILEEVENT              ASSIGN TO UT-S-TU14               C98970
 02150          RESERVE 1 ALTERNATE AREA.                                   C98970
 02160      SELECT IRANOUT                ASSIGN TO UT-S-TU22               C98970
 02170          RESERVE 1 ALTERNATE AREA.                                   C98970
 02180      SELECT IRANREPORT             ASSIGN TO UT-S-TU23               C98970
 02190          RESERVE 1 ALTERNATE AREA.                                   C98970
 10000  DATA DIVISION.                                                      C98970
 10010  FILE SECTION.                                                       C98970
 11100  FD  FILEACCPT                                                       C98970
 11120      RECORDING MODE IS F                                             C98970
 11130      BLOCK CONTAINS 01 RECORDS                                       C98970
 11140      RECORD CONTAINS 80            CHARACTERS                        C98970
 11150      LABEL RECORDS ARE OMITTED                                       C98970
 11160      DATA RECORDS ARE FILEACCPT-IRAN.                                C98970
 11200  01  FILLACCPT-IRAN SYNC.                                           C98970
 11210      02  FILLER           PICTURE X(80).                            C98970
 12100  FD  FILEEVENT                                                       C98970
 12120      RECORDING MODE IS F                                             C98970
 12130      BLOCK CONTAINS 01 RECORDS                                       C98970
 12140      RECORD CONTAINS 80            CHARACTERS        -             C98970
 12150      LABEL RECORDS ARE OMITTED                                       C98970
 12160      DATA RECORDS ARE FILEEVENT-IRAN.                                C98970
 12200  01  FILEEVENT-IRAN SYNC.                                           C98970
 12210      02  FILLER           PICTURE X(80).                            C98970
 13100  FD  IRANOUT                                                         C98970
 13120      RECORDING MODE IS F                                             C98970
 13130      BLOCK CONTAINS 30 RECORDS                                       C98970
 13140      RECORD CONTAINS 80            CHARACTERS                        C98970
 13150      LABEL RECORDS ARE OMITTED                                       C98970
 13160      DATA RECORDS ARE IRANOUT-PRE.                                   C98970
 13200  01  IRANOUT-PRE SYNC.                                              C98970
 13210      02  FILLER           PICTURE X(80).                            C98970
 14100  FD  IRANREPORT                                                      C98970
 14120      RECORDING MODE IS F                                             C98970
 14130      BLOCK CONTAINS 45 RECORDS                                       C98970
 14140      RECORD CONTAINS 120           CHARACTERS                        C98970
 14150      LABEL RECORDS ARE OMITTED                                       C98970
 14160      DATA RECORDS ARE IRANREPORT-PRE.                                C98970
 14200  01  IRANREPORT-PRE SYNC.                                           C98970
 14210      02  FILLER           PICTURE X(120).                           C98970
 30000  WORKING-STORAGE SECTION.                                            C98970
 30020  01  JYR      PICTURE S99      COMPUTATIONAL VALUE ZERO SYNC.        C98970
 30030  01  IYR      PICTURE S99      COMPUTATIONAL VALUE ZERO SYNC.        C98970
 30040  01  IMO      PICTURE S99      COMPUTATIONAL VALUE ZERO SYNC.        C98970
 30050  01  IDA      PICTURE S99      COMPUTATIONAL VALUE ZERO SYNC.        C98970
 30060  01  JDAY     PICTURE S999     COMPUTATIONAL VALUE ZERO SYNC.        C98970
 30100  01  RECORDS-READ         PICTURE 9(6) SYNC VALUE ZERO.             C98970
 30110  01  RECORDS-PASS         PICTURE 9(6) SYNC VALUE ZERO.             C98970
 30230  01  NINE SYNC.                                                     C98970
 30240      02  FILLER           PICTURE X(25)   VALUE                     C98970
 30250                            1999999999999999999999999991.           C98970
 30260      02  FILLER           PICTURE X(25)   VALUE                     C98970
 30270                            :999999999999999999999999991.           C98970
 30280      02  FILLER           PICTURE X(30)   VALUE                     C98970
 30290                            :99999999999999999999999999999991.      C98970
 30400  01  KOUNT    PICTURE S999  COMPUTATIONAL VALUE ZERO SYNC.          C98970
 30410  01  KNT      PICTURE S999  COMPUTATIONAL VALUE ZERO SYNC.          C98970
 31000  01  DAYS-IN-YEAR SYNC.                                             C98970
 31010      02  FILLER           PICTURE 999      VALUE   0.              C98970
 31020      02  FILLER           PICTURE 999      VALUE  31.              C98970
 31030      02  FILLER           PICTURE 999      VALUE  59.              C98970
 31040      02  FILLER           PICTURE 999      VALUE  90.              C98970
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31050      02  FILLER              PICTURE 999      VALUE 120.              C98970
31060      02  FILLER              PICTURE 999      VALUE 151.              C98970
31070      02  FILLER              PICTURE 999      VALUE 181.              C98970
31080      02  FILLER              PICTURE 999      VALUE 212.              C98970
31090      02  FILLER              PICTURE 999      VALUE 243.              C98970
31100      02  FILLER              PICTURE 999      VALUE 273.              C98970
31110      02  FILLER              PICTURE 999      VALUE 304.              C98970
31120      02  FILLER              PICTURE 999      VALUE 334.              C98970
31130  01  NO-DAYS-IN-YEAR REDEFINES DAYS-IN-YEAR SYNC.                     C98970
31140      02  KDAYS OCCURS 12 TIMES                                        C98970
31150                               PICTURE 999.                           C98970
32000  01  DAYS-IN-YEARS SYNC.                                              C98970
32010      02  FILLER              PICTURE 9999     VALUE    0.            C98970
32020      02  FILLER              PICTURE 9999     VALUE  365.            C98970
32030      02  FILLER              PICTURE 9999     VALUE  730.            C98970
32040      02  FILLER              PICTURE 9999     VALUE 1095.            C98970
32050      02  FILLER              PICTURE 9999     VALUE 1461.            C98970
32060      02  FILLER              PICTURE 9999     VALUE 1826.            C98970
32070      02  FILLER              PICTURE 9999     VALUE 2191.            C98970
32080      02  FILLER              PICTURE 9999     VALUE 2556.            C98970
32090      02  FILLER              PICTURE 9999     VALUE 2922.            C98970
32100      02  FILLER              PICTURE 9999     VALUE 3287.            C98970
32110      02  FILLER              PICTURE 9999     VALUE 3652.            C98970
32120      02  FILLER              PICTURE 9999     VALUE 4017.            C98970
32130      02  FILLER              PICTURE 9999     VALUE 4383.            C98970
32140      02  FILLER              PICTURE 9999     VALUE 4748.            C98970
32150      02  FILLER              PICTURE 9999     VALUE 5113.            C98970
32160      02  FILLER              PICTURE 9999     VALUE 5478.            C98970
32170      02  FILLER              PICTURE 9999     VALUE 5844.            C98970
32180      02  FILLER              PICTURE 9999     VALUE 6209.            C98970
32190      02  FILLER              PICTURE 9999     VALUE 6574.            C98970
32200      02  FILLER              PICTURE 9999     VALUE 6939.            C98970
32210      02  FILLER              PICTURE 9999     VALUE 7305.            C98970
32220  01  DAY-IN-YEAR-TABLE REDEFINES DAYS-IN-YEARS SYNC.                  C98970
32230      02  DAY-YEAR OCCURS 21 TIMES                                     C98970
32235                               PICTURE 9999.                          C98970
33000  01  FILLEVENT-IRAN-WORK2 SYNC.                                       C98970
33010      02  SER-I-2-2           PICTURE 99.                            C98970
33020      02  SER-3-6-2           PICTURE 9999.                          C98970
33030      02  SERIES-2            PICTURE X.                             C98970
33040      02  FILLER              PICTURE XX.                            C98970
33050      02  MO-STRT-2           PICTURE 99.                            C98970
33060      02  DA-STRT-2           PICTURE 99.                            C98970
33070      02  YR-STRT-2           PICTURE 99.                            C98970
33080      02  FILLER              PICTURE X.                             C98970
33090      02  MO-DONE-2           PICTURE 99.                            C98970
33100      02  DA-DONE-2           PICTURE 99.                            C98970
33110      02  YR-DONE-2           PICTURE 99.                            C98970
33120      02  FILLER              PICTURE XXXX.                          C98970
33130      02  FL-HRS-CUM-2        PICTURE 9999.                          C98970
33140      02  FL-DEC-2            PICTURE X.                             C98970
33150      02  FL-D-TENTH-2        PICTURE 9.                             C98970
33160      02  FILLER              PICTURE XX.                            C98970
33170      02  TYPE-CODE-2         PICTURE 99.                            C98970
33180      02  FILLER              PICTURE X(33).                         C98970
33190      02  MH-LABOR-2          PICTURE 9999.                          C98970
33200      02  FILLER              PICTURE X(7).                          C98970
34000  01  IRAN-OUT-WORKT SYNC.                                             C98970
34010      02  SERIAL-T            PICTURE 9(8)     VALUE ZEROS.          C98970
34020      02  SERIES-T            PICTURE X        VALUE SPACE.          C98970
34030      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34040      02  ACCPT-DA-T          PICTURE 9(5)     VALUE ZEROS.          C98970
34050      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34060      02  VISIT-T             PICTURE 9        VALUE ZEROS.          C98970
34065      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34070      02  TYPE-CODE-T         PICTURE 99       VALUE ZEROS.          C98970
34080      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34090      02  FL-HRS-C-T          PICTURE 9(5)     VALUE ZEROS.          C98970
34100      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34110      02  AGE-STRT-T          PICTURE 999      VALUE ZEROS.          C98970
34120      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34130      02  DA-NO-ST-T          PICTURE 9999     VALUE ZEROS.          C98970
34140      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34150      02  DA-NO-FN-T          PICTURE S9999    VALUE ZEROS.          C98970
34160      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34170      02  DURATION-DA-T       PICTURE 999      VALUE ZEROS.          C98970
34180      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34190      02  MH-LABOR-T          PICTURE 9999     VALUE ZEROS.          C98970
34200      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34210      02  TYPE-CODE-NXT-S     PICTURE 99       VALUE ZEROS.          C98970
34220      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34230      02  FL-HRS-C-NXT-S      PICTURE 9(5)     VALUE ZEROS.          C98970
34240      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34250      02  DA-NO-ST-NXT-S      PICTURE S9999    VALUE ZEROS.          C98970
34260      02  FILLER              PICTURE X        VALUE SPACE.          C98970
34270      02  INTERVAL-DAYS-T     PICTURE 9999     VALUE ZEROS.          C98970
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34280      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34290      02  INT-MO-T            PICTURE 999     VALUE ZEROS.          C98970
34300      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34310      02  INT-FL-HRS-T        PICTURE 9(5)    VALUE ZEROS.          C98970
34320      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34330      02  R-MARK-T            PICTURE X       VALUE SPACE.          C98970
34400  01  IRAN-OUT-WORKO SYNC.                                          C98970
34410      02  SERIAL-O            PICTURE 9(8)    VALUE ZEROS.          C98970
34420      02  SERIES-O            PICTURE X       VALUE SPACE.          C98970
34430      02  FILLER              PICTURE XX      VALUE SPACE.          C98970
34440      02  ACCPT-DA-O          PICTURE 99(4)   VALUE ZEROS.          C98970
34450      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34460      02  VISIT-O             PICTURE 9       VALUE ZEROS.          C98970
34465      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34470      02  TYPE-CODE-O         PICTURE 99      VALUE ZEROS.          C98970
34480      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34490      02  FL-HRS-C-O          PICTURE 9(5)    VALUE ZEROS.          C98970
34500      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34510      02  AGE-STRT-O          PICTURE 999     VALUE ZEROS.          C98970
34520      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34530      02  DA-NO-ST-O          PICTURE S9999   VALUE ZEROS.          C98970
34540      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34550      02  DA-NO-FN-O          PICTURE S9999   VALUE ZEROS.          C98970
34560      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34570      02  DURATION-DA-O       PICTURE 999     VALUE ZEROS.          C98970
34580      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34590      02  MH-LABOR-O          PICTURE 9999    VALUE ZEROS.          C98970
34600      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34610      02  TYPE-CODE-NXT-O     PICTURE 99      VALUE ZEROS.          C98970
34620      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34630      02  FL-HRS-C-NXT-O      PICTURE 9(5)    VALUE ZEROS.          C98970
34640      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34650      02  DA-NO-ST-NXT-O      PICTURE S9999   VALUE ZEROS.          C98970
34660      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34670      02  INTERVAL-DA-O       PICTURE 9999    VALUE ZEROS.          C98970
34680      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34690      02  INTERVAL-WK-O       PICTURE 999     VALUE ZEROS.          C98970
34700      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34710      02  INT-FL-HRS-O        PICTURE 9(5)    VALUE ZEROS.          C98970
34720      02  FILLER              PICTURE X       VALUE SPACE.          C98970
34730      02  R-MARK-O            PICTURE X       VALUE I#1.            C98970
35000  01  IRANREPORT-WORKP SYNC.                                        C98970
35010      02  FILLER              PICTURE X(5)    VALUE SPACE.          C98970
35020      02  SERIAL-R            PICTURE X(8)    VALUE SPACE.          C98970
35030      02  SERIES-R            PICTURE X       VALUE SPACE.          C98970
35040      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35050      02  ACCPT-DA-R          PICTURE -(5).                         C98970
35060      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35070      02  VISIT-R             PICTURE X       VALUE SPACE.          C98970
35080      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35090      02  TYPE-CODE-R         PICTURE Z9.                           C98970
35100      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35110      02  FL-HRS-C-R          PICTURE ZZZZ9.                        C98970
35120      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35130      02  AGE-STRT-R          PICTURE ZZ9.                          C98970
35150      02  DA-NO-ST-R          PICTURE -(5).                         C98970
35170      02  DA-NO-FN-R          PICTURE -(5).                         C98970
35180      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35190      02  DURATION-DA-R       PICTURE ZZ9.                          C98970
35200      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35210      02  MH-LABOR-R          PICTURE X(4)    VALUE SPACE.          C98970
35220      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35230      02  TYPE-CODE-NXT-R     PICTURE Z9.                           C98970
35240      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35250      02  FL-HRS-C-NXT-R      PICTURE ZZZZ9.                        C98970
35260      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35270      02  DA-NO-ST-NXT-R      PICTURE ZZZ9.                         C98970
35280      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35290      02  INTERVAL-DA-R       PICTURE ZZZ9.                         C98970
35300      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35310      02  INTERVAL-WK-R       PICTURE ZZ9.                          C98970
35320      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35330      02  INT-FL-HRS-R        PICTURE ZZZZ9.                        C98970
35340      02  FILLER              PICTURE XX      VALUE SPACE.          C98970
35350      02  MO-START-R          PICTURE XX      VALUE SPACE.          C98970
35360      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35370      02  DA-START-R          PICTURE XX      VALUE SPACE.          C98970
35380      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35390      02  YR-START-R          PICTURE XX      VALUE SPACE.          C98970
35400      02  FILLER              PICTURE XX      VALUE SPACE.          C98970
35410      02  MO-DONE-R           PICTURE XX      VALUE SPACE.          C98970
35420      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35430      02  DA-DONE-R           PICTURE XX      VALUE SPACE.          C98970
35440      02  FILLER              PICTURE X       VALUE SPACE.          C98970
35450      02  YR-DONE-R           PICTURE XX      VALUE SPACE.          C98970
35460      02  FILLER              PICTURE X(16)   VALUE SPACE.          C98970
35470      02  WRECK-M-R           PICTURE X       VALUE I#I.            C98970
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35600  01  FILEACCPT-IRANW SYNC.                                                C98970
35610      02  SERIAL          PICTURE 9(8)    VALUE ZEROS.                     C98970
35620      02  FILLER          PICTURE XX.                                      C98970
35630      02  DAY-NO-A        PICTURE S9(4)   VALUE ZEROS.                     C98970
35640      02  FILLER          PICTURE X(65).                                   C98970
35650      02  RCDMK-O         PICTURE X.                                       C98970
37000  01  IRANREPORT-TITLE-A SYNC.                                             C98970
37010      02  CAR-CODE-A  PICTURE X       VALUE :1:.                           C98970
37020      02  FILLER      PICTURE X(14)   VALUE SPACE.                         C98970
37030      02  T-10-24-A   PICTURE X(9)    VALUE :ACCPT V T:.                   C98970
37040      02  FILLER      PICTURE X(12)   VALUE SPACE.                         C98970
37050      02  T-37-55-A   PICTURE X(19)   VALUE :STRT CMPL DAYS     :.         C98970
37060      02  T-56-71-A   PICTURE X(16)   VALUE :--NEXT IRAN-- --:.            C98970
37070      02  T-72-90-A   PICTURE X(19)   VALUE :INTERVALS---       :.         C98970
37080      02  T-91-99-A   PICTURE X(9)    VALUE :     PAGE:.                   C98970
37090      02  PAGE-NO-A   PICTURE ZZZ9.                                        C98970
37095      02  FILLER      PICTURE X(10)   VALUE SPACE.                         C98970
37100      02  T-114-120-A PICTURE X(7)    VALUE :     #:.                      C98970
37200  01  IRANREPORT-TITLE-B SYNC.                                             C98970
37210      02  CAR-CODE-B  PICTURE X       VALUE SPACE.                         C98970
37220      02  FILLER      PICTURE X(14)   VALUE SPACE.                         C98970
37230      02  T-10-32-B   PICTURE X(17)   VALUE :DATE  I Y  F/H   :.          C98970
37240      02  T-33-49-B   PICTURE X(17)   VALUE :AGE DATE DATE  IN:.          C98970
37250      02  FILLER      PICTURE X(6)    VALUE SPACE.                         C98970
37260      02  T-50-71-B   PICTURE X(16)   VALUE :T  F/H   STRT   :.           C98970
37270      02  T-72-80-B   PICTURE X(9)    VALUE :   WK  FH:.                   C98970
37280      02  FILLER      PICTURE X(5)    VALUE SPACE.                         C98970
37290      02  T-80-95-B   PICTURE X(10)   VALUE :START     :.                 C98970
37300      02  T-96-105-B  PICTURE X(10)   VALUE :COMPLETE  :.                 C98970
37310      02  FILLER      PICTURE X(14)   VALUE SPACE.                         C98970
37320      02  T-120-B     PICTURE X       VALUE :#:.                           C98970
37400  01  IRANREPORT-TITLE-C SYNC.                                             C98970
37410      02  CAR-CODE-C  PICTURE X       VALUE SPACE.                         C98970
37420      02  FILLER      PICTURE X(4)    VALUE SPACE.                         C98970
37430      02  T-6-15-C    PICTURE X(10)   VALUE :SERIAL    :.                  C98970
37440      02  T-10-32-C   PICTURE X(17)   VALUE :CODE  S P  X10   :.          C98970
37450      02  T-33-49-C   PICTURE X(17)   VALUE :WK. CODE CODE IRA:.          C98970
37460      02  T-50-55-C   PICTURE X(6)    VALUE :N M/H :.                      C98970
37470      02  T-56-74-C   PICTURE X(19)   VALUE :Y  X10   DATE DAYS :.        C98970
37480      02  T-75-85-C   PICTURE X(11)   VALUE :X10 X10    :.                C98970
37482      02  T-86-95-C   PICTURE X(10)   VALUE :MO DA YR  :.                 C98970
37485      02  T-96-105-C  PICTURE X(10)   VALUE :MO DA YR  :.                 C98970
37490      02  FILLER      PICTURE X(14)   VALUE SPACE.                         C98970
37500      02  T-120-C     PICTURE X       VALUE :#:.                           C98970
37600  01  IRANREPORT-TITLE-D SYNC.                                             C98970
37610      02  CAR-CODE-D  PICTURE X       VALUE SPACE.                         C98970
37620      02  FILLER      PICTURE X(118)  VALUE SPACE.                         C98970
37630      02  T-120-D     PICTURE X       VALUE :#:.                           C98970
46000  01  NINES-8      PICTURE 9(8)   SYNC VALUE   99999999.                   C98970
46010  01  JFLAG        PICTURE 9      SYNC VALUE   ZERO.                       C98970
46020  01  IFLAG        PICTURE 9      SYNC VALUE   ZERO.                       C98970
46030  01  PAGE-CNT     PICTURE 9999   SYNC VALUE   ZERO.                       C98970
46050  01  LINE-CNT     PICTURE 99     SYNC VALUE   ZERO.                       C98970
46060  01  LINE-MAX-50  PICTURE 99     SYNC VALUE   50.                         C98970
46070  01  LAST-1       PICTURE 9      SYNC VALUE   0.                          C98970
46080  01  DAY-NO       PICTURE S9(4).                                          C98970
46090  01  DA-NO-FN-S   PICTURE S9(4)  VALUE ZEROS.                             C98970
46100  01  RCDS-ACCEPT  PICTURE 9(6)   SYNC VALUE   0.                          C98970
46110  01  SPACE-CNT    PICTURE 9(6)   SYNC VALUE   0.                          C98970
46120  01  LINES-OUT    PICTURE 9(6)   SYNC VALUE   0.                          C98970
50000  PROCEDURE DIVISION.                                                     C98970
50010  OPEN-FILES.                                                             C98970
50020      OPEN INPUT  FILEACCPT.                                              C98970
50030      OPEN INPUT  FILEEVENT.                                              C98970
50040      OPEN OUTPUT IRANOUT.                                                C98970
50050      OPEN OUTPUT IRANREPORT.                                             C98970
50090  INITIALIZE-PAGE.                                                        C98970
50110      PERFORM TITLE-S THRU TITLE-S-END.                                   C98970
50200  READ-FIRST-EVENT.                                                       C98970
50210      READ FILEEVENT  INTO FILEEVENT-IRAN-WORK2                           C98970
50220           AT END GO TO EOF-FIRST-EVENT.                                  C98970
50225      MOVE TYPE-CODE-2 TO TYPE-CODE-NXT-O.                                C98970
50227      ADD 1 TO RECORDS-READ.                                              C98970
50230      COMPUTE SERIAL-2 = SER-1-2-2 * 1000000 + SER-3-6-2.                 C98970
50240  CALC-START-FINISH-DAYS.                                                 C98970
50250      PERFORM DAY-NUMBERS THRU DAY-NUMBERS-END.                           C98970
50300  NEW-SERIAL-2.                                                           C98970
50310      IF SERIAL EQUAL SERIAL-T    GO TO SAME-120.                         C98970
50320      IF SERIAL EQUAL NINES-8     GO TO SAME-SERIAL-TEST-100.             C98970
50330      GO TO READ-NEXT-ACCEPTANCE-DATE-80.                                 C98970
50700  DAY-NUMBERS.                                                            C98970
50710      MOVE ZERO TO DA-NO-ST-NXT-O DA-NO-FN-T.                             C98970
50715      IF YR-STRT-2 IS LESS THAN 1 GO TO FINISH-DAYS.                      C98970
50720      MOVE MO-STRT-2  TO  IMO.                                            C98970
50730      MOVE DA-STRT-2  TO  IDA.                                            C98970
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50740      MOVE YR-STRT-2  TO  IYR.                                          C98970
50750      PERFORM DAYS-BEFORE-AFTER-DEC-31-64 THRU DAYS-END.                C98970
50760      MOVE DAY-NO TO  DA-NO-ST-NXT-0.                                   C98970
50800  FINISH-DAYS.                                                          C98970
50802      IF MO-DONE-2 EQUAL  SPACE MOVE ZEROS TO MO-DONE-2.                C98970
50804      IF DA-DONE-2 EQUAL  SPACE MOVE ZEROS TO DA-DONE-2.                C98970
50806      IF YR-DONE-2 EQUAL  SPACE MOVE ZEROS TO YR-DONE-2.                C98970
50810      IF YR-DONE-2 IS LESS THAN 1 GO TO CALC-FLIGHT-HRS-NXT.            C98970
50820      MOVE MO-DONE-2  TO  IMO.                                          C98970
50830      MOVE DA-DONE-2  TO  IDA.                                          C98970
50840      MOVE YR-DONE-2  TO  IYR.                                          C98970
50850      PERFORM DAYS-BEFORE-AFTER-DEC-31-64 THRU DAYS-END.                C98970
50860      MOVE DAY-NO TO  DA-NO-FN-T.                                       C98970
50870  CALC-FLIGHT-HRS-NXT.                                                  C98970
50872      IF FL-HRS-CUM-2 EQUAL SPACE MOVE ZEROS TO FL-HRS-CUM-2.           C98970
50875      IF FL-0-TENTH-2 EQUAL SPACE MOVE ZEROS TO FL-0-TENTH-2.           C98970
50880      COMPUTE FL-HRS-C-NXT-0 > FL-HRS-CUM-2 * 10 < FL-0-TENTH-2.        C98970
50890  DAY-NUMBERS-END.          EXIT.                                       C98970
51000  DAYS-BEFORE-AFTER-DEC-31-64.                                          C98970
51010      COMPUTE JYR     >   IYR - 56.                                     C98970
51020      COMPUTE JDAY    >   IDA < KDAYS (IMO).                            C98970
51030      IF JYR EQUAL  0 GO TO LEAP-YEAR.                                  C98970
51040      IF JYR EQUAL  4 GO TO LEAP-YEAR.                                  C98970
51050      IF JYR EQUAL  8 GO TO LEAP-YEAR.                                  C98970
51060      IF JYR EQUAL 12 GO TO LEAP-YEAR.                                  C98970
51070      IF JYR EQUAL 16 GO TO LEAP-YEAR.                                  C98970
51080      IF JYR EQUAL 20 GO TO LEAP-YEAR.                                  C98970
51090      GO TO JULIAN-DAYS.                                                C98970
51100  LEAP-YEAR.                                                            C98970
51110      IF IMO IS LESS THAN 3 GO TO JULIAN-DAYS.                          C98970
51120      ADD 1 TO JDAY.                                                    C98970
51130  JULIAN-DAYS.                                                          C98970
51140      COMPUTE DAY-NO  >   DAY-YEAR (JYR) < JDAY - 2922.                 C98970
51150  DAYS-END.                   EXIT.                                     C98970
51300  TITLE-S.                                                              C98970
51310      ADD 1 TO PAGE-CNT.                                                C98970
51320      MOVE PAGE-CNT TO PAGE-NO-A.                                       C98970
51330      WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-A.                     C98970
51340      WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-B.                     C98970
51350      WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-C.                     C98970
51360      WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-D.                     C98970
51370  TITLE-S-END.              EXIT.                                       C98970
52000  READ-NEXT-ACCEPTANCE-DATE-80.                                         C98970
52010      READ FILEACCPT  INTO FILEACCPT-IRAN                               C98970
52020              AT END  GO TO SET-NINES-8-90.                             C98970
52025      ADD 1 TO RCDS-ACCEPT.                                             C98970
52030      GO TO SAME-SERIAL-TEST-100.                                       C98970
52040  SET-NINES-R-90.                                                       C98970
52050      MOVE NINES-8 TO SERIAL.                                           C98970
52060  SAME-SERIAL-TEST-100.                                                 C98970
52070      IF SERIAL EQUAL SERIAL-T GO TO SAME-120.                          C98970
52080      IF SERIAL IS LESS THAN SERIAL-T                                   C98970
52090              GO TO READ-NEXT-ACCEPTANCE-DATE-80.                       C98970
52100      MOVE 1 TO JFLAG.                                                  C98970
52110  SAME-120.                                                             C98970
52120      IF JFLAG EQUAL ZERO GO TO ACCPT-DATE-CODE-130.                    C98970
52130      MOVE TYPE-CODE-NXT-S     TO  TYPE-CODE-NXT-0.                     C98970
52140      MOVE DA-NO-ST-NXT-S      TO  DA-NO-ST-NXT-0.                      C98970
52150      MOVE DA-NO-FN-S          TO  DA-NO-FN-T.                          C98970
52160      MOVE FL-HRS-C-NXT-S      TO  FL-HRS-C-NXT-0.                      C98970
52170      MOVE ZERO                TO  VISIT-0 IFLAG.                       C98970
52200  ACCPT-DATE-CODE-130.                                                  C98970
52210      MOVE ZERO                TO  ACCPT-DA-0.                          C98970
52220      IF JFLAG EQUAL ZERO MOVE DAY-NO-A TO ACCPT-DA-0                   C98970
52230                                           ACCPT-DA-R.                  C98970
52240          MOVE ZERO TO JFLAG.                                           C98970
52250  REPEAT-SAME-SER-SAVE-PRIOR-140.                                       C98970
52260      MOVE SERIAL-T            TO  SERIAL-0 SERIAL-R.                   C98970
52270      MOVE SERIES-2            TO  SERIES-0 SERIES-R.                   C98970
52280      MOVE MO-STRT-2           TO  MO-STRT-R.                           C98970
52290      MOVE DA-STRT-2           TO  DA-STRT-R.                           C98970
52300      MOVE YR-STRT-2           TO  YR-STRT-R.                           C98970
52310      MOVE MO-DONE-2           TO  MO-DONE-R.                           C98970
52320      MOVE DA-DONE-2           TO  DA-DONE-R.                           C98970
52330      MOVE YR-DONE-2           TO  YR-DONE-R.                           C98970
52340      MOVE TYPE-CODE-NXT-0     TO  TYPE-CODE-0 TYPE-CODE-R.             C98970
52350      MOVE MH-LABOR-2          TO  MH-LABOR-0 MH-LABOR-R.               C98970
52360      MOVE FL-HRS-C-NXT-0      TO  FL-HRS-C-0 FL-HRS-C-R.               C98970
52370      MOVE DA-NO-ST-NXT-0      TO  DA-NO-ST-0 DA-NO-ST-R.               C98970
52380      MOVE DA-NO-FN-T          TO  DA-NO-FN-0 DA-NO-FN-R.               C98970
52385  AGE-CALC.                                                             C98970
52390      MOVE ZERO TO AGE-STRT-0 DURATION-DA-0.                            C98970
52410      IF ACCPT-DA-0   EQUAL ZERO  GO TO DURA-DA-CALC.                   C98970
52420      IF YR-STRT-R    EQUAL ZERO  GO TO DURA-DA-CALC.                   C98970
52430      COMPUTE AGE-STRT-0 > (DA-NO-ST-0 - ACCPT-DA-0) / 7.               C98970
52440  DURA-DA-CALC.                                                         C98970
52450      IF YR-STRT-R    EQUAL ZERO  GO TO READ-NEXT-IRAN-EVENT.           C98970
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52460      IF YR-DONE-R    EQUAL ZERO  GO TO READ-NEXT-IRAN-EVENT.          C98970
52470      COMPUTE DURATION-DA-O > DA-NO-FN-O - DA-NO-ST-O.                C98970
52500  READ-NEXT-IRAN-EVENT.                                              C98970
52510      READ FILEEVENT INTO FILEEVENT-IRAN-WORK2                        C98970
52520           AT END GO TO LAST-I-150.                                   C98970
52525      ADD 1 TO RECORDS-READ.                                          C98970
52530      GO TO NEXT-VISIT-160.                                           C98970
52540  LAST-I-150.                                                         C98970
52550      MOVE :I: TO LAST-1.                                             C98970
52560  NEXT-VISIT-160.                                                     C98970
52570      ADD 1 TO VISIT-O.                                               C98970
52580      IF LAST-1  EQUAL ZERO MOVE TYPE-CODE-2 TO TYPE-CODE-NXT-O.      C98970
52600  DAY-NOS-AND-FLIGHT-HRS.                                             C98970
52610      PERFORM DAY-NUMBERS THRU DAY-NUMBERS-END.                       C98970
52620      COMPUTE SERIAL-O > SER-I-2-2 * 1000000 < SER-3-6-2.             C98970
52630      IF SERIAL-O EQUAL SERIAL-O GO TO SER-SAME-180.                  C98970
52640  NEW-SERIAL-170-SAVE-NULL-OUTP.                                      C98970
52650      MOVE     TYPE-CODE-NXT-O   TO TYPE-CODE-NXT-S.                  C98970
52660      MOVE     OA-NO-ST-NXT-O    TO OA-NO-ST-NXT-S.                   C98970
52670      MOVE     OA-NO-FN-O        TO OA-NO-FN-S.                       C98970
52680      MOVE     FL-HRS-C-NXT-O    TO FL-HRS-C-NXT-S.                   C98970
52690  END-FILE-MOVES-175.                                                 C98970
52700      MOVE ZERO TO TYPE-CODE-NXT-O  DA-NO-ST-NXT-O.                   C98970
52710      MOVE ZERO TO TYPE-CODE-NXT-R  OA-NO-ST-NXT-R.                   C98970
52720      MOVE ZERO TO FL-HRS-C-NXT-O   FL-HRS-C-NXT-R.                   C98970
52730      MOVE ZERO TO INTERVAL-DA-O    INT-FL-HRS-O.                     C98970
52740      MOVE ZERO TO INTERVAL-DA-R    INT-FL-HRS-R.                     C98970
52750      MOVE ZERO TO INTERVAL-WK-R.                                     C98970
52760      MOVE ZERO TO INTERVAL-WK-O.                                     C98970
52770      MOVE :I: TO IFLAG.                                              C98970
52775      IF LAST-I EQUAL :I: GO TO LAST-OUTPUT-195.                      C98970
52780      GO TO WRITE-OUTPUT-190.                                         C98970
52800  SER-SAME-180.                                                       C98970
52810      MOVE ZEROS TO INTERVAL-DA-O.                                    C98970
52820      MOVE ZEROS TO INTERVAL-WK-O  INT-FL-HRS-O.                      C98970
52830      IF YR-STRT-2 EQUAL ZERO GO TO CALC-INTERVAL-WK.                 C98970
52840      IF YR-DONE-R EQUAL ZERO GO TO CALC-INTERVAL-WK.                 C98970
52850  CALC-INTERVAL-DAY.                                                  C98970
52860      COMPUTE INTERVAL-DA-O  >  DA-NO-ST-NXT-O - DA-NO-FN-O.          C98970
52870  CALC-INTERVAL-WK.                                                   C98970
52880      IF INTERVAL-DA-O  IS NOT GREATER THAN ZERO                      C98970
52890           GO TO CALC-INT-FL-HRS.                                     C98970
52900      COMPUTE  INTERVAL-WK-O >  INTERVAL-DA-O  * 7 / 10.              C98970
52910  CALC-INT-FL-HRS.                                                    C98970
52920      IF FL-HRS-C-NXT-O IS GREATER THAN ZERO GO TO TEST-2.            C98970
52930           GO TO WRITE-OUTPUT-190.                                    C98970
52940  TEST-2.                                                             C98970
52950      IF FL-HRS-C-O IS GREATER THAN ZERO GO TO CALC-INTERVAL.         C98970
52960           GO TO WRITE-OUTPUT-190.                                    C98970
52970  CALC-INTERVAL.                                                      C98970
52980      COMPUTE INT-FL-HRS-O > FL-HRS-C-NXT-O - FL-HRS-C-O.             C98970
53000  WRITE-OUTPUT-190.                                                   C98970
53090      IF LAST-I EQUAL :I: GO TO END-FILE-MOVES-175.                   C98970
53095  LAST-OUTPUT-195.                                                    C98970
53100      MOVE VISIT-O             TO  VISIT-R.                           C98970
53110      MOVE AGE-STRT-O          TO  AGE-STRT-R.                        C98970
53120      MOVE DURATION-DA-O       TO  DURATION-DA-R.                     C98970
53130      MOVE TYPE-CODE-NXT-O     TO  TYPE-CODE-NXT-R.                   C98970
53140      MOVE FL-HRS-C-NXT-O      TO  FL-HRS-C-NXT-R.                    C98970
53150      MOVE DA-NO-ST-NXT-O      TO  DA-NO-ST-NXT-R.                    C98970
53160      MOVE INTERVAL-DA-O       TO  INTERVAL-DA-R.                     C98970
53170      MOVE INTERVAL-WK-O       TO  INTERVAL-WK-R.                     C98970
53180      MOVE INT-FL-HRS-O        TO  INT-FL-HRS-R.                      C98970
53500      WRITE IRANOUT-PRE     FROM  IRAN-OUT-WORKO.                     C98970
53510      WRITE IRANREPORT-PRE  FROM  IRANREPORT-WORKR.                   C98970
53520      ADD 1 TO RECORDS-PASS.                                          C98970
53530      IF LAST-1 EQUAL :I: GO TO END-FILE-2-240.                       C98970
53540      ADD 1 TO LINE-CNT.                                              C98970
53550      IF IFLAG EQUAL ZERO                                             C98970
53560      GO TO REPEAT-SAME-SER-SAVE-PRIOR-140.                           C98970
53570      IF LINE-CNT IS LESS THAN 50 GO TO PRINT-BLANK-LINE-220.         C98970
53580  NEW-PAGE.                                                           C98970
53590      PERFORM TITLE-S THRU TITLE-S-END.                               C98970
53600          MOVE ZERO TO LINE-CNT.                                      C98970
53610      GO TO NEW-SERIAL-70.                                            C98970
53620  PRINT-BLANK-LINE-220.                                               C98970
53630      WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-O.                   C98970
53640      ADD 1 TO LINE-CNT.                                              C98970
53645      ADD 1 TO SPACE-CNT.                                             C98970
53650      GO TO NEW-SERIAL-70.                                            C98970
53660  END-FILE-2-240.                                                     C98970
62000  BLOCK-CHECK.                                                        C98970
62010      COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 30) * 30).      C98970
62020      IF KOUNT EQUAL ZERO GO TO BLOCK-CHECK-2.                        C98970
62040  LOOP3.                                                              C98970
62050      WRITE IRANOUT-PRE FROM NINE.                                    C98970
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62060       ADD 1 TO KOUNT.                                                  C98970
62070       IF KOUNT IS LESS THAN 30 GO TO LOOP3.                            C98970
62100   BLOCK-CHECK-2.                                                       C98970
62110       COMPUTE LINES-OUT > 4 + PAGE-CNT < RECORDS-PASS < SPACE-CNT.     C98970
62115       COMPUTE KNT  >  LINES-OUT - ((LINES-OUT / 25) * 25).             C98970
62120       IF KNT  EQUAL ZERO GO TO CLOSE-FILES.                            C98970
62130   LOOP4.                                                               C98970
62140       WRITE IRANREPORT-PRE FROM IRANREPORT-TITLE-D.                    C98970
62150       ADD 1 TO KNT.                                                    C98970
62160       IF KNT  IS LESS THAN 25 GO TO LOOP4.                             C98970
62170       GO TO CLOSE-FILES.                                               C98970
63900   EOF-FIRST-EVENT.                                                     C98970
63910       DISPLAY : NO EVENTS : UPON CONSOLE.                              C98970
64000   CLOSE-FILES.                                                         C98970
64010           CLOSE FILEACCPT     WITH LOCK.                               C98970
64020           CLOSE FILEEVENT     WITH LOCK.                               C98970
64030           CLOSE IRANOUT       WITH LOCK.                               C98970
64040           CLOSE IRANREPORT    WITH LOCK.                               C98970
64100       DISPLAY : ACCEPT IN : RCDS-ACCEPT   UPON CONSOLE.                C98970
64110       DISPLAY : EVENT  IN : RECORDS-READ  UPON CONSOLE.                C98970
64120       DISPLAY : IRAN  OUT : RECORDS-PASS  UPON CONSOLE.                C98970
64140       DISPLAY : EOJ C9897 : UPON CONSOLE.                              C98970
64150       GOBACK.                                                          C98970
/*      PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
TFG  TU14     11  001Z080
57 230A  091064 111664     834.7  1065                        01       29 66
57 230A  100465 110965    1041.1  2066                        01       88 74
57 230A  100768 122468    1924.8  1068                        01 4245 124 35
57 231A  092864 120164     920.5  1065                        01       79 63
57 231A  101465 111765    1189.1  2066                        01       88 33
57 231A  112068 030669    2004.7  1069                        01 4507 128 79
570231A  042071           2680.0  10
57 232A  111565 011766     989.6  2066                        02       90 52
57 232A  112067 022168    1478.7  1068                        02      114 92
57 232A  021670 032970    2036.6  1070                        02 4140 140 73
57 235A  070665 080665    1002.3  2066                        03       85 30
57 235A  072666 091966    1211.0  3066                        03       96 63
57 235A  100266 123066    1233.1  2066                        03 3676 100 88
57 235A  032169 052969    1749.3  1069          1111          03 4463 129 67
57 236A  120965 012266    1307.4  2066                        04       88 43
57 236A  110267 011868    1798.8  1068                        04 4117 112 76
57 236A  012270 032570    1292.9  1070                        04 3906 126 33
57 237A  113065 012066    1128.6  2066                        04       88 58
57 237A  110467 021468    1548.1  1068                        04 4110 113 69
57 237A  103069 011270    2106.0  1070                        04 4145 136 72
57 241A  031565 042165    1134.6  2065                        05       90 37
57 241A  061466 080366    1521.5  3067                        05      105 50
57 241A  112466 012767    1593.7  1067                        05 4022 124 63
57 241A  111968 020369    2047.8  1069                        05 4878 136 74
570241A  042271           2650.4  10
57 243A  012165 022865    1034.0  2065                        05       78 37
57 243A  022366 040166    1198.1  3066                        05       90 38
57 243A  011968 040360    1681.2  1068                        05 4334 126 79
57 243A  032670 060170    2251.8  1070        11   11         05 4394 150 65
57 244A  120665 012866    1332.4  6265                        04       97 55
57 244A  121366 022867    1552.1  1067                        04 3173 110 75
57 244A  031169 050769    2147.9  1069                        04 4507 138 65
57 245A  111765 010566    1083.5  2066                        02      100 50
57 245A  042268 071168    1698.0  1068                        02 3966 129 73
570245A  071070 091670    2217.2  10                             6898
57 246A  112764 022865            1065                        08       93
57 246A  092666 110866            6267                        08       33
57 246A  080768 101068    1856.2  1069                        08 4345 127 65
570246A  102170 011371    2333.1  10                             6770
572453A  071564 090964            1065                        09       78 54
572453A  123064 021565            2066                        09       93 46
572453A  041766 052366    1159.7  3067                        09      105 36
572453A  111667 021468    1554.5  1068                        09 4564 117 58
572453A  020570 051070    1999.9  6370                        09 4433 132 65
572455A  122964 020765            2065                        08       69 39
572455A  041966 052666    1246.8  6366                        08       85 37
572455A  103166 021367    1395.8  1067                        08 4647  94107
572455A  052069 090369    1854.0  1068                        08 5255 124 43
572456A  121064 020665            2065                        09       66 56
572456A  042766 060366    1470.6  6366                        09       85 36
572456A  050267 053067    1670.6  1067                        09 4229  96 29
572456A  063069 090869    2149.4  1068                        09 5051 112 69
572457A  010665 020165            2065                        09          35
572457A  042166 052766            6366                        09          36
572457A  011067 042567            1067                        09         125
572457A  121168 022769            1069                        09          76
572458A  051765 061565    1069.0  2065                        09       76 30
572458A  052366 071166    1426.0  6366                        09       88 48
572458A  041967 063067    1625.9  1067                        09 3874 100 71
572458A  071769 092469    2143.4  1070                        09 4341 125 67
572459A  120164 012465            2065                        09       66 84
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572459A	042766	061366	1277.3	6367	09		74	47
572459A	102067	011168	1526.3	1068	09	4079	102	81
572459A	121169	021970	2032.6	1070	09	4081	121	69
572460A	061265	071565		2065	09			33
572460A	080866	120066		1067	09			142
572460A	112268	022469	1654.0	1069	09	4995	118	92
572460A	040671		2248.8	10				
572461A	110964	012765	1059.3	1065	09		68	78
572461A	051266	062266	1475.6	1066	09		85	40
572461A	092368	121068	2077.3	6369	09	4363	112	76
572461A	020871	041571	2667.1	10		6919		
572463A	050565	060265	1371.0	2065	09		61	28
572463A	052566	072566	1663.0	6367	09		86	21
572463A	022767	050467	1818.0	1067	09	3696	97	67
572463A	050669	071169	2263.7	1069	09	4430	121	65
572464A	042865	052065	1242.3	2065	09		72	30
572464A	051366	060166	1451.3	6366	09		84	18
572464A	120767	022968	1770.4	1068	09	4157	102	81
572464A	020670	041870	2261.4	1070	09	4165	126	67
572465A	060664	081864	505.6	1065	10		61	73
572465A	090265	101165	719.3	6366	10		74	37
572465A	071966	083166	895.9	3067	10		88	42
572465A	070868	092068	1201.1	1068	10	3820	110	71
572466A	120164	012465		2065	08		66	54
572466A	042766	060366	1382.7	6366	08		88	36
572466A	113066	022467	1587.3	1067	08	3778	81	84
572466A	031369	052169	2002.4	1069	08	5240	121	67
572466A	052771		2529.8	10				
572467A	121664	012865		2065	08		66	42
572467A	041566	051766	1363.7	3066	08		81	32
572467A	090968	122868	1905.2	1069	08	4946	113	78
572467A	010571	031571	2494.0	10		6936		
572469A	122164	020965		2065	08	4143		48
572469A	042966	061366		6366	08			45
572469A	021667	032767		1067	08			71
572470A	061764	083164		1064	08		51	56
572470A	122164	020665		2065	08		65	45
572470A	050266	060666	1467.1	6366	08		81	34
572470A	082167	120667	1703.1	1067	08	5339	98	105
572470A	080669	102069	2073.1	1070	08		122	74
572472A	091964	121064		1064	08			51
572472A	042166	052666		6366	08			35
572472A	040368	061768		1068	08			74
572473A	120764	012465		2065	08		67	47
572473A	050266	062266	1533.5	6366	08		85	50
572473A	052867	083067	1743.8	1067	08	5773	96	92
572473A	082269	102969	2116.4	1070	08	4674	120	67
572475A	081264	110364		1065	08			81
572475A	010465	020565		2065	08			31
572475A	041566	052766	1491.3	6366	08			42
572475A	050968	072368	1925.5	1068	08	4081		74
572475A	071670	092370	2458.4	10		6431		
572476A	010465	020465		2065	08			38
572476A	042266	060666		6366	08			44
572476A	032668	060668	1892.6	1068	08	3477		70
572476A	012870	041070	2222.9	1070	08	4351		72
572477A	121864	020965		2065	08			51
572477A	042166	060366	1451.6	6366	08		84	42
572477A	090566	120366	1506.3	1067	08	4060	86	88
572477A	122168	030769	1925.4	1069	08	4252	114	76
572478A	030163	121063	885.1	1164	09		53	280
572478A	051065	061165	1358.4	2065	09		70	31
572478A	052466	062966	1628.1	6366	09		82	35
572478A	021268	042468	2040.6	1068	09	3896	104	72
572478A	030370	050870	2484.0	1070	09	4600	129	65
572480A	101664	121464	1010.9	1065	09	3476	66	58
572480A	050365	052865	1155.8	2065	09		70	25
572480A	051166	062766	1399.2	6366	09		82	46
572480A	071268	091868	1948.4	1069	09	4697	109	66
572480A	090970	112470	2415.9	10		7262		
572481A	081764	110364		1065	09			76
572481A	042965	052765		2065	09			28
572481A	051066	062066		6366	09			40
572481A	041968	070868		1068	09	3389		79
572481A	070670	090870	2491.5	10		6940		
572482A	051965	061865	1433.6	2065	09		70	30
572482A	050666	060166	1696.1	6366	09		82	24
572482A	110967	012368	2032.5	1068	09	4215	101	74
572482A	010870	031770	2515.9	1070	09		127	39
572483A	050465	060165	1418.0	2065	09		70	27
572483A	051366	062066	1663.2	6366	09		82	37
572483A	100266	011067	1738.4	1067	09	3818	88	91
572483A	102568	011369	2219.4	1069	09	4868	112	78
572483A	061571		2817.0	10				
572485A	051165	061065	1406.0	2065	09		69	30
572485A	051866	062766	1707.3	6366	09		81	39

572495A	010567	032567	1791.8	1067			09	3438	90	80		
572495A	022069	043069	2270.7	1069			09		115	70		
572496A	091864	112764		1065			09			69		
572496A	042765	052465		2065			09			27		
572496A	052066	062766		6366			09			37		
572496A	021968	043068		1068			09	3988		71		
572496A	031770			1070			09	4766				
572497A	051365	061065	1309.9	2065			09		69	27		
572497A	050566	062266	1530.3	6366			09		81	47		
572497A	050967	072567	1777.3	1067			09	4987	93	74		
572497A	091269	111969	2291.1	1070			09	4269	122	97		
572490A	051465	061465	1180.0	2065		1	09		69	30		
572490A	052666	071366	1452.3	6366		1	09		81	47		
572490A	051867	072967	1717.5	1067		1	09	3979	93	71		
572490A	092469	120269	2217.7	1070		1	09	5171	121	86		
572491A	042665	060865	917.3	2065			09		69	42		
572491A	052666	061166	1227.2	6366			09		81	45		
572491A	080167	102367	1495.0	1068			09	4081	97	83		
572491A	112469	021070	2018.5	1070			09	3954	124	76		
572492A	042064	071564		1064			09			85		
572492A	050765	081165		2065			09			34		
572492A	051966	070666		6366			09			47		
572492A	050868	071968		1068			09	3726		71		
572493A	061065	071665		2065			08			36		
572493A	092266	012767		6367			08	3535		112		
572493A	020669	041469	1984.3	1069			08	5068	114	68		
572494A	042964	080764		1064			08		57	98		
572494A	052765	062565		2065			08		69	28		
572494A	090266	102266	1517.6	6366			08		86	50		
572494A	091268	112568	2120.1	1069			08	4992	110	73		
572495A	061564	082764		1064			08		58	72		
572495A	060765	070665	1310.8	2065			08		70	30		
572495A	091966	110166	1649.4	6367			08		86	42		
572495A	072468	092768	2082.4	1069			08	3871	108	63		
572495A	081470	102270	2510.6	10				7715				
572496A	052465	062965		2065			11			35		
572496A	090666	101166		6367			11			35		
572496A	112167	021568	1855.8	1068			11	4123		74		
572496A	091869	010770	2348.0	1070			11	4786		99		
572497A	060765	071265		2064			08		71	35		
572497A	090166	101866		6366			08		86	47		
572497A	011267	041367	1422.1	1067			08	3896	89	91		
572497A	030669	052269	1873.1	1069			08	5178	115	76		
572499A	060765	070865	1354.8	2065			08		70	31		
572499A	091366	110266	1397.4	6366			08		78	49		
572499A	040467	061667	1513.4	1067			08	3517	93	72		
572499A	070969	100369	1967.2	1070			08	5792	117	84		
572500A	052665	062865		2065			08			32		
572500A	091266	101466		6367			08			32		
572500A	121366	022567	1591.2	1067			08	3221		72		
572500A	051469	080169	2079.8	1069			08	5364		77		
572501A	062764	103164		1065			08		58	64		
572501A	052065	061765		2065			08		68	27		
572501A	092666	110866		6366			08		84	43		
572501A	123068	032069	1371.3	1069			08	4984	124	81		
572501A	032571		2489.8	10								
572502A	093064	113064		1065			08		61	60		
572502A	052465	061865		2065			08		67	24		
572502A	082566	100666		6367			08		69	41		
572502A	101568	122768	2089.0	1069			08	2089	105	72		
572503A	061465	071465	1122.6	2066			08		69	30		
572503A	091566	102266	1416.7	6367			08		84	37		
572503A	061267	083167	1584.2	1067			08	5651	104	78		
572503A	072969	102169	2004.4	1070			08	5461	127	83		
572504A	060265	070265		2065			08		70	30		
572504A	091666	102166	1518.0	6366			08		84	35		
572504A	012368	040168	1838.9	1068			08	4493	112	38		
572504A	120369	022270	2211.1	1070			08	4879	125	76		
572505A	052665	063065		2065			08		69	34		
572505A	083066	101366	1521.8	6367			08		82	44		
572505A	011268	040568	1847.8	1068			08	4380	100	83		
572505A	121069	022270	2786.3	1070			08	4140	124	72		
572506A	053065	063065		2065		1	08		70	30		
572506A	090866	102666	1717.4	6367		1	08		85	48		
572506A	050468	072468	2058.2	1068		1	08	3895	105	80		
572506A	060570			1070		1	08					
572508B	071965	090265	191.5	2066			12		69	43		
572508B	012867	050367	1356.0	1067			12		76	96		
572508B	090269	011970	2009.8	1069			12	4865	120	137		
572509B	102764	123064	393.1	1065			13		76	64		
572509B	030866	041566	1308.1	6366			13		93	37		
572509B	010268	033168	1799.1	1068			14	4228	114	89		
572509B	021170	050570	2389.5	1070			14	5674	141	84		
572510B	082365	101265	1108.1	2066			12		82	49		
572510B	051368	080168	1859.9	1068			12		116	78		
572510B	083170	112370	2404.1	10				8288				
572512B	071265	090265	352.9	2065			13		78	50		

572512B	011267	042767	1260.2	1067			13		97105	
572512B	061669	092369	1832.4	1069			13	6353	127	97
572514B	102865	122365	1082.7	6266			02		72	55
572514B	120566	030467	1363.1	1067			02		85	89
572514B	040269	061869	1933.1	1069			02	4808	126	76
572515B	101264	123064	840.1	1065			15		57	79
572515B	040665	051765	940.0	2065			15		62	41
572515B	031566	042966	1112.6	6366			15		74	44
572515B	032668	062668	1660.6	1068			15	4546	110	88
572515B	071470	092570	2347.6	10				7633		
572517B	111864	012865		1065			08		70	70
572517B	060265	071265	755.2	2065			08			40
572517B	082266	102166	1051.4	6367			08		88	60
572517B	061868	091368	1435.1	1069			08	4118	109	85
572517B	100170	122670	1907.1	10				8673		
572518B	042365	061865	847.0	2065			09		68	55
572518B	051766	090866	1027.5	6367			09		81	111
572518B	073166	100868	1529.3	1069			09	4867	106	69
572518B	111870	021671	2111.8	10				8505		
572520B	051265	063065	1220.1	2065			09		70	48
572520B	050466	070166	1417.1	6366			09		81	57
572520B	103166	031667	1996.5	1067			09		88	137
572520B	020469	043069	1951.5	1069			09	5341	115	84
572520B	040271		2281.8	10						
572521B	012066	040466	910.9	2066			12		79	
572521B	100468	011069	1726.1	1069			12	5160	112	96
572521B	012270		1418.1	1070		1	12			
572522B	052465	070865	861.0	2065			08		70	44
572522B	083066	110166	1469.7	6367			08		86	62
572522B	040567	063067	1309.2	1067			08		94	85
572522B	041669	071769	1693.0	1069			08	5790	117	91
572522B	060371		2080.2	10						
572524B	072364	093064	783.1	1065			08		60	67
572524B	061565	080665	1015.0	2065			08		72	51
572524B	092166	112166	1340.8	6367			08		79	60
572524B	021268	051668	1361.2	1068			08	4611	113	96
572524B	042870			1070			08		129	
572526B	060364	083164		1064			08			58
572526B	042965	062465		6265			08			56
572526B	050666	071566		3066			08			69
572527B	043064	070664		1064			12		57	67
572527B	121464	022365		6165			12		66	69
572527B	041166	052366	1285.7	6366			12		81	42
572527B	113068	022769	1986.9	1069			12	6086	112	88
572527B	031771		2278.3	10						
572528B	110364	022865		1065			12		57	115
572528B	041866	061366	919.4	6366			12		81	55
572528B	111368	020769	1314.4	1068			12	6502	110	84
572528B	010471	032371	1704.6	10				7321		
572530B	021563	122063	586.0	1163			12		42	305
572530B	070665	103065	775.3	1066			12		66	114
572530B	032167	071967	1080.7	1067			12		90	128
572530B	120169	022370	1561.6	1070			12	6091	124	83
572531B	123064	022865		6265			12			59
572532B	071665	090765	741.8	6266			12		68	51
572532B	063066	112968	1747.3	1069			12		105	90
572533B	092264	113064	698.0	1065			03		57	68
572533B	083065	101265	1057.0	2066			03		69	44
572533B	080266	092366	1339.9	6367			03		81	52
572533B	062066	103168	1545.4	1069			03	4786		70
572533B	101470	010671	2140.8	10				7972		
572535B	040364	072464	751.2	2064			03		52	111
572535B	072265	100465	1034.5	2066			03		64	42
572535B	062766	081066	1389.7	6366			03		78	43
572535B	093067	010268	1700.3	1068			03	5121	93	93
572535B	102069	011970	2126.5	1070			03	6146	118	89
572536B	060165	080365	863.9	6266		-	12		69	32
572536B	031769	112169	1062.2	1069			12		112	244
572537B	072665	091765	852.3	2065			12		68	82
572537B	062766	091968	1086.0	1068			12		102	51
572537B	103070	020571	1884.8	10				8800		
572538B	070165	080365	1003.7	6266			12		67	34
572538B	092366	011367	1279.1	1067			12		81	110
572538B	030369	052969	1809.1	1069			12	6217	112	86
572538B	050371		2397.2	10						
572539B	080665	092865	1065.3	6266			12		68	52
572539B	042067	070567	1751.0	1067			12		88	75
572539B	111869	021170	2109.6	1070			12	5666	118	83
572540B	080265	090765	1033.3	6266			12		68	36
572540B	062367	092867	1481.1	1067			12		90	95
572540B	122969	033070	2059.8	1070			12	4721	120	82
572541B	081965	100865	1089.5	6266			12		68	49
572541B	121467	032368	1625.0	1068			12	6160	96	99
572541B	051570			1070			12		125	
572543B	060965	090365		6266			12			26
572543B	101367	021568		1068			12	5699		122
572543B	040670			1070			12			

572544B	070264	091864	847.0	1065			12		54			
572544B	081265	100565	1101.4	6266			12		67			
572544B	081568	110768	1073.7	1068			12	5608	103			
572545B	073164	102164	1038.8	1065			04		54	82		
572545B	111365	010766	1549.5	6266			04		70	54		
572545B	050168	072268	2190.2	1068		1	04	4084	88	83		
572545B	061570			1070		1	04		124			
572546B	101465	121065		2066			12		66			
572546B	013168	042468	1734.3	1068			12	4643	92	85		
572546B	060270			1070			12		122			
572547B	081965	100865	697.0	6266			12		66	49		
572547B	102167	120667	1281.2	1066			12		78	45		
572547B	070269	082569	1813.6	1066			12	6192	112	83		
58 759A	102364	010965		1065			12			76		
58 759A	062665	073065		6165			12			34		
58 759A	080566	091966		6367			12			44		
58 760A	082665	100165	1205.7	2066			10		69	35		
58 760A	072766	091366	1358.9	6367			10	4032	81	46		
58 760A	051567	073167	1524.9	1068			10		92	76		
580760A	072670	092970	2417.8	10				6741				
58 764A	062465	072865	1121.9	2065			05		69	34		
58 764A	081966	092866	1402.8	6367			05		84	39		
58 764A	100768	121368	1981.0	1067			05	4117	109	66		
580764A	021771	042371	2381.6	10								
58 765A	061865	071765	1278.8	2065			05		69	30		
58 765A	111066	022167	1021.5	1067			05		82	101		
58 765A	100268	121668	2014.7	1069			05	4313	109	74		
580765A	081870	113070	2555.5	10				7073				
58 766A	091465	101865	1031.8	2066			10		72	34		
58 766A	081166	092366	1302.2	6367			10		81	42		
58 766A	092368	112368	1748.1	1069			10	4236	108	60		
580766A	031071	051071	2381.7	10								
58 767A	062165	071765	963.8	2066			10		69	26		
58 767A	081666	092966	1271.1	6367			10		82	43		
58 767A	122066	031767	1271.1	1067			10	3530	88	87		
58 767A	123069	030970	2155.7	1070			10	4028	124	70		
58 768A	062465	072265		2065			10			28		
58 768A	072766	091366		6367			10			46		
58 768A	020468	041968		1068			10			73		
58 769A	091464	111864		1065			10			64		
58 769A	062665	073065		6165			10			32		
58 772A	062265	072265	1161.1	2065			10		69	30		
58 772A	071366	081766	1449.1	6367			10		81	34		
58 772A	030767	051767	1604.3	1067			10	3484	90	70		
58 772A	122969	030470	2243.6	1070			10	4005	124	36		
58 773A	070265	080665		2066			10			34		
58 773A	081966	100366		6367			10			71		
58 773A	121167	022768		1068			10			76		
58 773A	051970			1070			10					
58 774A	081665	092165	1188.0	2066			10		70	35		
58 774A	081166	092766	1395.9	6367			10		82	46		
58 774A	031467	053167	1510.0	1067			10	3252	91	76		
58 774A	011670	032370	2271.2	1070			10	4281	124	67		
58 775A	060164	092364	842.0	1064			03		57	83		
58 775A	070865	080565	1039.1	6166			03		69	27		
58 775A	072966	091366	1272.8	6367			03		105	45		
58 775A	112668	021869	1742.7	1069			03	4243	110	82		
58 776A	060965	080965	917.1	2065			07		69	30		
58 776A	080566	091466	1106.6	6367			07		82	39		
50 776A	100366	010667	1329.3	1067			07	3266	86	93		
58 776A	092368	102168	1407.8	1069			07	3908	108	28		
58 777A	090965	101665	1013.4	2066			03		70	37		
58 777A	081766	092766	1214.9	6367			03		81	40		
58 777A	031568	052868	1515.2	1068			03	3992	113	73		
58 777A	041370	062270	1940.3	1070			03	5226		69		
58 778A	072665	090365	866.0	2066			12		69	37		
58 778A	021869	050669	1065.9	1069			12	5211	112	78		
580778A	052171		1719.9	10								
58 779A	072665	082565	1131.0	2066			03		68	29		
58 779A	070166	080966	1296.2	6367			03		80	37		
58 779A	050267	072867	1563.7	1067			03	4447	91	86		
58 779A	012070	032670	2114.6	1070			03	4331	124	66		
58 780A	090265	100565	883.6	2066			03		69	33		
58 780A	072066	082266	1073.8	6367			03		80	32		
58 780A	122067	031468	1507.5	1068			03		97	84		
58 780A	052170			1070			03					
58 781A	091765	101865	1043.5	2066			03		72	31		
58 781A	081066	091666	1217.6	6367			03		82	36		
58 781A	112566	022167	1242.0	1067			03	3205	85	86		
58 781A	052869	080669	1518.4	1069			03	5126	116	68		
58 782A	082065	092965	956.1	1066			03		69	39		
58 782A	070766	081166	1108.6	6367			03		81	34		
58 782A	121666	022767	1201.9	1067			03	3118	86	71		
58 782A	040869	062369	1558.2	1069			03	5257	114	75		
58 783A	080165	091565	651.1	2066			10		69	46		
58 783A	041768	062068	1393.5	1068			10	4322	102			

580783A	100870	122870	2068.2	10						6736		
58 784A	072265	082685	1126.1	2066					10		69	34
58 784A	071268	081666	1323.8	3067					10		81	34
58 784A	101168	122468	1813.7	1069		11			10	4165	108	73
580784A	030571	050771	2302.7	10								
58 785A	080665	092185	716.3	6266					02		69	45
58 785A	031467	060567	1046.5	1067					02	3633	89	79
58 785A	072269	101069	1553.2	1070					02	4965	117	78
58 786A	032765	060965	738.0	2065		11			10			
58 786A	032267	052687	1188.4	1067					10	3550	89	64
58 786A	102869	011570	1756.1	1070					10	4628	120	77
58 787A	080565	091165		2066					10			35
58 787A	080266	092166		6367					10			49
58 787A	030168	051668		1068					10			76
58 788A	100864	122664	784.6	1065					10		60	78
580788A	072765	090165	1613.1	2065					10		69	35
580788A	071866	090166	1228.2	8367					10		81	44
580788A	080268	100768	1618.6	1069		11			10	2930	105	65
580788A	122070	030571	2185.7	10						6856		
58 789A	110264	122284		1065					10			50
58 789A	060665	071865		6265					10			40
58 790A	070764	091864	743.1	1065					10		58	71
58 790A	080965	091165	1093.5	2066					10		69	32
58 790A	070866	082466	1234.2	6367					10		81	46
58 790A	053168	081268	1639.5	1069					10		103	73
580790A	080570	100870	2070.7	10						7300		
58 791A	072065	082185	1280.5	2066					10		69	31
58 791A	072266	082668	1485.0	8367					10		81	34
58 791A	072167	101167	1687.8	1068					10	4611	94	80
58 791A	012270	052770	2174.0	1070		1111			10	3959	124	65
58 792A	040164	070764	854.7	1064					05		54	67
58 792A	022565	032585	1096.0	2065					05		64	30
58 792A	060768	072066	1524.5	6366					05		81	43
58 792A	040768	061968	1937.8	1068					05	3811	104	72
58 792A	051170			1070					05			
58 793A	082965	073065	1167.3	2066					10		68	32
58 793A	070766	081766	1362.5	6367					10		80	40
58 793A	010368	031568	1610.0	1068					10	4230	100	72
58 797A	071665	081365	1255.7	2066					03		69	27
58 797A	072666	090686	1481.1	6367					03		81	41
58 797A	010567	040567	1543.5	1067					03	3396	86	90
58 797A	080069	102169	2054.9	1070		11			03	4738	117	73
58 798A	041365	101265		6166					03			29
58 900B	070164	080364	658.8	1065					12		52	33
58 900B	101265	120965	912.7	6266					12		67	57
58 900B	091968	121868	1676.3	1069					12	6308	105	90
580900B	112770	021771	2232.3	10						6947		
58 901B	113085	012866	1620.5	6266					04		68	59
58 901B	100766	011967	1833.2	1067					04		80	102
58 901B	121368	031989	2384.2	1069					04	5390	117	96
580902B	040165	060365	916.3	2065					12		60	
58 902B	053168	082768	1510.1	1068					12	3930	96	88
580902B	030171		1914.1	10								
58 903B	110665	010666	1211.5	8266					12		65	60
58 903B	071867	110387	1556.3	1068					12	6703	85	105
58 903B	022670	052870	2138.5	1070					12	5901	116	92
58 904B	111965	011066	1032.8	6266					12		65	51
580904B	091467	011868	1467.8	1068					12	6204	86	124
580904B	011670	040270	2034.6	1070					12	4183	114	76
59 001A	051864	073064		1084					12			72
59 001A	120165	011386		2066					12			44
59 002A	062464	090964	594.1	1064					04		54	55
59 002A	111965	123185	1041.2	6266					04		72	42
59 002A	072368	100188	1876.1	1069					04	3812	103	68
590002A	111770	012871	2434.5	10						7586		
59 003A	121465	012686	1528.7	2066					04		73	42
59 003A	013167	041367	1817.4	1067					04	3685	85	73
59 003A	060469	081189	2381.3	1069					04	4584	114	67
59 004A	121465	011286	1411.4	8266					12		73	42
59 004A	082268	102588	2034.2	1069					12	4113	105	63
590004A	121470	021971	2814.6	10						6860		
59 005A	112265	010366	1443.3	6266					04		73	42
59 005A	051567	081867	1838.7	1087					04	4504	90	93
59 005A	081469	103169	2334.6	1070					04	4367	117	77
59 006A	112665	011266	1037.7	8266					04		70	47
59 006A	081767	112187	1537.2	1068					04	4004	80	94
59 006A	100969	121989	2005.6	1070					04	5479	117	70
59 007A	071965	081865	1216.6	2066					03		66	27
59 007A	081966	100466	1540.7	6367					03		79	45
59 007A	011869	032869	2014.4	1069		11			03	4693	108	70
59 008A	080265	090985	1177.0	2066					03		68	37
59 008A	072066	083186	1376.6	6367					03		78	41
59 008A	010669	031869	1917.9	1069		11			03	4849	108	75
59 009A	020165	030965	1030.1	2065					13		61	39
59 009A	031866	041386	1278.8	6365					13		73	25
59 009A	012369	041169	1715.7	1069					13	4651	108	78
590009A	042071		2266.1	10								

59	010A	100764	120464	993.8	1064			04		58	58
59	010A	120365	011366	1272.9	6266			04		73	40
59	010A	041068	062168	1875.6	1068			04	3993	100	71
59	010A	040270	061070	2432.1	1070			04	4823	121	68
59	011A	071966	100766	1355.1	3067			03		78	78
59	011A	051768	080968	1774.1	1068		11	03	3527	102	82
590011A		091770	112570	2235.0	10				7020		
59	012A	090364	111364	1093.7	1065			04		57	71
59	012A	120865	012766	1453.0	2066			04		72	50
59	012A	062468	091668	2071.1	1068			04	3786	102	82
590012A		090370	111370	2735.7	10				6913		
59	014A	112665	010866		6266			04			35
59	014A	012668	040868		1068			04	3940		72
59	015A	120765	011466	1344.6	6266			04		60	37
59	015A	091466	120766	1507.0	1067			04	3570	80	84
59	015A	010969	032869	2038.5	1069			04	4534	108	77
590015A		062471	083071	2639.2	10						
59	016A	011066	022866	1344.1	6266			10		72	49
59	016A	010367	072567	1607.1	1067			10		84	202
59	016A	030670	051870	2434.0	1070			10	4768	122	72
59	018A	111964	021665	1018.8	1065			04		58	87
59	018A	112365	011466	1297.7	2066			04		70	52
59	018A	102268	123068	2102.4	1069			04	4415	106	69
59	019A	112365	010766		6266			04		70	45
59	019A	030967	051967		1067			04	3278	88	70
59	019A	032569	070969	2374.4	1069			04	4260	112	74
59	020A	081465	092865	1100.9	6266			13			44
59	020A	010868	032868	1649.9	1068			13			80
59	020A	042170			1070						
59	021A	052164	081064	964.2	1064			15		48	80
590021A		032565	042765	1103.2	2065			15		57	32
590021A		040866	051366	1382.5	6366			15		69	35
590021A		080568	111968	1932.1	1069			15	4109	90	104
590021A		022271	050771	2539.5	10						
59	022A	101964	121764		1065			15			58
59	022A	021265	031965		2065			15			37
59	022A	022866	033166		6366			15			32
59	023A	100264	120864	1134.9	1065			02		58	66
59	023A	010666	022466	1148.8	6266			02		72	48
59	023A	092568	121168	2063.0	1068			02	4367	105	77
590023A		032171	061071	2653.8	10						
59	024A	062364	082664		1064			05		54	63
59	024A	052267	103167	1557.4	1067			05		89	99
59	024A	082669	102769	1997.8	1069			05	4449	116	61
59	025A	071465	081165	1101.2	2066			10		66	27
59	025A	072566	083166	1298.1	6366			10		78	36
59	025A	091367	121367	1584.0	1068			10	4322	91	90
59	025A	033070	060470	2247.5	1070			10	4744	124	65
59	026A	041264	062464		1064			04		52	72
59	026A	083065	100565		2065			04		68	36
59	026A	021660	050868	1266.9	1068			04	4038	97	82
59	026A	012370	040270	1736.6	1070			04	4351	120	69
59	027A	071265	081165	1078.4	1066			10		65	30
59	027A	070466	081666	1342.6	6367			10		77	42
59	027A	091868	112768	1958.1	1069			10	4724	104	79
590027A		051671		2707.1	10						
59	028A	091164	112764	919.7	1065			15		56	76
59	028A	032965	042365	1031.1	2065			15		64	24
59	028A	040566	051166	1274.4	6366			15		76	36
59	028A	012969	040869	2003.5	2069			15	4611	108	69
59	030A	120965	011966	1348.3	6266			04		70	41
59	030A	042667	063067	1766.0	1067			04	3650	88	64
59	030A	073169	100669	2347.2	1070			04	4660	102	68
59	031A	110865	122065	1202.1	6266			02		69	42
59	031A	072367	101667	1612.9	1067			02	4552	89	83
59	031A	112069	020270	2141.9	1070			02	3817	117	68
59	032A	092265	102665	1120.5	6266						
59	032A	072968	092768	1854.3	1069			01		68	34
590032A		082670	103070	2449.6	10			01	3949	101	58
59	033A	102665	121565	1160.0	6266				7383		
59	033A	122667	030868	1676.6	1068			02		69	49
59	033A	030970	051470	2237.5	1070			02	4356	94	42
59	034A	092064	112464		1065			02	4351	122	66
59	034A	102565	120165	1107.5	6266			02		54	56
59	034A	102368	010469	1358.6	1069			02		69	37
590034A		052371		1990.7	10			02	4174	105	76
59	035A	100865	110365	1192.6	2066						
59	035A	101868	123068	2130.3	1069			01		68	26
59	036A	110965	122365		6266			01	4708	104	72
59	036A	062967	091867	1495.1	1067			01			44
59	036A	062469	090269	1944.7	1069			01	4527		80
59	037A	082264	102664	954.6	1065			01			69
59	037A	110465	122065	1277.4	6266			02		54	64
59	037A	081660	092368	1967.5	1068			02		69	46
590037A		102670	010871	2583.8	10			02	3819	101	68
59	038A	042864	072364		1064				6802		
								02			85

59	038A	102965	121665		6266					02			48
59	038A	061268	101368		1069					02			61
590	038A	010871	032471	2356.3	10						6455		
59	040A	102565	120165	993.1	6266					02		68	36
59	040A	020768	041968	1540.8	1068					02	4502	96	72
59	040A	050870			1070					02	4369	124	
59	042A	110165	121565	1070.3	6266					10		68	45
59	042A	102469	022770	1648.9	1070					10	6136	116	123
59	043A	110265	121765	972.3	2066					02		69	45
59	043A	030768	052368	1450.0	1068					02	3977	96	76
59	043A	040970	061670	1891.4	1070					02	4836	124	68
59	044A	111265	123065	1047.7	6266					02		68	48
59	044A	020267	041367	1268.9	1067					02	3665	84	69
59	044A	022569	050269	1670.9	1069					02		108	68
59	046A	111065	122365	912.3	6266					02		53	43
59	046A	051167	072567	1306.5	1067					02		68	74
59	046A	090869	111369	1757.6	1070					02		114	66
59	047A	061564	081964	858.4	1064					02	3888	52	65
59	047A	110365	121565	1241.6	6266					02		69	42
59	047A	121768	022769	1953.2	1069					02	4056	106	70
590	047A	062171	083171	2508.6	10								
59	048A	111565	122765	1185.5	6266					02		69	42
59	048A	111566	022067	1437.6	1067					02	4043	81	95
59	048A	050869	071669	1951.4	1069					02	4218	112	68
59	049A	020965	031565		2065					13			36
59	049A	011866	021566	1219.4	6366					13			27
59	049A	031968	052968	1822.3	1068					13			70
59	049A	050570			10					13			
59	051A	052264	073164	854.3	1064					01		52	69
59	051A	012665	022865	942.0	6165					01		57	30
59	051A	013166	030166	1267.9	6366					01		69	68
59	051A	060669	081469	2201.9	1069		111	1		01	5570	112	69
59	052A	020465	022565	1109.3	2065					13		60	21
59	052A	012066	022366	1289.8	6366					13		72	34
59	052A	072667	101767	1613.3	1068					13	3732	90	82
59	052A	111269	012170	2183.2	1070					13	3844	117	70
59	053A	011165	022065	948.1	2065					13		57	39
59	053A	012466	022466	1238.5	6366					13		69	31
59	053A	041267	062667	1593.0	1067					13	3225	84	74
590	053A	091069	121769	2181.6	1070					13	4312	114	68
59	054A	020865	031665		2065					07			38
59	054A	022566	032566	1689.8	6366					07			29
59	054A	102567	010468	1711.5	1068					07	2936	70	70
59	054A	032070	052270	2224.7	1070		1 111	1		07	4379	120	62
59	056A	021865	031965		2065					13		58	29
59	056A	030166	032866		6366					13		70	85
59	056A	110966	020467	1514.1	1067					13	3967	92	85
59	056A	041469	061969	2047.2	1069					13	5160	109	65
59	057A	080564	101664	1043.3	1065					07		54	71
59	057A	020165	030465	1132.2	2065					07		58	32
59	057A	020466	031466	1452.5	6366					07		70	38
59	057A	022769	050969	2136.8	1069					07	4790	108	72
59	058A	072864	100864	1010.4	1065					07		52	70
59	058A	012665	022865	1127.1	2065					07		64	32
59	058A	012166	022366	1374.4	6366					07		76	33
59	058A	021069	052969	2198.1	1069		1			07		106	109
59	059A	070864	092364	1102.4	1065					07		52	77
59	059A	021265	031765		2065					07		58	33
59	059A	012566	030266	1498.8	6366					07		69	36
59	059A	011069	040869	2294.0	1069		11			07	5682	105	89
590	059A	040771		2804.3	10								
59	060A	022065	032665		2065					13		58	34
59	060A	030266	040166	1373.5	6366					13		70	30
59	060A	101167	121967	1845.1	1068					13	3676	90	68
59	060A	112469	020970	2287.3	1070					13	4031	116	77
59	062A	011865	022365	1007.4	2065					13		56	36
59	062A	012766	022866	1331.5	6365					13		68	32
59	062A	032268	060368	1953.1	1068					13	3628	96	71
59	063A	011865	022465	860.3	2065					13		56	37
59	063A	031166	041466	1079.2	6366					13		68	33
59	063A	090666	010367	1200.3	1067					13	3772	89	108
59	063A	033169	060969	1905.7	1069					13	4983	118	70
59	064A	021265	031065		6165					02		58	26
59	064A	030766	040866		6366					02		70	31
59	064A	082067	111467	1253.6	1068					02	4195	88	85
59	064A	121569	030370	1821.0	1070					02	4053	117	77
59	065A	011365	022365	1111.5	2065					02		57	41
59	065A	020266	030266	1357.0	6366					02		69	28
59	065A	020867	041367	1645.8	1067					02	3388	81	33
59	065A	081269	102369	2314.8	1070					02	4647	113	72
59	066A	010865	021865	1063.7	2065					13		57	41
59	066A	020166	030466	1331.6	6365					13		69	32
59	066A	060568	082368	1983.2	1068					13	3457	110	78
590	066A	091470	112270	2520.1	10						6820		
59	067A	040265	051265	1037.4	2065					15		60	40
59	067A	040566	051266	1283.6	6366					15		72	37
59	067A	101166	123066	1390.7	1067					15	3251	77	49
59	067A	021469	042269	1951.6	1069					15		106	68
59	068A	080364	101664		1065					15			74
59	068A	040665	050465		6165					15			28

59 068A	032966	042866		6366	15			30	
59 069A	070964	092364	845.0	1065	15		50	75	
59 069A	040665	051565	1016.1	2065	15		58	39	
59 069A	032466	042866	1230.4	6366	15		69	34	
59 069A	090567	113067	1503.2	1068	15		88	56	
59 069A	111469	012770	1937.3	1070	15	3686	115	74	
59 071A	041265	051165	1025.9	2065	15		60	30	
59 071A	031766	041966	1235.1	6366	15		70	32	
59 071A	041568	062568	1787.6	1068	15		94	71	
59 071A	042070	062970	2273.0	1070	15	4098	120	64	
59 072A	041465	051765	977.1	2065	15		60	33	
59 072A	033066	050666	1155.7	6366	15		69	37	
59 072A	122166	031067	1320.0	1067	15	3327	90	78	
59 072A	041169	061869	1905.1	1069	15		108	68	
59 074A	011363	102663	595.0	1163	15		30	54	
59 074A	042065	051965	992.3	2065	15		57	30	
59 074A	040866	051366	1215.5	6366	15		69	36	
59 074A	111768	013169	1856.6	1069	15		103	75	
590074A	041571		2444.7	10					
59 075A	042165	052465	1097.2	2065	15		57	30	
59 075A	040166	050666	1256.6	6366	15		69	36	
59 075A	011168	032068	1756.5	1068	15	4510	90	70	
59 075A	021270	042270	2264.4	1070	15	3841	116	69	
59 076A	033065	042765	1124.6	2065	15		57	28	
59 076A	031866	042066	1377.1	6366	15		69		
59 076A	030367	051867	1619.3	1067	15	2840	81	75	
59 076A	042269	062769	2131.2	1069	15	4243	117	65	
59 077A	033065	050365	1022.2	2065	15		57	34	
59 077A	033066	042966	1250.0	6366	15		70	31	
59 077A	111366	020367	1425.1	1067	15	3477	90	82	
59 077A	082868	103068	1864.4	1068	15	4088	98	65	
590077A	121070	021771	2470.8	10		6434			
59 078A	040265	050665	1074.7	2065	15		57	35	
59 078A	040166	050566	1324.6	6366	15		69	35	
59 078A	041867	070367	1589.4	1067	15	3637	81	76	
59 078A	062069	082869	2195.7	1070	15	4421	108	69	
59 079A	040665	051165	1055.6	2065	15		57	35	
59 079A	032966	042766	1297.2	6366	15		69	29	
59 079A	070168	091068	1902.9	1069	15		97	71	
590079A	092870	121170	2427.0	10		6884			
59 080A	041265	051165	1072.0	6165	15		57	30	
59 080A	032466	042566	1268.8	6366	15		68	32	
59 080A	061967	090167	1662.4	1067	15	3921	84	73	
59 080A	090469	110669	2227.4	1070	15	4238	112	63	
59 081A	041465	051865	1035.3	2065	15		57	34	
59 081A	032466	042966	1222.1	0366	15		68	32	
59 081A	061768	083068	1880.6	1068	15		96	74	
590081A	081070	101370	2211.3	10		7046			
59 082A	041765	051465	1033.0	2065	15		57	27	
59 082A	032266	042566		6366	15		69	34	
59 082A	080367	102767	1608.7	1068	15	3560	86	86	
59 082A	100769	121869	2126.9	1070	15	5272	113	66	
59 083A	042065	052665	1033.7	2065	15		57	37	
59 083A	031866	042166	1250.9	6366	15		69	33	
59 083A	110867	020868	1692.4	1068	15	3775	89	90	
59 083A	122969	030670	2226.9	1070	15	3552	114	67	
59 084A	012465	032465	1072.0	1065	15		55	59	
59 084A	040866	051366	1389.4	6366	15		69	35	
59 084A	120568	022769	2059.0	1069	15	4646	102	84	
590084A	060771		2614.2	10					
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59 085A	061366	072566	1480.7	6366	05		72	44	
59 085A	031367	062367	1688.4	1067	05	3546	81	101	
59 085A	061269	081869	2116.3	1069	05	4703	108	67	
59 086A	041066	062066		1066	16			62	
59 086A	062768	102568		1068	16			118	
590086A	033071	073071	952.0	10					
59 088A	092065	100665	1335.7	6266	01		62	17	
59 088A	050368	071668	2050.6	1068	01	3435	93	74	
59 088A	052770			1070	01				
59 089A	092165	102365	1338.2	6266	01		62	33	
59 089A	111866	022267	1616.7	1067	01	3478	76	66	
59 089A	030569	051469	2220.9	1069	01	2403	104		
59 090A	100865	111265	1000.5	6266	01		64	35	
59 090A	091867	121467	1581.1	1068	01	3756	86	87	
59 090A	093069	120469	2182.1	1070	01	4879	110	66	
59 091A	100565	111067	1122.4	2066	01		64	35	
59 091A	113066	021967	1385.7	1067	01		76	82	
59 091A	010269	031269	1984.5	1069	01	4156	102	69	
590091A	061471		2630.5	10					
59 092A	093065	110565	1318.4	6266	01		62	37	
59 092A	011967	040467	1549.6	1067	01	3364	78	75	
59 092A	031969	052669	2154.3	1069	01	4341	104	38	
59 093A	101165	111665	1282.5	6266	01		62	35	
59 093A	060668	100968	1991.1	1068	01		96	65	
590093A	111070	011571	2601.0	10		6262			

59	094A	101165	111965	1291.7	6266	01		64	39
59	094A	121567	022968	1740.7	1068	01	4079	89	76
59	094A	122969	030270	2344.1	1070	01	3629	113	59
59	095A	101465	112265	1206.2	6266	01		64	39
59	095A	051668	072968	1901 5	1068	01	3737	93	73
59	095A	062370			1070	01	3994	119	
59	096A	100565	110965	1155.5	6266	01		62	35
59	096A	020067	041467	1443.0	1067	01	3303	78	64
59	096A	051369	071469	2043.1	1069	01	4354	105	62
59	097A	101965	113065	1149.9	6265	01		64	42
59	097A	030668	051568	1833.4	1068	01	3560	92	69
59	097A	042270	062970	2427.2	1070	01	4227		67
59	099A	092865	110565	1221.2	6266	01		62	39
59	099A	071067	092667	1636.9	1068	01	4867	84	77
59	099A	070769	091269	2233.9	1070	01	4510	108	
59	100A	100165	110865		6266	01			39
59	100A	032967	062367	1331.5	1067	01	3466		86
59	100A	052669	082269	1928.6	1069	01	4469		87
59	101A	092765	102865	1188.6	6266	01		62	32
59	101A	041367	070367	1604 9	1067	01	3435	81	81
59	101A	102469	010670	2358.2	1070	01	4610	112	74
59	102A	101965	112465	1244.4	6266	01		62	36
59	102A	022368	050968	1817 4	1068	01	3388	90	75
59	102A	031970	052270	2413.3	1070	01	4336	115	63
59	103A	081265	091565	1055.3	6266	13		60	34
59	103A	100667	010268	1558.7	1068	13	3647	86	88
59	103A	021170	042070	2073 4	1070	13	4663	114	69
59	104A	071263	061564	749.0	1164	04		48	338
59	104A	122965	011966	1353.7	6266	04		65	22
59	104A	070868	093068	1495 2	1069	04		96	83
590	104A	020471	040571	1948.2	10		6683		
59	105A	010866	020866	1505.7	6266	04			31
59	105A	122766	031667	1681.9	1067	04	3096		71
59	105A	052069	072469	2279.2	1069	04			65
59	106A	122965	011966	1255.8	6266	15		65	22
59	106A	020368	041568	1786.4	1068	15	4320	90	70
59	106A	032470	052770	2275.2	1070	15	4314	115	63
59	108A	050564	072764	985.5	1064	07		45	83
59	108A	122365	012866	1416.7	6266	07		64	36
59	108A	012368	040268	1968.4	1068	07	3708	89	69
59	108A	060370		2550 9	1070	07		117	
59	109A	082664	103064	1079 3	1065	10		48	66
59	109A	010566	020466	1461.5	6266	10		65	30
59	109A	070868	091168	2021.8	1069	10	3638	94	64
590	109A	110270	011871	2673 2	10		7122		
59	110A	122365	012866		2066	07		64	36
59	110A	052267	073167	1753.0	1067	07		81	70
59	110A	010870	031370	2343.9	1070	07	3808	113	70
59	112A	060763	011364	580.1	1164	10		33	221
59	112A	030565	040265	830.9	2065	10		55	27
59	112A	060166	072066	1176.0	6366	10		69	50
59	112A	082668	110768	1650 5	1069	10	4742	96	73
590	112A	011871	032271	2307.9	10		6403		
59	115A	122265	020366	1264.9	6266	13		53	43
59	115A	031367	053167	1549.1	1067	13	3422	80	78
59	115A	061869	092669	1894 4	1069	13		106	99
59	116A	022765	031665	1054.2	2065	05		54	17
59	116A	061566	082466	1459.9	6366	05		69	[illegible]
59	116A	010567	032267	1588.9	1067	05	3590	78	[illegible]
59	116A	013169	042369	1977.5	1069	05	5176	102	83
59	118A	011366	021866		6266	05			36
59	118A	110466	012667		1067	05	3508		83
59	119A	010366	020366	1427.2	6266	07		67	32
59	119A	050167	071867	1767.0	1067	07	3713	82	74
59	119A	110569	012170	2363.3	1070	07	4029	109	77
59	121A	011166	021766		6266	07			37
59	121A	101266	011167		1067	07	3358		90
59	122A	031765	041765	1073.6	2065	05		57	31
59	122A	062066	081566	1480.4	6366	05		70	56
59	122A	112166	022467	1574.2	1067	05		86	95
59	122A	012169	032869	2029.2	1069	05	4969	102	66
590	122A	062971		2726.1	10				
59	123A	031565	042065	996.9	2065	05		55	35
59	123A	053166	072066	1309.9	6366	05		68	51
59	123A	101266	012367	1395.2	1067	05	4337	85	102
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59	125A	021165	031565		2065	13		54	32
59	125A	020266	032466	1419.9	6366	13		66	50
59	125A	083068	111268	2253.5	1069	13	4156	94	74
59	126A	022765	031665	967.7	2065	05		54	17
59	126A	061566	072866	1310.8	6366	05		69	43
59	126A	052367	082367	1571.8	1067	05		80	91
59	126A	072369	092969	2008.7	1069	05	4695	106	67
59	127A	011265	022365	1121.3	2065	05		52	42
59	127A	012666	022066	1349.9	6366	05		64	33

59	127A	053167	061967	1636.4	1067						05	3137	80	81	
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59	128A	051065	062065	999.2	2065						05		54	40	
59	128A	062066	072566	1381.8	6366						05	4984	69	35	
59	128A	060867	110367	1637.0	1067						05		82	87	
59	128A	092269	120169	2034.8	1069		1				05	5381	108	70	
59	129A	072764	092564	834.3	1065						13		46	59	
59	129A	010466	022466	1016.3	6265						13		62	41	
59	129A	111968	013169	1997.2	1069						13	4306	96	72	
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59	130A	121865	012766	1456.5	6266						13		61	40	
59	130A	012169	032869	2222.9	1069						13	5039	110	66	
590	130A	021271	041571	2749.5	10							6708			
59	131A	012865	030165	1266.8	6165						13		52	32	
59	131A	021266	032266	1562.8	6365						13		64	38	
59	131A	060768	083068	2224.8	1068						13	3862	92	83	
59	132A	032365	040965	1096.2	2065						05		54	16	
59	132A	060166	072266	1462.2	6366						05		67	52	
59	132A	021767	051167	1663.1	1067						05	4292	77	83	
59	132A	040469	061969	2096.2	1069						05	6169	101	76	
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59	133A	060166	072066	1297.3	6366						05		68	50	
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59	133A	120569	021870	1985.1	1070		1				05	4276	102	75	
59	134A	030465	040765		2065						05			33	
59	134A	062266	060266		6366						05			41	
59	134A	032868	061268		1068						05	3017		75	
59	135A	090464	090164	838.2	1065						05		46	57	
59	135A	031065	041365	1004.3	2065						05		53	33	
59	135A	053166	072266	1375.1	6366						05		66	52	
59	135A	062168	090968	1823.9	1068						05	4458	91	79	
590	135A	120770	021471	2420.8	10							6971			
59	136A	100564	121164	976.4	1065						03		48	67	
59	136A	030465	033065	1084.5	2065						03		52	26	
59	136A	060566	072066	1536.5	6366						03		67	45	
59	136A	091068	111968	2024.1	1069						03	5623	93	81	
590	136A	011571	031971	2556.6	10							6351			
59	137A	031765	040165	1117.5	2065						05		54	15	
59	137A	061366	072966	1450.2	6366						05		67	46	
59	137A	102267	011868	1793.1	1067						05	5954	82	88	
59	137A	022070	043070	2246.2	1070						05	4033	112	38	
59	138A	022065	032665		2065						13		52	35	
59	138A	030466	040566	1489.7	6366						13		64	32	
59	138A	021667	042867	1763.4	1067						13	3850	76	71	
59	138A	062669	090369	2427.1	1069						13		103	69	
59	140A	020265	030965	1047.7	2065						13		50	36	
59	140A	022366	032966	1239.8	6366						13		62	34	
59	140A	012467	032867	1438.2	1067						13	3124	73	63	
59	140A	102269	122969	2181.7	1070						13	5348	106	68	
59	141A	012265	022765	1078.4	2065						07		50	36	
59	141A	030266	040166	1375.6	6366						07		64	31	
59	141A	063167	120167	1772.	1067						07	4137	81	62	
59	141A	011270	031970	2367.9	1070		111	1			07	4375	112	50	
59	143A	011965	022465	1115.4	2065						07		61	36	
59	143A	020366	030766	1483.9	6366						07		73	32	
59	143A	122068	031069	2150.9	1069		1				07		96	74	
590	143A	012271	032971	2702.3	10							6764			
59	144A	011865	022765	1066.0	2065						07		49	40	
59	144A	011766	021466	1334.3	6366						07		61	28	
59	144A	120966	022367	1593.4	1067						07	2955	72	76	
59	144A	042469	070169	2172.1	1069		111	1		-	07	4866	100	68	
59	145A	012765	030965	1247.2	2065						07		49	41	
59	145A	030766	040566	1516.7	6366						07		62	29	
59	145A	120767	021968	1959.8	1068						07	3073	72	74	
59	145A	013070	040670	2547.5	1070		111	1			07	4072	109	67	
59	146A	123064	021765	1123.5	2065						03		48	49	
59	146A	011166	022166	1455.2	6366						03			41	
59	146A	032769	061869	2267.2	1069		1				03	4501		83	
59	147A	020565	031665		2065						07		49	39	
59	147A	022166	032266	1303..	6366						07		61	30	
59	147A	011967	032767	1540.3	1067						07	3332	84	67	
59	147A	072569	101369	2127.2	1070						07	5316	114	109	
59	148A	020465	030865		6165						07			32	
59	148A	031666	041966		6366						07			34	
59	148A	120166	022767		1067						07	3136		89	
59	149B	103164	012865	691.5	1065						02		52	90	
59	149B	110165	122865	936.2	6266						02		66	59	
59	149B	090866	120866	1164.2	1067						02		76	91	
59	149B	011469	041169	1736.8	1069						02	5524	104	87	
590	149B	012971	042871	2308.1	10										
59	151B	021065	031665		2065						07		55	34	
59	151B	012666	031466	1508.2	6366						07		66	45	
59	151B	030667	061667	1759.2	1067						07		80	102	
59	151B	050269	080969	2325.5	1069		1				07	5861	106	98	
59	152B	020165	031765		2065						07		54	45	
59	152B	022166	041266	1412.6	6366						07		66	50	
59	152B	041268	072468	2015.1	1068						07	4839	92	103	

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5901528  072870 101470    2579.7  10                                      8500
59 153B  032965 050365     974.2  2065                          10              56 36
59 153B  032366 050666    1258.8  6366                          10              68 44
59 153B  122966 080867    1443.2  1067                          10              79221
59 153B  121569 031370    2253.7  1070                          10 5251 114 88
59 155B  092765 111265     976.5  6266                          01              61 47
59 155B  070367 101367    1356.9  1068                          01 5620  82102
59 155B  080469 102469    1969.2  1070                          01 5157 108 81
59 157B  102064 010865     780.7  1065                          05              53 48
59 157B  030165 040665     847.8  2065                          05              55 37
59 157B  060766 081166    1260.5  6366                          05              65 65
59 157B  011768 043068    1613.0  1068                          05 5700  89 72
59 157B  041670           1070                                  05              115
59 158B  022365 040565     956.1  2065                          05              54 43
59 158B  060166 072666    1401.0  6366                          05              81 57
59 158B  060667 100367    1700.8  1067                          05              93119
59 158B  110369 020270    2200.0  1070                          05 5250 109 92
59 159B  082365 101265            6266                          12              50
59 159B  031368 062068            1068                          12 5409         78
5901598  062970 091870    2263.2  10
59 160B  081763 011764     679.3  1164                          01              34153
59 160B   92265 110965    1121.9  6266                          01              58 48
59 160B  113067 030668    1679.0  1068                          01 4788  85 97
59 160B  020370 042170    2310.9  1070                          01 5281 112 77
59 161B  121765 021466    1204.3  6266                          15              61 69
59 161B  040467 083067    1569.6  1067                          15              79147
59 161B  071569 102169    2132.1  1070                          15 5388 104 98
59 162B  121564 022865    1021.1  1065                          13              49 44
59 162B  011366 022566    1279.7  6366                          13              62 43
59 162B  110468 011769    2072.5  1069                          13 4447  96 74
59 163B  070765 082065    1005.2  6266                          12              57 43
59 163B  080266 021767    1318.0  1067                          12              69120
59 163B  031769 061369    1885.3  1067                          12 5541 101 87
59 164B  082565 101265     882.3  1066                          12              56 48
59 164B  022867 060567    1163.6  1067                          12              74 97
59 164B  091669 121669    1742.0  1070                          12 5431 104 91
59 165B  061065 072865            2065                          12              54 49
59 165B  112866 030767     605.8  1067                          12              70101
59 165B  081869 112869    1053.6  1070                          12 6015 104102
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU22     DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5                T22
//TPR.TPR1N    DD   *,SPACE>(TRK,(1,1))
T/P  TU13    1200080Z080
T/P  TU14    1200080Z080
T/P  TU22    1200080Z080
T/P  TU23    1200120Z120
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
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6.4.3 IRAN COPY ACCEPTABLE AIRCRAFT

```
//C9897J JOB   01,: G  WANG     :,PRTY>02,TYPRUN>HOLD
//C9897  EXEC  P9655L TIME>01,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A.9895422,   CT12    1
//               VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU22     DD   DISP>(,PASS),UNIT>(T+F5,1,DEFER),DSN>+E.9895422,   CT22    1
//               VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//               1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
00000          COMBINE     COMPILE                  G. WANG,            C98970
01040  DATE-WRITTEN. 27 DEC 71.                                         C98970
01050      REMARKS. IRAN COPY ACCEPTABLE AIRCRAFT.                      C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120      SELECT INFILE                ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                C98970
02140      SELECT OUTFILE               ASSIGN TO UT-S-TU22             C98970
02150          RESERVE 1 ALTERNATE AREA.                                C98970
02160      SELECT ACCEPT-FILE           ASSIGN TO DA-S-DT01             C98970
02170          RESERVE 1 ALTERNATE AREA.                                C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
10020  FD  INFILE                                                       C98970
10030      RECORDING MODE IS F                                          C98970
10040      BLOCK CONTAINS 30 RECORDS                                    C98970
10050      RECORD CONTAINS 80           CHARACTERS                      C98970
```

```
10060       LABEL RECORDS ARE OMITTED                                       C98970
10070       DATA RECORDS ARE INREC.                                         C98970
10080  01   INREC SYNC.                                                     C98970
10090       02  FILLER                    PICTURE X(80).                   C98970
10100  FD   OUTFILE                                                        C98970
10110       RECORDING MODE IS F                                             C98970
10120       BLOCK CONTAINS 30 RECORDS                                       C98970
10130       RECORD CONTAINS 80          CHARACTERS                          C98970
10140       LABEL RECORDS ARE OMITTED                                       C98970
10150       DATA RECORDS ARE OUTREC.                                        C98970
10160  01   OUTREC SYNC.                                                    C98970
10170       02  FILLER                    PICTURE X(80).                   C98970
11400  FD   ACCEPT-FILE                                                    C98970
11410       RECORDING MODE IS F                                             C98970
11420       BLOCK CONTAINS 20 RECORDS                                       C98970
11430       RECORD CONTAINS 80          CHARACTERS                          C98970
11440       LABEL RECORDS ARE STANDARD                                      C98970
11450       DATA RECORDS ARE ACCEPT-REC.                                    C98970
11460  01   ACCEPT-REC SYNC.                                                C98970
11470       02  ACCEPT-DATA               PICTURE X(80).                   C98970
11480       02  FILLER REDEFINES ACCEPT-DATA.                              C98970
11490           03  DATA-1                PICTURE 999.                     C98970
11500           03  FILLER                PICTURE X(77).                   C98970
11510       02  FILLER REDEFINES ACCEPT-DATA.                              C98970
11520           03  DATA-2                PICTURE X(8).                    C98970
11530           03  FILLER                PICTURE X(72).                   C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30100  01   DATA-IN SYNC.                                                  C98970
30110       02  SER-NO                    PICTURE X(8).                    C98970
30120       02  FILLER                    PICTURE X(72).                   C98970
30130  01   KNT SYNC COMPUTATIONAL        PICTURE S999.                    C98970
30140  01   NUMBER-RECORDS-PASS SYNC      PICTURE 9(6) VALUE ZERO.         C98970
35000  01   NINE SYNC                     PICTURE X(80) VALUE              C98970
35010            :9999999999999999999999999999999999999999999999999999:    C98970
35020 -     :99999999999999999999999999999:.                                C98970
40000  01   TABLE-ACCEPT-A-C SYNC.                                          C98970
40010       02  ACCEPT-A-C OCCURS  250 TIMES DEPENDING ON NO-ACCEPT-A-C     C98970
40020                                     PICTURE X(8).                    C98970
40030  01   NO-ACCEPT-A-C SYNC            PICTURE 999.                     C98970
40040  01   TEMP-ACCEPT-A-C   SYNC        PICTURE X(8).                    C98970
40050  01   INC SYNC COMPUTATIONAL        PICTURE S999 VALUE <1.           C98970
50000  PROCEDURE DIVISION.                                                  C98970
50010  BEGIN.                                                               C98970
50020       OPEN INPUT INFILE, ACCEPT-FILE.                                 C98970
50030       OPEN OUTPUT OUTFILE.                                            C98970
50040       PERFORM READ-ACCEPT-DATA THRU END-R-A-D.                        C98970
50090  READ-FILES.                                                          C98970
50100       READ INFILE AT END GO TO BLOCK-CHECK.                           C98970
50110       MOVE INREC TO DATA-IN.                                          C98970
50120  TEST1.                                                               C98970
50121       IF SER-NO IS LESS THAN TEMP-ACCEPT-A-C GO TO READ-FILES.        C98970
50122       IF SER-NO IS EQUAL TO  TEMP-ACCEPT-A-C GO TO WRITE-DATA.        C98970
50123       ADD 1 TO INC.                                                   C98970
50124       IF INC IS GREATER THAN NO-ACCEPT-A-C GO TO BLOCK-CHECK.         C98970
50125       MOVE ACCEPT-A-C (INC) TO TEMP-ACCEPT-A-C.                       C98970
50126       GO TO TEST1.                                                    C98970
50200  WRITE-DATA.                                                          C98970
50210       WRITE OUTREC FROM DATA-IN.                                      C98970
50215       ADD 1 TO NUMBER-RECORDS-PASS.                                   C98970
50220       GO TO READ-FILES.                                               C98970
50222  BLOCK-CHECK.                                                         C98970
50224       COMPUTE KNT > NUMBER-RECORDS-PASS - ((NUMBER-RECORDS-PASS /     C98970
50226                                30) * 30).                             C98970
50228       IF KNT IS EQUAL TO ZERO GO TO CLOSE-FILES.                      C98970
50230  LOOP1.                                                               C98970
50232       WRITE OUTREC FROM NINE.                                         C98970
50234       ADD 1 TO KNT.                                                   C98970
50236       IF KNT IS LESS THAN 30 GO TO LOOP1.                             C98970
50240  CLOSE-FILES.                                                         C98970
50250       CLOSE INFILE WITH LOCK, ACCEPT-FILE WITH LOCK.                  C98970
50260       CLOSE OUTFILE WITH LOCK.                                        C98970
50270       DISPLAY NUMBER-RECORDS-PASS UPON CONSOLE.                       C98970
50280       DISPLAY :EOJ 9897 : UPON CONSOLE.                               C98970
50290       GOBACK.                                                         C98970
70000  READ-ACCEPT-DATA.                                                    C98970
70010       READ ACCEPT-FILE AT END GO TO END-R-A-D.-                       C98970
70020       MOVE DATA-1 TO NO-ACCEPT-A-C.                                   C98970
70030       MOVE ZERO TO KNT.                                               C98970
70040  RAD-1.                                                               C98970
70050       ADD 1 TO KNT.                                                   C98970
70060       READ ACCEPT-FILE AT END GO TO END-R-A-D.                        C98970
70070       MOVE DATA-2 TO ACCEPT-A-C (KNT).                                C98970
70080       IF KNT IS LESS THAN NO-ACCEPT-A-C GO TO RAD-1.                  C98970
70090       MOVE ACCEPT-A-C (1) TO TEMP-ACCEPT-A-C.                         C98970
70100  END-R-A-D. EXIT.                                                     C98970
```

```
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CMG.IFGIN    DD   *,SPACE=(CYL,(1,1))                              1440 CDS
IFG  DIU1    11  0207080
150
57000231
57000232
57000235
57000236
57000237
57000243
57000244
57002455
57002456
57002458
57002459
57002463
57002470
57002473
57002476
57002477
57002482
57002483
57002485
57002486
57002490
57002491
57002493
57002494
57002496
57002503
57002504
57002505
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57002520
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57002537
57002538
57002540
57002543
57002545
57002546
58000760
58000766
58000767
58000772
58000773
58000776
58000777
58000778
58000780
58000781
58000783
58000785
58000786
58000788
58000792
58000797
58000900
58000901
58000903
58000904
59000002
59000003
59000004
59000005
59000006
59000007
59000008
59000010
59000012
59000015
59000016
59000018
59000019
59000024
59000025
59000026
59000027
59000028
59000030
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59000031
59000033
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59000064
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59000072
59000074
59000076
59000078
59000080
59000082
59000084
59000085
59000088
59000090
59000092
59000094
59000095
59000096
59000099
59000103
59000104
59000105
59000108
59000109
59000110
59000115
59000116
59000119
59000126
59000127
59000128
59000130
59000132
59000133
59000137
59000139
59000140
59000141
59000143
59000144
59000145
59000146
59000147
59000149
59000151
59000152
59000153
59000155
59000157
59000164
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1              TI2
//TPR.TU22      DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5              T22
//TPR.TPR1N     DD   ,SPACE>(TRK,(1,1))
T/P  TU22    1050080Z080



T/P  DT01    1020080Z080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.5 DATA BANK GENERATION PROGRAMS

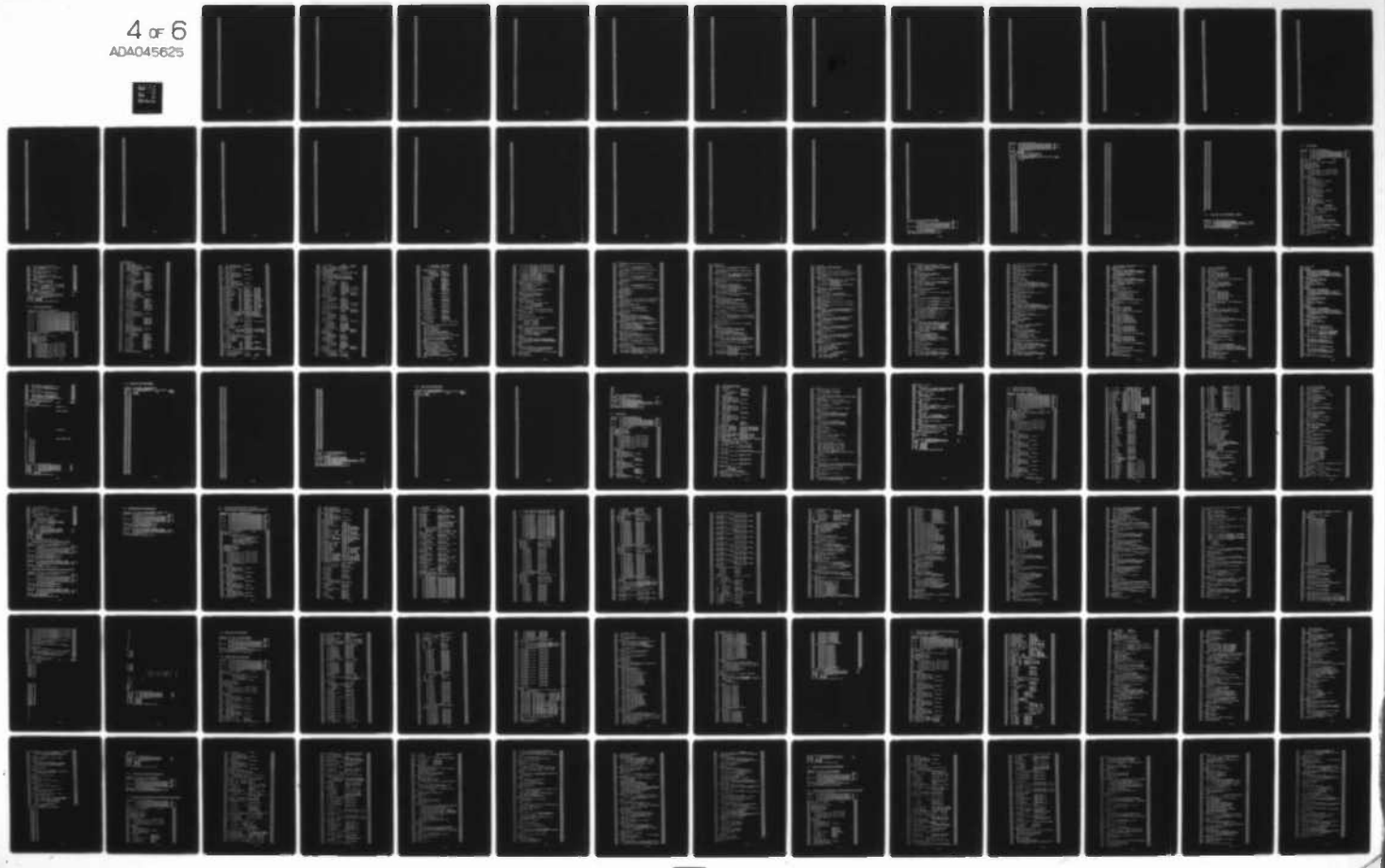
6.5.1 SORT ACCEPTABLE WUC

```
//T9897A JOB   01,: G. WANG     :,PRTY>02,TYPRUN>HOLD
//C9897S EXEC  C9601N,TIME>01,ACCT>D35323007
//CHG.TU22     DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),DSN>*E.9697401,   CT22    1
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.TFGIN    DD   *,SPACE>(TRK,(5,5))                                  360 CDS
TFG  TU22    11  050Z020
11U00
11C00
11CA1
11CAA
11CB1
11CBA
11CC1
11CCA
11CD1
11CDA
11CE1
11CEA
11CF1
11CFA
11CG1
11CGA
11CH1
11CJ1
11D0U
11DA0
11DAA
11DAB
11DAC
11DAD
11DAE
11DAF
11DB0
11DBA
11DBB
11DBC
11DBD
11DBE
11DC0
11DCA
11DCB
11DCC
11DCD
11DCE
11DCF
11DCG
11DCH
11DCJ
11DCK
11DD0
11DDA
11DDB
11DDC
11DDD
11DDE
11DDG
11DDF
11DDH
11DE0
11DEA
11DEB
11DEC
11DED
11DEE
11DEF
11DEG
11DEH
11DF0
11DFA
11DFB
11DFC
11DFD
11DFE
11DFF
11DFG
11DFH
11DFJ
11DG0
11DGA
```

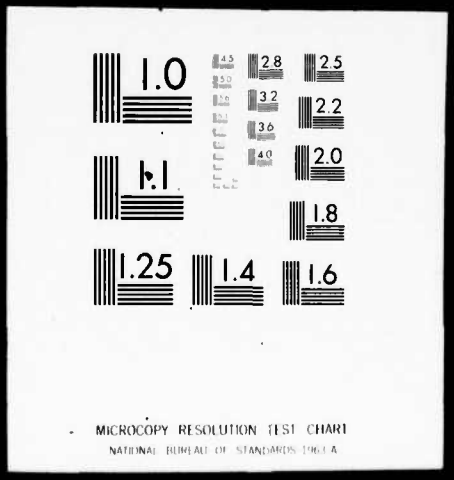
```
11DGB
11DGC
11DGD
11DGE
11DGF
11DGG
11DH0
11DHA
11DHB
11DHC
11DHD
11DHE
11E00
11EA0
11EAA
11EAB
11EAC
11EAD
11EAE
11EAF
11EAG
11EAH
11EAJ
11EAK
11EAL
11EB0
11EBA
11EBB
11EBC
11EBD
11EBE
11EBF
11EBG
11EBH
11EBJ
11EBK
11EC0
11ECA
11ECB
11ECC
11ECD
11ECE
11ECF
11ECG
11ECH
11ECJ
11ECK
11ECL
11ECM
11ECN
11ED0
11EDA
11EDB
11EDC
11EDD
11EDE
11EDF
11EDG
11F00
11FA0
11FAA
11FAB
11FAC
11FAD
11FAE
11FAF
11FAG
11FAH
11FAJ
11FAK
11FAL
11FB0
11FBA
11FBB
11FBC
11FBD
11FBE
11FBF
11FBG
11FBH
11FBJ
11FBK
11FC0
11FCA
11FCB
```

AD-A045 625 GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV F/G 1/5
F-106 SCHEDULED MAINTENANCE STUDY. USER'S MANUAL,(U)
SEP 72 G WANG, R S GROTE , J R COOPER F41608-71-D-1383
UNCLASSIFIED GDCA-AHD72-006 NL

4 OF 6
AD A045625



4 OF 6
ADA045625



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11FDB
11FDC
11FDD
11FDE
11FDF
11FDG
11G00
11GA0
11GAA
11GAB
11GAC
11GAD
11GAE
11GAF
11GAG
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11J00
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23KQD
23KQE
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23KQK
23KQL
23KQM
23KQN
23KQP
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23LAB
23LAC
23LAA

23LQC
23LQD
23MA0
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23MAB
23MAC
23MB0
23MBA
23MQ0
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23MRU
23MRA
23MRH
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23MSB
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23MVF
23N00
23NQA
23NQC
23NQU
23NQE
23NQF
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23SRE
23SRF
23SRG
23SRH
23SRJ
23SRK
23SRL
23SRM
23SRN
23SRP
23SRQ
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41AD1
41AE1
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*END
/*
//C98970 EXEC  P9622N,W>199,TIME>01,ACCT>D35323007
//CHG.SORT1N   DU   DISP>( KEEP),UNIT>(T+F5,1,DEFER),                    CT22   1
//             DSN>+E,9897401,                                           CT22   2
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22   3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22   4
//             DCB>(LRECL>1020,BLKSIZE>1000),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DU   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9897402,     CT12   1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12   2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12   3
//             DCB>(LRECL>1020,BLKSIZE>1000)
//CHG.SYSIN    DU   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(001,005,CH,A),SIZE>E0003000
 MODS  E15>(E15,008,SORTLIB,N),E18>(E18,024,SORTLIB,N)
```

```
/*
//C9897P EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU12     DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9897402,   CT12    1
//             VOL>SER>(+F',A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//             1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1) T12     3
//CHG.TU22     DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),DSN>+E,9897401,   CT22    1
//             VOL>SER>(+FJ,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//             1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5) T22     3
//CHG.TPR1N    DD   *,SPACE>(TRK,(1,1))
T/P  TU12    1050020Z020
T/P  TU22    1050020Z020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//T9897N JOB   01,I G WANG      I,PRTY>02,TYPRUN>HOLD
//C9897W EXEC  C9601N,TIME>03,ACCT>D35323007
//CHG.TU22     DD   DSN>+P,9897401,DISP>(,PASS),SPACE>(CYL,(001,001))   D22-OUT
//CHG.TFG1N    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
TFG  TU22    11  020Z080
 74AJ1 74AK1
 74AK1 74AL1
 74AKA 74ALA
 74AM1 74AN1
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74CQC 74CAC
74CQD 74CAD
74CQE 74CAE
74CR1 74CC1
74CRA 74CCA
74CRB 74CCB
74CRC 74CCC
74CRD 74CCD
74CRE 74CCE
74CRF 74CCF
74CRG 74CCG
74CRH 74CCH
74CRJ 74CCJ
74CRK 74CCK
74CRL 74CCL
74CC1 74CD1
74CS1 74CF1
74CSA 74CFA
74CSB 74CFB
74CE1 74CG1
74CF1 74CH1
74CFA 74CHA
74CT1 74CJ1
74CTA 74CJA
74CTB 74CJB
74CTC 74CJC
74CTD 74CJD
74CTE 74CJE
74CG1 74DB1
74CH1 74DC1
74CHA 74DCA
74CHB 74DCB
74CHC 74DCC
74CHE 74DCD
74CHF 74DCE
74CK1 74DD1
74E00 74F00
74EB1 74FA0
74FF1 74FB1
74FE1 74FC1
74FEA 74FCA
74FEB 74FCB
74FEC 74FCC
74FED 74FCD
74FEE 74FCE
74FEF 74FCF
74FC1 74FD1
74FCA 74FDA
74FCB 74FDB
74FCC 74FDC
74FCD 74FDD
74FCE 74FDE
74FCF 74FDF
74FCG 74FDG
74FCH 74FDH
74FCJ 74FDJ
74FCK 74FDK
74FCL 74FDL
74FCM 74FDM
74FCN 74FDN
74FCP 74FDP
74FCQ 74FDQ
74FCR 74FDR
74FCS 74FDS
74FCT 74FDT
74FCU 74FDU
74FCV 74FDV
74FCW 74FDW
74FCX 74FDX
74FCY 74FDY
74FCZ 74FDZ
74FC2 74FD2
74FC3 74FD3
74FC4 74FD4
74FC5 74FD5
74FC6 74FD6
74FC7 74FD7
74FC8 74FD8
74FC9 74FD9
74FDA 74FEA
74FD8 74FEB
74FB1 74FF1

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74F8A 74FFA
74F88 74FF8
74F8C 74FFC
74F8D 74FFD
74F8E 74FFE
74F8F 74FFF
74F8G 74FFG
74F8H 74FFH
74F8J 74FFJ
74F8K 74FFK
74F8L 74FFL
74F8M 74FFM
74EV1 74FG1
74EW1 74FH1
74EX1 74FJ1
74EU1 74FK1
74KM1 74KB1
74KB1 74KC1
74KB8 74KC8
74KC1 74KD1
74KD1 74KE1
74KD8 74KE8
74KDC 74KEC
74KE1 74KF1
74KE8 74KF8
74KF1 74KG1
74KFA 74KGA
74KF8 74KGB
74KFC 74KGC
74KFD 74KGD
74KFE 74KGE
74KFF 74KGF
74KFG 74KGG
74KFH 74KGH
74KFJ 74KGJ
74KFK 74KGK
74KFL 74KGL
74KG1 74KH1
74KMA 74KJA
74KP1 74KK1
74KQ1 74KL1
74KR1 74KM1
74KS1 74KN1
74KT1 74KP1
74KU1 74KQ1
74CEA 74CGA
74KV1 74KR1
74G00 74P00
74GA1 74PA1
74GB1 74PB1
74GD1 74PC1
74BF1 74PD1
74GF1 74PE1
74GG1 74PF1
74GGA 74PFA
74GH1 74PG1
74GJ1 74PH1
74GK1 74PJ1
74GL1 74PK1
74GM1 74PL1
74GP1 74PM1
74GQ1 74PN1
74GR1 74PP1
74GN1 74QA1
74GNA 74QAA
*END
```

6.5.2 SORT WUC FOR CONVERSION - MERGE

```
/*
//C9897N EXEC  P9622N,W>010,TIME>02,ACCT>D35323007
//CH6.SORTIN   DD   DSN>*P.9897401,DISP>(OLD,DELETE),                    CD22/23 1
//             DCB>(LRECL>0080,BLKSIZE>1600),LABEL>(,NSL,RETPD>0003)
//CH6.SORTOUT  DD   DSN>*P.9897403,DISP>(,PASS),SPACE>(CYL,(001,001)), CD12/13 1
//             DCB>(LRECL>0080,BLKSIZE>1600)
//CH6.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(002,005,CH,\),SIZE>E0000400
 MODS  E15>(E15,008,SORTL'0,N),E18>(E18,024,SORTLIB,N)
/*
```

6.5.3 WUC MERGE

```
//C9897D EXEC  P9655L,TIME=01,ACCT=D35323007
//CHG.TU12     DD   DSN=*.9897403,DISP=(OLD,PASS)                          DI2-IN
//CHG.TU14     DD   DISP=(,PASS),UNIT=(T+F3,I,DEFER),DSN=*C.9897402,      CTI4    1
//               VOL=SER=(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,    CTI4    2
//               I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  TI4    3
//CHG.TU24     DD   DISP=(,PASS),UNIT=(T+F7,I,DEFER),DSN=*G.9897404,      CT24    1
//               VOL=SER=(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,    CT24    2
//               I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24    3
//CHG.INPUT    DD   *,SPACE=(CYL,(1,1))                                   I440 CDS
00000          COMBINE     COMPILE                  G. WANG                C98970
01040  DATE-WRITTEN. 17 MAY 72.                                           C98970
01050  REMARKS.                                                           C98970
01060          MODIFY WUC FILE TO CONSIDER WUC CONVERSION.                C98970
02000  ENVIRONMENT DIVISION.                                              C98970
02010  CONFIGURATION SECTION.                                             C98970
02020  SOURCE-COMPUTER. IBM-360.                                          C98970
02030  OBJECT-COMPUTER. IBM-360.                                          C98970
02100  INPUT-OUTPUT SECTION.                                              C98970
02110  FILE-CONTROL.                                                      C98970
02120      SELECT IN-FILE-65-110          ASSIGN TO UT-S-TU14             C98970
02130          RESERVE 1 ALTERNATE AREA.                                  C98970
02180      SELECT IN-FILE-66-1            ASSIGN TO UT-S-TU12             C98970
02190          RESERVE 1 ALTERNATE AREA.                                  C98970
02200      SELECT IN-FILE-WUC             ASSIGN TO UT-S-TU24             C98970
02210          RESERVE 1 ALTERNATE AREA.                                  C98970
10000  DATA DIVISION.                                                     C98970
10010  FILE SECTION.                                                      C98970
10100  FD  IN-FILE-65-110                                                 C98970
10120      RECORDING MODE IS F                                            C98970
10130      BLOCK CONTAINS 50 RECORDS                                      C98970
10140      RECORD CONTAINS 20             CHARACTERS                      C98970
10150      LABEL RECORDS ARE OMITTED                                      C98970
10160      DATA RECORDS ARE IN-REC-65-110.                                C98970
10170  01  IN-REC-65-110 SYNC.                                           C98970
10180      02  OLD-REC-WUC  PICTURE X(5).                                C98970
10190      02  FILLER  PICTURE X(15).                                    C98970
13100  FD  IN-FILE-66-1                                                   C98970
13110      RECORDING MODE IS F                                            C98970
13120      BLOCK CONTAINS 20 RECORDS                                      C98970
13130      RECORD CONTAINS 80             CHARACTERS                      C98970
13140      LABEL RECORDS ARE OMITTED                                      C98970
13150      DATA RECORDS ARE IN-REC-66-1.                                  C98970
13160  01  IN-REC-66-1 SYNC.                                             C98970
13170      02  FILLER  PICTURE X.                                        C98970
13190      02  TAB2-WUC  PICTURE X(5).                                   C98970
13200      02  FILLER  PICTURE X(74).                                    C98970
14100  FD  IN-FILE-WUC                                                    C98970
14120      RECORDING MODE IS F                                            C98970
14130      BLOCK CONTAINS 50 RECORDS                                      C98970
14140      RECORD CONTAINS 20             CHARACTERS                      C98970
14150      LABEL RECORDS ARE OMITTED                                      C98970
14160      DATA RECORDS ARE REC-IN-WUC.                                   C98970
14170  01  REC-IN-WUC SYNC.                                              C98970
14180      02  IN-REC-WUC                PICTURE XXXXX,                  C98970
14190      02  FILLER                    PICTURE X(15).                  C98970
30000  WORKING-STORAGE SECTION.                                           C98970
30400  01  NO-WUC-PROC      PICTURE 9999  VALUE ZERO  SYNC.               C98970
30420  01  NO-TAB2-PROC     PICTURE 9999  VALUE ZERO  SYNC.               C98970
30440  01  TABLE4-WUC   SYNC.                                            C98970
30500      02  TABLE-WUC       PICTURE X(5).                             C98970
30600      02  FILLER      PICTURE X(15).                                C98970
50000  PROCEDURE DIVISION.                                                C98970
50010  OPEN-FILES.                                                        C98970
50020      OPEN INPUT IN-FILE-65-110, IN-FILE-66-1.                       C98970
50030      OPEN OUTPUT IN-FILE-WUC.                                       C98970
50040      MOVE ZERO TO NO-WUC-PROC.                                      C98970
50050      MOVE ZERO TO NO-TAB2-PROC.                                     C98970
50060      READ IN-FILE-65-110 AT END GO TO CLOSE-FILES.                  C98970
50070      READ IN-FILE-66-1   AT END GO TO CLOSE-FILES.                  C98970
50080      MOVE TAB2-WUC TO TABLE-WUC.                                    C98970
50090  COMPARE-FILES.                                                     C98970
50100      IF OLD-REC-WUC LESS THAN TABLE-WUC GO TO TU14-LESS.            C98970
50110      IF OLD-REC-WUC NOT EQUAL TO TABLE-WUC GO TO TU12-LESS.         C98970
50120      WRITE REC-IN-WUC FROM IN-REC-65-110.                           C98970
50130      ADD 1 TO NO-WUC-PROC.                                          C98970
50140      READ IN-FILE-65-110 AT END GO TO CLOSE-FILES.                  C98970
50150      GO TO R-TU12.                                                  C98970
50160  TU12-LESS.                                                         C98970
50170      WRITE REC-IN-WUC FROM TABLE4-WUC.                              C98970
50180      ADD 1 TO NO-TAB2-PROC.                                         C98970
50190      GO TO R-TU12.                                                  C98970
50200  TU14-LESS.                                                         C98970
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S0210       WRITE REC-IN-WUC FROM IN-REC-65-110.                                C98970
S0220       ADD 1 TO NO-WUC-PROC.                                               C98970
S0230       READ IN-FILE-65-110 AT END GO TO CLOSE-FILES.                       C98970
S0240       GO TO COMPARE-FILES.                                                C98970
S0250   R-TU12.                                                                 C98970
S0260       READ IN-FILE-66-1 AT END GO TO R-TU14.                              C98970
S0270       MOVE TAB2-WUC TO TABLE-WUC.                                         C98970
S0280       GO TO COMPARE-FILES.                                                C98970
S0290   R-TU14.                                                                 C98970
S0300       WRITE REC-IN-WUC FROM IN-REC-65-110.                                C98970
S0305       ADD 1 TO NO-WUC-PROC.                                               C98970
S0310       READ IN-FILE-65-110 AT END GO TO CLOSE-FILES.                       C98970
S0320       GO TO R-TU14.                                                       C98970
S0720   CLOSE-FILES.                                                            C98970
S0730       CLOSE IN-FILE-65-110 WITH LOCK,                                     C98970
S0760             IN-FILE-66-1   WITH LOCK,                                     C98970
S0780             IN-FILE-WUC    WITH LOCK.                                     C98970
S0790   MESSAGES.                                                              C98970
S0791       DISPLAY ' RECS COPIED FROM WUC FILE 1 NO-WUC-PROC                   C98970
S0800                 UPON CONSOLE.                                           C98970
S0810       DISPLAY 1 RECS COPIED FROM TABLE 2 1 NO-TAB2-PROC                   C98970
S0820                 UPON CONSOLE.                                           C98970
S0835       DISPLAY 1 EOJ C98970 ' UPON CONSOLE.                                C98970
S0840       GOBACK.                                                             C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                        1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP=(OLD,KEEP),VOL=SER=*F3,UNIT=T*F3                      T14

//TPR.TU24      DD   DISP=(OLD,KEEP),VOL=SER=*F7,UNIT=T*F7                      T24
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU12    1998080Z080
T/P  TU14    1998020Z020
T/P  TU24    1998020Z020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.5.4 DATA BANK PROGRAM

```
//C9097F JOB   01,' G. WANG     ',PRTY=02,TYPRUN=HOLD
//C9897E EXEC  F3655L,TIME=30,ACCT=035323007
//CHG.TU12      DD   DISP=(,PASS),UNIT=(A*F1,2,DEFER),DSN=*A.9895440,          CT12/13 1
//                VOL=SER=(*F1,A*F1,B*F1,C*F1,D*F1,E*F1,F*F1,G*F1,H*F1,        CT12    2
//                I*F1,J*F1,K*F1,L*F1,M*F1,N*F1,O*F1,P*F1,Q*F1,R*F1,S*F1)      T12     3
//CHG.TU14      DD   DISP=(,PASS),UNIT=(T*F3,1,DEFER),DSN=*C.9895435,          CT14    1
//                VOL=SER=(*F3,A*F3,B*F3,C*F3,D*F3,E*F3,F*F3,G*F3,H*F3,        CT14    2
//                I*F3,J*F3,K*F3,L*F3,M*F3,N*F3,O*F3,P*F3,Q*F3,R*F3,S*F3)      T14     3
//CHG.TU15      DD   DISP=(,PASS),UNIT=(T*F4,1,DEFER),DSN=*O.9895455,          CT15    1
//                VOL=SER=(*F4,A*F4,B*F4,C*F4,D*F4,E*F4,F*F4,G*F4,H*F4,        CT15    2
//                I*F4,J*F4,K*F4,L*F4,M*F4,N*F4,O*F4,P*F4,Q*F4,R*F4,S*F4)      T15     3
//CHG.TU22      DD   DISP=(,PASS),UNIT=(A*F5,2,DEFER),DSN=*L.9897405,          CT22/23 1
//                VOL=SER=(*F5,A*F5,B*F5,C*F5,D*F5,E*F5,F*F5,G*F5,H*F5,        CT22    2
//                I*F5,J*F5,K*F5,L*F5,M*F5,N*F5,O*F5,P*F5,Q*F5,R*F5,S*F5)      T22     3
//CHG.TU24      DD   DISP=(,PASS),UNIT=(T*F7,1,DEFER),DSN=*0.9897404,          CT24    1
//                VOL=SER=(*F7,A*F7,B*F7,C*F7,D*F7,E*F7,F*F7,G*F7,H*F7,        CT24    2
//                I*F7,J*F7,K*F7,L*F7,M*F7,N*F7,O*F7,P*F7,Q*F7,R*F7,S*F7)      T24     3
//CHG.TU25      DD   DISP=(,PASS),UNIT=(T*F8,1,DEFER),DSN=*H.9895422,          CT25    1
//                VOL=SER=(*F8,A*F8,B*F8,C*F8,D*F8,E*F8,F*F8,G*F8,H*F8,        CT25    2
//                I*F8,J*F8,K*F8,L*F8,M*F8,N*F8,O*F8,P*F8,Q*F8,R*F8,S*F8)      T25     3
//CHG.INPUT     DD   *,SPACE=(CYL,(1,1))                                        1440 CDS
00000           COMBINE     COMPILE                  0, WANG                    C98970
01040   DATE-WRITTEN.  7 FEB 72.                                                C98970
01050   REMARKS.                                                                C98970
01060           DATA BANK PROGRAM FOR VE-12.                                    C98970
02000   ENVIRONMENT DIVISION.                                                   C98970
02010   CONFIGURATION SECTION.                                                  C98970
02020   SOURCE-COMPUTER. IBM-360.                                               C98970
02030   OBJECT-COMPUTER. IBM-360.                                               C98970
02100   INPUT-OUTPUT SECTION.                                                   C98970
02110   FILE-CONTROL.                                                           C98970
02120       SELECT IN-FILE-65-110          ASSIGN TO UT-S-TU14                  C98970
02130           RESERVE 2 ALTERNATE AREA.                                       C98970
02140       SELECT IN-FILE-IRAN            ASSIGN TO UT-S-TU25                  C98970
02150           RESERVE 1 ALTERNATE AREA.                                       C98970
02160       SELECT IN-FILE-AIE             ASSIGN TO UT-S-TU15                  C98970
02170           RESERVE 1 ALTERNATE AREA.                                       C98970
02180       SELECT IN-FILE-66-1            ASSIGN TO UT-S-TU12                  C98970
02190           RESERVE 2 ALTERNATE AREA.                                       C98970
02200       SELECT IN-FILE-WUC             ASSIGN TO UT-S-TU24                  C98970
02210           RESERVE 1 ALTERNATE AREA.                                       C98970
02220       SELECT OUT-FILE                ASSIGN TO UT-S-TU22                  C98970
02230           RESERVE 2 ALTERNATE AREA.                                       C98970
02240       SELECT DATA-IN-FILE            ASSIGN TO DA-S-DT01                  C98970
02250           RESERVE 1 ALTERNATE AREA.                                       C98970
```

```
10000  DATA DIVISION.                                                  C98970
10010  FILE SECTION.                                                   C98970
10100  FD  IN-FILE-65-110                                              C98970
10120      RECORDING MODE IS F                                         C98970
10130      BLOCK CONTAINS 50 RECORDS                                   C98970
10140      RECORD CONTAINS 60          CHARACTERS                      C98970
10150      LABEL RECORDS ARE OMITTED                                   C98970
10160      DATA RECORDS ARE IN-REC-65-110.                             C98970
10170  01  IN-REC-65-110 SYNC.                                         C98970
10180      02  MDS-65-110.                                            C98970
10190          03  MISSION-65-110      PICTURE X.                     C98970
10200          03  DESIGN-65-110       PICTURE XXX.                   C98970
10210          03  SERIES-65-110       PICTURE X.                     C98970
10220      02  FILLER                  PICTURE X(23).                 C98970
10230      02  MAINT-CODE-65-110       PICTURE X.                     C98970
10240      02  FILLER                  PICTURE X.                     C98970
10250      02  TIME-65-110             PICTURE 999.                   C98970
10260      02  WUC-65-110              PICTURE X(5).                  C98970
10340      02  WUC-2-65-110 REDEFINES WUC-65-110.                     C98970
10350          03  LANDINGS-65-110     PICTURE 99.                    C98970
10360          03  SORTIES-65-110      PICTURE 99.                    C98970
10370          03  FILLER              PICTURE X.                     C98970
10380      02  SER-NO-65-110           PICTURE X(8).                  C98970
10390      02  FILLER                  PICTURE XX.                    C98970
10400      02  J-DAY-65-110            PICTURE 9(4).                  C98970
10410      02  FILLER                  PICTURE X(6).                  C98970
10420      02  REC-ID-65-110           PICTURE X.                     C98970
10430      02  FILLER                  PICTURE X.                     C98970
11100  FD  IN-FILE-IRAN                                                C98970
11120      RECORDING MODE IS F                                         C98970
11130      BLOCK CONTAINS 30 RECORDS                                   C98970
11140      RECORD CONTAINS 80          CHARACTERS                      C98970
11150      LABEL RECORDS ARE OMITTED                                   C98970
11160      DATA RECORDS ARE IN-REC-IRAN.                               C98970
11170  01  IN-REC-IRAN SYNC.                                           C98970
11180      02  SER-NO-IRAN             PICTURE X(8).                  C98970
11190      02  SERIES-IRAN             PICTURE X.                     C98970
11200      02  FILLER                  PICTURE X(7).                  C98970
11210      02  IRAN-VIS-NO             PICTURE 9.                     C98970
11220      02  FILLER                  PICTURE X.                     C98970
11230      02  IRAN-CODE               PICTURE 99.                    C98970
11240      02  FILLER                  PICTURE X(11).                 C98970
11250      02  IRAN-START-DAY          PICTURE S9999.                 C98970
11260      02  FILLER                  PICTURE X.                     C98970
11270      02  IRAN-END-DAY            PICTURE S9999.                 C98970
11280      02  FILLER                  PICTURE X(40).                 C98970
12100  FD  IN-FILE-AIE                                                 C98970
12120      RECORDING MODE IS F                                         C98970
12130      BLOCK CONTAINS 60 RECORDS                                   C98970
12140      RECORD CONTAINS 50          CHARACTERS                      C98970
12150      LABEL RECORDS ARE OMITTED                                   C98970
12160      DATA RECORDS ARE IN-REC-AIE.                                C98970
12200  01  IN-REC-AIE SYNC.                                            C98970
12210      02  FILLER                  PICTURE X(9).                  C98970
12220      02  WUC-AIE                 PICTURE X(5).                  C98970
12280      02  FILLER                  PICTURE X(10).                 C98970
12290      02  SER-NO-AIE              PICTURE X(8).                  C98970
12300      02  FILLER                  PICTURE X(12).                 C98970
12310      02  J-DAY-AIE               PICTURE 9999.                  C98970
12320      02  FILLER                  PICTURE XX.                    C98970
13100  FD  IN-FILE-66-1                                                C98970
13110      RECORDING MODE IS F                                         C98970
13120      BLOCK CONTAINS 30 RECORDS                                   C98970
13130      RECORD CONTAINS 90          CHARACTERS                      C98970
13140      LABEL RECORDS ARE OMITTED                                   C98970
13150      DATA RECORDS ARE IN-REC-66-1.                               C98970
13160  01  IN-REC-66-1 SYNC.                                           C98970
13170      02  MDS-66-1.                                              C98970
13180          03  MISSION-66-1        PICTURE XXX.                   C98970
13190          03  DESIGN-66-1         PICTURE XXX.                   C98970
13200          03  SERIES-66-1         PICTURE X.                     C98970
13210      02  FILLER                  PICTURE X(7).                  C98970
13220      02  SER-NO-66-1             PICTURE X(8).                  C98970
13230      02  FILLER                  PICTURE X(23).                 C98970
13240      02  WUC-66-1                PICTURE X(5).                  C98970
13300      02  A/C-66-1                PICTURE X.                     C98970
13310      02  W/C-66-1                PICTURE X.                     C98970
13320      02  RMC-66-1                PICTURE XXX.                   C98970
13330      02  UNITS-66-1              PICTURE 99.                    C98970
13340      02  LABOR-66-1              PICTURE 9(4).                  C98970
13370      02  FILLER                  PICTURE X(24).                 C98970
13380      02  J-DAY-66-1              PICTURE 9(4).                  C98970
13390      02  FILLER                  PICTURE X.                     C98970
14100  FD  IN-FILL-WUC                                                 C98970
14120      RECORDING MODE IS F                                         C98970
14130      BLOCK CONTAINS 50 RECORDS                                   C98970
```

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14140      RECORD CONTAINS 20           CHARACTERS                          C98970
14150      LABEL RECORDS ARE OMITTED                                        C98970
14160      DATA RECORDS ARE REC-IN-WUC.                                     C98970
14170  01  REC-IN-WUC SYNC.                                                C98970
14180      02  IN-REC-WUC              PICTURE XXXXX.                      C98970
14190      02  FILLER                  PICTURE X[15].                      C98970
15100  FD  OUT-FILE                                                        C98970
15120      RECORDING MODE IS F                                              C98970
15130      BLOCK CONTAINS 60 RECORDS                                        C98970
15140      RECORD CONTAINS 50           CHARACTERS                          C98970
15150      LABEL RECORDS ARE OMITTED                                        C98970
15160      DATA RECORDS ARE OUT-REC.                                        C98970
15170  01  OUT-REC SYNC.                                                   C98970
15180      02  FILLER                  PICTURE X[50].                      C98970
16100  FD  DATA-IN-FILE                                                    C98970
16110      RECORDING MODE IS F                                              C98970
16130      BLOCK CONTAINS 20 RECORDS                                        C98970
16140      RECORD CONTAINS 80           CHARACTERS                          C98970
16150      LABEL RECORDS ARE STANDARD                                       C98970
16160      DATA RECORDS ARE DATA-IN-REC.                                    C98970
16200  01  DATA-IN-REC                 PICTURE X[80].                      C98970
30000  WORKING-STORAGE SECTION.                                            C98970
30020  77  CUR-WEEK            SYNC    PICTURE 999      VALUE ZERO.        C98970
30030  77  IRAN-FLAG           SYNC    PICTURE 9        VALUE ZERO.        C98970
30040  77  FILE-FLOW-DATA      SYNC    PICTURE 9        VALUE ZERO.        C98970
30050  77  CUR-SSN             SYNC    PICTURE X[8]     VALUE SPACE.       C98970
30060  77  DATA-AVAIL-CODE     SYNC    PICTURE 9[4]     VALUE ZERO,        C98970
30070  77  IN-IRAN             SYNC    PICTURE 9        VALUE ZERO,        C98970
30080  77  START-IRAN-DAY      SYNC    PICTURE S9999    VALUE ZERO,        C98970
30090  77  END-IRAN-DAY        SYNC    PICTURE S9999    VALUE ZERO,        C98970
30100  77  JDAY                SYNC    PICTURE 9999     VALUE ZERO,        C98970
30110  77  WUC-TYPE            SYNC    PICTURE 9        VALUE ZERO,        C98970
30140  77  POS-TABLE-3         SYNC    PICTURE 999      VALUE ZERO,        C98970
30150  77  POS-TABLE-4         SYNC    PICTURE 999      VALUE ZERO,        C98970
30160  77  EOF-SSN             SYNC    PICTURE X[8]     VALUE '99999999'.  C98970
30170  77  EOF-JDAY            SYNC    PICTURE 9[4]     VALUE 9999,        C98970
30210  77  WUC-09              SYNC    PICTURE XX       VALUE '09'.        C98970
30220  77  NINE-X1             SYNC    PICTURE X        VALUE '9'.         C98970
30230  77  NINE-X3             SYNC    PICTURE XXX      VALUE '999'.       C98970
30240  77  NINE-X5             SYNC    PICTURE X[5]     VALUE '99999'.     C98970
30260  77  NINE-S4             SYNC    PICTURE S9999    VALUE -9999.       C98970
30270  77  NINE-S3             SYNC    PICTURE S999     VALUE -999,        C98970
30280  77  TABLE-SIZE          SYNC    PICTURE 999      VALUE 250.         C98970
30290  77  TAB-SIZ-1           SYNC    PICTURE 999      VALUE 251.         C98970
30330  77  REC-60-110-TYPE-I-ONLY SYNC PICTURE X VALUE SPACE.              C98970
30331  77  MAX-TAB-3   SYNC COMPUTATIONAL PICTURE S999 VALUE ZERO,         C98970
30332  77  MAX-TAB-4   SYNC COMPUTATIONAL PICTURE S999 VALUE ZERO,         C98970
30340  77  R-B SYNC COMPUTATIONAL      PICTURE S999 VALUE <60.             C98970
30350  77  ATC-INDEX COMPUTATIONAL     PICTURE S999 VALUE ZERO SYNC.       C98970
30400  01  NO-A-C-PROC                 PICTURE 999      VALUE ZERO SYNC.   C98970
30410  01  LIST-SER-NO SYNC.                                               C98970
30420      02  SER-NO OCCURS 4 TIMES   PICTURE X[8].                       C98970
30430  01  LIST-WEEK-NO SYNC.                                              C98970
30440      02  WEEK-NO OCCURS 4 TIMES  PICTURE 999.                        C98970
30450  01  NO-WEEK-PROC                PICTURE 999      VALUE ZERO SYNC.   C98970
30460  01  WUC-TEMP SYNC.                                                  C98970
30470      02  WUC-MJR                 PICTURE XX.                         C98970
30480      02  FILLER                  PICTURE XXX.                        C98970
30490  01  WUC-1 REDEFINES WUC-TEMP SYNC.                                  C98970
30500      02  WUC-3-DIG               PICTURE XXX.                        C98970
30510      02  WUC-2-DIG               PICTURE XX.                         C98970
30520  01  KN7          COMPUTATIONAL  PICTURE S9999    VALUE ZERO SYNC.   C98970
30530  01  KNA          COMPUTATIONAL  PICTURE S9999    VALUE ZERO SYNC.   C98970
30540  01  KNB          COMPUTATIONAL  PICTURE S9999    VALUE ZERO SYNC.   C98970
30550  01  WEEK-NO-COMP                PICTURE 999                SYNC.     C98970
30560  01  TEMP                SYNC    PICTURE S999.                       C98970
30590  01  LIST-DATA-WEEK SYNC.                                            C98970
30600      02  DATA-WEEK OCCURS 4 TIMES PICTURE S9.                        C98970
30601  01  LIST-DATA-WEEK-A REDEFINES LIST-DATA-WEEK SYNC.                 C98970
30602      02  DATA-WEEK-1             PICTURE S9.                         C98970
30603      02  DATA-WEEK-2             PICTURE S9.                         C98970
30604      02  DATA-WEEK-3             PICTURE S9.                         C98970
30605      02  DATA-WEEK-4             PICTURE S9.                         C98970
30610  01  ONE                 SYNC    PICTURE 9        VALUE 1.           C98970
30620  01  FILE-NO             SYNC    PICTURE S99 COMPUTATIONAL.          C98970
30630  01  SN-TEMP             SYNC    PICTURE X[8].                       C98970
30640  01  ALL-EQ              SYNC    PICTURE 9.                          C98970
30650  01  IND-TEMP            SYNC    PICTURE 9.                          C98970
30700  01  RECOPUS-PASS        SYNC    PICTURE 9[7]     VALUE ZERO,        C98970
30710  01  NINES               SYNC    PICTURE X[50]    VALUE              C98970
30720          '99999999999999999999999999999999999999999999999999'.      C98970
30800  01  MSG SYNC.                                                       C98970
30810      02  POS PICTURE 99999.                                          C98970
30820      02  FILLER PICTURE X[15] VALUE SPACE.                           C98970
30900  01  DEFINE-FILE-DATA SYNC.                                          C98970
30910      02  FILE-DATA-1             PICTURE 9        VALUE 1.           C98970
30920      02  FILE-DATA-2             PICTURE 9        VALUE 1.           C98970
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30930      02  FILLER-DATA-3              PICTURE 9       VALUE 1.          C98970
30940      02  FILLER-DATA-4              PICTURE 9       VALUE 1.          C98970
30950  01  FILLER       REDEFINES DEFINE-FILE-DATA SYNC.                     C98970
30960      02  FILLER-DATA OCCURS 4 TIMES PICTURE 9.                        C98970
31100  01  DEFINE-NON-CODES SYNC.                                           C98970
31290      02  NON-CODE OCCURS 17 TIMES PICTURE X.                          C98970
31400  01  WUC-ENGINES SYNC.                                                C98970
31490      02  ENGINE-WUC                 PICTURE XXX OCCURS 7 TIMES.       C98970
31600  01  TABLE-WUC SYNC.                                                  C98970
31610      02  LIST-WUC OCCURS 3000 TIMES PICTURE X(5).                     C98970
32100  01  WUC-DEFINE-TABLE SYNC.                                           C98970
33510      02  WUC-POS-TYPE  OCCURS 22 TIMES PICTURE XX.                    C98970
33520      02  WUC-POS-START OCCURS 22 TIMES PICTURE 9999.                  C98970
33530      02  WUC-POS-END   OCCURS 22 TIMES PICTURE 9999.                  C98970
40000  01  REC-TYPE-1 SYNC.                                                 C98970
40010      02  MDS-TYPE-1.                                                  C98970
40020          03  MISSION-TYPE-1     PICTURE X.                            C98970
40030          03  DESIGN-TYPE-1      PICTURE XXX.                          C98970
40040          03  SERIES-TYPE-1      PICTURE X.                            C98970
40050      02  SER-NO-TYPE-1          PICTURE X(8).                         C98970
40060      02  WEEK-NO-TYPE-1         PICTURE 999.                          C98970
40070      02  FILLER                 PICTURE X(12)   VALUE SPACE.          C98970
40080      02  FLT-TIME-TYPE-1        PICTURE S9999.                        C98970
40090      02  FILLER                 PICTURE X(3)    VALUE SPACE.          C98970
40100      02  SORTIES-TYPE-1         PICTURE S9999.                        C98970
40120      02  LANDINGS-TYPE-1        PICTURE S9999.                        C98970
40130      02  FILLER                 PICTURE X(05)   VALUE SPACE.          C98970
40140      02  REC-ID-TYPE-1          PICTURE 9       VALUE 1.              C98970
40150      02  FILLER                 PICTURE X       VALUE SPACE.          C98970
40400  01  REC-TYPE-2 SYNC.                                                 C98970
40410      02  MDS-TYPE-2.                                                  C98970
40420          03  MISSION-TYPE-2     PICTURE X.                            C98970
40430          03  DESIGN-TYPE-2      PICTURE XXX.                          C98970
40440          03  SERIES-TYPE-2      PICTURE X.                            C98970
40450      02  SER-NO-TYPE-2          PICTURE X(8).                         C98970
40460      02  WEEK-NO-TYPE-2         PICTURE 999.                          C98970
40470      02  FILLER                 PICTURE X(9)    VALUE SPACE.          C98970
40480      02  TRAN-VIS-NO-TYPE-2     PICTURE S999.                         C98970
40490      02  FILLER                 PICTURE X(4)    VALUE SPACE.          C98970
40500      02  TRAN-CODE-TYPE-2       PICTURE S999.                         C98970
40510      02  TRAN-START-DAY-TYPE-2  PICTURE S9999.                        C98970
40530      02  TRAN-END-DAY-TYPE-2    PICTURE S9999.                        C98970
40540      02  FILLER                 PICTURE X(05)   VALUE SPACE.          C98970
40550      02  REC-ID-TYPE-2          PICTURE 9       VALUE 2.              C98970
40560      02  FILLER                 PICTURE X       VALUE SPACE.          C98970
40700  01  REC-TYPE-3 SYNC.                                                 C98970
40710      02  MDS-TYPE3.                                                   C98970
40720          03  MISSION-TYPE-3     PICTURE X.                            C98970
40730          03  DESIGN-TYPE-3      PICTURE XXX.                          C98970
40740          03  SERIES-TYPE-3      PICTURE X.                            C98970
40750      02  SER-NO-TYPE-3          PICTURE X(8).                         C98970
40760      02  WEEK-NO-TYPE-3         PICTURE 999.                          C98970
40770      02  WUC-TYPE-3             PICTURE X(5).                         C98970
40780      02  FILLER                 PICTURE X(4)    VALUE SPACE.          C98970
40790      02  DATA-TYPE-3A.                                                C98970
40800          03  UNITS-TYPE-3       PICTURE S999.                         C98970
40810          03  LABOR-TYPE-3       PICTURE S9999.                        C98970
40840          03  AIE-TYPE-3         PICTURE S999.                         C98970
40850          03  NORM-TYPE-3        PICTURE S9999.                        C98970
40874          03  NORS-TYPE-3        PICTURE S9999.                        C98970
40876          03  UNITS-AIC-TYPE-3   PICTURE S999.                         C98970
40880      02  FILLER                 PICTURE X(02) VALUE SPACE.            C98970
40890      02  REC-ID-TYPE-3          PICTURE 9       VALUE 3.              C98970
40900      02  FILLER                 PICTURE X       VALUE SPACE.          C98970
41100  01  REC-TYPE-4 SYNC.                                                 C98970
41110      02  MDS-TYPE-4.                                                  C98970
41120          03  MISSION-TYPE-4     PICTURE X.                            C98970
41130          03  DESIGN-TYPE-4      PICTURE XXX.                          C98970
41140          03  SERIES-TYPE-4      PICTURE X.                            C98970
41150      02  SER-NO-TYPE-4          PICTURE X(8).                         C98970
41160      02  WEEK-NO-TYPE-4         PICTURE 999.                          C98970
41170      02  DATA-TYPE-4.                                                 C98970
41180          03  WUC-TYPE-4         PICTURE X(5).                         C98970
41230          03  WDC-TYPE-4         PICTURE X.                            C98970
41250              03  HMC-TYPE-4     PICTURE XXX.                          C98970
41260              03  UNITS-TYPE-4   PICTURE S999.                         C98970
41270              03  MHRS-TYPE4     PICTURE S9999.                        C98970
41280      02  FILLER                 PICTURE X(16)   VALUE SPACE.          C98970
41290      02  REC-ID-TYPE-4          PICTURE 9       VALUE 4.              C98970
41300      02  FILLER                 PICTURE X       VALUE SPACE.          C98970
42000  01  TABLE-3 SYNC.                                                    C98970
42010      02  TABLE-3-ROW OCCURS 250 TIMES.                                C98970
42020          03  TABLE-3-WUC        PICTURE X(5).                         C98970
42030          03  TABLE-3-DATAA.                                           C98970
42040              04  TABLE-3-UNITS  PICTURE S999.                         C98970
42050              04  TABLE-3-LABOR  PICTURE S9999.                        C98970
42070              04  TABLE-3-AIE    PICTURE S999.                         C98970
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42080                04  TABLE-3-NORM     PICTURE S9999.                  C98970
42120                04  TABLE-3-NORS     PICTURE S9999.                  C98970
42130                04  TABLE-3-UNITS-ATC                                C98970
42140                                      PICTURE S999.                   C98970
42200  01  TABLE-4 SYNC.                                                  C98970
42210      02  TABLE-4-ROW OCCURS 250 TIMES.                              C98970
42220          03  TABLE-4-WUC          PICTURE X(5).                     C98970
42230          03  TABLE-4-WDC          PICTURE X.                        C98970
42250              03  TABLE-4-MMC      PICTURE XXX.                      C98970
42260              03  TABLE-4-UNITS    PICTURE S999.                     C98970
42270              03  TABLE-4-MHRS     PICTURE S9999.                    C98970
43000  01  DATA-IN-A SYNC.                                                C98970
43010      05  WUC-SCHED-INSP           PICTURE XX.                       C98970
43020      05  FILLER                   PICTURE XXX.                      C98970
43030      05  WUC-SPEC-INSP            PICTURE XX.                       C98970
43040      05  FILLER                   PICTURE XXX.                      C98970
43050      05  FIRST-A-C                PICTURE X(8).                     C98970
43060      05  FILLER                   PICTURE XX.                       C98970
43070      05  FIRST-WEEK               PICTURE 9(5).                     C98970
43080      05  LAST-WEEK                PICTURE 9(5).                     C98970
43090      05  FILLER                   PICTURE X.                        C98970
43100      05  MISSION-IN               PICTURE X.                        C98970
43110      05  DESIGN-IN                PICTURE XXX.                      C98970
43120      05  NO-AC-TO-PROC            PICTURE 9(5).                     C98970
43130      05  FILLER                   PICTURE X(40).                    C98970
43200  01  DATA-IN-B SYNC.                                                C98970
43210      05  NUM-ATC                  PICTURE 999.                      C98970
43220      05  FILLER                   PICTURE X(77).                    C98970
43300  01  DATA-IN-C SYNC.                                                C98970
43310      05  X-CODE                   PICTURE X.                        C98970
43320      05  FILLER                   PICTURE X(79).                    C98970
43400  01  DATA-IN-D SYNC.                                                C98970
43410      05  NUM-NCODES               PICTURE 999.                      C98970
43420      05  NUM-NORM                 PICTURE 999.                      C98970
43430      05  FILLER                   PICTURE X(74).                    C98970
43500  01  DATA-IN-E SYNC.                                                C98970
43510      05  NUM-ENG-WUC              PICTURE 999.                      C98970
43520      05  FILLER                   PICTURE X(77).                    C98970
43600  01  DATA-IN-F SYNC.                                                C98970
43610      05  ENG-WUC-IN               PICTURE XXX.                      C98970
43620      05  FILLER                   PICTURE X(77).                    C98970
43700  01  DATA-IN-G SYNC.                                                C98970
43710      05  NUM-WUC-GROUPS           PICTURE 999.                      C98970
43720      05  FILLER                   PICTURE XXX.                      C98970
43730      05  MAX-NUM-WUC              PICTURE 9999.                     C98970
43740      05  FILLER                   PICTURE X(70).                    C98970
43800  01      DATA-IN-H SYNC.                                            C98970
43810      05  WUC-2DIG-IN              PICTURE XX.                       C98970
43820      05  FILLER                   PICTURE XXX.                      C98970
43830      05  FIRST-POSITION           PICTURE 9(5).                     C98970
43840      05  LAST-POSITION            PICTURE 9(5).                     C98970
43850      05  FILLER                   PICTURE X(65).                    C98970
43900  01      FILLER SYNC.                                               C98970
43910      05      LIST-AIC              PICTURE X  OCCURS 5 TIMES.        C98970
50000  PROCEDURE DIVISION.                                                C98970
50010  OPEN-FILES.                                                        C98970
50020      OPEN INPUT IN-FILE-65-110, IN-FILE-IRAN, IN-FILE-AIE,          C98970
50030          IN-FILE-66-I, IN-FILE-WUC.                                 C98970
50040      OPEN OUTPUT OUT-FILE.                                          C98970
50045      OPEN INPUT DATA-IN-FILE.                                       C98970
50050      MOVE ZERO TO NO-A-C-PROC.                                      C98970
50060      MOVE ZERO TO IRAN-FLAG.                                        C98970
50065      PERFORM READ-DATA-IN-FILE THRU END-RDIF.                       C98970
50070      NOTE  READ LIST OF WORK-UNIT-CODES.                            C98970
50080      PERFORM READ-WUC-LIST THRU END-READ-WUC-LIST.                  C98970
50085      CLOSE IN-FILE-WUC WITH LOCK.                                   C98970
50090      NOTE  FIND LOWEST SERIAL NUMBER AND WEEK FOR INPUT DATA        C98970
50100          FILES.                                                     C98970
50110      PERFORM INIT-SN-WK THRU END-INIT-SN-WK.                        C98970
50120      NOTE  FIND FILE WITH LOWEST SERIAL NUMBER-WEEK.                C98970
50130      PERFORM ST-SN-WK THRU END-ST-SN-WK.                            C98970
50140  NEW-SER-NO.                                                        C98970
50150      MOVE FILE-LOW-DATA TO FILE-NO.                                 C98970
50160      MOVE SER-NO (FILE-NO) TO CUR-S-N.                              C98970
50170      MOVE WEEK-NO (FILE-NO) TO CUR-WEEK.                            C98970
50180      MOVE ZERO TO NO-WEEK-PROC.                                     C98970
50190      NOTE  ROUTINE TO START DATA BANK WHEN        65-110            C98970
50200         AND 66-I IS AVAILABLE.                                      C98970
50210      PERFORM START-BANK THRU END-START-BANK.                        C98970
50220      IF IRAN-FLAG NOT EQUAL TO ZERO,                                C98970
50230          PERFORM RESET-WEEK THRU END-RESET,                         C98970
50240          ELSE, PERFORM RESET-SER-NO THRU END-RESET.                 C98970
50250      MOVE ZERO TO IRAN-FLAG.                                        C98970
50260      MOVE ZERO TO NO-WEEK-PROC.                                     C98970
50270      IF DATA-AVAIL-CODE EQUAL TO ZERO GO TO SN-WEEK-DONE.           C98970
50280      NOTE     PROCESS ONE SERIAL NUMBER-WEEK.                       C98970
50290  NEXT-WEEK.                                                         C98970
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50301      IF DATA-WEEK-2 IS NOT EQUAL TO ZERO PERFORM RESET-IRAN          C98970
50302                     THRU END-RESET.                                  C98970
50303      IF DATA-WEEK-3 IS NOT EQUAL TO ZERO PERFORM RESET-AIE           C98970
50304                     THRU END-RESET.                                  C98970
50305      IF DATA-WEEK-4 IS NOT EQUAL TO ZERO PERFORM RESET-66-1          C98970
50306                     THRU END-RESET.                                  C98970
50307      IF DATA-WEEK-1 IS NOT EQUAL TO ZERO PERFORM RESET-65-110        C98970
50308                     THRU END-RESET.                                  C98970
50309      IF DATA-WEEK-2   NOT EQUAL TO ZERO                              C98970
50310          PERFORM SN-WK-IRAN THRU END-SN-WK-IRAN.                     C98970
50320      IF DATA-WEEK-3   NOT EQUAL TO ZERO                              C98970
50330          PERFORM SN-WK-AIE  THRU END-SN-WK-AIE.                      C98970
50340      IF DATA-WEEK-4   NOT EQUAL TO ZERO                              C98970
50350          PERFORM SN-WK-66-1 THRU END-SN-WK-66-1.                     C98970
50360      IF DATA-WEEK-1   NOT EQUAL TO ZERO                              C98970
50370          PERFORM SN-WK-65-110 THRU END-SN-WK-65-110.                 C98970
50380  SN-WEEK-DONE.                                                       C98970
50390      PERFORM WRITE-BANK THRU END-WRITE-BANK.                         C98970
50400      ADD ONE TO CUR-WEEK.                                            C98970
50410      IF CUR-WEEK GREATER THAN LAST-WEEK                              C98970
50420          GO TO SERIAL-NO-DONE.                                       C98970
50430      IF IRAN-FLAG EQUAL TO ZERO                                      C98970
50440          GO TO WEEK-RESET.                                           C98970
50450      COMPUTE WEEK-NO-COMP > LEND-IRAN-DAY < 31 / 7 < 1.              C98970
50460      IF CUR-WEEK GREATER THAN WEEK-NO-COMP                           C98970
50470          MOVE ZERO TO IRAN-FLAG.                                     C98970
50480  WEEK-RESET.                                                         C98970
50490      PERFORM RESET-WEEK THRU END-RESET.                              C98970
50500      PERFORM DATA-AVAIL THRU END-DATA-AVAIL.                         C98970
50510      IF DATA-AVAIL-CODE EQUAL TO ZERO                                C98970
50520          GO TO SN-WEEK-DONE.                                         C98970
50530      GO TO NEXT-WEEK.                                                C98970
50540  SERIAL-NO-DONE.                                                     C98970
50550      PERFORM RESET-SER-NO THRU END-RESET.                            C98970
50555      MOVE ZERO TO IRAN-FLAG.                                         C98970
50560      ADD ONE TO NO-A-C-PROC.                                         C98970
50570      IF NO-A-C-PROC IS NOT LESS THAN NO-AC-TO-PROC,                  C98970
50580                        GO TO BLOCK-CHECK.                            C98970
50590      NOTE    CHECK IF ALL FILES HAVE EOF.                            C98970
50600      PERFORM FILES-EOF THRU END-FILES-EOF.                           C98970
50610      IF ALL-EOF NOT EQUAL TO ZERO                                    C98970
50620          GO TO NEW-SER-NO.                                           C98970
50630      NOTE    AIRCRAFT SERIAL NUMBERS PROCESSING COMPLETED.           C98970
50640  BLOCK-CHECK.                                                        C98970
50650      COMPUTE KNT > RECORDS-PASS - RECORDS-PASS / R-B * R-B.          C98970
50660      IF KNT EQUAL TO ZERO                                            C98970
50670          GO TO CLOSE-FILES.                                          C98970
50680  NINE-FILL.                                                          C98970
50690      WRITE OUT-REC FROM NINES.                                       C98970
50700      ADD ONE TO KNT.                                                 C98970
50710      IF KNT IS LESS THAN R-B GO TO NINE-FILL.                        C98970
50720  CLOSE-FILES.                                                        C98970
50730      CLOSE IN-FILE-65-110 WITH LOCK,                                 C98970
50740            IN-FILE-IRAN   WITH LOCK,                                 C98970
50750            IN-FILE-AIE    WITH LOCK,                                 C98970
50760            IN-FILE-66-1   WITH LOCK,                                 C98970
50780            OUT-FILE       WITH LOCK.                                 C98970
50781      CLOSE DATA-IN-FILE WITH LOCK.                                   C98970
50790  MESSAGES.                                                           C98970
50791      DISPLAY ' SER-NO ' CUR-S-N ' WEEK ' CUR-WEEK UPON CONSOLE.      C98970
50800      DISPLAY ' RECORDS WRITTEN IN DATA BANK ' RECORDS-PASS           C98970
50810              UPON CONSOLE.                                           C98970
50820      DISPLAY ' NUMBER A/C PROCESSED ' NO-A-C-PROC                    C98970
50830              UPON CONSOLE.                                           C98970
50831      DISPLAY ' MAX TAB 3 ' MAX-TAB-3 ' MAX TAB 4 '                   C98970
50832               MAX-TAB-4 UPON CONSOLE.                                C98970
50835      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                             C98970
50840      GOBACK.                                                         C98970
69000  CHECK-IN-IRAN.                                                      C98970
69020      MOVE ZERO TO IN-IRAN.                                           C98970
69030      IF IRAN-FLAG IS EQUAL TO ZERO GO TO END-CHECK-IN-IRAN.          C98970
69040      IF JDAY LESS THAN START-IRAN-DAY GO TO END-CHECK-IN-IRAN.       C98970
69050      IF JDAY GREATER THAN END-IRAN-DAY GO TO END-CHECK-IN-IRAN.      C98970
69060      MOVE ONE TO IN-IRAN.                                            C98970
69070  END-CHECK-IN-IRAN.                                                  C98970
69080      EXIT.                                                           C98970
70000  PROC-WUC.                                                           C98970
70010      MOVE ZERO TO WUC-TYPE.                                          C98970
70020      IF WUC-TEMP IS EQUAL TO SPACE THEN GO TO END-PROC-WUC.          C98970
70030      IF WUC-MJR IS GREATER THAN WUC-09 GO TO PROC-WUC-NSG.           C98970
70040      IF WUC-MJR IS EQUAL TO WUC-SCHED-INSP GO TO                     C98970
70050                        PROC-WUC-ACCPT-SG.                            C98970
70060      IF WUC-MJR IS EQUAL TO WUC-SPEC-INSP GO TO PROC-WUC-ACCPT-SG.   C98970
70070      GO TO END-PROC-WUC.                                             C98970
70100  PROC-WUC-ACCPT-SG.                                                  C98970
70110      MOVE 1 TO WUC-TYPE.                                             C98970
70120      GO TO END-PROC-WUC.                                             C98970
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70200  PROC-WUC-NSG.                                                    C98970
70210      IF POS-TABLE-3 IS EQUAL TO ZERO GO TO PROC-WUC-3.            C98970
70220      MOVE 1 TO KNT.                                               C98970
70230  PROC-WUC-4.                                                      C98970
70240      IF WUC-TEMP IS EQUAL TO TABLE-3-WUC (KNT) THEN GO TO         C98970
70250                              PROC-WUC-ACCPT-NSG.                  C98970
70260      ADD 1 TO KNT.                                                C98970
70270      IF KNT IS GREATER THAN POS-TABLE-3 THEN GO TO PROC-WUC-3.    C98970
70280      GO TO PROC-WUC-4.                                            C98970
70300  PROC-WUC-5.                                                      C98970
70310      IF POS-TABLE-4 IS EQUAL TO ZERO GO TO PROC-WUC-ENGS.         C98970
70320      MOVE 1 TO KNT.                                               C98970
70330  PROC-WUC-6.                                                      C98970
70340      IF WUC-TEMP IS EQUAL TO TABLE-4-WUC (KNT) THEN GO TO         C98970
70350                              PROC-WUC-ACCPT-NSG.                  C98970
70360      ADD 1 TO KNT.                                                C98970
70370      IF KNT IS GREATER THAN POS-TABLE-4 THEN GO TO PROC-WUC-ENGS. C98970
70380      GO TO PROC-WUC-6.                                            C98970
70400  PROC-WUC-ENGS.                                                   C98970
70410      MOVE 1 TO KNT.                                               C98970
70420  PROC-WUC-7                                                       C98970
70430      IF WUC-3-DIG IS EQUAL TO ENGINE-WUC (KNT) THEN GO TO         C98970
70440                              PROC-WUC-ACCPT-ENGS.                 C98970
70450      ADD 1 TO KNT.                                                C98970
70460      IF KNT IS GREATER THAN NUM-ENG-WUC GO TO PROC-WUC-MJR.       C98970
70470      GO TO PROC-WUC-7.                                            C98970
70500  PROC-WUC-ACCPT-ENGS.                                             C98970
70510      MOVE SPACE TO WUC-2-DIG.                                     C98970
70520  PROC-WUC-ACCPT-NSG.                                              C98970
70530      MOVE 2 TO WUC-TYPE.                                          C98970
70540      GO TO END-PROC-WUC.                                          C98970
70600  PROC-WUC-MJR.                                                    C98970
70610      MOVE 1 TO KNA.                                               C98970
70620  PROC-WUC-8.                                                      C98970
70630      IF WUC-MJR IS EQUAL TO WUC-POS-TYPE (KNA) GO TO PROC-WUC-MIN. C98970
70640      ADD 1 TO KNA.                                                C98970
70650      IF KNA IS GREATER THAN NUM-WUC-GROUPS GO TO END-PROC-WUC.    C98970
70660      GO TO PROC-WUC-8.                                            C98970
70700  PROC-WUC-MIN.                                                    C98970
70710      MOVE WUC-POS-START (KNA) TO KNT.                             C98970
70720      MOVE WUC-POS-END (KNA) TO KNB.                               C98970
70800  PROC-WUC-9.                                                      C98970
70810      IF WUC-TEMP IS EQUAL TO LIST-WUC (KNT) GO TO                 C98970
70820                              PROC-WUC-ACCPT-NSG.                  C98970
70830      ADD 1 TO KNT.                                                C98970
70840      IF KNT IS GREATER THAN KNB GO TO END-PROC-WUC.               C98970
70850      GO TO PROC-WUC-9.                                            C98970
70900  END-PROC-WUC. EXIT.                                              C98970
72000  PROC-65-110.                                                     C98970
72010      MOVE JDAY-65-110 TO JDAY.                                    C98970
72020      PERFORM CHECK-IN-IRAN THRU END-CHECK-IN-IRAN.                C98970
72030      IF IN-IRAN IS EQUAL TO 1 GO TO END-PROC-65-110.              C98970
72040      IF REC-ID-65-110 IS EQUAL TO '2' GO TO PROC-65-110-A.        C98970
72050      IF REC-ID-65-110 IS GREATER THAN '2' GO TO PROC-65-110-B.    C98970
72060      GO TO END-PROC-65-110.                                       C98970
72070  PROC-65-110-B.                                                   C98970
72080      IF REC-ID-65-110 IS GREATER THAN '9' GO TO END-PROC-65-110.  C98970
72090      NOTE  REC-ID-65-110 HAS VALUE 3 TO 9 AT THIS POINT.          C98970
72100      ADD TIME-65-110 TO FLT-TIME-TYPE-1.                          C98970
72105      MOVE '1' TO REC-65-110-TYPE-1-ONLY.                          C98970
72110      ADD SORTIES-65-110 TO SORTIES-TYPE-1.                        C98970
72120      ADD LANDINGS-65-110 TO LANDINGS-TYPE-1.                      C98970
72130      IF SERIES-TYPE-1 IS EQUAL TO SPACE THEN MOVE SERIES-65-110   C98970
72140                              TO SERIES-TYPE-1.                    C98970
72150      GO TO END-PROC-65-110.                                       C98970
72200  PROC-65-110-A.                                                   C98970
72220      MOVE WUC-65-110 TO WUC-TEMP.                                 C98970
72230      PERFORM PROC-WUC THRU END-PROC-WUC.                          C98970
72240      IF WUC-TYPE IS EQUAL TO ZERO GO TO END-PROC-65-110.          C98970
72245      MOVE '1' TO REC-65-110-TYPE-1-ONLY.                          C98970
72250      MOVE 1 TO KNT.                                               C98970
72260      IF POS-TABLE-3 EQUAL TO ZERO GO TO PROC-65-110-E.            C98970
72270  PROC-65-110-C.                                                   C98970
72280      IF WUC-TEMP IS EQUAL TO TABLE-3-WUC (KNT) THEN GO TO         C98970
72290                              PROC-65-110-D.                       C98970
72300      ADD 1 TO KNT.                                                C98970
72310      IF KNT IS GREATER THAN POS-TABLE-3 GO TO PROC-65-110-E.      C98970
72320      GO TO PROC-65-110-C.                                         C98970
72400  PROC-65-110-E.                                                   C98970
72410      MOVE KNT TO POS-TABLE-3.                                     C98970
72414      IF POS-TABLE-3 IS GREATER THAN MAX-TAB-3   MOVE POS-TABLE-3  C98970
72415                              TO MAX-TAB-3.                        C98970
72420      IF POS-TABLE-3 IS GREATER THAN TABLE-SIZE GO TO PROC-65-ERR. C98970
72430      MOVE WUC-TEMP TO TABLE-3-WUC (KNT).                          C98970
72440      IF SERIES-TYPE-3 IS EQUAL TO SPACE THEN MOVE SERIES-65-110   C98970
72450                              TO SERIES-TYPE-3.                    C98970
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72500  PROC-65-110-D.                                                    C98970
72510      MOVE 1 TO KNA.                                                C98970
72520  PROC-65-110-F.                                                    C98970
72530      IF MAINT-CODE-65-110 IS EQUAL TO NOR-CODE (KNA) GO TO         C98970
72540                              PROC-65-110-G.                        C98970
72550      ADD 1 TO KNA.                                                 C98970
72560      IF KNA IS GREATER THAN NUM-NCODES GO TO END-PROC-65-110.       C98970
72570      GO TO PROC-65-110-F.                                          C98970
72600  PROC-65-110-G.                                                    C98970
72610      IF KNA IS NOT GREATER THAN NUM-NORM THEN ADD TIME-65-110 TO    C98970
72620                              TABLE-3-NORM (KNT).                   C98970
72630      IF KNA IS GREATER THAN NUM-NORM THEN ADD TIME-65-110 TO        C98970
72640                              TABLE-3-NORS (KNT).                   C98970
72690      GO TO END-PROC-65-110.                                        C98970
72800  PROC-65-ERR.                                                      C98970
72810      DISPLAY ' TABLE SIZE EXCEEDED IN TABLE-3 ' UPON CONSOLE.      C98970
72820      GO TO CLOSE-FILES.                                            C98970
72900  END-PROC-65-110. EXIT.                                            C98970
73000  PROC-IRAN.                                                        C98970
73010      MOVE IRAN-VIS-NO TO IRAN-VIS-NO-TYPE-2.                       C98970
73020      MOVE IRAN-CODE TO IRAN-CODE-TYPE-2.                           C98970
73030      MOVE IRAN-START-DAY TO IRAN-START-DAY-TYPE-2.                 C98970
73040      MOVE IRAN-START-DAY TO START-IRAN-DAY.                        C98970
73050      IF IRAN-END-DAY IS EQUAL TO ZERO THEN MOVE 9999 TO            C98970
73060                              IRAN-END-DAY.                         C98970
73070      MOVE IRAN-END-DAY TO IRAN-END-DAY-TYPE-2.                     C98970
73080      MOVE IRAN-END-DAY TO END-IRAN-DAY.                            C98970
73090      MOVE 1 TO IRAN-FLAG.                                          C98970
73100      IF SERIES-TYPE-2 IS EQUAL TO SPACE THEN MOVE SERIES-IRAN      C98970
73110                              TO SERIES-TYPE-2.                     C98970
73900  END-PROC-IRAN. EXIT.                                              C98970
74000  PROC-AIE.                                                         C98970
74010      MOVE J-DAY-AIE TO JDAY.                                       C98970
74020      PERFORM CHECK-IN-IRAN THRU END-CHECK-IN-IRAN.                 C98970
74030      IF IN-IRAN IS EQUAL TO 1 GO TO END-PROC-AIE.                  C98970
74040      MOVE WUC-AIE TO WUC-TEMP.                                     C98970
74050      PERFORM PROC-WUC THRU END-PROC-WUC.                           C98970
74060      IF WUC-TYPE IS EQUAL TO ZERO GO TO END-PROC-AIE.              C98970
74100      MOVE 1 TO KNT.                                                C98970
74110      IF POS-TABLE-3 IS EQUAL TO ZERO GO TO PROC-AIE-A.             C98970
74120  PROC-AIE-B.                                                       C98970
74130      IF WUC-TEMP IS EQUAL TO TABLE-3-WUC (KNT) THEN GO TO          C98970
74140                              PROC-AIE-C.                           C98970
74150      ADD 1 TO KNT.                                                 C98970
74160      IF KNT IS GREATER THAN POS-TABLE-3 GO TO PROC-AIE-A.          C98970
74170      GO TO PROC-AIE-B.                                             C98970
74200  PROC-AIE-A.                                                       C98970
74210      MOVE KNT TO POS-TABLE-3.                                      C98970
74214      IF POS-TABLE-3 IS GREATER THAN MAX-TAB-3   MOVE POS-TABLE-3   C98970
74215                              TO MAX-TAB-3.                         C98970
74220      IF POS-TABLE-3 IS GREATER THAN TABLE-SIZE GO TO PROC-AIE-ERR. C98970
74230      MOVE WUC-TEMP TO TABLE-3-WUC (KNT).                           C98970
74300  PROC-AIE-C.                                                       C98970
74310      ADD 1 TO TABLE-3-AIE (KNT).                                   C98970
74320      GO TO END-PROC-AIE.                                           C98970
74910  PROC-AIE-ERR.                                                     C98970
74920      DISPLAY ' TABLE-SIZE EXCEEDED IN TABLE-3 ' UPON CONSOLE.      C98970
74930      GO TO CLOSE-FILES.                                            C98970
74990  END-PROC-AIE.                                                     C98970
75000  PROC-66-1.                                                        C98970
75010      MOVE J-DAY-66-1 TO JDAY.                                      C98970
75020      PERFORM CHECK-IN-IRAN THRU END-CHECK-IN-IRAN.                 C98970
75030      IF IN-IRAN IS EQUAL TO 1 GO TO END-PROC-66-1.                 C98970
75040      MOVE WUC-66-1 TO WUC-TEMP.                                    C98970
75050      PERFORM PROC-WUC THRU END-PROC-WUC.                           C98970
75060      IF WUC-TYPE IS EQUAL TO 1 GO TO PROC-66-1-B.                  C98970
75070      IF WUC-TYPE IS NOT EQUAL TO 2 GO TO END-PROC-66-1.            C98970
75100      MOVE 1 TO KNT.                                                C98970
75110      IF POS-TABLE-4 IS EQUAL TO ZERO GO TO PROC-66-1-D.            C98970
75120  PROC-66-1-B.                                                      C98970
75130      IF WUC-TEMP IS EQUAL TO TABLE-4-WUC (KNT) AND WDC-66-1 IS     C98970
75140            EQUAL TO TABLE-4-WDC (KNT) AND TABLE-4-HMC (KNT) IS     C98970
75145          EQUAL TO HMC-66-1 THEN GO TO PROC-66-1-HMC.               C98970
75150      ADD 1 TO KNT.                                                 C98970
75160      IF KNT IS GREATER THAN POS-TABLE-4 GO TO PROC-66-1-D.         C98970
75170      GO TO PROC-66-1-B.                                            C98970
75200  PROC-66-1-D.                                                      C98970
75210      MOVE KNT TO POS-TABLE-4.                                      C98970
75215      IF POS-TABLE-4 IS GREATER THAN MAX-TAB-4   MOVE POS-TABLE-4   C98970
75216                              TO MAX-TAB-4.                         C98970
75220      IF POS-TABLE-4 IS GREATER THAN TABLE-SIZE GO TO               C98970
75230                              PROC-66-1-ERR-1.                      C98970
75240      MOVE WUC-TEMP TO TABLE-4-WUC (KNT).                           C98970
75250      MOVE WDC-66-1 TO TABLE-4-WDC (KNT).                           C98970
75255      MOVE HMC-66-1 TO TABLE-4-HMC (KNT).                           C98970
75260      IF SERIES-TYPE-4 IS EQUAL TO SPACE MOVE SERIES-66-1 TO        C98970
75270                              SERIES-TYPE-4.                        C98970
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75440  PROC-66-1-MMC.                                                  C98970
T5450       ADD UNITS-66-I TO TABLE-4-UNITS [KNT].                     C98970
T5460       ADD LABOR-66-I TO TABLE-4-MHRS [KNT].                      C98970
75500  PROC-66-I-G.                                                    C98970
75510       MOVE 1 TO KNT.                                             C98970
75520       IF POS-TABLE-3 IS EQUAL TO ZERO GO TO PROC-66-I-H.         C98970
T5530  PROC-66-I-J.                                                    C98970
75540       IF WUC-TEMP IS EQUAL TO TABLE-3-WUC [KNT] GO TO PROC-66-1-K. C98970
75550       ADD 1 TO KNT.                                              C98970
T5560       IF KNT IS GREATER THAN POS-TABLE-3 GO TO PROC-66-I-N.      C98970
75570       GO TO PROC-66-I-J.                                         C98970
75600  PROC-66-I-H.                                                    C98970
T5610       MOVE KNT TO POS-TABLE-3.                                   C98970
T5614       IF POS-TABLE-3 IS GREATER THAN MAX-TAB-3   MOVE POS-TABLE-3 C98970
T5615                          TO MAX-TAB-3.                           C98970
75620       IF POS-TABLE-3 IS GHEATER THAN TABLE-SIZE GO TO            C98970
T5630                          PROC-66-I-ERR-3.                        C98970
75640       MOVE WUC-TEMP TO TABLE-3-WUC [KNT].                        C98970
T5650       IF SERIES-TYPE-3 IS EQUAL TO SPACE THEN MOVE SERIES-66-1   C98970
75660                          TO SERIES-TYPE-3.                       C98970
75700  PROC-66-I-K.                                                    C98970
T5710       ADD UNITS-66-I TO TABLE-3-UNITS [KNT].                     C98970
75720       ADD LABOR-66-I TO TABLE-3-LABOR [KNT].                     C98970
T5730       MOVE ZERO TO ATC-INDEX.                                    C98970
75735  PROC-66-I-K-L.                                                  C98970
75740       ADD I TO ATC-INDEX.                                        C98970
T5745       IF ATC-66-I IS EQUAL TO LIST-ATC [ATC-INDEX]               C98970
75750                              GO TO PROC-66-I-L.                  C98970
T5755       IF ATC-INDEX IS LESS THAN NUM-ATC GO TO PROC-66-I-K-L.     C98970
75760       GO TO END-PROC-66-I.                                       C98970
75770  PROC-66-I-L.                                                    C98970
75780       ADD UNITS-66-I TO TABLE-3-UNITS-ATC [KNT].                 C98970
75790       GO TO END-PROC-66-I.                                       C98970
T5900  PROC-66-I-ERR-1.                                                C98970
75910       DISPLAY ' TABLE-SIZE EXCEEDED IN TABLE 4 ' UPON CONSOLE.   C98970
75920       GO TO CLOSE-FILES.                                         C98970
75960  PROC-66-I-ERR-3.                                                C98970
75970       DISPLAY ' TABLE-SIZE EXCEEDED IN TABLE 3 ' UPON CONSOLE.   C98970
75980       GO TO CLOSE-FILES.                                         C98970
T5990  END-PROC-66-I. EXIT.                                            C98970
76000  READ-65-110.                                                    C98970
76010       IF FILE-DATA-1   IS EQUAL TO ZERO, GO TO END-READ-65-110.  C98970
76020       READ IN-FILE-65-110, AT END GO TO READ-65-110-A.           C98970
76030       IF SER-NO-65-110 EQUAL TO EOF-S-N GO TO READ-65-110-A.     C98970
76040       GO TO END-READ-65-110.                                     C98970
76050  READ-65-110-A.                                                  C98970
76060       MOVE ZERO TO FILE-DATA [1].                                C98970
76070  END-READ-65-110. EXIT.                                          C98970
76100  READ-IRAN.                                                      C98970
76110       IF FILE-DATA-2   IS EQUAL TO ZERO, GO TO END-READ-IRAN.    C98970
T6120       READ IN-FILE-IRAN, AT END GO TO READ-IRAN-A.               C98970
T6130       IF SER-NO-IRAN EQUAL TO EOF-S-N GO TO READ-IRAN-A.         C98970
76140       GO TO END-READ-IRAN.                                       C98970
76150  READ-IRAN-A.                                                    C98970
76160       MOVE ZERO TO FILE-DATA [2].                                C98970
T6170  END-READ-IRAN. EXIT.                                            C98970
76200  READ-AIE.                                                       C98970
T6210       IF FILE-DATA-3   IS EQUAL TO ZERO, GO TO END-READ-IRAN.    C98970
T6220       READ IN-FILE-AIE, AT END GO TO READ-AIE-A.                 C98970
T6230       IF SER-NO-AIE EQUAL TO EOF-S-N GO TO READ-AIE-A.           C98970
T6240       GO TO END-READ-AIE.                                        C98970
T6250  READ-AIE-A.                                                     C98970
T6260       MOVE ZERO TO FILE-DATA [3].                                C98970
T6270  END-READ-AIE. EXIT.                                             C98970
T6300  READ-66-I.                                                      C98970
T6310       IF FILE-DATA-4   IS EQUAL TO ZERO, GO TO END-READ-66-1.    C98970
76320       READ IN-FILE-66-I, AT END GO TO READ-66-1-A.               C98970
T6330       IF SER-NO-66-I EQUAL TO EOF-S-N GO TO READ-66-1-A.         C98970
T6340       GO TO END-READ-66-I.                                       C98970
T6350  READ-66-1-A.                                                    C98970
T6360       MOVE ZERO TO FILE-DATA [4].                                C98970
T6370  END-READ-66-I. EXIT.                                            C98970
77000  WRITE-BANK.                                                     C98970
77021       IF REC-65-110-TYPE-I-ONLY IS EQUAL TO SPACE GO TO          C98970
T7022                          WRITE-BANK-TYPE-2.                      C98970
77030       NOTE WRITE TYPE-I RECORD.                                  C98970
77040       MOVE CUR-S-N TO SER-NO-TYPE-I.                             C98970
77050       MOVE CUR-WEEK TO WEEK-NO-TYPE-I.                           C98970
77060       WRITE OUT-REC FROM REC-TYPE-I.                             C98970
77070       ADD 1 TO RECORDS-PASS.                                     C98970
77100  WRITE-BANK-TYPE-2.                                              C98970
77120       IF DATA-WEEK-2          IS EQUAL TO ZERO GO TO             C98970
77130                          WRITE-BANK-TYPE-3.                      C98970
77140       MOVE CUR-S-N TO SER-NO-TYPE-2.                             C98970
77150       MOVE CUR-WEEK TO WEEK-NO-TYPE-2.                           C98970
77160       WRITE OUT-REC FROM REC-TYPE-2.                             C98970
77170       ADD 1 TO RECORDS-PASS.                                     C98970
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77200  WRITE-BANK-TYPE-3.                                                    C98970
77220      IF REC-65-110-TYPE-1-ONLY IS EQUAL TO SPACE AND                   C98970
77230         DATA-WEEK-3 IS EQUAL TO ZERO AND                               C98970
77231         DATA-WEEK-4 IS EQUAL TO ZERO THEN GO TO WRITE-BANK-TYPE-4.     C98970
77240      IF POS-TABLE-3 IS EQUAL TO ZERO GO TO WRITE-BANK-TYPE-4.          C98970
77250      MOVE CUR-S-N TO SER-NO-TYPE-3.                                    C98970
77260      MOVE CUR-WEEK TO WEEK-NO-TYPE-3.                                  C98970
77270      MOVE 1 TO KNT.                                                    C98970
77280  WRITE-BANK-A.                                                         C98970
77290      MOVE TABLE-3-WUC (KNT) TO WUC-TYPE-3.                             C98970
77300      MOVE TABLE-3-DATAA (KNT) TO DATA-TYPE-3A.                         C98970
77330      WRITE OUT-REC FROM REC-TYPE-3.                                    C98970
77340      ADD 1 TO RECORDS-PASS.                                            C98970
77350      ADD 1 TO KNT.                                                     C98970
77360      IF KNT IS GREATER THAN POS-TABLE-3 GO TO WRITE-BANK-TYPE-4.       C98970
77370      GO TO WRITE-BANK-A.                                               C98970
77400  WRITE-BANK-TYPE-4.                                                    C98970
77420      IF DATA-WEEK-4 IS EQUAL TO ZERO GO TO END-WRITE-BANK.             C98970
77440      IF POS-TABLE-4 IS EQUAL TO ZERO GO TO END-WRITE-BANK.             C98970
77450      MOVE CUR-S-N TO SER-NO-TYPE-4.                                    C98970
77460      MOVE CUR-WEEK TO WEEK-NO-TYPE-4.                                  C98970
77490      MOVE 1 TO KNT.                                                    C98970
77500  WRITE-BANK-B.                                                         C98970
77510      MOVE TABLE-4-ROW (KNT) TO DATA-TYPE-4.                            C98970
77520      WRITE OUT-REC FROM REC-TYPE-4.                                    C98970
77530      ADD 1 TO RECORDS-PASS.                                            C98970
77540      ADD 1 TO KNT.                                                     C98970
77550      IF KNT IS GREATER THAN POS-TABLE-4 GO TO END-WRITE-BANK.          C98970
77560      GO TO WRITE-BANK-B.                                               C98970
77700  END-WRITE-BANK. EXIT.                                                 C98970
78000  INIT-SN-WK.                                                           C98970
78020  INIT-65-110.                                                          C98970
78021      PERFORM READ-65-110 THRU END-READ-65-110.                         C98970
78022      IF SER-NO-65-110 IS LESS THAN FIRST-A-C GO TO INIT-65-110.        C98970
78040  INIT-IRAN.                                                            C98970
78041      PERFORM READ-IRAN   THRU END-READ-IRAN.                           C98970
78042      IF SER-NO-IRAN   IS LESS THAN FIRST-A-C GO TO INIT-IRAN.          C98970
78060  INIT-AIE.                                                             C98970
78062      PERFORM READ-AIE    THRU END-READ-AIE.                            C98970
78063      IF SER-NO-AIE    IS LESS THAN FIRST-A-C GO TO INIT-AIE.           C98970
78080  INIT-66-1.                                                            C98970
78081      PERFORM READ-66-1 THRU END-READ-66-1.                             C98970
78082      IF SER-NO-66-1  IS LESS THAN FIRST-A-C THEN GO TO INIT-66-1.      C98970
78100      NOTE STORE SERIAL NUMBER,WEEK NUMBER INTO KEYS.                   C98970
78110      MOVE SER-NO-65-110 TO SER-NO (1).                                 C98970
78120      COMPUTE WEEK-NO (1) > (J-DAY-65-110 < 3) / 7 < 1.                 C98970
78130      MOVE SER-NO-IRAN TO SER-NO (2).                                   C98970
78140      COMPUTE WEEK-NO (2) > (IRAN-START-DAY < 3) / 7 < 1.               C98970
78150      MOVE SER-NO-AIE TO SER-NO (3).                                    C98970
78160      COMPUTE WEEK-NO (3) > (J-DAY-AIE < 3) / 7 < 1.                    C98970
78170      MOVE SER-NO-66-1 TO SER-NO (4).                                   C98970
78180      COMPUTE WEEK-NO (4) > (J-DAY-66-1 < 3) / 7 < 1.                   C98970
78190  END-INIT-SN-WK. EXIT.                                                 C98970
78200  START-BANK.                                                           C98970
78220  START-BANK-A.                                                         C98970
78230      PERFORM DATA-AVAIL THRU END-DATA-AVAIL.                           C98970
78240      IF CUR-WEEK GREATER THAN LAST-WEEK GO TO END-START-BANK.          C98970
78250      IF DATA-AVAIL-CODE EQUAL TO ZERO GO TO START-BANK-D.              C98970
78260      IF DATA-AVAIL-CODE EQUAL TO 2 GO TO STARY-BANK-B.                 C98970
78270      IF DATA-AVAIL-CODE EQUAL TO 4 GO TO START-BANK-D.                 C98970
78280      IF DATA-AVAIL-CODE EQUAL TO 6 GO TO START-BANK-B.                 C98970
78281      IF DATA-WEEK-1 IS EQUAL TO ZERO GO TO START-BANK-1.               C98970
78282      IF DATA-WEEK-4 IS EQUAL TO ZERO GO TO START-BANK-D.               C98970
78290      GO TO END-START-BANK.                                             C98970
78300      NOTE IRAN DATA AVAILABLE.                                         C98970
78310  START-BANK-B.                                                         C98970
78320      PERFORM RESET-IRAN THRU END-RESET.                                C98970
78330      PERFORM PROC-IRAN THRU END-PROC-IRAN.                             C98970
78340      MOVE ZERO TO NO-WEEK-PROC.                                        C98970
78350      PERFORM READ-IRAN THRU END-READ-IRAN.                             C98970
78360      IF FILE-DATA-2   EQUAL TO ZERO GO TO START-BANK-C.                C98970
78370      MOVE SER-NO-IRAN TO SER-NO (2).                                   C98970
78380      COMPUTE WEEK-NO (2) > (IRAN-START-DAY < 3) / 7 < 1.               C98970
78390      GO TO START-BANK-A.                                               C98970
78400  START-BANK-C.                                                         C98970
78410      MOVE EOF-S-N TO SER-NO (2).                                       C98970
78420      MOVE EOF-JDAY TO WEEK-NO (2).                                     C98970
78430      GO TO START-BANK-A.                                               C98970
78440  START-BANK-D.                                                         C98970
78450      ADD ONE TO CUR-WEEK.                                              C98970
78460      ADD ONE TO NO-WEEK-PROC.                                          C98970
78470      IF DATA-AVAIL-CODE EQUAL TO ZERO GO TO START-BANK-A.              C98970
78480  START-BANK-E.                                                         C98970
78490      PERFORM READ-AIE THRU END-READ-AIE.                               C98970
78500      IF FILE-DATA-3   EQUAL TO ZERO GO TO START-BANK-H.                C98970
78510      IF SER-NO-AIE NOT EQUAL TO CUR-S-N GO TO START-BANK-B.            C98970
78520      COMPUTE WEEK-NO-COMP  > (J-DAY-AIE < 3) / 7 < 1.                  C98970
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78530      IF WEEK-NO-COMP  LESS THAN CUR-WEEK GO TO START-BANK-E.          C98970
78540  START-BANK-F.                                                        C98970
78550      MOVE WEEK-NO-COMP  TO WEEK-NO [3].                               C98970
78560      GO TO START-BANK-A.                                              C98970
78570  START-BANK-G.                                                        C98970
78580      MOVE SER-NO-AIE TO SER-NO [3].                                   C98970
78585      COMPUTE WEEK-NO-COMP  > [J-DAY-AIE < 3] / 7 < 1.                 C98970
78590      GO TO START-BANK-F.                                              C98970
78600  START-BANK-H.                                                        C98970
78610      MOVE EOF-S-N TO SER-NO [3].                                      C98970
78620      MOVE EOF-JDAY TO WEEK-NO [3].                                    C98970
78630      GO TO START-BANK-A.                                              C98970
78640  START-BANK-I.                                                        C98970
78641      NOTE UPSPACE 66-1.                                               C98970
78642      ADD ONE TO CUR-WEEK.                                             C98970
78643      ADD ONE TO NO-WEEK-PROC.                                         C98970
78645  START-BANK-J.                                                        C98970
78646      PERFORM READ-66-1 THRU END-READ-66-1.                            C98970
78647      IF FILE-DATA-4   EQUAL TO ZERO GO TO START-BANK-K.               C98970
78648      IF SER-NO-66-1 IS NOT EQUAL TO CUR-S-N GO TO START-BANK-L.       C98970
78649      COMPUTE WEEK-NO-COMP  > [J-DAY-66-1 < 3] / 7 < 1.                C98970
78650      IF WEEK-NO-COMP  LESS THAN CUR-WEEK GO TO START-BANK-J.          C98970
78651  START-BANK-M.                                                        C98970
78652      MOVE WEEK-NO-COMP  TO WEEK-NO [4].                               C98970
78653      GO TO START-BANK-A.                                              C98970
78654  START-BANK-L.                                                        C98970
78655      MOVE SER-NO-66-1 TO SER-NO [4].                                  C98970
78656      COMPUTE WEEK-NO-COMP  > [J-DAY-66-1 < 3] / 7 < 1.                C98970
78657      GO TO START-BANK-M.                                              C98970
78658  START-BANK-K.                                                        C98970
78659      MOVE EOF-S-N TO SER-NO [4].                                      C98970
78660      MOVE EOF-JDAY TO WEEK-NO [4].                                    C98970
78661      GO TO START-BANK-A.                                              C98970
78670  START-BANK-O.                                                        C98970
78671      NOTE UPSPACE 65-110.                                             C98970
78672      ADD ONE TO CUR-WEEK.                                             C98970
78673      ADD ONE TO NO-WEEK-PROC.                                         C98970
78675  START-BANK-R.                                                        C98970
78676      PERFORM READ-65-110 THRU END-READ-65-110.                        C98970
78677      IF FILE-DATA-3   EQUAL TO ZERO GO TO START-BANK-P.               C98970
78678      IF SER-NO-65-110  IS NOT EQUAL TO CUR-S-N GO TO START-BANK-Q.    C98970
78679      COMPUTE WEEK-NO-COMP > [J-DAY-65-110 < 3] / 7 < 1.               C98970
78680      IF WEEK-NO-COMP  LESS THAN CUR-WEEK GO TO START-BANK-R.          C98970
78681  START-BANK-S.                                                        C98970
78682      MOVE WEEK-NO-COMP  TO WEEK-NO [1].                               C98970
78683      GO TO START-BANK-A.                                              C98970
78684  START-BANK-Q.                                                        C98970
78685      MOVE SER-NO-65-110 TO SER-NO [1].                                C98970
78686      COMPUTE WEEK-NO-COMP > [J-DAY-65-110 < 3] / 7 < 1.               C98970
78687      GO TO START-BANK-S.                                              C98970
78688  START-BANK-P.                                                        C98970
78689      MOVE EOF-S-N TO SER-NO [1].                                      C98970
78690      MOVE EOF-JDAY TO WEEK-NO [1].                                    C98970
78691      GO TO START-BANK-A.                                              C98970
78699  END-START-BANK. EXIT.                                                C98970
78700  FILES-EOF.                                                           C98970
78720  FILES-EOF-A.                                                         C98970
78730      COMPUTE ALL-EOF > FILE-DATA [1] < FILE-DATA [2]                  C98970
78740          < FILE-DATA [3] < FILE-DATA [4].                             C98970
78750      IF ALL-EOF EQUAL TO ZERO                                         C98970
78760          GO TO END-FILES-EOF.                                         C98970
78770  FILES-EOF-H.                                                         C98970
78780      PERFORM ST-SN-WK THRU END-ST-SN-WK.                              C98970
78790      COMPUTE FILE-NO > FILE-LOW-DATA.                                 C98970
78800      IF SER-NO [2] GREATER THAN SER-NO [FILE-NO]                      C98970
78810          GO TO FILES-EOF-C.                                           C98970
78820      MOVE WEEK-NO [FILE-NO] TO TEMP.                                  C98970
78821      IF TEMP IS GREATER THAN LAST-WEEK  -                             C98970
78830          GO TO FILES-EOF-C.                                           C98970
78840      IF CUR-S-N LESS THAN SER-NO [FILE-NO]                            C98970
78850          GO TO END-FILES-EOF.                                         C98970
78860  FILES-EOF-C.                                                         C98970
78870      GO TO FILES-EOF-D, FILES-EOF-E, FILES-EOF-F, FILES-EOF-G,        C98970
78880          DEPENDING ON FILE-LOW-DATA.                                  C98970
78890  FILES-EOF-D.                                                         C98970
78900      PERFORM READ-65-110 THRU END-READ-65-110.                        C98970
78910      IF FILE-DATA-1   EQUAL TO ZERO GO TO FILES-EOF-A.                C98970
78920      IF SER-NO-65-110 LESS THAN CUR-S-N GO TO FILES-EOF-D.            C98970
78930      MOVE SER-NO-65-110 TO SER-NO [1].                                C98970
78940      COMPUTE WEEK-NO-COMP > [J-DAY-65-110 < 3] / 7 < 1.               C98970
78950      MOVE WEEK-NO-COMP TO WEEK-NO [1].                                C98970
78960      GO TO FILES-EOF-B.                                               C98970
78970  FILES-EOF-E.                                                         C98970
78980      PERFORM READ-IRAN THRU END-READ-IRAN.                            C98970
78990      IF FILE-DATA-2   EQUAL TO ZERO GO TO FILES-EOF-A.                C98970
79000      IF SER-NO-IRAN LESS THAN CUR-S-N GO TO FILES-EOF-E.              C98970
79010      MOVE SER-NO-IRAN TO SER-NO [2].                                  C98970
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79020      COMPUTE WEEK-NO-COMP > (IRAN-START-DAY < 3) / 7 < 1.          C98970
79030      MOVE WEEK-NO-COMP TO WEEK-NO (2).                            C98970
79040      GO TO FILES-EOF-B.                                           C98970
79050  FILES-EOF-F.                                                     C98970
79060      PERFORM READ-AIE THRU END-READ-AIE.                          C98970
79070      IF FILE-DATA-3   EQUAL TO ZERO GO TO FILES-EOF-A.            C98970
79080      IF SER-NO-AIE LESS THAN CUR-S-N GO TO FILES-EOF-F.           C98970
79090      MOVE SER-NO-AIE TO SER-NO (3).                               C98970
79100      COMPUTE WEEK-NO-COMP > (J-DAY-AIE < 3) / 7 < 1.              C98970
79110      MOVE WEEK-NO-COMP TO WEEK-NO (3).                            C98970
79120      GO TO FILES-EOF-B.                                           C98970
79130  FILES-EOF-G.                                                     C98970
79140      PERFORM READ-66-1 THRU END-READ-66-1.                        C98970
79150      IF FILE-DATA-4   EQUAL TO ZERO GO TO FILES-EOF-A.            C98970
79160      IF SER-NO-66-1 LESS THAN CUR-S-N GO TO FILES-EOF-G.          C98970
79170      MOVE SER-NO-66-1 TO SER-NO (4).                              C98970
79180      COMPUTE WEEK-NO-COMP > (J-DAY-66-1 < 3) / 7 < 1.             C98970
79190      MOVE WEEK-NO-COMP TO WEEK-NO (4).                            C98970
79200      GO TO FILES-EOF-B.                                           C98970
79210  END-FILES-EOF. EXIT.                                             C98970
79500  DATA-AVAIL.                                                      C98970
79510      MOVE ZERO TO DATA-AVAIL-CODE.                                C98970
79520      MOVE ONE TO FILE-NO.                                         C98970
79530  DATA-AVAIL-A.                                                    C98970
79540      MOVE ZERO TO DATA-WEEK (FILE-NO).                            C98970
79550      IF SER-NO (FILE-NO) NOT EQUAL TO CUR-S-N,                    C98970
79560          GO TO DATA-AVAIL-B.                                      C98970
79570      MOVE WEEK-NO (FILE-NO) TO TEMP.                              C98970
79571      IF TEMP IS NOT EQUAL TO CUR-WEEK,                            C98970
79580          GO TO DATA-AVAIL-B.                                      C98970
79590      MOVE ONE TO DATA-WEEK (FILE-NO).                             C98970
79600      COMPUTE KNB > 2 ** (FILE-NO - 1).                            C98970
79610      COMPUTE DATA-AVAIL-CODE > DATA-AVAIL-CODE < KNB.             C98970
79620  DATA-AVAIL-B.                                                    C98970
79630      ADD 1 TO FILE-NO.                                            C98970
79640      IF FILE-NO LESS THAN 5, GO TO DATA-AVAIL-A.                  C98970
79650  END-DATA-AVAIL.                                                  C98970
79660      EXIT.                                                        C98970
80000  RESET-SER-NO.                                                    C98970
80010      MOVE NINE-X1 TO SERIES-TYPE-1.                               C98970
80020      MOVE NINE-X1 TO SERIES-TYPE-2.                               C98970
80030      MOVE NINE-X1 TO SERIES-TYPE-3.                               C98970
80040      MOVE NINE-X1 TO SERIES-TYPE-4.                               C98970
80050      NOTE THIS SETS SERIES TO 9 IN ALL OUTPUT FILES.              C98970
80200  RESET-WEEK.                                                      C98970
80221      MOVE ZERO TO POS-TABLE-3.                                    C98970
80222      MOVE ZERO TO POS-TABLE-4.                                    C98970
80230      MOVE NINE-94 TO FLT-TIME-TYPE-1.                             C98970
80240      MOVE NINE-94 TO SORTIES-TYPE-1.                              C98970
80250      MOVE NINE-94 TO LANDINGS-TYPE-1.                             C98970
80260      MOVE NINE-93 TO IRAN-VIS-NO-TYPE-2.                          C98970
80270      MOVE NINE-93 TO IRAN-CODE-TYPE-2.                            C98970
80280      MOVE NINE-94 TO IRAN-START-DAY-TYPE-2.                       C98970
80290      MOVE NINE-94 TO IRAN-END-DAY-TYPE-2.                         C98970
80300      MOVE SPACE TO REC-65-110-TYPE-1-ONLY.                        C98970
80400      MOVE 1 TO KNT.                                               C98970
80410  RESET-TABLE-3.                                                   C98970
80420      MOVE NINE-X5 TO TABLE-3-WUC (KNT).                           C98970
80430      MOVE NINE-93 TO TABLE-3-UNITS (KNT).                         C98970
80440      MOVE NINE-94 TO TABLE-3-LABOR (KNT).                         C98970
80450      MOVE NINE-94 TO TABLE-3-NORM (KNT).                          C98970
80455      MOVE NINE-93 TO TABLE-3-UNITS-ATC (KNT).                     C98970
80460      MOVE NINE-94 TO TABLE-3-NORS (KNT).                          C98970
80470      ADD 1 TO KNT.                                                C98970
80480      IF KNT IS LESS THAN TAB-SIZ-I GO TO RESET-TABLE-3.           C98970
80490      MOVE 1 TO KNT.                                               C98970
80500  RESET-TABLE-4.                                                   C98970
80510      MOVE NINE-X5 TO TABLE-4-WUC (KNT).                           C98970
80520      MOVE NINE-X1 TO TABLE-4-WDC (KNT).                           C98970
80620      MOVE NINE-X3 TO TABLE-4-HMC (KNT).                           C98970
80630      MOVE NINE-93 TO TABLE-4-UNITS (KNT).                         C98970
80640      MOVE NINE-94 TO TABLE-4-MHRS (KNT).                          C98970
80680      ADD 1 TO KNT.                                                C98970
80690      IF KNT IS LESS THAN TAB-SIZ-1 GO TO RESET-TABLE-4.           C98970
80800  RESET-AIE.                                                       C98970
80810      MOVE 1 TO KNT.                                               C98970
80820  RESET-AIE-1.                                                     C98970
80830      MOVE ZERO TO TABLE-3-AIE (KNT).                              C98970
80831      MOVE SPACE TO TABLE-3-WUC (KNT).                             C98970
80840      ADD 1 TO KNT.                                                C98970
80850      IF KNT IS LESS THAN TAB-SIZ-1 GO TO RESET-AIE-1.             C98970
80870      MOVE SPACE TO SERIES-TYPE-3.                                 C98970
80890      GO TO END-RESET.                                             C98970
81000  RESET-65-110.                                                    C98970
81010      MOVE ZERO TO FLT-TIME-TYPE-1.                                C98970
81020      MOVE ZERO TO SORTIES-TYPE-1.                                 C98970
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81030      MOVE ZERO TO LANDINGS-TYPE-1.                                    C98970
81040      MOVE SPACE TO SERIES-TYPE-3.                                     C98970
81050      MOVE SPACE TO SERIES-TYPE-1.                                     C98970
81090      MOVE 1 TO KNT.                                                   C98970
81100  SET-TABLE-3-65-110.                                                  C98970
81110      MOVE SPACE TO TABLE-3-WUC (KNT).                                 C98970
81120      MOVE ZERO TO TABLE-3-UNITS (KNT).                                C98970
81130      MOVE ZERO TO TABLE-3-LABOR (KNT).                                C98970
81140      MOVE ZERO TO TABLE-3-NORM (KNT).                                 C98970
81150      MOVE ZERO TO TABLE-3-NORS (KNT).                                 C98970
81160      ADD 1 TO KNT.                                                    C98970
81170      IF KNT IS LESS THAN TAB-SIZ-1 GO TO SET-TABLE-3-65-110.          C98970
81290      GO TO END-RESET.                                                 C98970
81400  RESET-IRAN.                                                          C98970
81410      MOVE NINE-93 TO IRAN-VIS-NO-TYPE-2.                              C98970
81420      MOVE NINE-93 TO IRAN-CODE-TYPE-2.                                C98970
81430      MOVE NINE-94 TO IRAN-START-DAY-TYPE-2.                           C98970
81440      MOVE NINE-94 TO IRAN-END-DAY-TYPE-2.                             C98970
81450      MOVE SPACE TO SERIES-TYPE-2.                                     C98970
81490      GO TO END-RESET.                                                 C98970
81600  RESET-66-1.                                                          C98970
81610      MOVE 1 TO KNT.                                                   C98970
81620  SET-TABLE-4-66-1.                                                    C98970
81630      MOVE SPACE TO TABLE-4-WUC (KNT).                                 C98970
81640      MOVE ZERO TO TABLE-3-UNITS (KNT).                                C98970
81641      MOVE ZERO TO TABLE-3-LABOR (KNT).                                C98970
81642      MOVE SPACE TO TABLE-3-WUC (KNT).                                 C98970
81643      MOVE ZERO    TO TABLE-3-UNITS-ATC (KNT).                         C98970
81650      MOVE SPACE TO TABLE-4-WDC (KNT).                                 C98970
81690      MOVE SPACE TO TABLE-4-HMC (KNT).                                 C98970
81700      MOVE ZERO TO TABLE-4-UNITS (KNT).                                C98970
81710      MOVE ZERO TO TABLE-4-MHRS (KNT).                                 C98970
81740      ADD 1 TO KNT.                                                    C98970
81750      IF KNT IS LESS THAN TAB-SIZ-1  GO TO SET-TABLE-4-66-1.           C98970
81780      MOVE SPACE TO SERIES-TYPE-4.                                     C98970
81790  END-RESET. EXIT.                                                     C98970
86000  READ-WUC-LIST.                                                       C98970
86010      MOVE ZERO TO KNB.                                                C98970
86020  READ-L-W-1.                                                          C98970
86025      ADD 1 TO KNB.                                                    C98970
86030      READ IN-FILE-WUC AT END GO TO END-READ-WUC-LIST.                 C98970
86040      MOVE IN-REC-WUC TO LIST-WUC (KNB).                               C98970
86060      IF KNB IS LESS THAN MAX-NUM-WUC GO TO READ-L-W-1.                C98970
86070  END-READ-WUC-LIST. EXIT.                                             C98970
87000  ST-SN-WK.                                                            C98970
87020      MOVE EOF-S-N TO SN-TEMP.                                         C98970
87030      MOVE ONE TO FILE-NO.                                             C98970
87040  ST-SN-WK-A.                                                          C98970
87048      MOVE FILE-DATA (FILE-NO) TO TEMP.                                C98970
87050      IF TEMP IS EQUAL TO ZERO, GO TO ST-SN-WK-B.                      C98970
87060      IF SER-NO (FILE-NO) GREATER THAN SN-TEMP, GO TO ST-SN-WK-B.      C98970
87070      MOVE FILE-NO TO FILE-LOW-DATA.                                   C98970
87080      MOVE SER-NO (FILE-NO) TO SN-TEMP.                                C98970
87090  ST-SN-WK-B.                                                          C98970
87100      ADD ONE TO FILE-NO.                                              C98970
87110      IF FILE-NO LESS THAN 5, GO TO ST-SN-WK-A.                        C98970
87130      MOVE EOF-JDAY TO WEEK-NO-COMP.                                   C98970
87140      MOVE ONE TO FILE-NO.                                             C98970
87150  ST-SN-WK-D.                                                          C98970
87160      MOVE FILE-DATA (FILE-NO) TO TEMP.                                C98970
87161      IF TEMP IS EQUAL TO ZERO GO TO ST-SN-WK-E.                       C98970
87170      IF SER-NO (FILE-NO) NOT EQUAL TO SN-TEMP, GO TO ST-SN-WK-E.      C98970
87180      MOVE WEEK-NO (FILE-NO) TO TEMP.                                  C98970
87181      IF TEMP IS GREATER THAN WEEK-NO-COMP, GO TO                      C98970
87190          ST-SN-WK-E.                                                  C98970
87200      MOVE FILE-NO TO FILE-LOW-DATA.                                   C98970
87210      MOVE WEEK-NO (FILE-NO) TO WEEK-NO-COMP.                          C98970
87220  ST-SN-WK-E.                                                          C98970
87230      ADD ONE TO FILE-NO.                                              C98970
87240      IF FILE-NO LESS THAN 5, GO TO ST-SN-WK-D.                        C98970
87250  END-ST-SN-WK. EXIT.                                                  C98970
88000  SN-WK-65-110.                                                        C98970
88030  SN-WK-65-110-A.                                                      C98970
88040      PERFORM PROC-65-110 THRU END-PROC-65-110.                        C98970
88050      PERFORM READ-65-110 THRU END-READ-65-110.                        C98970
88060      IF FILE-DATA-1   IS EQUAL TO ZERO, GO TO SN-WK-65-110-C.         C98970
88070      COMPUTE WEEK-NO-COMP > (J-DAY-65-110 < 3) / 7 < 1.               C98970
88080      IF SER-NO-65-110 NOT EQUAL TO CUR-S-N, GO TO SN-WK-65-110-B.     C98970
88090      IF WEEK-NO-COMP NOT EQUAL TO CUR-WEEK, GO TO SN-WK-65-110-B.     C98970
88100      GO TO SN-WK-65-110-A.                                            C98970
88110  SN-WK-65-110-B.                                                      C98970
88120      MOVE SER-NO-65-110 TO SER-NO (1).                                C98970
88130      MOVE WEEK-NO-COMP TO WEEK-NO (1).                                C98970
88140      GO TO END-SN-WK-65-110.                                          C98970
88150  SN-WK-65-110-C.                                                      C98970
88160      MOVE EOF-S-N TO SER-NO (1).                                      C98970
88170      MOVE EOF-JDAY TO WEEK-NO (1).                                    C98970
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88180  END-SN-WK-65-110.                                                    C98970
88190      EXIT.                                                            C98970
88200  SN-WK-IRAN.                                                          C98970
88230  SN-WK-IRAN-A.                                                        C98970
88240      PERFORM PROC-IRAN THRU END-PROC-IRAN.                            C98970
88250      PERFORM READ-IRAN THRU END-READ-IRAN.                            C98970
88260      IF FILE-DATA-2   IS EQUAL TO ZERO, GO TO SN-WK-IRAN-C.           C98970
88270      COMPUTE WEEK-NO-COMP > [IRAN-START-DAY < 3] / 7 < 1.             C98970
88280      IF SER-NO-IRAN NOT EQUAL TO CUR-S-N, GO TO SN-WK-IRAN-B.         C98970
88290      IF WEEK-NO-COMP NOT EQUAL TO CUR-WEEK, GO TO SN-WK-IRAN-B.       C98970
88300      GO TO SN-WK-IRAN-A.                                              C98970
88310  SN-WK-IRAN-B.                                                        C98970
88320      MOVE SER-NO-IRAN TO SER-NO [2].                                  C98970
88330      MOVE WEEK-NO-COMP TO WEEK-NO [2].                                C98970
88340      GO TO END-SN-WK-IRAN.                                            C98970
88350  SN-WK-IRAN-C.                                                        C98970
88360      MOVE EOF-S-N TO SER-NO [2].                                      C98970
88370      MOVE EOF-JDAY TO WEEK-NO [2].                                    C98970
88380  END-SN-WK-IRAN.                                                      C98970
88390      EXIT.                                                            C98970
88400  SN-WK-AIE.                                                           C98970
88430  SN-WK-AIF-A.                                                         C98970
88440      PERFORM PROC-AIE THRU END-PROC-AIE.                              C98970
88450      PERFORM READ-AIE THRU END-READ-AIE.                              C98970
88460      IF FILE-DATA-3   IS EQUAL TO ZERO, GO TO SN-WK-AIE-C.            C98970
88470      COMPUTE WEEK-NO-COMP > [J-DAY-AIE < 3] / 7 < 1.                  C98970
88480      IF SER-NO-AIE NOT EQUAL TO CUR-S-N, GO TO SN-WK-AIE-B.           C98970
88490      IF WEEK-NO-COMP NOT EQUAL TO CUR-WEEK, GO TO SN-WK-AIE-B.        C98970
88500      GO TO SN-WK-AIE-A.                                               C98970
88510  SN-WK-AIE-B.                                                         C98970
88520      MOVE SER-NO-AIE TO SER-NO [3].                                   C98970
88530      MOVE WEEK-NO-COMP TO WEEK-NO [3].                                C98970
88540      GO TO END-SN-WK-AIE.                                             C98970
88550  SN-WK-AIE-C.                                                         C98970
88560      MOVE EOF-S-N TO SER-NO [3].                                      C98970
88570      MOVE EOF-JDAY TO WEEK-NO [3].                                    C98970
88580  END-SN-WK-AIE.                                                       C98970
88590      EXIT.                                                            C98970
88600  SN-WK-66-1.                                                          C98970
88630  SN-WK-66-1-A.                                                        C98970
88640      PERFORM PROC-66-1 THRU END-PROC-66-1.                            C98970
88650      PERFORM READ-66-1 THRU END-READ-66-1.                            C98970
88660      IF FILE-DATA-4   IS EQUAL TO ZERO, GO TO SN-WK-66-1-C.           C98970
88670      COMPUTE WEEK-NO-COMP > [J-DAY-66-1 < 3] / 7 < 1.                 C98970
88680      IF SER-NO-66-1 NOT EQUAL TO CUR-S-N, GO TO SN-WK-66-1-B.         C98970
88690      IF WEEK-NO-COMP NOT EQUAL TO CUR-WEEK, GO TO SN-WK-66-1-B.       C98970
88700      GO TO SN-WK-66-1-A.                                              C98970
88710  SN-WK-66-1-B.                                                        C98970
88720      MOVE SER-NO-66-1 TO SER-NO [4].                                  C98970
88730      MOVE WEEK-NO-COMP TO WEEK-NO [4].                                C98970
88740      GO TO END-SN-WK-66-1.                                            C98970
88750  SN-WK-66-1-C.                                                        C98970
88760      MOVE EOF-S-N TO SER-NO [4].                                      C98970
88770      MOVE EOF-JDAY TO WEEK-NO [4].                                    C98970
88780  END-SN-WK-66-1.                                                      C98970
88790      EXIT.                                                            C98970
90000  READ-DATA-IN-FILE.                                                   C98970
90010      READ DATA-IN-FILE INTO DATA-IN-A,                                C90970
90020                          AT END GO TO END-RDIF.                       C98970
90030      READ DATA-IN-FILE INTO DATA-IN-B,                                C98970
90040                          AT END GO TO END-RDIF.                       C98970
90050      MOVE ZERO TO KNT.                                                C98970
90060      MOVE MISSION-IN TO MISSION-TYPE-1, MISSION-TYPE-2                C98970
90070                         MISSION-TYPE-3, MISSION-TYPE-4.               C98970
90080      MOVE DESIGN-IN TO DESIGN-TYPE-1, DESIGN-TYPE-2,                  C98970
90090                        DESIGN-TYPE-3, DESIGN-TYPE-4.                  C98970
90100  ROIF-A.                                                              C98970
90110      READ DATA-IN-FILE INTO DATA-IN-C,                                C98970
90120                          AT END GO TO END-RDIF.                       C98970
90130      ADD 1 TO KNT.                                                    C98970
90140      MOVE X-CODE  TO  LIST-ATC [KNT].                                 C98970
90150      IF KNT IS LESS THAN NUM-ATC GO TO ROIF-A.                        C98970
90200      READ DATA-IN-FILE INTO DATA-IN-D,                                C98970
90210                          AT END GO TO END-RDIF.                       C98970
90220      MOVE ZERO TO KNT.                                                C98970
90300  ROIF-B.                                                              C98970
90310      READ DATA-IN-FILE INTO DATA-IN-C,                                C98970
90320                          AT END GO TO END-RDIF.                       C98970
90330      ADD 1 TO KNT.                                                    C98970
90340      MOVE X-CODE TO NOR-CODE [KNT].                                   C98970
90350      IF KNT IS LESS THAN NUM-NCODES GO TO ROIF-B.                     C98970
90400      READ DATA-IN-FILE INTO DATA-IN-E,                                C98970
90410                          AT END GO TO END-RDIF.                       C98970
90420      MOVE ZERO TO KNT.                                                C98970
90430  ROIF-C.                                                              C98970
90440      READ DATA-IN-FILE INTO DATA-IN-F,                                C98970
90450                          AT END GO TO END-RDIF.                       C90970
```

```
90460       ADD 1 TO KNT.                                                    C98970
90470       MOVE ENG-WUC-IN TO ENGINE-WUC (KNT).                             C98970
90480       IF KNT IS LESS THAN NUM-ENG-WUC GO TO RDIF-C.                    C98970
90500       READ DATA-IN-FILE INTO DATA-IN-G,                                C98970
90510                             AT END GO TO END-RDIF.                     C98970
90520       MOVE ZERO TO KNT.                                                C98970
90530   RDIF-D.                                                              C98970
90540       READ DATA-IN-FILE INTO DATA-IN-H,                                C98970
90550                             AT END GO TO END-RDIF.                     C98970
90560       ADD 1 TO KNT.                                                    C98970
90570       MOVE WUC-2DIG-IN TO WUC-POS-TYPE (KNT).                          C98970
90580       MOVE FIRST-POSITION TO WUC-POS-START (KNT).                      C98970
90590       MOVE LAST-POSITION  TO WUC-POS-END (KNT).                        C98970
90600       IF KNT IS LESS THAN NUM-WUC-GROUPS GO TO RDIF-D.                 C98970
90900   END-RDIF. EXIT.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CH8.TFGIN     DD   *,SPACE>(CYL,(1,1))                                    1440 CDS
00000           GET TFG                                WANG                 C98970'T
010001 019999  REPLACE                                                        'T
TFG  DT01    11  020Z080
03   04   57000230      0  357 F106  150
  3                                                 NUMBER OF ATC.
P
R
S
 17  9                                             NUMBER OF NOR-NORM
A
B
C
D
F
G
H
E
K
M
N
P
R
S
T
V
W
  7                                                 NO ENGINE WUC
23A
23B
23C
23D
23E
23G
23Z
 22   2201                                         NUM WUC GROUPS, NUM WUC
11       1  250
12     251  288
13     289  403
14     404  498
23     499  745
41     746  848
42     849  895
44     896  919
45     920 1024
46    1025 1167
47    1168 1196
49    1197 1216
51    1217 1258
52    1259 1308
55    1309 1316
63    1317 1326
65    1327 1384
71    1385 1430
74    1431 1983
75    1984 2166
93    2167 2188
97    2189 2201
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                  T12
//TPR.TU14      DD   DISP>(OLD,KEEP),VOL>SER>+F3,UNIT>T+F3                  T14
//TPR.TU15      DD   DISP>(OLD,KEEP),VOL>SER>+F4,UNIT>T+F4                  T15
//TPR.TU22      DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5                  T22
//TPR.TU24      DD   DISP>(OLD,KEEP),VOL>SER>+F7,UNIT>T+F7                  T24
//TPR.TU25      DD   DISP>(OLD,KEEP),VOL>SER>+F8,UNIT>T+F8                  T25
//TPR.TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  DT01    10100802080
T/P  TU22    19980502050
/*       PLACE COBOL SOURCE BEFORE THIS CARD
```

6.5.5 SORT WUC FOR CONVERSION

```
//T9897A JOB   01,:  @ WANG    :,PRTY>02,TYPRUN>HOLD
//C9897G EXEC  C9601N,TIME>01,ACCT>D35323007
//CHG.TU23     DD   DSN>+P.9897551,DISP>(,PASS),SPACE>(CYL,(001,001))   D23-OUT
//CHG.TFG1N    DD   @,SPACE>(CYL,(1,1))                                 1440 CDS
00000            SET TFG                          WANG                 C98970'T
010001 019999    REPLACE                                                    'T
TFG  TU23    11  020Z080
 74AJ1 74AK1
 74AK1 74AL1
 74AKA 74ALA
 74AM1 74AN1
 74AN1 74AP1
 74ANB 74APA
 74ANC 74APB
 74AND 74APC
 74ANG 74APF
 74ANH 74APG
 74ANJ 74APH
 74ANK 74APJ
 74ANL 74APK
 74ANM 74APL
 74ANN 74APM
 74ANQ 74APP
 74ANS 74APR
 74ANT 74APS
 74ANU 74APT
 74ANV 74APU
 74ANW 74APV
 74ANX 74APW
 74ANY 74APX
 74ANZ 74APY
 74AN2 74APZ
 74AN3 74AP2
 74AN4 74AP3
 74AN5 74AP4
 74AN6 74AP5
 74AN7 74AP6
 74AN8 74AP7
 74AP1 74AQ1
 74AQ1 74AR1
 74AQB 74ARB
 74AQC 74ARC
 74AR1 74AS1
 74AS1 74AT1
 74ASA 74ATA
 74AT1 74AU1
 74BC1 74BB1
 74BCA 74BBA
 74BD1 74BC1
 74BG1 74BD1
 74GE1 74BE1
 74BH1 74BF1
 74BJ1 74BG1
 74BK1 74BH1
 74BL1 74BJ1
 74BM1 74BK1
 74BMA 74BKA
 74BMB 74BKB
 74BN1 74BL1
 74BP1 74BM1
 74BPA 74BMA
 74BPB 74BMB
 74BQ1 74BN1
 74BR1 74BP1
 74BT1 74BQ1
 74BU1 74BR1
 74BUA 74BRA
 74BUB 74BRB
 74BV1 74BS1
 74BW1 74BT1
 74BX1 74BU1
 74CM1 74BV1
 74CN1 74BW1
 74BZ1 74BX1
 74BZA 74BXA
 74CP1 74BY1
 74CA1 74BZ1
 74CAA 74BZA
 74CQ1 74CA1
 74CQA 74CAA
 74CQB 74CAB
 74CQC 74CAC
 74CQD 74CAD
```

74C0E 74CAE
74CR1 74CC1
74CRA 74CCA
74CRB 74CCB
74CRC 74CCC
74CRD 74CCD
74CRE 74CCL
74CRF 74CCF
74CRG 74CCG
74CRH 74CCH
74CRJ 74CCJ
74CRK 74CCK
74CRL 74CCL
74CC1 74CD1
74CS1 74CF1
74CSA 74CFA
74CSB 74CFB
74CE1 74CG1
74CF1 74CH1
74CFA 74CHA
74CT1 74CJ1
74CTA 74CJA
74CTB 74CJB
74CTC 74CJC
74CTD 74CJD
74CTE 74CJE
74CG1 74DB1
74CH1 74DC1
74CHA 74DCA
74CHB 74DCB
74CHC 74DCC
74CHE 74DCD
74CHF 74DCE
74CK1 74DD1
74E00 74F00
74EB1 74FA0
74FF1 74FB1
74FE1 74FC1
74FEA 74FCA
74FEB 74FCB
74FEC 74FCC
74FED 74FCD
74FEE 74FCE
74FEF 74FCF
74FC1 74FD1
74FCA 74FDA
74FCB 74FDB
74FCC 74FDC
74FCD 74FDD
74FCE 74FDE
74FCF 74FDF
74FCG 74FDG
74FCH 74FDH
74FCJ 74FDJ
74FCK 74FDK
74FCL 74FDL
74FCM 74FDM
74FCN 74FDN
74FCP 74FDP
74FCQ 74FDQ
74FCR 74FDR
74FCS 74FDS
74FCT 74FDT
74FCU 74FDU
74FCV 74FDV
74FCW 74FDW
74FCX 74FDX
74FCY 74FDY
74FCZ 74FDZ
74FC2 74FD2
74FC3 74FD3
74FC4 74FD4
74FC5 74FD5
74FC6 74FD6
74FC7 74FD7
74FC8 74FD8
74FC9 74FD9
74FDA 74FEA
74FDB 74FEB
74FB1 74FF1
74FBA 74FFA
74FBB 74FFB
74FBC 74FFC
74FBD 74FFD
74FBE 74FFE
74FBF 74FFF
74FBG 74FFG

```
 74FBH 74FFH
 74FBJ 74FFJ
 74FBK 74FFK
 74FBL 74FFL
 74FBM 74FFM
 74EV1 74FG1
 74EW1 74FH1
 74EX1 74FJ1
 74EU1 74FA1
 74KM1 74KB1
 74KB1 74KC1
 74KBB 74KCB
 74KC1 74KD1
 74KD1 74KE1
 74KDB 74KEB
 74KDC 74KEC
 74KE1 74KF1
 74KEB 74KFB
 74KF1 74KG1
 74KFA 74KGA
 74KFB 74KGB
 74KFC 74KGC
 74KFD 74KGD
 74KFE 74KGE
 74KFF 74KGF
 74KFG 74KGG
 74KFH 74KGH
 74KFJ 74KGJ
 74KFK 74KGK
 74KFL 74KGL
 74KG1 74KH1
 74KMA 74KJA
 74KP1 74KK1
 74KQ1 74KL1
 74KR1 74KM1
 74KS1 74KN1
 74KT1 74KP1
 74KU1 74KQ1
 74CEA 74CGA
 74KV1 74KR1
 74G00 74P00
 74GA1 74PA1
 74GB1 74PB1
 74GD1 74PC1
 74BF1 74PD1
 74GF1 74PE1
 74GG1 74PF1
 74GGA 74PFA
 74GH1 74PG1
 74GJ1 74PH1
 74GK1 74PJ1
 74GL1 74PK1
 74GM1 74PL1
 74GP1 74PM1
 74GQ1 74PN1
 74GR1 74PP1
 74GN1 74QA1
 74GNA 74QAA
*END
/*
//C9897H EXEC  C1603N,TIME>01,ACCT>D35323007
//CHG.TU23     DD   DSN>+P.9897551,DISP>(OLD,PASS)                    D23-IN
//CHG.TPR1N    DD   *,SPACE>(TRK,(1,1))
T/P  TU23    101.0802080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897D EXEC  P9622P,M>010,TIME>01,ACCT>D35323007
//CH0.SORT1N   DD   DSN>+P.9897551,DISP>(OLD,DELETE),                  CD22/23 1
//             D^B>(LRECL>0080,BLKSIZE>1600),LABEL>(,NSL,RETPD>000)
//CH0.SORTOUT  DD   DSN>+P.9897553,DISP>(,PASS),SPACE>(CYL,(001,001)), CD12/13 1
//             DCB>(LRECL>0080,BLKSIZE>1600)
//CH0.SYS1N    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(002,005,CH,A),SIZE>E0000400
 MODS  E15>(EI5,000,SORTLIB,N),E18>(EI8,024,SORTLIB,N)
/*
```

6.5.6 SORT WUC FOR DELETION

```
//C9897A EXEC  C)601N,TIME)01,ACCT)D38323007
//CHG.TU22     DD   DSN)+P.9097550,DISP)(,PASS),SPACE)(CYL,(001,001))   D22-OUT
//CHG.TFGIN    DD   *,SPACE)(CYL,(1,1))                                 1440 CDS
00000            &T TF8                              WAN8             C98970'T
010001 019999    R_PLACE                                                    'T
TFG  TU22    11  020Z080
 74AEF
 74AEH
 74DE1
 74DF1
 74DG1
 74DZ1
 74KAA
 74KAB
 74KCA
 74KEA
 74KED
 74ALA
 74AL1
 74APA
 74APB
 74APC
 74APF
 74APG
 74APM
 74APJ
 74APK
 74APL
 74APM
 74APP
 74APR
 74APS
 74APT
 74APU
 74APV
 74APW
 74APX
 74APY
 74APZ
 74AP2
 74AP3
 74AP4
 74AP5
 74AP6
 74AP7
 74ARB
 74ARC
 74ATA
 74AU1
 74BBA
 74BB1
 74PD1
 74BKA
 74BRB
 74BRA
 74BRB
 74BS1
 74BXA
 74CD1
 74CGA
 74DB1
 74DCA
 74DCB
 74DCC
 74DCD
 74DCE
 74DC1
 74DD1
 749Y1
 74CAB
 74CAC
 74CAD
 74CAE
 74CCA
 74CCB
 74CCC
 74CCD
 74CCE
 74CCF
 74CCG
 74CCM
 74CCJ
 74CCK
```

74CCL
74CFB
74CJA
74CJB
74CJC
74CJD
74CJE
74CJ1
74FA0
74FK1
74FG1
74FH1
74FJ1
74F00
74FFA
74FFB
74FFC
74FFD
74FFE
74FFF
74FFG
74FFH
74FFJ
74FFK
74FFL
74FFM
74FDC
74FDD
74FDE
74FDF
74FDG
74FDH
74FDJ
74FDK
74FDL
74FDM
74FDN
74FDP
74FDQ
74FDR
74FDS
74FDT
74FDU
74FDV
74FDW
74FDX
74FDY
74FDZ
74FD1
74FD2
74FD3
74FD4
74FD5
74FD6
74FD7
74FD8
74FD9
74PA1
74PB1
74PC1
74BE1
74PE1
74PFA
74PF1
74PG1
74PH1
74PJ1
74PK1
74PL1
74QAA
74QA1
74PM1
74PN1
74PP1
74P00
74KCB
74KEC
74KGA
74KGB
74KGC
74KGD
74KGE
74KGF
74KGG
74KGH
74KGJ
74KGK

```
 74KGL
 74KH1
 74KJA
 74KK1
 74KL1
 74KN1
*END
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897B EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU22     DD   DSN>*P.9897550,DISP>[OLD,PASS]                          D22-1N
T/P  TU22    1010100Z080
/*       PLACE TFG DATA BEFORE THIS CARD
//C9897C EXEC  P9622N,W>010,TIME>01,ACCT>35323007
//CHG.SORTIN   DD   DSN>*P.9897550,DISP>[OLD,DELETE],                       CD22/23 1
//             DCB>[LRECL>0080,BLKSIZE>1600],LABEL>[,NSL,RETPD>000]
//CHG.SORTOUT  DD   DSN>*P.9897552,DISP>[,PASS],SPACE>[CYL,[001,001]], CD12/13 1
//             DCB>[LRECL>0080,BLKSIZE>1600]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[002,005,CH,A],SIZE>E0000300
 MODS  E15>[E15,008,SORTLIB,N],E16>[E16,024,SORTLIB,N]
/*
```

6.5.7 VERIFY WUC

```
//C9897F EXEC  P9655L,TIME>05,ACCT>D35323007
//CHG.TU12     DD   DSN>*P.9897552,DISP>[OLD,PASS]                          D12-1N
//CHG.TU13     DD   DSN>*P.9897553,DISP>[OLD,PASS]                          D13-1N
//CHG.TU14     DD   DISP>[,PASS],UNIT>[A+F3,2,DEFER],DSN>*C,9897405,   CT14/15 1
//             VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//             I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[A+F7,2,DEFER],DSN>*G,9897405,   CT24/25 1
//             VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//             I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                    1440 CDS
00000          COMBINE     COMPILE                  0, WANG,                C98970
01050  DATE-WRITTEN. 15 MAY 72.                                             C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02120      SELECT TABLE-1-FILE          ASSIGN TO UT-S-TU12                 C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT TABLE-2-FILE          ASSIGN TO UT-S-TU13                 C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
02160      SELECT DATA-IN-FILE          ASSIGN TO UT-S-TU14                 C98970
02170          RESERVE 1 ALTERNATE AREA.                                    C98970
02180      SELECT DATA-OUT-FILE         ASSIGN TO UT-S-TU24                 C98970
02190          RESERVE 1 ALTERNATE AREA.                                    C98970
02200      SELECT MSG-FILE              ASSIGN TO DA-S-DT01                 C98970
02210          RESERVE 1 ALTERNATE AREA.                                    C98970
02220      SELECT CON-FILE              ASSIGN TO DA-S-DT02                 C98970
02230          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
11200  FD  TABLE-1-FILE                                                     C98970
11210      RECORDING MODE IS F                                              C98970
11220      BLOCK CONTAINS 20 RECORDS                                        C98970
11230      RECORD CONTAINS 80           CHARACTERS                          C98970
11240      LABEL RECORDS ARE OMITTED                                        C98970
11250      DATA RECORDS ARE TABLE-1-REC.                                    C98970
11260  01  TABLE-1-REC SYNC.                                               C98970
11270      02  FILLER                   PICTURE X.                         C98970
11280      02  WUC-1                    PICTURE X[5].                      C98970
11290      02  FILLER                   PICTURE X[74].                     C98970
12000  FD  TABLE-2-FILE                                                     C98970
12010      RECORDING MODE IS F                                              C98970
12020      BLOCK CONTAINS 20 RECORDS                                        C98970
12030      RECORD CONTAINS 80           CHARACTERS                          C98970
12040      LABEL RECORDS ARE OMITTED                                        C98970
12050      DATA RECORDS ARE TABLE-2-REC.                                    C98970
12060  01  TABLE-2-REC SYNC.                                               C98970
12070      02  FILLER                   PICTURE X.                         C98970
12080      02  WUC-2                    PICTURE X[5].                      C98970
12090      02  FILLER                   PICTURE X.                         C98970
12100      02  WUC-3                    PICTURE X[5].                      C98970
12110      02  FILLER                   PICTURE X[68].                     C98970
13000  FD  DATA-IN-FILE                                                     C98970
13010      RECORDING MODE IS F                                              C98970
13020      BLOCK CONTAINS 60 RECORDS                                        C98970
13030      RECORD CONTAINS 50           CHARACTERS                          C98970
```

```
13040      LABEL RECORDS ARE OMITTED                                        C98970
13050      DATA RECORDS ARE DATA-IN-REC.                                    C98970
13060  01  DATA-IN-REC SYNC.                                               C98970
13070      02  FILLER                    PICTURE X(13).                    C98970
13080      02  WEEK                      PICTURE XXX.                      C98970
13090      02  WUC                       PICTURE X(5).                     C98970
13100      02  FILLER REDEFINES WUC.                                       C98970
13110          03  WUC-2-DIGIT           PICTURE XX.                       C90970
13120          03  FILLER                PICTURE XXX.                      C98970
13130      02  FILLER                    PICTURE X(29).                    C98970
14000  FD  DATA-OUT-FILE                                                   C98970
14010      RECORDING MODE IS F                                              C98970
14020      BLOCK CONTAINS 60 RECORDS                                        C98970
14030      RECORD CONTAINS 50          CHARACTERS                           C98970
14040      LABEL RECORDS ARE OMITTED                                        C98970
14050      DATA RECORDS ARE DATA-OUT-FILE.                                  C98970
14060  01  DATA-OUT-REC      SYNC.                                         C98970
14070      02  FILLER                    PICTURE X(50).                    C98970
15000  FD  MSG-FILE                                                        C98970
15010      RECORDING MODE IS F                                              C98970
15020      BLOCK CONTAINS 40 RECORDS                                        C98970
15030      RECORD CONTAINS 70          CHARACTERS                           C98970
15040      LABEL RECORDS ARE STANDARD                                       C98970
15050      DATA RECORDS ARE MSG-REC.                                        C98970
15060  01  MSG-REC  SYNC.                                                  C98970
15070      02  WUC-MSG                   PICTURE X(5).                     C98970
15080      02  FILLER-A                  PICTURE X(65).                    C98970
16000  FD  CON-FILE                                                        C98970
16010      RECORDING MODE IS F                                              C98970
16020      BLOCK CONTAINS 20 RECORDS                                        C98970
16030      RECORD CONTAINS 80          CHARACTERS                           C98970
16040      LABEL RECORDS ARE STANDARD                                       C98970
16050      DATA RECORDS ARE CON-REC.                                        C98970
16100  01  CON-REC SYNC.                                                   C98970
16110      05  WEEK-CHNG                 PICTURE XXX.                      C98970
16120      05  FILLER                    PICTURE X.                        C98970
16130      05  WUC2                      PICTURE XX.                       C98970
16140      05  FILLER                    PICTURE X(74).                    C98970
30000  WORKING-STORAGE SECTION.                                            C98970
30020  77  REC-READ  COMPUTATIONAL       PICTURE S9(7) VALUE ZERO SYNC.    C98970
30030  77  REC-PASS  COMPUTATIONAL       PICTURE S9(7) VALUE ZERO SYNC.    C98970
30040  77  REC-CHNG  COMPUTATIONAL       PICTURE S9(7) VALUE ZERO SYNC.    C98970
30050  77  REC-DROP  COMPUTATIONAL       PICTURE S9(7) VALUE ZERO SYNC.    C98970
30060  77  CNT COMPUTATIONAL SYNC        PICTURE S9(5).                    C98970
30070  77  TEMP-NO SYNC                  PICTURE 9(7).                     C98970
30080  77  WUC-TEMP          SYNC        PICTURE X(5).                     C98970
30090  77  NO-TAB-1 COMPUTATIONAL SYNC   PICTURE S999 VALUE ZERO.          C98970
30100  77  NO-TAB-2 COMPUTATIONAL SYNC   PICTURE S999 VALUE ZERO.          C98970
30110  77  KNT COMPUTATIONAL SYNC        PICTURE S999.                     C90970
30120  77  NO-ERRORS SYNC                PICTURE 9999 VALUE ZERO.          C98970
32000  01  NINES                 SYNC    PICTURE X(50) VALUE   !9999999999 C98970
32010 -    !99999999999999999999999999999999999999!.                        C98970
33000  01  FILLER SYNC.                                                    C98970
33010      02  TABLE-1 OCCURS 300 TIMES PICTURE X(5).                      C98970
33020      02  FILLER  OCCURS 2  TIMES.                                    C98970
33030          03  TABLE-2 OCCURS 300 TIMES    PICTURE X(5).               C98970
34000  01  MSG-1 SYNC.                                                     C98970
34010      02  FILLER                    PICTURE X(65) VALUE               C98970
34020              !   OCCURS IN TABLE-2 (LHS) AND TABLE-1.                 C98970
34030 -    !                 !.                                             C98970
34100  01  MSG-2 SYNC.                                                     C98970
34110      02  FILLER                    PICTURE X(65) VALUE               C98970
34120              !   OCCURS IN TABLE-2 (RH) BUT NOT IN TABLE-2 (LH) OR    C98970
34130 -    !IN TABLE-1.  !.                                                 C98970
34200  01  MSG-3 SYNC.                                                     C98970
34210      02  FILLER                    PICTURE X(65) VALUE               C98970
34220              !   IS DUPLICATED IN TABLE-1.                            C98970
34230 -    !                 !.                                             C98970
34300  01  MSG-4 SYNC.                                                     C98970
34310      02  FILLER                    PICTURE X(65) VALUE               C98970
34320              !   IS DUPLICATED IN TABLE-2 (RH)                        C98970
34330 -    !                 !.                                             C98970
34400  01  MSG-5 SYNC.                                                     C98970
34410      02  FILLER                    PICTURE X(65) VALUE               C98970
34420              !   IS DUPLICATED IN TABLE-2 (LH)                        C98970
34430 -    !                 !.                                             C98970
50000  PROCEDURE DIVISION.                                                 C98970
50100      OPEN INPUT TABLE-1-FILE, CON-FILE,                               C98970
50110                 TABLE-2-FILE,                                         C98970
50120                 DATA-IN-FILE,                                         C98970
50130           OUTPUT DATA-OUT-FILE, MSG-FILE.                             C98970
50140      READ CON-FILE AT END GO TO READ-TABLE-1.                         C98970
50200  READ-TABLE-1.                                                       C98970
50210      READ TABLE-1-FILE, AT END GO TO READ-TABLE-2.                    C98970
50220      ADD 1 TO NO-TAB-1.                                               C98970
50230      MOVE WUC-1 TO TABLE-1 (NO-TAB-1).                                C98970
50240      GO TO READ-TABLE-1.                                              C98970
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50300  READ-TABLE-2.                                                    C98970
50310      READ TABLE-2-FILE, AT END GO TO R-D.                         C98970
50320      ADD 1 TO NO-TAB-2.                                           C98970
50330      MOVE WUC-2 TO TABLE-2 (1, NO-TAB-2).                         C98970
50340      MOVE WUC-3 TO TABLE-2 (2, NO-TAB-2).                         C98970
50350      GO TO READ-TABLE-2.                                          C98970
50355  R-D.                                                             C98970
50360      PERFORM CHECK-WUC-DATA THRU END-CWD.                         C98970
50370      IF NO-ERRORS IS NOT EQUAL TO ZERO DISPLAY NO-ERRORS ' ERRORS'C98970
50380      UPON CONSOLE, GO TO CFA.                                     C98970
50400  READ-DATA-INPUT.                                                 C98970
50410      READ DATA-IN-FILE, AT END GO TO CLOSE-FILE.                  C98970
50420      ADD 1 TO REC-READ.                                           C98970
50430      IF WEEK IS LESS        7THAN WEEK-CHNG GO TO CHK-WUC.        C98970
50500  COPY-REC.                                                        C98970
50510      WRITE DATA-OUT-REC FROM DATA-IN-REC.                         C98970
50520      ADD 1 TO REC-PASS.                                           C98970
50530      GO TO READ-DATA-INPUT.                                       C98970
50600  CHK-WUC.                                                         C98970
50610      IF WUC-2-DIGIT IS NOT EQUAL TO WUC2 GO TO COPY-REC.          C98970
51000      MOVE ZERO TO CNT.                                            C98970
51010  CHK-TAB-1.                                                       C98970
51020      ADD 1 TO CNT.                                                C98970
51030      MOVE TABLE-1 (CNT) TO WUC-TEMP.                              C98970
51040      IF WUC IS LESS THAN WUC-TEMP GO TO END-CHK-TAB-1.            C98970
51050      IF WUC IS EQUAL TO  WUC-TEMP GO TO DELETE-REC.               C98970
51060      IF CNT IS LESS THAN NO-TAB-1 GO TO CHK-TAB-1.                C98970
51070  END-CHK-TAB-1.                                                   C98970
51080      MOVE ZERO TO CNT.                                            C98970
51100  CHK-TAB-2.                                                       C98970
51110      ADD 1 TO CNT.                                                C98970
51120      MOVE TABLE-2 (1, CNT) TO WUC-TEMP.                           C98970
51130      IF WUC IS LESS THAN WUC-TEMP GO TO COPY-REC.                 C98970
51140      IF WUC IS EQUAL TO WUC-TEMP GO TO MOVE-WUC.                  C98970
51150      IF CNT IS LESS THAN NO-TAB-2 GO TO CHK-TAB-2.                C98970
51160      GO TO COPY-REC.                                              C98970
51200  DELETE-REC.                                                      C98970
51210      ADD 1 TO REC-DROP.                                           C98970
51220      GO TO READ-DATA-INPUT.                                       C98970
51300  MOVE-WUC.                                                        C98970
51310      MOVE TABLE-2 (2, CNT) TO WUC.                                C98970
51320      ADD 1 TO REC-CHNG.                                           C98970
51330      GO TO COPY-REC.                                              C98970
52000  CLOSE-FILE.                                                      C98970
52010      COMPUTE CNT > REC-PASS - REC-PASS / 60 * 60.                 C98970
52020      IF CNT IS EQUAL TO ZERO GO TO CFA.                           C98970
52100  NINE-FILL.                                                       C98970
52110      WRITE DATA-OUT-REC FROM NINES.                               C98970
52120      ADD 1 TO CNT.                                                C98970
52130      IF CNT IS LESS THAN 60 GO TO NINE-FILL.                      C98970
52200  CFA.                                                             C98970
52210      MOVE REC-READ TO TEMP-NO.                                    C98970
52220      DISPLAY ' REC-READ '  TEMP-NO UPON CONSOLE.                  C98970
52230      MOVE REC-PASS TO TEMP-NO.                                    C98970
52240      DISPLAY ' REC-PASS '  TEMP-NO UPON CONSOLE.                  C98970
52250      MOVE REC-CHNG TO TEMP-NO.                                    C98970
52260      DISPLAY ' REC-CHNG '  TEMP-NO UPON CONSOLE.                  C98970
52270      MOVE REC-DROP TO TEMP-NO.                                    C98970
52280      DISPLAY ' REC-DROP '  TEMP-NO UPON CONSOLE.                  C98970
52290      DISPLAY ' EOJ 9897 ' UPON CONSOLE.                           C98970
52292      CLOSE TABLE-1-FILE, TABLE-2-FILE, DATA-IN-FILE, CON-FILE,    C98970
52294         DATA-OUT-FILE, MSG-FILE.                                  C98970
52300      GOBACK.                                                      C98970
54000  CHECK-WUC-DATA.                                                  C98970
54010      MOVE ZERO TO CNT.                                            C98970
54100  CWOA.                                                            C98970
54110      ADD 1 TO CNT.                                                C98970
54120      MOVE TABLE-2 (1, CNT) TO WUC-TEMP.                           C98970
54130      MOVE ZERO TO KNT.                                            C98970
54200  CWOB.                                                            C98970
54210      ADD 1 TO KNT.                                                C98970
54220      IF TABLE-1 (KNT) IS GREATER THAN WUC-TEMP GO TO CWOC.        C98970
54230      IF TABLE-1 (KNT) IS EQUAL TO WUC-TEMP MOVE MSG-1 TO FILLER-A,C98970
54235      PERFORM BAD-DATA.                                            C98970
54240      IF KNT IS LESS THAN NO-TAB-1 GO TO CWOB.                     C98970
54300  CWOC.                                                            C98970
54310      IF CNT IS LESS THAN NO-TAB-2 GO TO CWDA.                     C98970
54320      MOVE  ZERO TO CNT.                                           C98970
54400  CWOD.                                                            C98970
54410      ADD 1 TO CNT.                                                C98970
54420      MOVE TABLE-2 (2, CNT)  TO WUC-TEMP.                          C98970
54430      MOVE ZERO TO KNT.                                            C98970
54500  CWOE.                                                            C98970
54510      ADD 1 TO KNT.                                                C98970
54515      IF TABLE-1 (KNT) IS GREATER THAN WUC-TEMP GO TO CWDH.        C98970
54520      IF TABLE-1 (KNT) IS EQUAL TO WUC-TEMP GO TO CWDF.            C98970
54530      IF KNT IS LESS THAN NO-TAB-1 GO TO CWDE.                     C98970
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54535  CWDM.                                                                C98970
54540       MOVE ZERO TO KNT.                                               C98970
54550  CWDG.                                                                C98970
54560       ADD 1 TO KNT.                                                   C98970
54565       IF TABLE-2 (1, KNT) IS GREATER THAN WUC-TEMP GO TO B-D-A.       C98970
54570       IF TABLE-2 (1, KNT) IS EQUAL TO WUC-TEMP GO TO CWDF.            C98970
54580       IF KNT IS LESS THAN NO-TAB-2 GO TO CWDG.                        C98970
54585  B-D-A.                                                               C98970
54590       MOVE MS -2 TO FILLER-A.                                         C98970
54600  BAD-DATA.                                                            C98970
54610       MOVE WUC-TEMP TO WUC-MSG.                                       C98970
54620       WRITE BAD-REC.                                                  C98970
54630       ADD 1 TO NO-ERRORS.                                             C98970
54700  CWDF.                                                                C98970
54710       IF CNT IS LESS THAN NO-TAB-2 GO TO CWDD.                        C98970
54800       MOVE ZERO TO KNT.                                               C98970
54810       MOVE 1    TO CNT.                                               C98970
54820  TAB-1-DUP.                                                           C98970
54830       ADD 1 TO KNT.                                                   C98970
54840       ADD 1 TO CNT.                                                   C98970
54845       MOVE TABLE-1 (KNT) TO WUC-TEMP.                                 C98970
54850       IF WUC-TEMP       IS EQUAL TO TABLE-1 (CNT) MOVE MSG-3 TO       C98970
54855       FILLER-A, PERFORM BAD-DATA.                                     C98970
54860       IF CNT IS LESS THAN NO-TAB-1 GO TO TAB-1-DUP.                   C98970
54900       MOVE ZERO TO KNT.                                               C98970
54910       MOVE 1 TO CNT.                                                  C98970
54920  TAB-2-DUP.                                                           C98970
54930       ADD 1 TO KNT.                                                   C98970
54940       ADD 1 TO CNT.                                                   C98970
54945       MOVE TABLE-2  (1, KNT) TO WUC-TEMP.                             C98970
54950       IF WUC-TEMP         IS EQUAL TO TABLE-2 (1, CNT)                C98970
54960       MOVE MSG-4 TO FILLER-A, PERFORM BAD-DATA.                       C98970
54970       IF CNT IS LESS THAN NO-TAB-2 GO TO TAB-2-DUP.                   C98970
55000       MOVE 1 TO CNT.                                                  C98970
55010  CHK-LHS.                                                             C98970
55020       MOVE TABLE-2 (2, CNT) TO WUC-TEMP.                              C98970
55030       MOVE CNT TO KNT.                                                C98970
55040  CHK-LHSA.                                                            C98970
55050       ADD 1 TO KNT.                                                   C98970
55060       IF TABLE-2 (2, KNT) IS EQUAL TO WUC-TEMP MOVE MSG-5 TO          C98970
55065       FILLER-A, PERFORM BAD-DATA.                                     C98970
55070       IF KNT IS LESS THAN NO-TAB-2 GO TO CHK-LHSA.                    C98970
55080       ADD 1 TO CNT.                                                   C98970
55090       IF CNT IS LESS THAN NO-TAB-2 GO TO CHK-LHS.                     C98970
56000  END-CWD.  EXIT.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                   1040 CDS
00000              GET TFG                              WANG               C98970'T
010001 014999      REPLACE                                                      'T
TFG  DT02    11  020Z080
280 74
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP=(OLD,KEEP),VOL=SER=*.F3,UNIT=T+F3                T14
//TPR.TU24      DD   DISP=(OLD,KEEP),VOL=SER=*.F7,UNIT=T+F7                T24
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU12    10200A0Z080
T/P  TU13    10200B0Z080
T/P  TU14    10100C0Z050
T/P  TU24    10200D0Z050
T/P  DT01    10200E0Z070
T/P  DT02    10010L0Z080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.6 PREPROCESSOR PROGRAMS

6.6.1 PREPROCESSOR FORMATTER

```
//C9897U JOB   01,I G. WANG     1,PRTY>02,TYPRUN>HOLD
//C9897U EXEC  P9655L,TIME>04,ACCT>D35323007
//CHG.TU12     DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897405,   CT12/13 1
//              VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU14     DD   DISP>[,PASS],UNIT>[A+F3,2,DEFER],DSN>+C.9897409,   CT14/15 1
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[A+F5,2,DEFER],DSN>+E.9897406,   CT22/23 1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[A+F7,1,DEFER],DSN>+G.9897408,   CT24    1
//              VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.TU25     DD   DSN>+P.9897407,SPACE>[CYL,(010,001)]                D25-OUT
//CHG.INPUT    DD   *,SPACE>[CYL,(1,1)]                                 1440 CD5
00000          COMBINE     COMPILE                  G. WANG,            C98970
01040  DATE-WRITTEN. 23 MAR 72.                                         C98970
01050  REMARKS. PROGRAM NAME- DATA BANK PHASE II -SUM OF FLIGHT HOURS,   C98970
01060       SORTIES AND LANDINGS IN TYPE 3 AND TYPE 4 RECORDS.          C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120       SELECT INFILE                ASSIGN TO UT-S-TU12         C98970
02130           RESERVE 5 ALTERNATE AREA.                               C98970
02140       SELECT OUTBANK-FILE          ASSIGN TO UT-S-TU22         C98970
02150           RESERVE 5 ALTERNATE AREA.                               C98970
02160       SELECT MCD-KP-FILE           ASSIGN TO UT-S-TU25         C98970
02170           RESERVE 1 ALTERNATE AREA.                               C98970
02180       SELECT SG-FILE               ASSIGN TO UT-S-TU24         C98970
02190           RESERVE 5 ALTERNATE AREA.                               C98970
02200       SELECT NSG-FILE              ASSIGN TO UT-S-TU14         C98970
02210           RESERVE 5 ALTERNATE AREA.                               C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
11100  FD  INFILE                                                       C98970
11120       RECORDING MODE IS F                                         C98970
11130       BLOCK CONTAINS 80 RECORDS                                   C98970
11140       RECORD CONTAINS  50          CHARACTERS                  C98970
11150       LABEL RECORDS ARE OMITTED                                   C98970
11160       DATA RECORDS ARE IN-REC.                                    C98970
11200  01   IN-REC SYNC.                                               C98970
11210       02  FILLER                PICTURE X(50).                   C98970
12100  FD  OUTBANK-FILE                                                 C98970
12120       RECORDING MODE IS F                                         C98970
12130       BLOCK CONTAINS 40 RECORDS                                   C98970
12140       RECORD CONTAINS  70          CHARACTERS                  C98970
12150       LABEL RECORDS ARE OMITTED                                   C98970
12160       DATA RECORDS ARE OUT-REC.                                   C98970
12200  01   OUT-REC SYNC.                                              C98970
12210       02  FILLER                PICTURE X(70).                   C98970
13100  FD  MCD-KP-FILE                                                  C98970
13120       RECORDING MODE IS F                                         C98970
13130       BLOCK CONTAINS 25 RECORDS                                   C98970
13140       RECORD CONTAINS 70           CHARACTERS                  C98970
13150       LABEL RECORDS ARE OMITTED                                   C98970
13160       DATA RECORDS ARE SN-COUNT.                                  C98970
13200  01   SN-COUNT SYNC.                                             C98970
13210       02  FILLER                PICTURE X(70).                   C98970
14100  FD  SG-FILE                                                      C98970
14120       RECORDING MODE IS F                                         C98970
14130       BLOCK CONTAINS 40 RECORDS                                   C98970
14140       RECORD CONTAINS  70          CHARACTERS                  C98970
14150       LABEL RECORDS ARE OMITTED                                   C98970
14160       DATA RECORDS ARE SG-REC.                                    C98970
14200  01   SG-REC SYNC.                                               C98970
14210       02  FILLER                PICTURE X(70).                   C98970
15100  FD  NSG-FILE                                                     C98970
15120       RECORDING MODE IS F                                         C98970
15130       BLOCK CONTAINS 40 RECORDS                                   C98970
15140       RECORD CONTAINS  70          CHARACTERS                  C98970
15150       LABEL RECORDS ARE OMITTED                                   C98970
15160       DATA RECORDS ARE NSG-REC.                                   C98970
15200  01   NSG-REC SYNC.                                              C98970
15210       02  FILLER                PICTURE X(70).                   C98970
30000  WORKING-STORAGE SECTION.                                         C98970
30230  01   NINE SYNC.                                                 C98970
30240       02  FILLER           PICTURE X(25)   VALUE                 C98970
30250                              '9999999999999999999999999'.        C98970
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30260       02  FILLER          PICTURE X[25]   VALUE                        C98970
30270                             ;999999999999999999999999;.                C98970
30280       02  FILLER          PICTURE X[20]   VALUE                        C98970
30290                             ;99999999999999999$;.                      C98970
30310   01  RECORDS-READ    PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30320   01  RECORDS-PASS    PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30330   01  REC-1-CNT       PICTURE 9[6]  SYNC VALUE ZERO.                   C98970
30340   01  REC-3-CNT       PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30350   01  REC-4-CNT       PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30355   01  SN-TOT-CNT      PICTURE 9[3]  SYNC VALUE ZERO.                   C98970
30360   01  FH-CNT          PICTURE S9[6] SYNC VALUE ZERO COMPUTATIONAL.     C98970
30370   01  SORTIES-CNT     PICTURE S9[5] SYNC VALUE ZERO COMPUTATIONAL.     C98970
30380   01  LANDINGS-CNT    PICTURE S9[5] SYNC VALUE ZERO COMPUTATIONAL.     C98970
30390   01  KNT             PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30400   01  KOUNT           PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30410   01  SGCNT           PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30420   01  NSGCNT          PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30500   01  SG-CNT          PICTURE 9[6]  SYNC VALUE ZERO.                   C98970
30510   01  NSG-CNT         PICTURE 9[6]  SYNC VALUE ZERO.                   C98970
30520   01  SG-RCNT         PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30530   01  NSG-RCNT        PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30540   01  R1-G-CNT        PICTURE 9[6]  SYNC VALUE ZERO.                   C98970
30550   01  R3-G-CNT        PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
30560   01  R4-G-CNT        PICTURE 9[7]  SYNC VALUE ZERO.                   C98970
33000   01  TEST-A SYNC.                                                     C98970
33010       02  SN-A                PICTURE X[8]    VALUE SPACE.           C98970
33020       02  WK-A                PICTURE X[3]    VALUE SPACE.           C90970
33100   01  TEST-B SYNC.                                                     C98970
33110       02  SN-B                PICTURE X[8]    VALUE SPACE.           C98970
33120       02  WK-B                PICTURE X[3]    VALUE SPACE.           C98970
39000   01  IN-TEST SYNC.                                                    C98970
39010       02  MDS-IN              PICTURE X[5].                          C98970
39020       02  SN-IN               PICTURE X[8].                          C98970
39030       02  WK-IN               PICTURE X[3].                          C98970
39035       02  WUC-1-IN            PICTURE X.                             C98970
39040       02  FILL-A              PICTURE X[11].                         C98970
39050       02  FH-IN               PICTURE S9[4].                         C98970
39060       02  FILL-B              PICTURE X[3].                          C98970
39070       02  SORTIES-IN          PICTURE S9[4].                         C98970
39080       02  LANDINGS-IN         PICTURE S9[4].                         C98970
39090       02  FILL-C              PICTURE X[5].                          C98970
39100       02  TYPE-IN             PICTURE X[1].                          C98970
39110       02  FILL-D              PICTURE X[1].                          C98970
40000   01  REC-TYPE-3 SYNC.                                                 C98970
40010       02  MDS-3               PICTURE X[5].                          C98970
40020       02  SN-3                PICTURE X[8].                          C98970
40030       02  WK-3                PICTURE X[3].                          C98970
40040       02  FLD-3               PICTURE X[12].                         C90970
40050       02  LABOR-3             PICTURE X[4].                          C98970
40060       02  AIE-3               PICTURE X[3].                          C98970
40070       02  NORM-3              PICTURE X[4].                          C98970
40080       02  NORS-3              PICTURE X[4].                          C98970
40090       02  UNIT-ATC-3          PICTURE X[5].                          C90970
40100       02  TYPE-3              PICTURE X[1].                          C98970
40110       02  REC-3-HOLD          PICTURE X[21].                         C98970
40200   01  REC-TYPE-4 SYNC.                                                 C98970
40210       02  MDS-4               PICTURE X[5].                          C98970
40220       02  SN-4                PICTURE X[8].                          C98970
40230       02  WK-4                PICTURE X[3].                          C98970
40240       02  FLD-4               PICTURE X[12].                         C98970
40250       02  LABOR-4             PICTURE X[4].                          C98970
40260       02  FLD-4A              PICTURE X[16].                         C98970
40270       02  TYPE-4              PICTURE X[1].                          C98970
40280       02  REC-4-HOLD          PICTURE X[21].                         C98970
40400   01  REC-1-HOLD SYNC.                                                 C90970
40410       02  FH-HOLD             PICTURE S9[4].                         C98970
40420       02  FH-SUM-HOLD         PICTURE S9[6].                         C98970
40430       02  SORTIES-SUM-HOLD    PICTURE S9[5].                         C90970
40440       02  LANDINGS-SUM-HOLD   PICTURE S9[5].                         C98970
40450       02  RCD-MK-HOLD         PICTURE X       VALUE I$:.             C98970
40600   01  SN-TOTAL SYNC.                                                   C98970
40610       02  CAR-CONTROL         PICTURE X       VALUE SPACE.           C98970
40620       02  FH-TOT              PICTURE ZZZZZ9.                        C98970
40630       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40640       02  SORTIES-TOT         PICTURE ZZZZ9.                         C98970
40650       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40660       02  LANDINGS-TOT        PICTURE ZZZZ9.                         C98970
40670       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40680       02  TYPE-1-TOT          PICTURE ZZZZZ9.                        C98970
40690       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40700       02  TYPE-3-TOT          PICTURE ZZZZZZ9.                       C98970
40710       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40720       02  TYPE-4-TOT          PICTURE ZZZZZZ9.                       C98970
40730       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40740       02  SN-TOT              PICTURE X[8].                          C98970
40750       02  FILLER              PICTURE X       VALUE SPACE.           C98970
40760       02  SW-TOT              PICTURE ZZZZZ9.                        C98970
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40770      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40780      02  NSG-TOT                 PICTURE ZZZZZ9.                       C98970
40790      02  REC-KP-TOT              PICTURE X(5)    VALUE SPACE.          C98970
40800  01  RCO-TOTALS SYNC.                                                  C98970
40810      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40820      02  RECORDS-INPUT           PICTURE ZZZZZZ9.                      C98970
40830      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40840      02  REC-3-4-OUT             PICTURE ZZZZZZ9.                      C98970
40845      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40850      02  SN-OUT                  PICTURE ZZ9.                          C98970
40860      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40865      02  SG-GTOT                 PICTURE ZZZZZZ9.                      C98970
40870      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40875      02  NSG-GTOT                PICTURE ZZZZZZ9.                      C98970
40880      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40890      02  R1-G-TOT                PICTURE ZZZZZZ9.                      C98970
40900      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40910      02  R3-G-TOT                PICTURE ZZZZZZ9.                      C98970
40920      02  FILLER                  PICTURE X       VALUE SPACE.          C98970
40930      02  R4-G-TOT                PICTURE ZZZZZZ9.                      C98970
40940      02  FILLER                  PICTURE X(10)   VALUE SPACE.          C98970
40980  01  SN-TOT-BLNK SYNC.                                                 C98970
40990      02  FILLER                  PICTURE X(70)   VALUE SPACE.          C98970
50000  PROCEDURE DIVISION.                                                   C98970
50010  BANK1.                                                                C98970
50020      OPEN INPUT INFILE OUTPUT OUTBANK-FILE.                            C98970
50030      OPEN OUTPUT RCO-KP-FILE.                                          C98970
50035      OPEN OUTPUT SG-FILE NSG-FILE.                                     C98970
50040      SUBTRACT 1 FROM SN-TOT-CNT.                                       C98970
50100  READ-IN.                                                              C98970
50110      MOVE TEST-A TO TEST-B.                                            C98970
50120      READ INFILE INTO IN-TEST                                          C98970
50130          AT END GO TO RECORD-KEEP.                                     C98970
50135      ADD 1 TO RECORDS-READ.                                            C98970
50140      MOVE SN-IN    TO SN-A.                                            C98970
50150      MOVE WK-IN    TO WK-A.                                            C98970
50200  COMPARE-SN.                                                           C98970
50210      IF SN-A EQUAL SN-B GO TO COMPARE-WK.                              C98970
50212      MOVE  SG-CNT TO  SG-TOT.                                          C98970
50214      MOVE NSG-CNT TO NSG-TOT.                                          C98970
50220      MOVE SN-B TO SN-TOT.                                              C98970
50230      MOVE FH-CNT TO FH-TOT.                                            C98970
50240      MOVE SORTIES-CNT TO SORTIES-TOT.                                  C98970
50250      MOVE LANDINGS-CNT TO LANDINGS-TOT.                                C98970
50252      MOVE REC-1-CNT TO TYPE-1-TOT.                                     C98970
50253      MOVE REC-3-CNT TO TYPE-3-TOT.                                     C98970
50254      MOVE REC-4-CNT TO TYPE-4-TOT.                                     C98970
50256      ADD REC-1-CNT TO R1-G-CNT.                                        C98970
50257      ADD REC-3-CNT TO R3-G-CNT.                                        C98970
50258      ADD REC-4-CNT TO R4-G-CNT.                                        C98970
50260      WRITE SN-COUNT FROM SN-TOTAL.                                     C98970
50270      ADD 1 TO SN-TOT-CNT.                                              C98970
50272      IF TYPE-IN EQUAL '9' GO TO RECORD-KEEP.                           C98970
50280      MOVE ZEROS TO FH-CNT SORTIES-CNT LANDINGS-CNT.                    C98970
50290      MOVE ZEROS TO FH-HOLD FH-SUM-HOLD SORTIES-SUM-HOLD                C98970
50300                    LANDINGS-SUM-HOLD.                                  C98970
50310      MOVE ZEROS TO SG-CNT NSG-CNT                                      C98970
50320                    REC-1-CNT                                           C98970
50330                    REC-3-CNT                                           C98970
50340                    REC-4-CNT.                                          C98970
50500          GO TO COMPARE-WK-A-1.                                         C98970
51000  COMPARE-WK.                                                           C98970
51010      IF WK-A GREATER THAN WK-B GO TO COMPARE-WK-A-1.                   C98970
51020      GO TO TYPE-3.                                                     C98970
51030  COMPARE-WK-A-1.                                                       C98970
51040      IF TYPE-IN EQUAL '1' GO TO TYPE-1-PROC.                           C98970
51050  COMPARE-TYPE-3.                                                       C98970
51060      IF TYPE-IN EQUAL '3' GO TO TYPE-3-1.                              C98970
51070      IF TYPE-IN GREATER THAN '3' GO TO TYPE-4-1.                       C98970
51080          GO TO READ-IN.                                                C98970
51100  TYPE-1-PROC.                                                          C98970
51105      ADD 1 TO REC-1-CNT.                                               C98970
51110      IF FH-IN LESS THAN ZERO GO TO TYPE-1-PROC-A.                      C98970
51120      ADD FH-IN TO FH-CNT.                                              C98970
51130      ADD SORTIES-IN TO SORTIES-CNT.                                    C98970
51140      ADD LANDINGS-IN TO LANDINGS-CNT.                                  C98970
51150      MOVE FH-IN TO FH-HOLD.                                            C98970
51160          GO TO TYPE-1-PROC-B.                                          C98970
51200  TYPE-1-PROC-A.                                                        C98970
51202      MOVE ZEROS TO FH-HOLD.                                            C98970
51204  TYPE-1-PROC-B.                                                        C98970
51210      MOVE FH-CNT TO FH-SUM-HOLD.                                       C98970
51220      MOVE SORTIES-CNT TO SORTIES-SUM-HOLD.                             C98970
51230      MOVE LANDINGS-CNT TO LANDINGS-SUM-HOLD.                           C98970
51250          GO TO READ-IN.                                                C98970
51300  TYPE-3-1.                                                             C98970
51310      MOVE ZEROS TO FH-HOLD.                                            C98970
```

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51320       MOVE 1N-TEST TO REC-TYPE-3.                                    C98970
51330       MOVE REC-1-HOLD TO REC-3-HOLD.                                 C98970
51340       WRITE OUT-REC FROM REC-TYPE-3.                                 C98970
51350       ADD 1 TO REC-3-CNT.                                            C98970
51355       ADD 1 TO RECORDS-PASS.                                         C98970
51360       IF WUC-1-1N EQUAL :0: GO TO SG-OUTPUT.                         C98970
51370       GO TO NSG-OUTPUT-3.                                            C98970
52000  TYPE-4-1.                                                           C98970
52010       IF TYPE-1N GREATER THAN :4: GO TO TYPE-9-1.                    C98970
52020       MOVE ZEROS TO FH-HOLD.                                         C98970
52030       MOVE 1N-TEST TO REC-TYPE-4.                                    C98970
52040       MOVE REC-1-HOLD TO REC-4-HOLD.                                 C98970
52050       WRITE OUT-REC FROM REC-TYPE-4.                                 C98970
52060       ADD 1 TO REC-4-CNT.                                            C98970
52065       ADD 1 TO RECORDS-PASS.                                         C98970
52070       GO TO NSG-OUTPUT-4.                                            C98970
52100  TYPE-9-1.                                                           C98970
52110       IF TYPE-1N EQUAL :9. GO TO RECORD-KEEP.                        C98970
52120       GO TO READ-1N.                                                 C90970
53000  TYPE-3.                                                             C98970
53010       IF TYPE-1N EQUAL :3: GO TO TYPE-3-A.                           C98970
53020       IF TYPE-1N GREATER THAN :3: GO TO TYPE-4.                      C98970
53030       GO TO READ-1N.                                                 C98970
53100  TYPE-3-A.                                                           C98970
53110       MOVE 1N-TEST TO REC-TYPE-3.                                    C98970
53120       MOVE REC-1-HOLD TO REC-3-HOLD.                                 C98970
53130       WRITE OUT-REC FROM REC-TYPE-3.                                 C98970
53140       ADD 1 TO REC-3-CNT.                                            C98970
53145       ADD 1 TO RECORDS-PASS.                                         C98970
53150       IF WUC-1-1N EQUAL :0: GO TO SG-OUTPUT.                         C98970
53160       GO TO NSG-OUTPUT-3.                                            C98970
53400  TYPE-4.                                                             C98970
53410       IF TYPE-1N EQUAL :4. GO TO TYPE-4-A.                           C98970
53420       GO TO TYPE-9.                                                  C98970
53500  TYPE-4-A.                                                           C98970
53510       MOVE 1N-TEST TO REC-TYPE-4.                                    C98970
53520       MOVE REC-1-HOLD TO REC-4-HOLD.                                 C98970
53530       WRITE OUT-REC FROM REC-TYPE-4.                                 C98970
53540       ADD 1 TO REC-4-CNT.                                            C98970
53545       ADD 1 TO RECORDS-PASS.                                         C98970
53550       GO TO NSG-OUTPUT-4.                                            C98970
53900  TYPE-9.                                                             C98970
53910       IF TYPE-1N EQUAL :9: GO TO RECORD-KEEP.                        C98970
53920       GO TO READ-1N.                                                 C98970
54000  SG-OUTPUT.                                                          C98970
54010       WRITE  SG-REC FROM REC-TYPE-3.                                 C98970
54020       ADD 1 TO  SG-CNT  SG-RCNT.                                     C90970
54050           GO TO READ-1N.                                             C98970
54100  NSG-OUTPUT-3.                                                       C90970
54110       WRITE NSG-REC FROM REC-TYPE-3.                                 C98970
54120       ADD 1 TO NSG-CNT NSG-RCNT.                                     C98970
54150           GO TO READ-1N.                                             C98970
54200  NSG-OUTPUT-4.                                                       C98970
54210       WRITE NSG-REC FROM REC-TYPE-4.                                 C98970
54220       ADD 1 TO NSG-CNT NSG-RCNT.                                     C98970
54250           GO TO READ-1N.                                             C98970
55000  RECORD-KEEP.                                                        C98970
55060       MOVE SN-TOT-BLNK TO SN-TOTAL.                                  C98970
55065       SUBTRACT 1 FROM RECORDS-READ.                                  C98970
55070       MOVE RECORDS-READ TO RECORDS-INPUT.                            C98970
55080       MOVE RECORDS-PASS TO REC-3-4-OUT.                              C98970
55085       SUBTRACT 2 FROM SN-TOT-CNT.                                    C90970
55087       MOVE SN-TOT-CNT TO SN-OUT.                                     C98970
55100       MOVE  SG-RCNT   TO   SG-GTOT.                                  C98970
55110       MOVE NSG-RCNT   TO  NSG-GTOT.                                  C98970
55120       MOVE R1-G-CNT   TO  R1-G-TOT.                                  C98970
55130       MOVE R3-G-CNT   TO  R3-G-TOT.                                  C98970
55140       MOVE R4-G-CNT   TO  R4-G-TOT.                                  C98970
55290       MOVE RCD-TOTALS TO SN-TOTAL.                                   C98970
55300       WRITE SN-COUNT FROM SN-TOTAL.                                  C98970
55310       ADD 2 TO SN-TOT-CNT.                                           C98970
55400       GO TO BLOCK-CHECK.                                             C98970
62000  BLOCK-CHECK.                                                        C98970
62010       COMPUTE KOUNT > RECORDS-PASS - [[RECORDS-PASS / 40] * 40].     C98970
62040  LOOP3.                                                              C98970
62050       WRITE OUT-REC     FROM NINE.                                   C98970
62060       ADD 1 TO KOUNT.                                                C98970
62070       IF KOUNT IS LESS THAN 40 GO TO LOOP3.                          C98970
62100  BLOCK-CHECK-2.                                                      C98970
62115       COMPUTE KNT  >  SN-TOT-CNT -  [[SN-TOT-CNT / 25] * 25].        C98970
62130  LOOP4.                                                              C98970
62140       WRITE SN-COUNT       FROM NINE.                                C98970
62150       ADD 1 TO KNT.                                                  C98970
62160       IF KNT  IS LESS THAN 25 GO TO LOOP4.                           C98970
62200  BLOCK-CHECK-3.                                                      C98970
62210       COMPUTE   SGCNT >   SG-RCNT  - [[SG-RCNT / 40] * 40].          C98970
62220  LOOP5.                                                              C98970
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62230       WRITE  SG-REC FROM NINE.                                          C98970
62240       ADD 1 TO  SGCNT.                                                  C98970
62250       IF   SGCNT  IS LESS THAN 40 GO TO LOOP5.                          C98970
62300   BLOCK-CHECK-4.                                                        C98970
62310       COMPUTE  NSGCNT >  NSG-RCNT  - [INSG-RCNT / 40] * 40].            C98970
62320   LOOP6.                                                                C98970
62330       WRITE NSG-REC FROM NINE.                                          C98970
62340       ADD 1 TO NSGCNT.                                                  C98970
62350       IF  NSGCNT  IS LESS THAN 40 GO TO LOOP6.                          C98970
64000   CLOSE-FILES.                                                          C98970
64010           CLOSE INFILE        WITH LOCK.                                C98970
64020           CLOSE OUTBANK-FILE WITH LOCK.                                 C98970
64030           CLOSE RCD-KP-FILE  WITH LOCK.                                 C98970
64040           CLOSE SG-FILE NSG-FILE WITH LOCK.                             C98970
64110       DISPLAY ' BANK    IN ' RECORDS-READ  UPON CONSOLE.                C98970
64120       DISPLAY ' BANK  OUT ' RECORDS-PASS  UPON CONSOLE.                 C98970
64140       DISPLAY ' EOJ C9897 . UPON CONSOLE.                               C98970
64150       GOBACK.                                                           C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE>[CYL,[1,1]]
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>[OLD,KEEP],VOL>SER>+F1,UNIT>T+F1                    T12
//TPR.TU14      DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5                    T22
//TPR.TU24      DD   DISP>[OLD,KEEP],VOL>SER>+F7,UNIT>T+F7                    T24
//TPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU25     10100702070
T/P  TU24     10400702070
T/P  TU22     10800702070
T/P  TU14     10400702070
T/P  TU12     *0800502050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.6.2 REFORMATTED SUPPORT GENERAL WUC SORT

```
//T9897L JOB    01,: G. WANG,    :,PRTY>02,TYPRUN>HOLD SORT SG  X1310
//C9897L EXEC   P9622N,W>199,TIME>03,ACCT>D35323007   22/12 SORT
//CHG.SORTIN    DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                       CT22/23 1
//               DSN>+E.9897408,                                             CT22    2
//               VOL>SER>I+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,       CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//               DCB>[LRECL>0070,BLKSIZE>2800],LABEL>I,NSL,RETPD>001]
//CHG.SORTOUT   DD   DISP>I,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897418,        CT12/13 1
//               VOL>SER>I+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0070,BLKSIZE>2800]
//CHG.SYSIN     DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[006,008,CH,A,014,003,CH,A,017,005,CH,A,                       C
               049,001,CH,A],SIZE>E0200000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
//C9897L EXEC   C9603N,TIME>02,ACCT>D35323007  STDALONE T P  BIIS0
//CHG.TU12      DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897418,        CT12/13 1
//               VOL>SER>I+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU12     11000702070
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.6.3 REFORMATTED NON-SUPPORT GENERAL WUC SORT

```
//T9897M JOB    01,: G. WANG,    :,PRTY>02,TYPRUN>HOLD SORT NSG X1310
//C9897M EXEC   P9622N,W>199,TIME>04,ACCT>D35323007   22/12 SORT
//CHG.SORTIN    DD   DISP>I,KEEP],UNIT>[A+F5,2,DEFER],                       CT22/23 1
//               DSN>+E.9897409,                                             CT22    2
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,       CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//               DCB>[LRECL>0070,BLKSIZE>2800],LABEL>I,NSL,RETPD>002]
//CHG.SORTOUT   DD   DISP>I,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897419,        CT12/13 1
//               VOL>SER>I+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0070,BLKSIZE>2800]
//CHG.SYSIN     DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[006,008,CH,A,014,003,CH,A,017,005,CH,A,                       C
               049,001,CH,A],SIZE>E0700000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
//C9897M EXEC   C9603N,TIME>02,ACCT>D35323007  STDALONE T P  BIINS0
//CHG.TU12      DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897419,        CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//               1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU12     R0900702070001001001       D
T/P  TU120080R1100702070001001001        D
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.6.4 REFORMATTED DATA BANK SORT

```
//T9897K JOB   01,: G. WANG.   :,PRTY>02,TYPRUN>HOLD    SORT 81  X1310
//C9897K EXEC  P962ZN,W>199,TIME>04,ACCT>D35323007   22/12 SORT
//CHG.SORTIN   DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                  CT22/23 1
//             DSN>+E.989740,,                                         CT22    2
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//             DCB>[LRECL>0070,BLKSIZE>2800],LABEL>[,NSL,RETPD>002]
//CHG.SORTOUT  DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897410,   CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//             DCB>[LRECL>0070,BLKSIZE>2800]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[017,005,CH,A,023,003,CH,A,006,008,CH,A,                  C
               014,003,CH,A],SIZE>E0700000
 MODS  E15>[E15,008,SORTLIB,1],E18>[E18,024,SORTLIB,N]
/*
//C9897K EXEC  C9603N,TIME>02,ACCT>D35323007  STDALONE T P  BI134
//CHG.TU12     DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897410,   CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12.   2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  TU12    11000702070
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.7 PROGRAMS FOR FREQUENCY ANALYSES

6.7.1 TITLE FORMATTER AND FIVE-DIGIT WUC ANALYSIS

```
//C98970 JOB   01,' G. WANG     I,PRTY>02,TYPRUN>HOLD
//C98970 EXEC  P9655L,TIME>02,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(A+F1,2,DEFER),DSN>*A,9897416,   CT12/13 1
//               VOL>SER>(*F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12   2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12   3
//CHG.TU14     DD   DISP>(,PASS),UNIT>(T+F3,1,DEFER),DSN>*C,9897440,   CT14   1
//               VOL>SER>(*F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14   2
//               I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14   3
//CHG.TU22     DD   DISP>(,PASS),UNIT>(A+F5,2,DEFER),DSN>*E,9897441,   CT22/23 1
//               VOL>SER>(*F5,A+F5,H+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22   2
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22   3
//CHG.TU24     DD   DISP>(,PASS),UNIT>(T+F7,1,DEFER),DSN>*G,9897442,   CT24   1
//               VOL>SER>(*F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24   2
//               I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24   3
//CHG.TU25     DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>*H,9897443,   CT25   1
//               VOL>SER>(*F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25   2
//               I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25   3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                1440 CDS
00000          COMBINE     COMPILE                  G. WANG.           C98970
01040  DATE-WRITTEN. 15 APR 72.                                        C98970
01050  REMARKS.                                                        C98970
01060          MAINTENANCE STUDY   PROGRAM 1A.                         C98970
01070              FREQUENCY ANALYSIS.                                 C98970
01080                FREQUENCY OF WORK UNIT CODE REPAIR ACTION.        C98970
01090                                (5 DIGIT LEVEL)                   C98970
01100                COMPUTES FREQUENCY OF SPECIFIC SG-WUC.            C98970
01110                FORMATS FREQUENCIES FOR TITLE.                    C98970
01120                COMPUTES FREQUENCY OF SPECIFIC WDC.               C98970
01130                THIS REPEATED FOR EACH NON-SG-WUC AND WMC.        C98970
01140                INPUT SORT SEQUENCE                               C98970
01150                     WUC, WMC, SERIAL-NO, WEEK.                   C98970
02000  ENVIRONMENT DIVISION.                                           C98970
02010  CONFIGURATION SECTION.                                          C98970
02020  SOURCE-COMPUTER. IBM-360.                                       C98970
02030  OBJECT-COMPUTER. IBM-360.                                       C98970
02100  INPUT-OUTPUT SECTION.                                           C98970
02110  FILE-CONTROL.                                                   C98970
02120      SELECT IN-FILE-UB              ASSIGN TO UT-S-TU12          C98970
02130          RESERVE 1 ALTERNATE AREA.                               C98970
02140      SELECT IN-FILE-ISC             ASSIGN TO DA-S-DT01          C98970
02150          RESERVE 1 ALTERNATE AREA.                               C98970
02160      SELECT OUT-DATA                ASSIGN TO UT-S-TU22          C98970
02170          RESERVE 1 ALTERNATE AREA.                               C98970
02180      SELECT OUT-TITLES              ASSIGN TO UT-S-TU14          C98970
02190          RESERVE 1 ALTERNATE AREA.                               C98970
02200      SELECT OUT-PRINT-NI            ASSIGN TO UT-S-TU24          C98970
02210          RESERVE 1 ALTERNATE AREA.                               C98970
02220      SELECT OUT-PRINT-ISC           ASSIGN TO UT-S-TU25          C98970
02230          RESERVE 1 ALTERNATE AREA.                               C98970
10000  DATA DIVISION.                                                  C98970
10010  FILE SECTION.                                                   C98970
10100  FD  IN-FILE-DB                                                  C98970
10130      BLOCK CONTAINS 40 RECORDS                                   C98970
10140      RECORD CONTAINS 70          CHARACTERS                      C98970
10150      LABEL RECORDS ARE OMITTED                                   C98970
10160      DATA RECORDS ARE IN-REC-D-B.                                C98970
10200  01  IN-REC-D-B SYNC.                                           C98970
10210      02  FILLER                  PICTURE X(70).                 C98970
11300  FD  IN-FILE-ISC                                                 C98970
11320      RECORDING MODE IS F                                         C98970
11330      BLOCK CONTAINS 20 RECORDS                                   C98970
11340      RECORD CONTAINS 80          CHARACTERS                      C98970
11350      LABEL RECORDS ARE STANDARD                                  C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                C98970
11400  01  IN-REC-ISC SYNC.                                           C98970
11410      02  FILLER                  PICTURE X(80).                 C98970
12100  FD  OUT-DATA                                                    C98970
12120      RECORDING MODE IS F                                         C98970
12130      BLOCK CONTAINS 23 RECORDS                                   C98970
12140      RECORD CONTAINS 130         CHARACTERS                      C98970
12150      LABEL RECORDS ARE OMITTED                                   C98970
12160      DATA RECORDS ARE TAPE-FILE.                                 C98970
12180  01  TAPE-FILE     SYNC          PICTURE X(130).                C98970
13100  FD  OUT-TITLES                                                  C98970
13120      RECORDING MODE IS F                                         C98970
13130      BLOCK CONTAINS 23 RECORDS                                   C98970
13140      RECORD CONTAINS 130         CHARACTERS                      C98970
13150      LABEL RECORDS ARE OMITTED                                   C98970
13160      DATA RECORDS ARE TAPE-FILE-TI.                              C98970
13170  01  TAPE-FILE-TI SYNC           PICTURE X(130).                C98970
14100  FD  OUT-PRINT-NI                                                C98970
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14120      RECORDING MODE IS F
14130      BLOCK CONTAINS 15 RECORDS                                        C98970
14140      RECORD CONTAINS 130          CHARACTERS                          C98970
14150      LABEL RECORDS ARE OMITTED                                        C98970
14160      DATA RECORDS ARE NI-DATA.                                        C98970
14170 01   NI-DATA  SYNC                PICTURE X(130).                     C98970
15100 FD   OUT-PRINT-ISC                                                    C98970
15120      RECORDING MODE IS F                                              C98970
15130      BLOCK CONTAINS 15 RECORDS                                        C98970
15140      RECORD CONTAINS 130          CHARACTERS                          C98970
15150      LABEL RECORDS ARE OMITTED                                        C98970
15160      DATA RECORDS ARE ISC-DATA.                                       C98970
15170 01   ISC-DATA SYNC                PICTURE X(130).                     C98970
30000 WORKING-STORAGE SECTION.                                              C98970
30010 77   ISCHRONAL SYNC               PICTURE X.                          C98970
30020 77   WDC-TEMP SYNC                PICTURE X.                          C98970
30040 77   WEEK-TEMP SYNC               PICTURE 999.                        C98970
30050 77   KNT SYNC COMPUTATIONAL       PICTURE S999.                       C98970
30060 77   CUR-SN                       PICTURE X(8) VALUE SPACE.           C98970
30070 77   P-WEEK                       PICTURE S999 COMPUTATIONAL.         C98970
30080 77   P-FLT-HRS                    PICTURE S9(6) COMPUTATIONAL.        C98970
30100 77   NO-WUC              SYNC     PICTURE 9999 VALUE ZERO.            C98970
30170 77   CNT SYNC COMPUTATIONAL       PICTURE S999.                       C98970
30400 77   ISC-TEMP            SYNC     PICTURE X(8) VALUE SPACE.           C98970
30410 77   PREV-TESTED-SN      SYNC     PICTURE X(8) VALUE SPACE.           C98970
30420 77   ISC-FLAG            SYNC     PICTURE X    VALUE SPACE.           C98970
30430 77   MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.       C98970
30500 77   TEMP-WUC      SYNC           PICTURE X(5).                       C98970
30510 77   TEMP-COL-NO  SYNC            PICTURE S99 COMPUTATIONAL.          C98970
30520 77   NO-WDC-COLS COMPUTATIONAL    PICTURE S999 SYNC VALUE <21.        C98970
30530 77   BF           COMPUTATIONAL    PICTURE S999 SYNC VALUE <23.        C98970
30540 77   ONE  SYNC                    PICTURE X VALUE 1.                  C98970
30550 77   TWO  SYNC                    PICTURE X VALUE 2.                  C98970
30560 77   POS-WUC      COMPUTATIONAL   PICTURE S999.                       C98970
30570 77   ISC-TITLE-FLAG   SYNC        PICTURE X.                          C98970
30580 77   NI-TITLE-FLAG    SYNC        PICTURE X.                          C98970
30590 77   NI-LINE-FLAG     SYNC        PICTURE X.                          C98970
30600 77   ISC-LINE-FLAG    SYNC        PICTURE X.                          C98970
30610 77   PAGE-NUMBER-ISC              PICTURE S99  SYNC VALUE ZERO.       C98970
30615 77   PAGE-NUMBER-NI               PICTURE S99  SYNC VALUE ZERO.       C98970
30620 77   NO-REC-PRINT-ISC             PICTURE  9(7) VALUE ZERO.           C98970
30630 77   NO-REC-PRINT-NI              PICTURE  9(7) VALUE ZERO.           C98970
30640 77   NO-REC-TAPE                  PICTURE  9(7) VALUE ZERO.           C98970
30650 77   NO-REC-TAPE-T1               PICTURE  9(7) VALUE ZERO.           C98970
30660 77   LINE-CNT-ISC COMPUTATIONAL   PICTURE S999           SYNC.         C98970
30670 77   LINE-CNT-NI  COMPUTATIONAL   PICTURE S999           SYNC.         C98970
30680 77   LINE-PAGE    COMPUTATIONAL   PICTURE S999 VALUE <60 SYNC.         C98970
30682 77   SUM-INDEX  COMPUTATIONAL     PICTURE S999 VALUE ZERO SYNC.       C98970
30684 77   TEMP-INDEX COMPUTATIONAL     PICTURE S999 VALUE ZERO SYNC.       C98970
30686 77   NUMBER-SGWUC COMPUTATIONAL   PICTURE S999 VALUE ZERO SYNC.       C98970
30688 77   TWO-DIGIT-COL COMPUTATIONAL  PICTURE S999 VALUE ZERO SYNC.       C98970
30700 01   WDC-FREQ-LINE-RPT SYNC.                                         C98970
30710      02  FILLER                   PICTURE X(18) VALUE               C90970
30720                                    :J WDC FREQUENCY   I.              C98970
30730      02  WUC-FREQ-RPT OCCURS 21 TIMES                                C98970
30740                                    PICTURE ZZZZZ.                    C98970
30750      02  TOTAL-WDC-FREQ-RPT       PICTURE Z(6).                     C98970
30760      02  FILLER                   PICTURE X VALUE 1#I.              C98970
31010 01   NO-ISC SYNC.                                                    C98970
31020      02  FILLER                   PICTURE XX.                       C98970
31030      02  NO-ISC-AC                PICTURE S999.                     C98970
31040      02  FILLER                   PICTURE X(75).                    C98970
31050 01   ISC-A-C SYNC.                                                   C98970
31060      02  FILLER                   PICTURE XX.                       C98970
31070      02  ISC-TN                   PICTURE X(0).                     C98970
31080      02  FILLER                   PICTURE XX.                       C98970
31090      02  ISC-WK                   PICTURE  999.                     C98970
31100      02  FILLER                   PICTURE X(65).                    C98970
31200 01   FILLER SYNC.                                                    C98970
31205      02  FILLER OCCURS 36 TIMES.                                     C98970
31210          03  ISC-AC-TN            PICTURE X(8).                     C98970
31220          03 .ISC-AC--WK COMPUTATIONAL PICTURE S999.                  C98970
31300 01   INPUT-DB SYNC.                                                  C98970
31310      02  FILLER                   PICTURE X(5).                     C98970
31320      02  SERIAL-NO                PICTURE X(8).                     C98970
31330      02  WEEK                     PICTURE 999.                      C98970
31340      02  WUC                      PICTURE X(5).                     C98970
31350      02  FILLER REDEFINES WUC.                                       C98970
31360          03  WUC-2                PICTURE XX.                       C98970
31370          03  FILLER               PICTURE XXX.                      C98970
31380      02  WUC                      PICTURE X.                        C98970
31390      02  MMC                      PICTURE XXX.                      C98970
31400      02  MA                       PICTURE 999.                      C98970
31410      02  FILLER                   PICTURE X(20).                    C98970
31420      02  IDENT                    PICTURE X.                        C98970
31430          02  FILLER               PICTURE X(4).                     C98970
31432          02  FLT-HRS              PICTURE S9(6).                    C98970
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31434          02  FILLER                  PICTURE X(11).                        C98970
32000    01  REPORT-ID SYNC.                                                     C98970
32010          02  FILLER                  PICTURE X(50) VALUE                   C98970
32020              '$9897860  TF7919-02 102-8 1       1/2              '.       C98970
32030          02  FILLER                  PICTURE X(50) VALUE SPACE.            C98970
32040          02  FILLER                  PICTURE X(30) VALUE                   C98970
32050              '                          $'.                                 C98970
40000    01  NEW-PAGE SYNC.                                                      C98970
40010          02  FILLER                  PICTURE X VALUE '1'.                  C98970
40020          02  FILLER                  PICTURE X(120) VALUE SPACE.           C98970
40030          02  FILLER                  PICTURE X(6) VALUE '  PAGE'.          C98970
40040          02  PAGE-NO                 PICTURE Z9.                           C98970
40050          02  FILLER                  PICTURE X VALUE '$'.                  C98970
40060    01  TITLE-LINE SYNC.                                                    C98970
40070          02  FILLER                  PICTURE X(10) VALUE '$   WUC > '.     C98970
40080          02  CUR-WUC                 PICTURE X(5) VALUE SPACE.             C98970
40090          02  FILLER                  PICTURE X(5) VALUE SPACE.             C98970
40100          02  ISC-TITLE               PICTURE X(13).                        C98970
40110          02  FILLER                  PICTURE X(96) VALUE SPACE.            C98970
40120          02  FILLER                  PICTURE X VALUE '$'.                  C98970
40130    01        WHEN-DISC-CODE-TITLE SYNC.                                     C98970
40140          05      FILLER              PICTURE X(18) VALUE                   C98970
40150              ' WHEN DISC. CODE  '.                                          C98970
40160          05      WUC-TITLE-DATA      PICTURE X(5) OCCURS 21 TIMES.         C98970
40170          05      FILLER              PICTURE X(7) VALUE '      $'.         C98970
40200    01  SG-WUC-TITLE-1 SYNC.                                                C98970
40210          05  FILLER                  PICTURE X(18) VALUE SPACE.            C98970
40220          05  SG-WUC-TITLE-1A         PICTURE X(80).                        C98970
40230          05  SG-WUC-TITLE-1B         PICTURE X(25).                        C98970
40240          05  FILLER                  PICTURE X(7) VALUE '   U M$'.        C98970
40300    01        SG-WUC-TITLE-2 SYNC.                                           C98970
40310          05  FILLER                  PICTURE X(18) VALUE                   C98970
40315              ' SUPPORT          '.                                          C98970
40320          05  SG-WUC-TITLE-2A         PICTURE X(80).                        C98970
40330          05  SG-WUC-TITLE-2B         PICTURE X(25).                        C98970
40335          05  FILLER                  PICTURE X(7) VALUE '   N A$'.        C98970
40350    01        SG-WUC-TITLE-3 SYNC.                                           C98970
40360          05  FILLER                  PICTURE X(18) VALUE                   C98970
40365              ' GENERAL          '.                                          C98970
40370          05  SG-WUC-TITLE-3A         PICTURE X(80).                        C98970
40380          05  SG-WUC-TITLE-3B         PICTURE X(25).                        C98970
40390          05  FILLER                  PICTURE X(7) VALUE '   S I$'.        C98970
40410    01  SG-WUC-TITLE-4 SYNC.                                                C98970
40420          05  FILLER                  PICTURE X(18) VALUE                   C98970
40425              '  W.U.C.          '.                                          C98970
40430          05  SG-WUC-TITLE-4A         PICTURE X(80).                        C98970
40440          05  SG-WUC-TITLE-4B         PICTURE X(25).                        C98970
40450          05  FILLER                  PICTURE X(7) VALUE '   C N$'.        C98970
40480    01  SG-WUC-TITLE-5 SYNC.                                                C98970
40490          05  FILLER                  PICTURE X(18) VALUE SPACE.            C98970
40500          05  SG-WUC-TITLE-5A         PICTURE X(80).                        C98970
40510          05  SG-WUC-TITLE-5B         PICTURE X(25).                        C98970
40520          05  FILLER                  PICTURE X(7) VALUE '   H T$'.        C98970
40620    01  HMC-FREQ-LINE SYNC.                                                 C98970
40630          02  FILLER                  PICTURE X(12) VALUE                   C98970
40640              '/FREQ HMC > '.                                                C98970
40650          02  CUR-HMC                 PICTURE XXX.                          C98970
40660          02  FILLER                  PICTURE XXX VALUE '   '.              C98970
40670          02  HMC-FREQ-RPT            PICTURE Z(5)                          C98970
40680                              OCCURS 21 TIMES.                               C98970
40690          02  HMC-FREQ-TOTAL-RPT      PICTURE Z(6).                         C98970
40700          02  FILLER                  PICTURE X VALUE '$'.                  C98970
40830    01  TABLE-SG-WUC-VALUES SYNC.                                           C98970
41092          02  SG-WUC OCCURS 14 TIMES  PICTURE X(5).                         C98970
41093          02  COL-NO OCCURS 14 TIMES  PICTURE S99 COMPUTATIONAL.            C98970
41100    01        FILLER SYNC.                                                   C98970
41105          02      TABLE-SG-WUC-FREQ-ISC.                                   C98970
41125              03  SG-WUC-FREQ-ISC-1   PICTURE S9(5) COMPUTATIONAL.          C98970
41126              03  SG-WUC-FREQ-ISC-2   PICTURE S9(5) COMPUTATIONAL.          C98970
41127              03  SG-WUC-FREQ-ISC-3   PICTURE S9(5) COMPUTATIONAL.          C98970
41128              03  SG-WUC-FREQ-ISC-4   PICTURE S9(5) COMPUTATIONAL.          C98970
41129              03  SG-WUC-FREQ-ISC-5   PICTURE S9(5) COMPUTATIONAL.          C98970
41130              03  SG-WUC-FREQ-ISC-6   PICTURE S9(5) COMPUTATIONAL.          C98970
41131              03  SG-WUC-FREQ-ISC-7   PICTURE S9(5) COMPUTATIONAL.          C98970
41132              03  SG-WUC-FREQ-ISC-8   PICTURE S9(5) COMPUTATIONAL.          C98970
41133              03  SG-WUC-FREQ-ISC-9   PICTURE S9(5) COMPUTATIONAL.          C98970
41134              03  SG-WUC-FREQ-ISC-10  PICTURE S9(5) COMPUTATIONAL.          C98970
41135              03  SG-WUC-FREQ-ISC-11  PICTURE S9(5) COMPUTATIONAL.          C98970
41136              03  SG-WUC-FREQ-ISC-12  PICTURE S9(5) COMPUTATIONAL.          C98970
41137              03  SG-WUC-FREQ-ISC-13  PICTURE S9(5) COMPUTATIONAL.          C98970
41138              03  SG-WUC-FREQ-ISC-14  PICTURE S9(5) COMPUTATIONAL.          C98970
41139              03  SG-WUC-FREQ-ISC-15  PICTURE S9(5) COMPUTATIONAL.          C98970
41140              03  SG-WUC-FREQ-ISC-16  PICTURE S9(5) COMPUTATIONAL.          C98970
41141              03  SG-WUC-FREQ-ISC-17  PICTURE S9(5) COMPUTATIONAL.          C98970
41142              03  SG-WUC-FREQ-ISC-18  PICTURE S9(5) COMPUTATIONAL.          C98970
41143              03  SG-WUC-FREQ-ISC-19  PICTURE S9(5) COMPUTATIONAL.          C98970
41144              03  SG-WUC-FREQ-ISC-20  PICTURE S9(5) COMPUTATIONAL.          C98970
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41145          03  SG-WUC-FREQ-ISC-21  PICTURE S9[5] COMPUTATIONAL.        C98970
41146      02      FILLER REDEFINES TABLE-SG-WUC-FREQ-ISC.                 C98970
41147          03  SG-WUC-FREQ-ISC     PICTURE S9[5] COMPUTATIONAL         C98970
41148                                     OCCURS 21 TIMES.                  C98970
41150      02      TABLE-SG-FREQ-NI.                                       C98970
41170          03  SG-WUC-FREQ-NI-1    PICTURE S9[5] COMPUTATIONAL.        C98970
41171          03  SG-WUC-FREQ-NI-2    PICTURE S9[5] COMPUTATIONAL.        C98970
41172          03  SG-WUC-FREQ-NI-3    PICTURE S9[5] COMPUTATIONAL.        C98970
41173          03  SG-WUC-FREQ-NI-4    PICTURE S9[5] COMPUTATIONAL.        C98970
41174          03  SG-WUC-FREQ-NI-5    PICTURE S9[5] COMPUTATIONAL.        C98970
41175          03  SG-WUC-FREQ-NI-6    PICTURE S9[5] COMPUTATIONAL.        C98970
41176          03  SG-WUC-FREQ-NI-7    PICTURE S9[5] COMPUTATIONAL.        C98970
41177          03  SG-WUC-FREQ-NI-8    PICTURE S9[5] COMPUTATIONAL.        C98970
41178          03  SG-WUC-FREQ-NI-9    PICTURE S9[5] COMPUTATIONAL.        C98970
41179          03  SG-WUC-FREQ-NI-10   PICTURE S9[5] COMPUTATIONAL.        C98970
41180          03  SG-WUC-FREQ-NI-11   PICTURE S9[5] COMPUTATIONAL.        C98970
41181          03  SG-WUC-FREQ-NI-12   PICTURE S9[5] COMPUTATIONAL.        C98970
41182          03  SG-WUC-FREQ-NI-13   PICTURE S9[5] COMPUTATIONAL.        C98970
41183          03  SG-WUC-FREQ-NI-14   PICTURE S9[5] COMPUTATIONAL.        C98970
41184          03  SG-WUC-FREQ-NI-15   PICTURE S9[5] COMPUTATIONAL.        C98970
41185          03  SG-WUC-FREQ-NI-16   PICTURE S9[5] COMPUTATIONAL.        C98970
41186          03  SG-WUC-FREQ-NI-17   PICTURE S9[5] COMPUTATIONAL.        C98970
41187          03  SG-WUC-FREQ-NI-18   PICTURE S9[5] COMPUTATIONAL.        C98970
41188          03  SG-WUC-FREQ-NI-19   PICTURE S9[5] COMPUTATIONAL.        C98970
41189          03  SG-WUC-FREQ-NI-20   PICTURE S9[5] COMPUTATIONAL.        C98970
41190          03  SG-WUC-FREQ-NI-21   PICTURE S9[5] COMPUTATIONAL.        C98970
41191      02      FILLER REDEFINES TABLE-SG-FREQ-NI.                      C98970
41192          03  SG-WUC-FREQ-NI      PICTURE S9[5] COMPUTATIONAL         C98970
41193                                     OCCURS 21 TIMES.                  C98970
41200  01  TAPE-OUT-ISC SYNC.                                              C98970
41210      02  FILLER                  PICTURE X VALUE IHI.                C98970
41220      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41230      02  CUR-WUC-ISC             PICTURE X[5].                       C98970
41240      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41250      02  CUR-HMC-ISC             PICTURE XXX.                        C98970
41260      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41280      02  LIST-HMC-ISC.                                               C98970
41290          03  HMC-ISC-1           PICTURE S9[5].                      C98970
41300          03  HMC-ISC-2           PICTURE S9[5].                      C98970
41310          03  HMC-ISC-3           PICTURE S9[5].                      C98970
41320          03  HMC-ISC-4           PICTURE S9[5].                      C98970
41330          03  HMC-ISC-5           PICTURE S9[5].                      C98970
41340          03  HMC-ISC-6           PICTURE S9[5].                      C98970
41350          03  HMC-ISC-7           PICTURE S9[5].                      C98970
41360          03  HMC-ISC-8           PICTURE S9[5].                      C98970
41370          03  HMC-ISC-9           PICTURE S9[5].                      C98970
41380          03  HMC-ISC-10          PICTURE S9[5].                      C98970
41390          03  HMC-ISC-11          PICTURE S9[5].                      C98970
41400          03  HMC-ISC-12          PICTURE S9[5].                      C98970
41410          03  HMC-ISC-13          PICTURE S9[5].                      C98970
41420          03  HMC-ISC-14          PICTURE S9[5].                      C98970
41430          03  HMC-ISC-15          PICTURE S9[5].                      C98970
41440          03  HMC-ISC-16          PICTURE S9[5].                      C98970
41450          03  HMC-ISC-17          PICTURE S9[5].                      C98970
41460          03  HMC-ISC-18          PICTURE S9[5].                      C98970
41470          03  HMC-ISC-19          PICTURE S9[5].                      C98970
41480          03  HMC-ISC-20          PICTURE S9[5].                      C98970
41490          03  HMC-ISC-21          PICTURE S9[5].                      C98970
41491      02  FILLER REDEFINES LIST-HMC-ISC.                              C98970
41492          03  HMC-ISC OCCURS 21 TIMES PICTURE S9[5].                  C98970
41500      02  HMC-FREQ-TOTAL-ISC      PICTURE S9[6].                      C98970
41510      02  FILLER                  PICTURE X[7] VALUE I 1    #I.       C98970
41600  01  TAPE-OUT-NI SYNC.                                               C98970
41610      02  FILLER                  PICTURE X VALUE IHI.                C98970
41620      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41630      02  CUR-WUC-NI              PICTURE X[5].                       C98970
41640      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41650      02  CUR-HMC-NI              PICTURE XXX.                        C98970
41660      02  FILLER                  PICTURE X VALUE SPACE.              C98970
41680      02  LIST-HMC-NI.                                                C98970
41690          03  HMC-NI-1            PICTURE S9[5].                      C98970
41700          03  HMC-NI-2            PICTURE S9[5].                      C98970
41710          03  HMC-NI-3            PICTURE S9[5].                      C98970
41720          03  HMC-NI-4            PICTURE S9[5].                      C98970
41730          03  HMC-NI-5            PICTURE S9[5].                      C98970
41740          03  HMC-NI-6            PICTURE S9[5].                      C98970
41750          03  HMC-NI-7            PICTURE S9[5].                      C98970
41760          03  HMC-NI-8            PICTURE S9[5].                      C98970
41770          03  HMC-NI-9            PICTURE S9[5].                      C98970
41780          03  HMC-NI-10           PICTURE S9[5].                      C98970
41790          03  HMC-NI-11           PICTURE S9[5].                      C98970
41800          03  HMC-NI-12           PICTURE S9[5].                      C98970
41810          03  HMC-NI-13           PICTURE S9[5].                      C98970
41820          03  HMC-NI-14           PICTURE S9[5].                      C98970
41830          03  HMC-NI-15           PICTURE S9[5].                      C98970
41840          03  HMC-NI-16           PICTURE S9[5].                      C98970
41850          03  HMC-NI-17           PICTURE S9[5].                      C98970
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41860          03  HMC-NI-18              PICTURE S9(5).                    C98970
41870          03  HMC-NI-19              PICTURE S9(5).                    C98970
41880          03  HMC-NI-20              PICTURE S9(5).                    C98970
41890          03  HMC-NI-21              PICTURE S9(5).                    C98970
41891      02  FILLER REDEFINES LIST-HMC-NI.                                C98970
41892          03  HMC-NI OCCURS 21 TIMES  PICTURE S9(5).                   C98970
41900      02  HMC-FREQ-TOTAL-NI          PICTURE S9(6).                    C98970
41910      02  FILLER                     PICTURE X(7) VALUE ' 2    '.     C98970
42000  01  WDC-FREQ-DATA-NI SYNC.                                           C98970
42010      02  FILLER                     PICTURE XX    VALUE 'W '.         C98970
42020      02  CUR-WUC-W-NI               PICTURE X(5).                     C98970
42025      02  FILLER                     PICTURE X(5) VALUE SPACE.         C98970
42040      02  TABLE-WDC-FREQ-NI.                                           C98970
42050          03  WDC-FREQ-NI-1          PICTURE S9(5).                    C98970
42060          03  WDC-FREQ-NI-2          PICTURE S9(5).                    C98970
42070          03  WDC-FREQ-NI-3          PICTURE S9(5).                    C98970
42080          03  WDC-FREQ-NI-4          PICTURE S9(5).                    C98970
42090          03  WDC-FREQ-NI-5          PICTURE S9(5).                    C98970
42100          03  WDC-FREQ-NI-6          PICTURE S9(5).                    C98970
42110          03  WDC-FREQ-NI-7          PICTURE S9(5).                    C98970
42120          03  WDC-FREQ-NI-8          PICTURE S9(5).                    C98970
42130          03  WDC-FREQ-NI-9          PICTURE S9(5).                    C98970
42140          03  WDC-FREQ-NI-10         PICTURE S9(5).                    C98970
42150          03  WDC-FREQ-NI-11         PICTURE S9(5).                    C98970
42160          03  WDC-FREQ-NI-12         PICTURE S9(5).                    C98970
42170          03  WDC-FREQ-NI-13         PICTURE S9(5).                    C98970
42180          03  WDC-FREQ-NI-14         PICTURE S9(5).                    C98970
42190          03  WDC-FREQ-NI-15         PICTURE S9(5).                    C98970
42200          03  WDC-FREQ-NI-16         PICTURE S9(5).                    C98970
42210          03  WDC-FREQ-NI-17         PICTURE S9(5).                    C98970
42220          03  WDC-FREQ-NI-18         PICTURE S9(5).                    C98970
42230          03  WDC-FREQ-NI-19         PICTURE S9(5).                    C98970
42240          03  WDC-FREQ-NI-20         PICTURE S9(5).                    C98970
42250          03  WDC-FREQ-NI-21         PICTURE S9(5).                    C98970
42251      02  FILLER REDEFINES TABLE-WDC-FREQ-NI.                          C98970
42252          03  WDC-FREQ-NI OCCURS 21 TIMES PICTURE S9(5).               C98970
42260      02  TOTAL-WDC-FREQ-NI          PICTURE S9(6).                    C98970
42270      02  FILLER                     PICTURE X(7) VALUE ' 2    '.     C98970
42300  01  WDC-FREQ-DATA-ISC SYNC.                                          C98970
42310      02  FILLER                     PICTURE XX    VALUE 'W '.         C98970
42320      02  CUR-WUC-W-ISC              PICTURE X(5).                     C98970
42325      02  FILLER                     PICTURE X(5) VALUE SPACE.         C98970
42340      02  LIST-WDC-FREQ-ISC.                                           C98970
42350          03  WDC-FREQ-ISC-1         PICTURE S9(5).                    C98970
42360          03  WDC-FREQ-ISC-2         PICTURE S9(5).                    C98970
42370          03  WDC-FREQ-ISC-3         PICTURE S9(5).                    C98970
42380          03  WDC-FREQ-ISC-4         PICTURE S9(5).                    C98970
42390          03  WDC-FREQ-ISC-5         PICTURE S9(5).                    C98970
42400          03  WDC-FREQ-ISC-6         PICTURE S9(5).                    C98970
42410          03  WDC-FREQ-ISC-7         PICTURE S9(5).                    C98970
42420          03  WDC-FREQ-ISC-8         PICTURE S9(5).                    C98970
42430          03  WDC-FREQ-ISC-9         PICTURE S9(5).                    C98970
42440          03  WDC-FREQ-ISC-10        PICTURE S9(5).                    C98970
42450          03  WDC-FREQ-ISC-11        PICTURE S9(5).                    C98970
42460          03  WDC-FREQ-ISC-12        PICTURE S9(5).                    C98970
42470          03  WDC-FREQ-ISC-13        PICTURE S9(5).                    C98970
42480          03  WDC-FREQ-ISC-14        PICTURE S9(5).                    C98970
42490          03  WDC-FREQ-ISC-15        PICTURE S9(5).                    C98970
42500          03  WDC-FREQ-ISC-16        PICTURE S9(5).                    C98970
42510          03  WDC-FREQ-ISC-17        PICTURE S9(5).                    C98970
42520          03  WDC-FREQ-ISC-18        PICTURE S9(5).                    C98970
42530          03  WDC-FREQ-ISC-19        PICTURE S9(5).                    C98970
42540          03  WDC-FREQ-ISC-20        PICTURE S9(5).                    C98970
42550          03  WDC-FREQ-ISC-21        PICTURE S9(5).                    C98970
42551      02  FILLER REDEFINES LIST-WDC-FREQ-ISC.                          C98970
42552          03  WDC-FREQ-ISC OCCURS 21 TIMES PICTURE S9(5).              C98970
42560      02  TOTAL-WDC-FREQ-ISC         PICTURE S9(6).                    C98970
42570      02  FILLER                     PICTURE X(7) VALUE ' 1    '.     C98970
42600  01  NINE SYNC.                                                       C98970
42610      02  FILLER                     PICTURE X(50)  VALUE              C98970
42620          '99999999999999999999999999999999999999999999999999'.        C98970
42630      02  FILLER                     PICTURE X(50)  VALUE              C98970
42640          '99999999999999999999999999999999999999999999999999'.        C98970
42650      02  FILLER                     PICTURE X(30)  VALUE              C98970
42660          '999999999999999999999999999999'.                            C98970
43000  01  TABLE-WDC-POS SYNC.                                              C98970
43260          03  WDC-LIST               PICTURE X OCCURS 21 TIMES.        C98970
44000  01  SG-WUC-FREQ-LINE-1-ISC SYNC.                                     C98970
44010      02  FILLER                     PICTURE X(18) VALUE               C98970
44020                  '/                                    '.             C98970
44030      02  SG-WUC-ISC-1               PICTURE X(5) OCCURS 21 TIMES.     C98970
44040      02  FILLER                     PICTURE X(7)  VALUE '      '.     C98970
44050  01  SG-WUC-FREQ-LINE-2-ISC SYNC.                                     C98970
44060      02  FILLER                     PICTURE X(18) VALUE               C98970
44070                  '/                                    '.             C98970
44080      02  SG-WUC-ISC-2               PICTURE X(5) OCCURS 21 TIMES.     C98970
44090      02  FILLER                     PICTURE X(7)  VALUE '      '.     C98970
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44100  01  SG-WUC-FREQ-LINE-3-ISC SYNC.                                    C98970
44110      02  FILLER                    PICTURE X(18) VALUE              C98970
44120                        '/SUPPORT          '.                         C98970
44130      02  SG-WUC-ISC-3              PICTURE X(5) OCCURS 21 TIMES.    C98970
44140      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44150  01  SG-WUC-FREQ-LINE-4-ISC SYNC.                                    C98970
44160      02  FILLER                    PICTURE X(18) VALUE              C98970
44170                        '/ GENERAL         '.                         C98970
44180      02  SG-WUC-ISC-4              PICTURE X(5) OCCURS 21 TIMES.    C98970
44190      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44200  01  SG-WUC-FREQ-LINE-5-ISC SYNC.                                    C98970
44210      02  FILLER                    PICTURE X(18) VALUE              C98970
44220                        '/   W.U.C.        '.                         C98970
44230      02  SG-WUC-ISC-5              PICTURE X(5) OCCURS 21 TIMES.    C98970
44240      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44250  01  SG-WUC-FREQ-LINE-6-ISC SYNC.                                    C98970
44260      02  FILLER                    PICTURE X(18) VALUE              C98970
44270                        'S    FREQUENCY    '.                         C98970
44280      02  SG-WUC-ISC-6              PICTURE X(5) OCCURS 21 TIMES.    C98970
44290      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44300  01  SG-WUC-FREQ-LINE-1-NI SYNC.                                     C98970
44310      02  FILLER                    PICTURE X(18) VALUE              C98970
44320                        '/                 '.                         C98970
44330      02  SG-WUC-NI-1               PICTURE X(5) OCCURS 21 TIMES.    C98970
44340      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44350  01  SG-WUC-FREQ-LINE-2-NI SYNC.                                     C98970
44360      02  FILLER                    PICTURE X(18) VALUE              C98970
44370                        '/                 '.                         C98970
44380      02  SG-WUC-NI-2               PICTURE X(5) OCCURS 21 TIMES.    C98970
44390      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44400  01  SG-WUC-FREQ-LINE-3-NI SYNC.                                     C98970
44410      02  FILLER                    PICTURE X(18) VALUE              C98970
44420                        '/SUPPORT          '.                         C98970
44430      02  SG-WUC-NI-3               PICTURE X(5) OCCURS 21 TIMES.    C98970
44440      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44450  01  SG-WUC-FREQ-LINE-4-NI SYNC.                                     C98970
44460      02  FILLER                    PICTURE X(18) VALUE              C98970
44470                        '/ GENERAL         '.                         C98970
44480      02  SG-WUC-NI-4               PICTURE X(5) OCCURS 21 TIMES.    C98970
44490      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44500  01  SG-WUC-FREQ-LINE-5-NI SYNC.                                     C98970
44510      02  FILLER                    PICTURE X(18) VALUE              C98970
44520                        '/   W.U.C.        '.                         C98970
44530      02  SG-WUC-NI-5               PICTURE X(5) OCCURS 21 TIMES.    C98970
44540      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44550  01  SG-WUC-FREQ-LINE-6-NI SYNC.                                     C98970
44560      02  FILLER                    PICTURE X(18) VALUE              C98970
44570                        'S    FREQUENCY    '.                         C98970
44580      02  SG-WUC-NI-6               PICTURE X(5) OCCURS 21 TIMES.    C98970
44590      02  FILLER                    PICTURE X(7)  VALUE '      #'.   C98970
44600  01  FILLER SYNC.                                                    C98970
44610      02  TEMP-NO                   PICTURE Z(6).                    C98970
44620      02  FILLER REDEFINES TEMP-NO.                                  C98970
44630          03  TEMP-1                PICTURE X.                       C98970
44640          03  TEMP-2                PICTURE X.                       C98970
44650          03  TEMP-3                PICTURE X.                       C98970
44660          03  TEMP-4                PICTURE X.                       C98970
44670          03  TEMP-5                PICTURE X.                       C98970
44680          03  TEMP-6                PICTURE X.                       C98970
44700  01  TEMP-PLACE SYNC.                                                C98970
44710      02  FILLER                    PICTURE X(4) VALUE SPACE.        C98970
44720      02  TEMP-PLACE-NO             PICTURE X.                       C98970
45000  01          FILLER SYNC.                                             C98970
45010      05          WDC-INPUT.                                           C98970
45020          10      WDC-TITLE-INPUT    PICTURE X(5).                    C98970
45030          10      FILLER             PICTURE X(75).                   C98970
45040      05          FILLER REDEFINES WDC-INPUT.                          C98970
45050          10      FILLER             PICTURE X(4).                    C98970
45060          10      WDC-IN             PICTURE X.                       C98970
45070          10      FILLER             PICTURE X(75).                   C98970
45100  01          NUMBER-CARD SYNC.                                        C98970
45110      05          NUMBER-ITEMS       PICTURE 999.                     C98970
45120      05          FILLER             PICTURE XX.                      C98970
45130      05          INPUT-SG-CODE      PICTURE X(5).                    C98970
45140      05          FILLER             PICTURE X(70).                   C98970
45200  01          FILLER SYNC.                                             C98970
45210      05          SUM-WDC-COL        PICTURE S999 OCCURS 10 TIMES.    C98970
45300  01      TEMP-INPUT-SGWUC SYNC.                                       C98970
45310      05  TEMP-SGWUC-TITLE          PICTURE X(25).                   C98970
45320      05  FILLER                    PICTURE X(55).                   C98970
45400  01      TWO-DIGIT-CODE SYNC.                                         C98970
45410      05  TWO-DIGIT                 PICTURE XX.                      C98970
45420      05  FILLER                    PICTURE XXX.                     C98970
45500  01      INTERCHANGE-COLS SYNC.                                       C98970
45510      05  PRIM-COL                  PICTURE 999.                     C98970
45520      05  SEC-COL                   PICTURE 999.                     C98970
45530      05  FILLER                    PICTURE X(74).                   C98970
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45560  01      SPEC-SG-WUC-REC SYNC.                                          C98970
45570      05  SPEC-SG-WUC              PICTURE X(5).                        C98970
45580      05  SPEC-WEEK-A              PICTURE 999.                         C98970
45590      05  FILLER                   PICTURE X(72).                       C98970
45600  01      FILLER SYNC.                                                   C98970
45610      05  SPEC-SG-WUC-LIST         PICTURE X(5) OCCURS 10 TIMES.        C98970
45620      05  SPEC-WEEK-LIST           PICTURE 999  OCCURS 10 TIMES.        C98970
45630  01      NO-SPEC-SG-WUC SYNC       PICTURE S999 COMPUTATIONAL.          C98970
45640  01      SPEC-WUC SYNC             PICTURE X(5).                        C98970
45650  01      SPEC-WEEK SYNC            PICTURE 999.                         C98970
45660  01      SPEC-INDEX SYNC           PICTURE S999 COMPUTATIONAL.          C98970
50000  PROCEDURE DIVISION.                                                    C98970
50010  OPEN-FILES.                                                            C98970
50020      OPEN INPUT IN-FILE-DB, IN-FILE-ISC, OUTPUT OUT-DATA,               C98970
50030                 OUT-PRINT-ISC, OUT-PRINT-NI, OUT-TITLES.                C98970
50040      PERFORM READ-ISC-A-C THRU END-RIAC.                                C98970
50045      PERFORM READ-IN-TITLE-DATA THRU END-RITD.                          C98970
50047      PERFORM READ-SPEC-SG-WUC THRU END-RSSW.                            C98970
50050      WRITE  NI-DATA FROM REPORT-ID.                                     C98970
50060      WRITE ISC-DATA FROM REPORT-ID.                                     C98970
50070      ADD 1 TO NO-REC-PRINT-NI.                                          C98970
50080      ADD 1 TO NO-REC-PRINT-ISC.                                         C98970
50100      MOVE ZERO TO CNT.                                                  C98970
50110  RST-SG-WUC.                                                            C98970
50120      ADD 1 TO CNT.                                                      C98970
50130      MOVE ZERO TO SG-WUC-FREQ-ISC (CNT).                                C98970
50140      MOVE ZERO TO SG-WUC-FREQ-NI (CNT).                                 C98970
50150      IF CNT IS LESS THAN NO-WDC-COLS, GO TO RST-SG-WUC.                 C98970
50200      MOVE 1 TO KNT.                                                     C98970
50210      MOVE SG-WUC (KNT) TO TEMP-WUC.                                     C98970
50220      MOVE COL-NO (KNT) TO TEMP-COL-NO.                                  C98970
50230  READ-SG-WUC.                                                           C98970
50240      READ IN-FILE-DB INTO INPUT-DB,                                     C98970
50250                      AT END GO TO CLOSE-FILES.                          C98970
50255      IF MA IS LESS THAN ZERO GO TO READ-SG-WUC.                         C98970
50260      IF WUC-2 IS EQUAL TO TWO-DIGIT PERFORM PROC-2-DIG-WUC.             C98970
50290  NEXT-SG-WUC.                                                           C98970
50300      IF WUC IS LESS THAN TEMP-WUC, GO TO READ-SG-WUC.                   C98970
50310      IF WUC IS EQUAL TO TEMP-WUC GO TO PROC-SG-WUC.                     C98970
50320      IF WUC IS GREATER THAN 3099991 GO TO SET-TITLE-1A.                 C98970
50330      ADD 1 TO KNT.                                                      C98970
50340      IF KNT IS GREATER THAN 14 GO TO SET-TITLE-1A.                      C98970
50350      MOVE SG-WUC (KNT) TO TEMP-WUC.                                     C98970
50360      MOVE COL-NO (KNT) TO TEMP-COL-NO.                                  C98970
50370      GO TO NEXT-SG-WUC.                                                 C98970
50400  PROC-SG-WUC.                                                           C98970
50410      PERFORM CHECK-ISCHRONAL THRU END-CI.                               C98970
50411      MOVE ZERO TO SPEC-INDEX.                                           C98970
50412  TEST-SPEC-SGWUC.                                                       C98970
50413      ADD 1 TO SPEC-INDEX.                                               C98970
50414      IF WUC IS EQUAL TO SPEC-SG-WUC-LIST (SPEC-INDEX) GO TO             C98970
50415                                          PROC-SPEC-SGWUC.               C98970
50416      IF SPEC-INDEX IS LESS THAN NO-SPEC-SG-WUC GO TO                    C98970
50417                                                TEST-SPEC-SGWUC.         C98970
50420      IF ISCHRONAL IS EQUAL TO ONE ADD MA TO SG-WUC-FREQ-ISC             C98970
50421          (TEMP-COL-NO),                                                 C98970
50430          ELSE ADD MA TO SG-WUC-FREQ-NI (TEMP-COL-NO).                   C98970
50440      GO TO READ-SG-WUC.                                                 C98970
50500  PROC-2-DIG-WUC.                                                        C98970
50510      PERFORM CHECK-ISCHRONAL THRU END-CI.                               C98970
50520      IF ISCHRONAL IS EQUAL TO ONE, ADD MA TO SG-WUC-FREQ-ISC            C98970
50530       (TWO-DIGIT-COL) ELSE ADD MA TO SG-WUC-FREQ-NI                     C98970
50540                                                 (TWO-DIGIT-COL).       C98970
50600  SET-TITLE-1A.                                                          C98970
50602      MOVE ZERO TO CNT.                                                  C98970
50604      MOVE SG-WUC-FREQ-ISC (PRIM-COL) TO SG-WUC-FREQ-ISC (SEC-COL).      C98970
50606  SET-SG-WUC-ISC.                                                        C98970
50608      ADD 1 TO CNT.                                                      C98970
50610      MOVE SG-WUC-FREQ-ISC (CNT) TO TEMP-NO.                             C98970
50612      MOVE TEMP-1 TO TEMP-PLACE-NO.                                      C98970
50614      MOVE TEMP-PLACE TO SG-WUC-ISC-1 (CNT).                             C98970
50616      MOVE TEMP-2 TO TEMP-PLACE-NO.                                      C98970
50618      MOVE TEMP-PLACE TO SG-WUC-ISC-2 (CNT).                             C98970
50620      MOVE TEMP-3     TO TEMP-PLACE-NO.                                  C98970
50622      MOVE TEMP-PLACE TO SG-WUC-ISC-3 (CNT).                             C98970
50624      MOVE TEMP-4     TO TEMP-PLACE-NO.                                  C98970
50626      MOVE TEMP-PLACE TO SG-WUC-ISC-4 (CNT).                             C98970
50628      MOVE TEMP-5     TO TEMP-PLACE-NO.                                  C98970
50630      MOVE TEMP-PLACE TO SG-WUC-ISC-5 (CNT).                             C98970
50632      MOVE TEMP-6     TO TEMP-PLACE-NO.                                  C98970
50634      MOVE TEMP-PLACE TO SG-WUC-ISC-6 (CNT).                             C98970
50636      IF CNT IS LESS THAN NO-WDC-COLS GO TO SET-SG-WUC-ISC.              C98970
50640      MOVE SG-WUC-FREQ-NI (PRIM-COL) TO SG-WUC-FREQ-NI (SEC-COL).        C98970
50642      MOVE ZERO TO CNT.                                                  C98970
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50644  SET-SG-WUC-NI.                                                    C98970
50646      ADD 1 TO CNT.                                                 C98970
50648      MOVE SG-WUC-FREQ-NI (CNT) TO TEMP-NO.                         C98970
50650      MOVE TEMP-1               TO TEMP-PLACE-NO.                   C98970
50652      MOVE TEMP-PLACE           TO SG-WUC-NI-1 (CNT).               C98970
50654      MOVE TEMP-2               TO TEMP-PLACE-NO.                   C98970
50656      MOVE TEMP-PLACE           TO SG-WUC-NI-2 (CNT).               C98970
50658      MOVE TEMP-3               TO TEMP-PLACE-NO.                   C98970
50660      MOVE TEMP-PLACE           TO SG-WUC-NI-3 (CNT).               C98970
50662      MOVE TEMP-4               TO TEMP-PLACE-NO.                   C98970
50664      MOVE TEMP-PLACE           TO SG-WUC-NI-4 (CNT).               C98970
50666      MOVE TEMP-5               TO TEMP-PLACE-NO.                   C98970
50668      MOVE TEMP-PLACE           TO SG-WUC-NI-5 (CNT).               C98970
50670      MOVE TEMP-6               TO TEMP-PLACE-NO.                   C98970
50672      MOVE TEMP-PLACE           TO SG-WUC-NI-6 (CNT).               C98970
50674      IF CNT IS LESS THAN NO-WUC-COLS GO TO SET-SG-WUC-NI.          C98970
50700      NOTE STORE TITLE FOR USE LATER.                               C98970
50710      MOVE PAGE-NUMBER-NI TO PAGE-NO.                               C98970
50720      MOVE ' NON-ISO    ' TO ISC-TITLE.                             C98970
50730      WRITE TAPE-FILE-TI FROM NEW-PAGE.                             C98970
50740      WRITE TAPE-FILE-TI FROM TITLE-LINE.                           C98970
50750      WRITE TAPE-FILE-TI FROM WHEN-OISC-CODE-TITLE.                 C98970
50760      WRITE TAPE-FILE-TI FROM SG-WUC-TITLE-1.                       C98970
50770      WRITE TAPE-FILE-TI FROM SG-WUC-TITLE-2.                       C98970
50780      WRITE TAPE-FILE-TI FROM SG-WUC-TITLE-3.                       C98970
50790      WRITE TAPE-FILE-TI FROM SG-WUC-TITLE-4.                       C98970
50800      WRITE TAPE-FILE-TI FROM SG-WUC-TITLE-5.                       C98970
50810      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-1-NI.                C98970
50812      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-2-NI.                C98970
50814      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-3-NI.                C98970
50815      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-4-NI.                C98970
50816      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-5-NI.                C98970
50817      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-6-NI.                C98970
50820      ADD 14 TO NO-REC-TAPE-TI.                                     C98970
50830      MOVE ' ISOCHRONAL ' TO ISC-TITLE.                             C98970
50850      WRITE TAPE-FILE-TI  FROM TITLE-LINE.                          C98970
50920      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-1-ISC.               C98970
50922      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-2-ISC.               C98970
50924      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-3-ISC.               C98970
50925      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-4-ISC.               C98970
50926      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-5-ISC.               C98970
50927      WRITE TAPE-FILE-TI FROM SG-WUC-FREQ-LINE-6-ISC.               C98970
50930      ADD 7 TO NO-REC-TAPE-TI.                                      C98970
51000      PERFORM RESET-HMC-LINE-NI THRU END-RESET-NI.                  C98970
51005      PERFORM RESET-HMC-LINE-ISC THRU END-RESET-ISC.                C98970
51010  READ-NSG-WUC.                                                     C98970
51020      READ IN-FILE-DB INTO INPUT-DB,                                C98970
51030                      AT END GO TO CLOSE-TABLE.                     C98970
51040      IF IOENT 1: NOT EQUAL TO :4: GO TO READ-NSG-WUC.              C98970
51050      PERFORM PROC-WDC THRU END-PROC-WDC.                           C98970
51060      IF POS-WDC IS EQUAL TO ZERO GO TO READ-NSG-WUC.               C98970
51100  NEXT-WUC.                                                         C98970
51102      MOVE ZERO TO PAGE-NUMBER-ISC.                                 C98970
51104      MOVE ZERO TO PAGE-NUMBER-NI.                                  C98970
51110      MOVE WUC TO CUR-WUC.                                          C98970
51130      MOVE SPACE TO ISC-TITLE-FLAG.                                 C98970
51140      MOVE SPACE TO NI-TITLE-FLAG.                                  C98970
51150      ADD 1 TO NO-WUC.                                              C98970
51160      PERFORM RESET-WUC-FREQ.                                       C98970
51200  NEXT-HMC.                                                         C98970
51210      MOVE HMC TO CUR-HMC.                                          C98970
51220      MOVE SPACE TO ISC-LINE-FLAG.                                  C98970
51230      MOVE SPACE TO NI-LINE-FLAG.                                   C98970
51240      PERFORM CHECK-ISCHRONAL THRU END-CI.                          C98970
51250      IF ISCHRONAL IS EQUAL TO ONE PERFORM ADD-ISC,                 C98970
51260                            ELSE PERFORM ADD-NI.                    C98970
51300  READ-DATA.                                                        C98970
51310      READ IN-FILE-DB INTO INPUT-DB,                                C98970
51320                      AT END GO TO CLOSE-TABLE.                     C98970
51330      IF IOENT IS NOT EQUAL TO :4: GO TO READ-DATA.                 C98970
51340      PERFORM PROC-WDC THRU END-PROC-WDC.                           C98970
51350      IF POS-WDC IS EQUAL TO ZERO GO TO READ-DATA.                  C98970
51360      PERFORM CHECK-ISCHRONAL THRU END-CI.                          C98970
51370      IF WUC IS NOT EQUAL TO CUR-WUC GO TO OUTPUT-TABLE-END.        C98970
51380      IF HMC IS NOT EQUAL TO CUR-HMC GO TO OUTPUT-LINE.             C98970
51390      IF ISCHRONAL IS EQUAL TO ONE PERFORM ADD-ISC,                 C98970
51400                            ELSE PERFORM ADD-NI.                    C98970
51490      GO TO READ-DATA.                                              C98970
51500  RESET-HMC-LINE-NI.                                                C98970
51510      MOVE ZERO TO CNT.                                             C98970
51520  RESET-HMC-LINE-1.                                                 C98970
51530      ADD 1 TO CNT.                                                 C98970
51550      MOVE ZERO TO HMC-NI (CNT).                                    C98970
51560      IF CNT IS LESS THAN NO-WDC-COLS GO TO RESET-HMC-LINE-1.       C98970
51590  END-RESET-NI. EXIT.                                               C98970
51600  WRITE-TITLE-NI.                                                   C98970
51610      ADD 1 TO PAGE-NUMBER-NI.                                      C98970
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51620      MOVE PAGE-NUMBER-NI TO PAGE-NO.                                  C98970
51630      WRITE NI-DATA FROM NEW-PAGE.                                     C98970
51640      MOVE :  NO-ISO     : TO  ISC-TITLE.                              C98970
51650      WRITE NI-DATA FROM TITLE-LINE.                                   C98970
51660      WRITE NI-DATA FROM WHEN-DISC-CODE-TITLE.                         C98970
51670      WRITE NI-DATA FROM SG-WUC-TITLE-1.                               C98970
51680      WRITE NI-DATA FROM SG-WUC-TITLE-2.                               C98970
51690      WRITE NI-DATA FROM SG-WUC-TITLE-3.                               C98970
51700      WRITE NI-DATA FROM SG-WUC-TITLE-4.                               C98970
51710      WRITE NI-DATA FROM SG-WUC-TITLE-5.                               C98970
51720      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-1-NI.                   C98970
51722      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-2-NI.                   C98970
51724      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-3-NI.                   C98970
51725      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-4-NI.                   C98970
51726      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-5-NI.                   C98970
51727      WRITE NI-DATA   FROM    SG-WUC-FREQ-LINE-6-NI.                   C98970
51730      ADD 14 TO NO-REC-PRINT-NI.                                       C98970
51740      MOVE 14 TO LINE-CNT-NI.                                          C98970
51800  WRITE-TITLE-ISC.                                                     C98970
51805      ADD 1 TO PAGE-NUMBER-ISC.                                        C98970
51810      MOVE PAGE-NUMBER-ISC  TO PAGE-NO.                                C98970
51820      WRITE ISC-DATA FROM NEW-PAGE.                                    C98970
51830      MOVE : ISOCHRONAL  : TO ISC-TITLE.                               C98970
51840      WRITE ISC-DATA FROM TITLE-LINE.                                  C98970
51850      WRITE ISC-DATA FROM WHEN-DISC-CODE-TITLE.                        C98970
51860      WRITE ISC-DATA FROM SG-WUC-TITLE-1.                              C98970
51870      WRITE ISC-DATA FROM SG-WUC-TITLE-2.                              C98970
51880      WRITE ISC-DATA FROM SG-WUC-TITLE-3.                              C98970
51890      WRITE ISC-DATA FROM SG-WUC-TITLE-4.                              C98970
51900      WRITE ISC-DATA FROM SG-WUC-TITLE-5.                              C98970
51910      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-1-ISC.                  C98970
51912      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-2-ISC.                  C98970
51914      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-3-ISC.                  C98970
51915      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-4-ISC.                  C98970
51916      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-5-ISC.                  C98970
51917      WRITE ISC-DATA  FROM    SG-WUC-FREQ-LINE-6-ISC.                  C98970
51920      ADD 14 TO NO-REC-PRINT-ISC.                                      C98970
51930      MOVE 14 TO LINE-CNT-ISC.                                         C98970
52000  PROC-WDC.                                                            C98970
52010      MOVE ZERO TO POS-WOC.                                            C98970
52020      MOVE ZERO TO CNT.                                                C98970
52030  PROC-WDC-A.                                                          C98970
52040      ADD 1 TO CNT.                                                    C98970
52050      MOVE WDC-LIST (CNT) TO WOC-TEMP.                                 C98970
52060      IF WDC IS LESS THAN WDC-TEMP GO TO END-PROC-WOC.                 C98970
52070      IF WDC IS EQUAL TO WDC-TEMP GO TO PROC-WDC-C.                    C98970
52080      IF CNT IS LESS THAN NO-WDC-COLS GO TO PROC-WOC-A.                C98970
52100  PROC-WDC-C.                                                          C98970
52110      MOVE CNT TO POS-WDC.                                             C98970
52190  END-PROC-WDC. EXIT.                                                  C98970
52200  OUTPUT-LINE-OF-NI-DATA.                                              C98970
52220      MOVE ZERO TO CNT.                                                C98970
52230  OUTPUT-LINE-NI-A.                                                    C98970
52240      ADD 1 TO CNT.                                                    C98970
52250      MOVE HMC-NI (CNT) TO HMC-FREQ-RPT (CNT).                         C98970
52260      IF CNT IS LESS THAN NO-WDC-COLS GO TO OUTPUT-LINE-NI-A.          C98970
52300      MOVE ZERO TO HMC-FREQ-TOTAL-NI.                                  C98970
52310      MOVE ZERO TO CNT.                                                C98970
52320  SUM-NI-COL.                                                          C98970
52330      ADD 1 TO CNT.                                                    C98970
52340      MOVE SUM-WDC-COL (CNT) TO TEMP-INDEX.                            C98970
52350      ADD HMC-NI (TEMP-INDEX) TO HMC-FREQ-TOTAL-NI.                    C98970
52360      IF CNT IS  ESS THAN SUM-INDEX GO TO SUM-NI-COL.                  C98970
52390      MOVE HMC-FREQ-TOTAL-NI TO HMC-FREQ-TOTAL-RPT.                    C98970
52392      IF LINE-CNT-NI IS GREATER THAN LINE-PAGE                         C98970
52394              PERFORM WRITE-TITLE-NI.                                  C98970
52400      WRITE NI-DATA FROM HMC-FREQ-LINE.                                C98970
52410      ADD 1 TO NO-REC-PRINT-NI.                                        C98970
52415      ADD 1 TO LINE-CNT-NI.                                            C98970
52500      MOVE CUR-WUC TO CUR-WUC-NI.                                      C98970
52510      MOVE CUR-HMC TO CUR-HMC-NI.                                      C98970
52520      WRITE TAPE-FILE    FROM TAPE-OUT-NI.                             C98970
52530      ADD 1 TO NO-REC-TAPE.                                            C98970
52580      PERFORM RESET-HMC-LINE-NI THRU END-RESET-NI.                     C98970
52590  END-OUTPUT-LINE-NI-DATA.   EXIT.                                     C98970
52600  OUTPUT-LINE-OF-ISC-DATA.                                             C98970
52610      MOVE ZERO TO CNT.                                                C98970
52620  OUTPUT-LINE-ISC-A.                                                   C98970
52630      ADD 1 TO CNT.                                                    C98970
52640      MOVE HMC-ISC (CNT) TO HMC-FREQ-RPT (CNT).                        C98970
52650      IF CNT IS LESS THAN NO-WDC-COLS GO TO OUTPUT-LINE-ISC-A.         C98970
52700      MOVE ZERO TO HMC-FREQ-TOTAL-ISC.                                 C98970
52710      MOVE ZERO TO CNT.                                                C98970
52720  SUM-ISC-COL.                                                         C98970
52730      ADD 1 TO CNT.                                                    C98970
52740      MOVE SUM-WDC-COL (CNT) TO TEMP-INDEX.                            C98970
52750      ADD HMC-ISC (TEMP-INDEX) TO HMC-FREQ-TOTAL-ISC.                  C98970
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52760       IF CNT IS LESS THAN SUM-INDEX GO TO SUM-ISC-COL.                  C98970
52790       MOVE HMC-FREQ-TOTAL-ISC TO HMC-FREQ-TOTAL-RPT.                    C98970
52792       IF LINE-CNT-ISC IS GREATER THAN LINE-PAGE                         C98970
52794           PERFORM WRITE-TITLE-ISC.                                      C98970
52800       WRITE ISC-DATA FROM HMC-FREQ-LINE.                                C98970
52810       ADD 1 TO NO-REC-PRINT-ISC.                                        C98970
52820       ADD 1 TO LINE-CNT-ISC.                                            C98970
52900       MOVE CUR-WUC TO CUR-WUC-ISC.                                      C98970
52910       MOVE CUR-HMC TO CUR-HMC-ISC.                                      C98970
52920       WRITE TAPE-FILE     FROM TAPE-OUT-ISC.                            C98970
52930       ADD 1 TO NO-REC-TAPE.                                             C98970
52980       PERFORM RESET-HMC-LINE-ISC THRU END-RESET-ISC.                    C98970
52990  END-OUTPUT-LINE-ISC-DATA.     EXIT.                                    C98970
53000  OUTPUT-TABLE-END.                                                      C98970
53010       IF NI-LINE-FLAG IS EQUAL TO SPACE GO TO OUTPUT-WOC-NI.            C98970
53020       IF NI-TITLE-FLAG IS EQUAL TO SPACE PERFORM WRITE-TITLE-NI.        C98970
53030       MOVE ONE TO NI-TITLE-FLAG.                                        C98970
53040       PERFORM OUTPUT-LINE-OF-NI-DATA THRU END-OUTPUT-LINE-NI-DATA.      C98970
53060  OUTPUT-WOC-NI.                                                         C98970
53070       IF NI-TITLE-FLAG IS EQUAL TO SPACE GO TO OUTPUT-CHECK-ISC.        C98970
53100       MOVE ZERO TO TOTAL-WOC-FREQ-NI.                                   C98970
53110       MOVE ZERO TO CNT.                                                 C98970
53120  SUM-NI-WOC.                                                            C98970
53130       ADD 1 TO CNT.                                                     C98970
53140       MOVE SUM-WOC-COL (CNT) TO TEMP-INDEX.                             C98970
53150       ADD WOC-FREQ-NI (TEMP-INDEX) TO TOTAL-WOC-FREQ-NI.                C98970
53160       IF CNT IS LESS THAN SUM-INDEX GO TO SUM-NI-WOC.                   C98970
53170       MOVE TOTAL-WOC-FREQ-NI TO TOTAL-WOC-FREQ-RPT.                     C98970
53180       MOVE ZERO TO CNT.                                                 C98970
53190  OUTPUT-A.                                                              C98970
53200       ADD 1 TO CNT.                                                     C98970
53210       MOVE WOC-FREQ-NI (CNT) TO WOC-FREQ-RPT (CNT).                     C98970
53220       IF CNT IS LESS THAN NO-WOC-COLS. GO TO OUTPUT-A.                  C98970
53230       WRITE NI-DATA FROM WOC-FREQ-LINE-RPT.                             C98970
53235       MOVE CUR-WUC TO CUR-WUC-W-NI.                                     C98970
53240       WRITE TAPE-FILE     FROM WOC-FREQ-DATA-NI.                        C98970
53250       ADD 1 TO NO-REC-TAPE.     ADD 1 TO NO-REC-PRINT-NI.               C98970
53260  OUTPUT-CHECK-ISC.                                                      C98970
53270       IF ISC-LINE-FLAG IS EQUAL TO SPACE GO TO OUTPUT-WOC-ISC.          C98970
53280       IF ISC-TITLE-FLAG IS EQUAL TO SPACE PERFORM WRITE-TITLE-ISC.      C98970
53290       MOVE ONE TO ISC-TITLE-FLAG.                                       C98970
53300       PERFORM OUTPUT-LINE-OF-ISC-DATA THRU                              C98970
53310                                       END-OUTPUT-LINE-ISC-DATA.         C98970
53320  OUTPUT-WOC-ISC.                                                        C98970
53330       IF ISC-TITLE-FLAG IS EQUAL TO SPACE GO TO CHECK-ID.               C98970
53340       MOVE ZERO TO TOTAL-WOC-FREQ-ISC.                                  C98970
53345       MOVE ZERO TO CNT.                                                 C98970
53350  SUM-ISC-WOC.                                                           C98970
53355       ADD 1 TO CNT.                                                     C98970
53360       MOVE SUM-WOC-COL (CNT) TO TEMP-INDEX.                             C98970
53365       ADD WOC-FREQ-ISC (TEMP-INDEX) TO TOTAL-WOC-FREQ-ISC.              C98970
53370       IF CNT IS LESS THAN SUM-INDEX GO TO SUM-ISC-WOC.                  C98970
53390       MOVE TOTAL-WOC-FREQ-ISC TO TOTAL-WOC-FREQ-RPT.                    C98970
53400       MOVE ZERO TO CNT.                                                 C98970
53410  OUTPUT-B.                                                              C98970
53420       ADD 1 TO CNT.                                                     C98970
53430       MOVE WOC-FREQ-ISC (CNT) TO WOC-FREQ-RPT (CNT).                    C98970
53440       IF CNT IS LESS THAN NO-WOC-COLS GO TO OUTPUT-B.                   C98970
53450       WRITE ISC-DATA FROM WOC-FREQ-LINE-RPT.                            C98970
53455       MOVE CUR-WUC TO CUR-WUC-W-ISC.                                    C98970
53460       WRITE TAPE-FILE     FROM WOC-FREQ-DATA-ISC.                       C98970
53470       ADD 1 TO NO-REC-TAPE.                                             C98970
53480       ADD 1 TO NO-REC-PRINT-ISC.                                        C98970
53481  CHECK-ID.                                                              C98970
53485       IF IDLN1 IS EQUAL TO 191 GO TO CLOSE-FILES.                       C98970
53490       GO TO NEXT-WUC.                                                   C98970
53500  CLOSE-TABLE.                                                           C98970
53510       MOVE 191 TO IOENT.                                                C98970
53520       GO TO OUTPUT-TABLE-END.                                           C98970
53700  OUTPUT-LINE.                                                           C98970
53710       IF NI-LINE-FLAG IS EQUAL TO SPACE GO TO OUTPUT-LINE-ISC.          C98970
53720       IF NI-TITLE-FLAG IS EQUAL TO SPACE PERFORM WRITE-TITLE-NI.        C98970
53730       MOVE ONE TO NI-TITLE-FLAG.                                        C98970
53740       PERFORM OUTPUT-LINE-OF-NI-DATA THRU END-OUTPUT-LINE-NI-DATA.      C98970
53800  OUTPUT-LINE-ISC.                                                       C98970
53810       IF ISC-LINE-FLAG IS EQUAL TO SPACE GO TO NEXT-HMC.                C98970
53820       IF ISC-TITLE-FLAG IS EQUAL TO SPACE PERFORM WRITE-TITLE-ISC.      C98970
53830       MOVE ONE TO ISC-TITLE-FLAG.                                       C98970
53840       PERFORM OUTPUT-LINE-OF-ISC-DATA THRU                              C98970
53850                                       END-OUTPUT-LINE-ISC-DATA.         C98970
53890       GO TO NEXT-HMC.                                                   C98970
53900  RESET-HMC-LINE-ISC.                                                    C98970
53910       MOVE ZERO TO CNT.                                                 C98970
53920  RESET-HMC-LINE-2.                                                      C98970
53930       ADD 1 TO CNT.                                                     C98970
53940       MOVE ZERO TO HMC-ISC (CNT).                                       C98970
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53950      IF CNT IS LESS THAN NO-WDC-COLS GO TO RESET-MMC-LINE-2.          C98970
53990  END-RESET-ISC. EXIT.                                                 C98970
54000  ADD-NI.                                                              C98970
54010      MOVE ONE TO NI-LINE-FLAG.                                        C98970
54020      ADD MA TO MMC-NI (POS-WDC).                                      C98970
54030      ADD MA TO WUC-FREQ-NI (POS-WDC).                                 C98970
54100  ADD-ISC.                                                             C98970
54110      MOVE ONE TO ISC-LINE-FLAG.                                       C98970
54120      ADD MA TO MMC-ISC (POS-WDC).                                     C98970
54130      ADD MA TO WUC-FREQ-ISC (POS-WDC).                                C98970
55000  CLOSE-FILES.                                                         C98970
55010      COMPUTE CNT > NO-REC-TAPE      - NO-REC-TAPE      / BF * BF.     C98970
55020      IF CNT IS EQUAL TO ZERO GO TO CF-1.                              C98970
55030  CF-2.                                                                C98970
55040      WRITE TAPE-FILE FROM NINE.                                       C98970
55050      ADD 1 TO CNT.                                                    C98970
55060      IF CNT IS LESS THAN BF GO TO CF-2.                               C98970
55070  CF-1.                                                                C98970
55080      COMPUTE CNT > NO-REC-TAPE-TI  - NO-REC-TAPE-TI  / BF * BF.       C98970
55090      IF CNT IS EQUAL TO ZERO GO TO CF-3.                              C98970
55100  CF-4.                                                                C98970
55110      WRITE TAPE-FILE-TI FROM NINE.                                    C98970
55120      ADD 1 TO CNT.                                                    C98970
55130      IF CNT IS LESS THAN BF GO TO CF-4.                               C98970
55140  CF-3.                                                                C98970
55150      DISPLAY : NO TITLE RECORD  : NO-REC-TAPE-TI  UPON CONSOLE.       C98970
55160      DISPLAY : NO      TAPE RECS : NO-REC-TAPE     UPON CONSOLE.      C98970
55165      DISPLAY : NO OF W.U.C. : NO-WUC UPON CONSOLE.                    C98970
55170      DISPLAY : NO ISC PRINT REC : NO-REC-PRINT-ISC UPON CONSOLE.      C98970
55180      DISPLAY : NO NI  PRINT REC : NO-REC-PRINT-NI  UPON CONSOLE.      C98970
55190      DISPLAY : END OF JOB C9897 : UPON CONSOLE.                       C98970
55200      CLOSE IN-FILE-DB,                                                C98970
55220            OUT-DATA,                                                  C98970
55230            OUT-PRINT-TSC,                                             C98970
55235          IN-FILE-ISC,                                                 C98970
55240            OUT-PRINT-NI,                                              C98970
55250            OUT-TITLES WITH LOCK.                                      C98970
55290      GOBACK.                                                          C98970
55400  PROC-SPEC-SGWUC.                                                     C98970
55410      IF SERIAL-NO IS NOT EQUAL TO CUR-SN GO TO NEW-SN-SG-WUC.         C98970
55420      IF WEEK = P-WEEK IS GREATER THAN SPEC-WEEK-LIST (SPEC-INDEX)     C98970
55425                    GO TO END-SG-WUC-INSP.                             C98970
55430  NOT-END-SPEC-SG-WUC-INSP.                                            C98970
55440      MOVE WEEK TO P-WEEK.                                             C98970
55450      MOVE FLT-HRS TO P-FLT-HRS.                                       C98970
55460      GO TO READ-SG-WUC.                                               C98970
55500  NEW-SN-SG-WUC.                                                       C98970
55510      IF ISCHRONAL IS EQUAL TO ONE ADD 1 TO SG-WUC-FREQ-ISC            C98970
55520          (TEMP-COL-NO) ELSE ADD 1 TO SG-WUC-FREQ-NI (TEMP-COL-NO).    C98970
55530      MOVE SERIAL-NO TO CUR-SN.                                        C98970
55540      GO TO NOT-END-SPEC-SG-WUC-INSP.                                  C98970
55600  END-SG-WUC-INSP.                                                     C98970
55610      IF ISCHRONAL IS EQUAL TO ONE ADD 1 TO SG-WUC-FREQ-ISC            C98970
55620          (TEMP-COL-NO) ELSE ADD 1 TO SG-WUC-FREQ-NI (TEMP-COL-NO).    C98970
55630      GO TO NOT-END-SPEC-SG-WUC-INSP.                                  C98970
70000  READ-ISC-A-C.                                                        C98970
70010      READ IN-FILE-ISC INTO NO-TSC AT END GO TO END-RIAC.              C98970
70020      MOVE ZERO TO KNT.                                                C98970
70030  RIAC.                                                                C98970
70040      ADD 1 TO KNT                                                     C98970
70050      READ IN-FILE-ISC INTO ISC-A-C AT END GO TO END-RIAC.             C98970
70060      MOVE ISC-TN TO ISC-AC-TN (KNT).                                  C98970
70070      MOVE ISC-WK TO ISC-AC-WK (KNT).                                  C98970
70075      IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK                  C98970
70076                TO MIN-ISC-WEEK.                                       C98970
70080      IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                        C98970
70090  END-RIAC. EXIT.                                                      C98970
70200  CHECK-ISCHRONAL.                                                     C98970
70210      IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-1-2.     C98970
70220      IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                        C98970
70230      IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN           C98970
70232                        MIN-ISC-WEEK, THEN GO TO END-CI.               C98970
70240  CHECK-I-2.                                                           C98970
70250      MOVE TWO TO ISCHRONAL.                                           C98970
70260      IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.                  C98970
70270      MOVE ZERO TO CNT.                                                C98970
70280  CHECK-I-1.                                                           C98970
70290      ADD 1 TO CNT                                                     C98970
70300      MOVE ISC-AC-TN (CNT) TO ISC-TEMP.                                C98970
70310      IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-I-4.              C90970
70320      IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-1-1A.             C98970
70330      IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.                   C98970
70340  CHECK-I-4.                                                           C98970
70350      MOVE TWO TO ISC-FLAG.                                            C98970
70360      GO TO CHECK-I-3.                                                 C98970
70370  CHECK-I-1A.                                                          C98970
70380      MOVE ISC-AC-WK (CNT) TO WEEK-TEMP.                               C98970
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70390      IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN          C98970
70400         WEEK-TEMP MOVE ONE TO ISCHRONAL.                            C98970
70410      MOVE ONE TO ISC-FLAG.                                          C98970
70430 CHECK-I-3.                                                          C98970
70440      MOVE SERIAL-NO TO PREV-TESTED-SN.                              C98970
70450 END-CI. EXIT.                                                       C98970
70500 RESET-WUC-FREQ.                                                     C98970
70510      MOVE ZERO TO WOC-FREQ-NI-1.                                    C98970
70520      MOVE ZERO TO WOC-FREQ-NI-2.                                    C98970
70530      MOVE ZERO TO WOC-FREQ-NI-3.                                    C98970
70540      MOVE ZERO TO WOC-FREQ-NI-4.                                    C98970
70550      MOVE ZERO TO WOC-FREQ-NI-5.                                    C98970
70560      MOVE ZERO TO WOC-FREQ-NI-6.                                    C98970
70570      MOVE ZERO TO WOC-FREQ-NI-7.                                    C98970
70580      MOVE ZERO TO WOC-FREQ-NI-8.                                    C98970
70590      MOVE ZERO TO WOC-FREQ-NI-9.                                    C98970
70600      MOVE ZERO TO WOC-FREQ-NI-10.                                   C98970
70610      MOVE ZERO TO WOC-FREQ-NI-11.                                   C98970
70620      MOVE ZERO TO WOC-FREQ-NI-12.                                   C98970
70630      MOVE ZERO TO WOC-FREQ-NI-13.                                   C98970
70640      MOVE ZERO TO WOC-FREQ-NI-14.                                   C98970
70650      MOVE ZERO TO WOC-FREQ-NI-15.                                   C98970
70660      MOVE ZERO TO WOC-FREQ-NI-16.                                   C98970
70670      MOVE ZERO TO WOC-FREQ-NI-17.                                   C98970
70680      MOVE ZERO TO WOC-FREQ-NI-18.                                   C98970
70690      MOVE ZERO TO WOC-FREQ-NI-19.                                   C98970
70700      MOVE ZERO TO WOC-FREQ-NI-20.                                   C98970
70710      MOVE ZERO TO WOC-FREQ-NI-21.                                   C98970
70810      MOVE ZERO TO WOC-FREQ-ISC-1.                                   C98970
70820      MOVE ZERO TO WOC-FREQ-ISC-2.                                   C98970
70830      MOVE ZERO TO WOC-FREQ-ISC-3.                                   C98970
70840      MOVE ZERO TO WOC-FREQ-ISC-4.                                   C98970
70850      MOVE ZERO TO WOC-FREQ-ISC-5.                                   C98970
70860      MOVE ZERO TO WOC-FREQ-ISC-6.                                   C98970
70870      MOVE ZERO TO WOC-FREQ-ISC-7.                                   C98970
70880      MOVE ZERO TO WOC-FREQ-ISC-8.                                   C98970
70890      MOVE ZERO TO WOC-FREQ-ISC-9.                                   C98970
70900      MOVE ZERO TO WOC-FREQ-ISC-10.                                  C98970
70910      MOVE ZERO TO WOC-FREQ-ISC-11.                                  C98970
70920      MOVE ZERO TO WOC-FREQ-ISC-12.                                  C98970
70930      MOVE ZERO TO WOC-FREQ-ISC-13.                                  C98970
70940      MOVE ZERO TO WOC-FREQ-ISC-14.                                  C98970
70950      MOVE ZERO TO WOC-FREQ-ISC-15.                                  C98970
70960      MOVE ZERO TO WOC-FREQ-ISC-16.                                  C98970
70970      MOVE ZERO TO WOC-FREQ-ISC-17.                                  C98970
70980      MOVE ZERO TO WOC-FREQ-ISC-18.                                  C98970
70990      MOVE ZERO TO WOC-FREQ-ISC-19.                                  C98970
71000      MOVE ZERO TO WOC-FREQ-ISC-20.                                  C98970
71010      MOVE ZERO TO WOC-FREQ-ISC-21.                                  C98970
80000 READ-IN-TITLE-DATA.                                                 C98970
80010      MOVE ZERO TO CNT.                                              C98970
80020 READ-WOC-INPUT.                                                     C98970
80030      READ IN-FILE-ISC INTO WOC-INPUT,                               C98970
80040                   AT END GO TO END-RITD.                            C98970
80050      ADD 1 TO CNT                                                   C98970
80060      MOVE WOC-IN TO WOC-LIST (CNT).                                 C98970
80070      MOVE WOC-TITLE-INPUT TO WOC-TITLE-DATA (CNT).                  C98970
80080      IF CNT IS LESS THAN 21 GO TO READ-WOC-INPUT.                   C98970
80100 READ-UNSCHED-MAINT-COLS.                                            C98970
80110      READ IN-FILE-ISC INTO NUMBER-CARD,                             C98970
80120                   AT END GO TO END-RITD.                            C90970
80130      MOVE NUMBER-ITEMS TO SUM-INDEX.                                C98970
80140      MOVE ZERO TO CNT.                                              C98970
80150 READ-UNSCHED-COLS.                                                  C98970
80160      READ IN-FILE-ISC INTO NUMBER-CARD,                             C98970
80170                   AT END GO TO END-RITD.                            C98970
80180      ADD 1 TO CNT.                                                  C98970
80190      MOVE NUMBER-ITEMS TO SUM-WOC-COL (CNT).                        C98970
80200      IF CNT IS LESS THAN SUM-INDEX GO TO READ-UNSCHED-COLS.         C98970
80290      MOVE ZERO TO CNT                                               C98970
80300      READ IN-FILE-ISC INTO NUMBER-CARD,                             C98970
80310                   AT END GO TO END-RITD.                            C98970
80320      MOVE NUMBER-ITEMS TO NUMBER-SGWUC.                             C98970
80330 READ-SGWUC-DATA.                                                    C98970
80340      READ IN-FILE-ISC INTO NUMBER-CARD,                             C98970
80350                   AT END GO TO END-RITD.                            C98970
80360      ADD 1 TO CNT.                                                  C98970
80370      MOVE NUMBER-ITEMS TO COL-NO (CNT).                             C98970
80380      MOVE INPUT-SG-CODE TO SG-WUC (CNT).                            C98970
80390      IF CNT IS LESS THAN NUMBER-SGWUC GO TO READ-SGWUC-DATA.        C98970
80400 READ-SGWUC-TITLE-INPUT.                                             C98970
80410      READ IN-FILE-ISC INTO SG-WUC-TITLE-1A, AT END GO TO END-RITD.  C98970
80420      READ IN-FILE-ISC INTO SG-WUC-TITLE-2A, AT END GO TO END-RITD.  C98970
80430      READ IN-FILE-ISC INTO SG-WUC-TITLE-3A, AT END GO TO END-RITD.  C98970
80440      READ IN-FILE-ISC INTO SG-WUC-TITLE-4A, AT END GO TO END-RITD.  C98970
80450      READ IN-FILE-ISC INTO SG-WUC-TITLE-5A, AT END GO TO END-RITD.  C98970
```

```
80460       READ IN-FILE-ISC INTO TEMP-INPUT-SGWUC AT END GO TO END-RITD.   C98970
80470       MOVE TEMP-SGWUC-TITLE TO SG-WUC-TITLE-1B.                       C98970
80480       READ IN-FILE-ISC INTO TEMP-INPUT-SGWUC AT END GO TO END-RITD.   C98970
80490       MOVE TEMP-SGWUC-TITLE TO SG-WUC-TITLE-2B.                       C98970
80500       READ IN-FILE-ISC INTO TEMP-INPUT-SGWUC AT END GO TO END-RITD.   C98970
80510       MOVE TEMP-SGWUC-TITLE TO SG-WUC-TITLE-3B.                       C98970
80520       READ IN-FILE-ISC INTO TEMP-INPUT-SGWUC AT END GO TO END-RITD.   C98970
80530       MOVE TEMP-SGWUC-TITLE TO SG-WUC-TITLE-4B.                       C98970
80540       READ IN-FILE-ISC INTO TEMP-INPUT-SGWUC AT END GO TO END-RITD.   C98970
80550       MOVE TEMP-SGWUC-TITLE TO SG-WUC-TITLE-5B.                       C98970
80600   READ-2-DIGIT-CODE.                                                  C98970
80610       READ IN-FILE-ISC INTO NUMBER-CARD, AT END GO TO END-RITD.       C98970
80620       MOVE NUMBER-ITEMS TO TWO-DIGIT-COL.                             C98970
80630       MOVE INPUT-SG-CODE TO TWO-DIGIT-CODE.                           C98970
80700   READ-INTERCHANGE-COL.                                               C98970
80710       READ IN-FILE-ISC INTO INTERCHANGE-COLS, AT END GO TO            C98970
80720                                                          END-RITD.    C98970
80790   END-RITD. EXIT.                                                     C98970
80800   READ-SPEC-SG-WUC.                                                   C98970
80810       MOVE ZERO TO NO-SPEC-SG-WUC.                                    C98970
80820   READ-SPEC.                                                          C98970
80830       READ IN-FILE-ISC INTO SPEC-SG-WUC-REC AT END GO TO END-RSSW.    C98970
80840       ADD 1 TO NO-SPEC-SG-WUC.                                        C98970
80850       MOVE SPEC-SG-WUC TO SPEC-SG-WUC-LIST (NO-SPEC-SG-WUC).          C98970
80860       SUBTRACT 1 FROM SPEC-WEEK-A DIVING                              C98970
80870                       SPEC-WEEK-LIST (NO-SPEC-SG-WUC).                C98970
80880       GO TO READ-SPEC.                                                C98970
80890   END-RSSW. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                   1440 CDS
00000           GET TFG                          WANG                      C98970'T
010001 019999   REPLACE                                                      'T
TFG  DT01    11  020Z080
   34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324
  58000901  331
  59000002  331
  59000003  331
  59000005  331
  59000006  331
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  59000141  324
  59000143  324
  59000144  324
  59000146  324
  59000147  324
  59000151  324
  59000152  324
    A
    B
    C
    D
    E
    F
    G
  H H
    J
    K
    M
    N
  P P
```

```
   Q
   R
   S
 T T
   U
   V
   2
   4
 9
 1
 2
 3
 4
 5
 6
16
19
20
14
  9  03100
  7  03109
  8  03200
  8  03210
10  03300
17  03310
17  03320
17  03330
11  03400
16  03600
21  04141
13  0421A
13  04210
18  04610
                                    0  0 0    0    0    0    0  0 0    0         0
                                    3  3 3    3    3    3    3  4 4    4         3
                                    1  2 2    1    3    4    1  2 2    X         6
                                    0  1 0    0    0    0    0  1 1    X         0
                                    9  0 0    0    0    0    9  A 0    X         0
  0 0    0              0
  3 3    4              0
  3 3    6              1
  3 2    1              4
  0 0    0              1
 14  04XXX
  7 12
03300  3
03310  3
03320  3
03330  3
03400  5
03600  5
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP>.OLD,KEEP],VOL>SER>+F1,UNIT>T+F1              T12
//TPR.TU14     DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3              T14
//TPR.TU22     DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5              T22
//TPR.TU24     DD   DISP>[OLD,KEEP],VOL>SER>+F7,UNIT>T+F7              T24
//TPR.TU25     DD   DISP>[OLD,KEEP],VOL>SER>+F8,UNIT>T+F8              T25
//TPR.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  DT01    1010080Z080
T/P  TU14    1010130Z130
T/P  TU22    1010130Z130
T/P  TU24    1100130R000
T/P  TU25    1100130R000
/*       PLACE T/P CONTRO. CARDS BEFORE THIS CARD
```

6.7.2 FREQUENCY ANALYSIS SORT

```
//T9897D JOB   01,: G WANG      1,PRTY>02,TYPRUN>HOLD
//C9897S EXEC  P9622N,W>I J9,TIME>02,ACCT>D35323007                          18S
//CHG.SORTIN   DD   DISP>',KEEP],UNIT>[A+F5,2,DEFER],                      CT22/23 1
//             DSN>+E,9897441,                                             CT22    2
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,       CT22    3
//             I+F5,J+F5,[+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//             DCB>[LRECL>0130,BLKSIZE>2990],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A,9897444,      CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//             I+F1,J+F1,[+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//             DCB>[LRECL>0130,BLKSIZE>2990]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[125,001,CH,A,003,003,CH,A,001,001,CH,A,009,003,CH,A],   C
             SIZE>E002000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
```

6.7.3 THREE-DIGIT WUC ANALYSIS

```
//C9897D EXEC  P9655E,TIME>04,ACCT>D35323007                                 1B
//CHG.IU12     DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A,9897444,      CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,       CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU14     DD   DISP>[,PASS],UNIT>[T+F3,1,DEFER],DSN>+C,9897440,      CT14
//             VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,       CT14    2
//             I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[T+F7,1,DEFER],DSN>+G,9897448,      CT24    1
//             VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,       CT24    2
//             I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000          COMBINE     COMPILE                  G. WANG,                C98970
01040  DATE-WRITTEN. 26 APR 72.                                             C98970
01050  REMARKS.                                                             C98970
01060          MAINTENANCE STUDY   PROGRAM 1B,                              C98970
01070              FREQUENCY ANALYSIS,                                      C98970
01080                SIMILAR TO 1A, BUT AT 3 DIGIT WUC LEVEL.               C98970
01090                TITLES ARE USED FROM 1A.                               C98970
01100                INPUT SORT SEQUENCE                                    C98970
01110                     WUC [3 DIGIT], HMC, WDC-DATA.                     C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02160      SELECT OUT-DATA              ASSIGN TO UT-S-TU12                 C98970
02170          RESERVE 1 ALTERNATE AREA.                                    C98970
02180      SELECT OUT-TITLES            ASSIGN TO UT-S-TU14                 C98970
02190          RESERVE 1 ALTERNATE AREA.                                    C98970
02200      SELECT OUT-PRINT-NI          ASSIGN TO UT-S-TU24                 C98970
02210          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
12100  FD  OUT-DATA                                                         C98970
12120      RECORDING MODE IS F                                              C98970
12130      BLOCK CONTAINS 23 RECORDS                                        C98970
12140      RECORD CONTAINS 130          CHARACTERS                          C98970
12150      LABEL RECORDS ARE OMITTED                                        C98970
12160      DATA RECORDS ARE TAPE-FILE.                                      C98970
12180  01  TAPE-FILE      SYNC          PICTURE X[130].                     C98970
13100  FD  OUT-TITLES                                                       C98970
13120      RECORDING MODE IS F                                              C98970
13130      BLOCK CONTAINS 23 RECORDS                                        C98970
13140      RECORD CONTAINS 130          CHARACTERS                          C98970
13150      LABEL RECORDS ARE OMITTED                                        C98970
13160      DATA RECORDS ARE TAPE-FILE-TI.                                   C98970
13170  01  TAPE-FILE-TI SYNC            PICTURE X[130].                     C98970
14100  FD  OUT-PRINT-NI                                                     C98970
14120      RECORDING MODE IS F                                              C98970
14130      BLOCK CONTAINS 15 RECORDS                                        C98970
14140      RECORD CONTAINS 130          CHARACTERS                          C98970
14150      LABEL RECORDS ARE OMITTED                                        C98970
14160      DATA RECORDS ARE NI-DATA.                                        C98970
14170  01  NI-DATA  SYNC                PICTURE X[130].                     C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30010  77  CURISC          SYNC         PICTURE X.                          C98970
30020  77  CUP-WUC SYNC                 PICTURE XXX.                        C98970
30050  77  KNT SYNC COMPUTATIONAL       PICTURE S999.                       C98970
30100  77  NO-WUC              SYNC     PICTURE 9999 VALUE ZERO.            C98970
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30170  77  CNT SYNC COMPUTATIONAL       PICTURE S999.                          C98970
30520  77  NO-WDC-COLS COMPUTATIONAL    PICTURE S999 SYNC VALUE <21.           C98970
30540  77  ONE  SYNC                    PICTURE X VALUE I1:.                   C98970
30550  77  TWO  SYNC                    PICTURE X VALUE :2:.                   C98970
30580  77  NI-TITLE-FLAG   SYNC         PICTURE X.                             C98970
30590  77  NI-LINE-FLAG    SYNC         PICTURE X.                             C98970
30615  77  PAGE-NUMBER-NI               PICTURE S99  SYNC VALUE ZERO.          C98970
30630  77  NO-REC-PRINT-NI              PICTURE  9[7] VALUE ZERO.              C98970
30670  77  LINE-CNT-NI  COMPUTATIONAL   PICTURE S999          SYNC.            C98970
30680  77  LINE-PAGE    COMPUTATIONAL   PICTURE S999 VALUE <60 SYNC.           C98970
30700  01  WDC-FREQ-LINE-RPT SYNC.                                             C98970
30710      02  FILLER                   PICTURE X[18] VALUE                    C98970
30720                                    :J WDC FREQUENCY   :.                 C98970
30730      02  WUC-FREQ-RPT-2           PICTURE Z[10].                         C98970
30731      02  WUC-FREQ-RPT-4           PICTURE Z[10].                         C98970
30732      02  WUC-FREQ-RPT-6           PICTURE Z[10].                         C98970
30733      02  WUC-FREQ-RPT-8           PICTURE Z[10].                         C98970
30734      02  WDC-FREQ-RPT-10          PICTURE Z[10].                         C98970
30735      02  WUC-FREQ-RPT-12          PICTURE Z[10].                         C98970
30736      02  WUC-FREQ-RPT-14          PICTURE Z[10].                         C98970
30737      02  WUC-FREQ-RPT-16          PICTURE Z[10].                         C98970
30738      02  WUC-FREQ-RPT-18          PICTURE Z[10].                         C98970
30739      02  WUC-FREQ-RPT-20          PICTURE Z[10].                         C98970
30740      02  TOTAL-WDC-FREQ-RPT       PICTURE Z[11].                         C98970
30741      02  FILLER                   PICTURE X VALUE :#:.                   C98970
30750  01  WDC-FREQ-LINE-2-RPT SYNC.                                           C98970
30751      02  FILLER                   PICTURE X[13] VALUE                    C98970
30752                                    :/          :.                        C98970
30753      02  WUC-FREQ-RPT-1           PICTURE Z[10].                         C98970
30754      02  WUC-FREQ-RPT-3           PICTURE Z[10].                         C98970
30755      02  WUC-FREQ-RPT-5           PICTURE Z[10].                         C98970
30756      02  WUC-FREQ-RPT-7           PICTURE Z[10].                         C98970
30757      02  WUC-FREQ-RPT-9           PICTURE Z[10].                         C98970
30758      02  WUC-FREQ-RPT-11          PICTURE Z[10].                         C98970
30759      02  WUC-FREQ-RPT-13          PICTURE Z[10].                         C98970
30760      02  WUC-FREQ-RPT-15          PICTURE Z[10].                         C98970
30761      02  WUC-FREQ-RPT-17          PICTURE Z[10].                         C98970
30762      02  WUC-FREQ-RPT-19          PICTURE Z[10].                         C98970
30763      02  WUC-FREQ-RPT-21          PICTURE Z[10].                         C98970
30764      02  FILLER                   PICTURE X[7] VALUE I      #:.          C98970
32000  01  REPORT-ID SYNC.                                                     C98970
32010      02  FILLER                   PICTURE X[50] VALUE                    C98970
32020          :59897860  TF7919-02 I42-8 I      1/2              :.          C98970
32030      02  FILLER                   PICTURE X[50] VALUE SPACE.             C98970
32040      02  FILLER                   PICTURE X[30] VALUE                    C98970
32050          :                             #:.                              C98970
40000  01  NEW-PAGE SYNC.                                                      C98970
40010      02  FILLER                   PICTURE X[120].                        C98970
40020      02  PAGE-DATA                PICTURE X[10].                         C98970
40030      02  FILLER REDEFINES PAGE-DATA.                                     C98970
40040          03  FILLER               PICTURE X[7].                          C98970
40050          03  PAGE-NO              PICTURE Z9.                            C98970
40060          03  FILLER               PICTURE X.                             C98970
40070  01  TITLE-LINE-NI SYNC.                                                 C98970
40080      02  FILLER                   PICTURE X[10].                         C98970
40085      02  WUC-NI                   PICTURE XXX.                           C98970
40090      02  FILLER                   PICTURE X[117].                        C98970
40100  01  TITLE-LINE-ISC SYNC.                                                C98970
40110      02  FILLER                   PICTURE X[10].                         C98970
40115      02  WUC-ISC                  PICTURE XXX.                           C98970
40120      02  FILLER                   PICTURE X[117].                        C98970
40130  01  WHEN-USC-CODE-TITLE SYNC.                                           C98970
40140      02  FILLER                   PICTURE X[120].                        C98970
40150      02  FILLER                   PICTURE X[10].                         C98970
40200  01  SG-WUC-TITLE-1 SYNC.                                                C98970
40210      02  FILLER                   PICTURE X[120].                        C98970
40220      02  FILLER                   PICTURE X[10].                         C98970
40270  01  SG-WUC-TITLE-2 SYNC.                                                C98970
40280      02  FILLER                   PICTURE X[120].                        C98970
40290      02  FILLER                   PICTURE X[10].                         C98970
40340  01  SG-WUC-TITLE-3 SYNC.                                                C98970
40350      02  FILLER                   PICTURE X[120].                        C98970
40360      02  FILLER                   PICTURE X[10].                         C98970
40410  01  SG-WUC-TITLE-4 SYNC.                                                C98970
40420      02  FILLER                   PICTURE X[120].                        C98970
40430      02  FILLER                   PICTURE X[10].                         C98970
40480  01  SG-WUC-TITLE-5 SYNC.                                                C98970
40490      02  FILLER                   PICTURE X[120].                        C98970
40500      02  FILLER                   PICTURE X[10].                         C98970
40550  01  SG-WUC-FREQ-LINE-ISC SYNC.                                          C98970
40560      02  FILLER                   PICTURE X[120].                        C98970
40570      02  FILLER                   PICTURE X[10].                         C98970
40620  01  HMC-FREQ-LINE SYNC.                                                 C98970
40630      02  FILLER                   PICTURE X[12] VALUE                    C98970
40640          :/FREQ HMC > :.                                                 C98970
40650      02  CUR-HMC                  PICTURE XXX.                           C98970
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40660      02  FILLER                    PICTURE XXX VALUE I   !.          C98970
40670      02  HMC-FREQ-RPI              PICTURE Z(5)                      C98970
40680                        OCCURS 21 TIMES.                              C98970
40690      02  HMC-FREQ-TOTAL-RPT        PICTURE Z(6).                     C98970
40700      02  FILLER                    PICTURE X VALUE I#!.              C98970
40710  01  SG-WUC-FREQ-LINE-NI SYNC.                                       C98970
40720      02  FILLER                    PICTURE X(120).                   C98970
40730      02  FILLER                    PICTURE X(10).                    C98970
41100  01      DATA-IN SYNC.                                               C98970
41110      02      IDENT                 PICTURE X.                        C98970
41120      02      FILLER                PICTURE X.                        C98970
41130      02      WUC                   PICTURE XXX.                      C98970
41140      02      FILLER                PICTURE XXX.                      C98970
41150      02      HMC                   PICTURE XXX.                      C98970
41160      02  FILLER                    PICTURE X.                        C98970
41170      02      LIST-HMC-IN.                                            C98970
41180          03  HMC-IN-1              PICTURE S9(5).                    C98970
41190          03  HMC-IN-2              PICTURE S9(5).                    C98970
41200          03  HMC-IN-3              PICTURE S9(5).                    C98970
41210          03  HMC-IN-4              PICTURE S9(5).                    C98970
41220          03  HMC-IN-5              PICTURE S9(5).                    C98970
41230          03  HMC-IN-6              PICTURE S9(5).                    C98970
41240          03  HMC-IN-7              PICTURE S9(5).                    C98970
41250          03  HMC-IN-8              PICTURE S9(5).                    C98970
41260          03  HMC-IN-9              PICTURE S9(5).                    C98970
41270          03  HMC-IN-10             PICTURE S9(5).                    C98970
41280          03  HMC-IN-11             PICTURE S9(5).                    C98970
41290          03  HMC-IN-12             PICTURE S9(5).                    C98970
41300          03  HMC-IN-13             PICTURE S9(5).                    C98970
41310          03  HMC-IN-14             PICTURE S9(5).                    C98970
41320          03  HMC-IN-15             PICTURE S9(5).                    C98970
41330          03  HMC-IN-16             PICTURE S9(5).                    C98970
41340          03  HMC-IN-17             PICTURE S9(5).                    C98970
41350          03  HMC-IN-18             PICTURE S9(5).                    C98970
41360          03  HMC-IN-19             PICTURE S9(5).                    C98970
41370          03  HMC-IN-20             PICTURE S9(5).                    C98970
41380          03  HMC-IN-21             PICTURE S9(5).                    C98970
41390      02  FILLER REDEFINES LIST-HMC-IN.                               C98970
41400          03  HMC-IN OCCUPS 21 TIMES                                  C98970
41410                                     PICTURE S9(5).                    C98970
41420      02      HMC-FREQ-IN           PICTURE S9(6).                    C98970
41430      02      FILLER                PICTURE X.                        C98970
41440      02      ISCHRONAL             PICTURE X.                        C98970
41450      02      FILLER                PICTURE X(5).                     C98970
41600  01  TAPE-OUT-NI SYNC.                                               C98970
41680      02  LIST-HMC-NI.                                                C98970
41690          03  HMC-NI-1              PICTURE S9(5).                    C98970
41700          03  HMC-NI-2              PICTURE S9(5).                    C98970
41710          03  HMC-NI-3              PICTURE S9(5).                    C98970
41720          03  HMC-NI-4              PICTURE S9(5).                    C98970
41730          03  HMC-NI-5              PICTURE S9(5).                    C98970
41740          03  HMC-NI-6              PICTURE S9(5).                    C98970
41750          03  HMC-NI-7              PICTURE S9(5).                    C98970
41760          03  HMC-NI-8              PICTURE S9(5).                    C98970
41770          03  HMC-NI-9              PICTURE S9(5).                    C98970
41780          03  HMC-NI-10             PICTURE S9(5).                    C98970
41790          03  HMC-NI-11             PICTURE S9(5).                    C98970
41800          03  HMC-NI-12             PICTURE S9(5).                    C98970
41810          03  HMC-NI-13             PICTURE S9(5).                    C98970
41820          03  HMC-NI-14             PICTURE S9(5).                    C98970
41830          03  HMC-NI-15             PICTURE S9(5).                    C98970
41840          03  HMC-NI-16             PICTURE S9(5).                    C98970
41850          03  HMC-NI-17             PICTURE S9(5).                    C98970
41860          03  HMC-NI-18             PICTURE S9(5).                    C98970
41870          03  HMC-NI-19             PICTURE S9(5).                    C98970
41880          03  HMC-NI-20             PICTURE S9(5).                    C98970
41890          03  HMC-NI-21             PICTURE S9(5).                    C98970
41891      02  FILLER REDEFINES LIST-HMC-NI.                               C98970
41892          03  HMC-NI OCCURS 21 TIMES  PICTURE S9(5).                  C98970
41900      02  HMC-FREQ-TOTAL-NI         PICTURE S9(6).                    C98970
42000  01  WDC-FREQ-DATA-NI SYNC.                                          C98970
42040      02  TABLE-WDC-FREQ-NI.                                          C98970
42050          03  WDC-FREQ-NI-1         PICTURE S9(9).                    C98970
42060          03  WDC-FREQ-NI-2         PICTURE S9(9).                    C98970
42070          03  WDC-FREQ-NI-3         PICTURE S9(9).                    C98970
42080          03  WDC-FREQ-NI-4         PICTURE S9(9).                    C98970
42090          03  WDC-FREQ-NI-5         PICTURE S9(9).                    C98970
42100          03  WDC-FREQ-NI-6         PICTURE S9(9).                    C98970
42110          03  WDC-FREQ-NI-7         PICTURE S9(9).                    C98970
42120          03  WDC-FREQ-NI-8         PICTURE S9(9).                    C98970
42130          03  WDC-FREQ-NI-9         PICTURE S9(9).                    C98970
42140          03  WDC-FREQ-NI-10        PICTURE S9(9).                    C98970
42150          03  WDC-FREQ-NI-11        PICTURE S9(9).                    C98970
42160          03  WDC-FREQ-NI-12        PICTURE S9(9).                    C98970
42170          03  WDC-FREQ-NI-13        PICTURE S9(9).                    C98970
42180          03  WDC-FREQ-NI-14        PICTURE S9(9).                    C98970
42190          03  WDC-FREQ-NI-15        PICTURE S9(9).                    C98970
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42200           03  WDC-FREQ-N1-16      PICTURE S9(9).                      C98970
42210           03  WDC-FREQ-N1-17      PICTURE S9(9).                      C98970
42220           03  WDC-FREQ-N1-18      PICTURE S9(9).                      C98970
42230           03  WDC-FREQ-N1-19      PICTURE S9(9).                      C98970
42240           03  WDC-FREQ-N1-20      PICTURE S9(9).                      C98970
42250           03  WDC-FREQ-N1-21      PICTURE S9(9).                      C98970
42251       02  FILLER REDEFINES TABLE-WDC-FREQ-N1.                         C98970
42252           03  WDC-FREQ-N1 OCCURS 21 TIMES PICTURE S9(9).              C98970
42260       02  TOTAL-WDC-FREQ-N1       PICTURE S9(9).                      C98970
42000   01  N1NE SYNC.                                                      C98970
42010       02  FILLER                  PICTURE X(50)  VALUE                C98970
42020           '99999999999999999999999999999999999999999999999999991'.    C98970
42030       02  FILLER                  PICTURE X(50)  VALUE                C98970
42040           '99999999999999999999999999999999999999999999999999991'.    C98970
42050       02  FILLER                  PICTURE X(30)  VALUE                C98970
42060           '999999999999999999999999999991'.                            C98970
43010   01  SG-WUC-FREQ-N1-1  SYNC.                                         C98970
43020       02  FILLER                  PICTURE X(120).                     C98970
43030       02  FILLER                  PICTURE X(10).                      C98970
43070   01  SG-WUC-FREQ-N1-2  SYNC.                                         C98970
43080       02  FILLER                  PICTURE X(120).                     C98970
43090       02  FILLER                  PICTURE X(10).                      C98970
43100   01  SG-WUC-FREQ-N1-3  SYNC.                                         C98970
43110       02  FILLER                  PICTURE X(120).                     C98970
43120       02  FILLER                  PICTURE X(10).                      C98970
43130   01  SG-WUC-FREQ-N1-4  SYNC.                                         C98970
43140       02  FILLER                  PICTURE X(120).                     C98970
43150       02  FILLER                  PICTURE X(10).                      C98970
43160   01  SG-WUC-FREQ-N1-5  SYNC.                                         C98970
43170       02  FILLER                  PICTURE X(120).                     C98970
43180       02  FILLER                  PICTURE X(10).                      C98970
43190   01  SG-WUC-FREQ-N1-6  SYNC.                                         C98970
43200       02  FILLER                  PICTURE X(120).                     C98970
43210       02  FILLER                  PICTURE X(10).                      C98970
43220   01  SG-WUC-FREQ-1SC-1 SYNC.                                         C98970
43230       02  FILLER                  PICTURE X(120).                     C98970
43240       02  FILLER                  PICTURE X(10).                      C98970
43250   01  SG-WUC-FREQ-1SC-2 SYNC.                                         C98970
43260       02  FILLER                  PICTURE X(120).                     C98970
43270       02  FILLER                  PICTURE X(10).                      C98970
43280   01  SG-WUC-FREQ-1SC-3 SYNC.                                         C98970
43290       02  FILLER                  PICTURE X(120).                     C98970
43330       02  FILLER                  PICTURE X(10).                      C98970
43340   01  SG-WUC-FREQ-1SC-4 SYNC.                                         C98970
43350       02  FILLER                  PICTURE X(120).                     C98970
43360       02  FILLER                  PICTURE X(10).                      C98970
43370   01  SG-WUC-FREQ-1SC-5 SYNC.                                         C98970
43380       02  FILLER                  PICTURE X(120).                     C98970
43390       02  FILLER                  PICTURE X(10).                      C98970
43400   01  SG-WUC-FREQ-1SC-6 SYNC.                                         C98970
43410       02  FILLER                  PICTURE X(120).                     C98970
43420       02  FILLER                  PICTURE X(10).                      C98970
43430                                                                        C98970
50000   PROCEDURE DIV1S10N.                                                  C98970
50010   OPEN-FILES.                                                          C98970
50020       OPEN       INPUT OUT-DATA, OUT-TITLES, OUTPUT OUT-PRINT-N1.      C98970
50050       WRITE  N1-DATA FROM REPORT-1D.                                   C98970
50070       ADD 1 TO NO-REC-PRINT-N1.                                        C98970
50100       READ OUT-TITLES   INTO NEW-PAGE              AT END GO TO INF.   C98970
50110       READ OUT-TITLES   INTO TITLE-LINE-N1         AT END GO TO INF.   C98970
50120       READ OUT-TITLES   INTO WHEN-DISC-CODE-TITLE  AT END GO TO INF.   C98970
50130       READ OUT-TITLES   INTO SG-WUC-TITLE-1        AT END GO TO INF.   C98970
50140       READ OUT-TITLES   INTO SG-WUC-TITLE-2        AT END GO TO INF.   C98970
50150       READ OUT-TITLES   INTO SG-WUC-TITLE-3        AT END GO TO INF.   C98970
50160       READ OUT-TITLES   INTO SG-WUC-TITLE-4        AT END GO TO INF.   C98970
50170       READ OUT-TITLES   INTO SG-WUC-TITLE-5        AT END GO TO INF.   C98970
50180       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-1 AT END GO TO INF.        C98970
50181       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-2 AT END GO TO INF.        C98970
50182       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-3 AT END GO TO INF.        C98970
50183       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-4 AT END GO TO INF.        C98970
50184       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-5 AT END GO TO INF.        C98970
50185       READ OUT-TITLES   INTO SG-WUC-FREQ-N1-6 AT END GO TO INF.        C98970
50190       READ OUT-TITLES   INTO TITLE-LINE-1SC        AT END GO TO INF.   C98970
50200       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-1 AT END GO TO INF.       C98970
50210       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-2 AT END GO TO INF.       C98970
50220       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-3 AT END GO TO INF.       C98970
50230       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-4 AT END GO TO INF.       C98970
50240       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-5 AT END GO TO INF.       C98970
50250       READ OUT-TITLES   INTO SG-WUC-FREQ-1SC-6 AT END GO TO INF.       C98970
51000   INF.                                                                 C98970
51010       READ OUT-DATA INTO DATA-1N, AT END GO TO CLOSE-FILES.            C98970
51020       IF IDENT IS NOT EQUAL TO 1HI GO TO ERROR-1.                      C98970
51030   NEXT-WUC.                                                            C98970
51040       MOVE ZERO TO  AGE-NUMBER-N1.                                     C98970
51050       MOVE WUC TO CHK-WUC.                                             C98970
51060       MOVE SPACE TO N1-TITLE-FLAG.                                     C98970
51070       ADD 1 TO NO-WLC.                                                 C98970
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51080       PERFORM RESET-WUC-FREQ.                                          C98970
51090       MOVE 1SYNCHRONAL TO CURISC.                                      C98970
51100   NEXT-HMC.                                                            C98970
51110       MOVE HMC TO CUR-HMC.                                             C98970
51120       MOVE SPACE TO NI-LINE-FLAG.                                      C98970
51130       PERFORM RESET-HMC-LINE-N1 THRU END-RESET-NI.                     C98970
51140       GO TO ACC-HMC.                                                   C98970
51200   READ-DATA.                                                           C98970
51210       READ OUT-DATA INTO DATA-IN, AT END GO TO CLOSE-FILES.            C98970
51215       IF IDENT IS EQUAL TO :9: GO TO CLOSE-FILES.                      C98970
51220       IF IDENT IS EQUAL TO :H: GO TO CHECK-WUC.                        C98970
51230       IF IDENT IS NOT EQUAL TO :W: GO TO ERROR-1.                      C98970
51240       IF N1-LINE-FLAG IS EQUAL TO ONE PERFORM OUTPUT-LINE              C98970
51250                                          THRU END-OL.                  C98970
51260       PERFORM ACCUM-WUC-DATA.                                          C98970
51270       GO TO READ-DATA.                                                 C98970
51300   CHECK-WUC.                                                           C98970
51310       IF WUC IS EQUAL TO CUR-WUC GO TO CHECK-HMC.                      C98970
51320       PERFORM WRITE-WUC THRU END-WRITE-WUC.                            C98970
51330       GO TO NEXT-WUC.                                                  C98970
51400   CHECK-HMC.                                                           C98970
51410       IF HMC IS EQUAL TO CUR-HMC GO TO ACC-HMC.                        C98970
51420       PERFORM OUTPUT-LINE THRU END-OL.                                 C98970
51430       GO TO NEXT-HMC.                                                  C98970
51500   RESET-HMC-LINE-N1.                                                   C98970
51510       MOVE ZERO TO CNT.                                                C98970
51520   RESET-HMC-LINE-1.                                                    C98970
51530       ADD 1 TO CNT.                                                    C98970
51550       MOVE ZERO TO HMC-N1 (CNT).                                       C98970
51560       IF CNT IS LESS THAN NO-WUC-COLS GO TO RESET-HMC-LINE-1.          C98970
51570       MOVE ZERO TO HMC-FREQ-TOTAL-N1.                                  C98970
51590   END-RESET-NI. EXIT.                                                  C98970
51600   WRITE-TITLE-N1.                                                      C98970
51610       ADD 1 TO PAGE-NUMBER-N1.                                         C98970
51620       MOVE PAGE-NUMBER-N1 TO PAGE-NO.                                  C98970
51630       WRITE N1-DATA FROM NEW-PAGE.                                     C98970
51635       MOVE CUR-WUC TO WUC-N1.                                          C98970
51640       WRITE N1-DATA FROM TITLE-LINE-N1.                                C98970
51660       WRITE N1-DATA FROM WHEN-DISC-CODE-TITLE.                         C98970
51670       WRITE N1-DATA FROM SG-WUC-TITLE-1.                               C98970
51680       WRITE N1-DATA FROM SG-WUC-TITLE-2.                               C98970
51690       WRITE N1-DATA FROM SG-WUC-TITLE-3.                               C98970
51700       WRITE N1-DATA FROM SG-WUC-TITLE-4.                               C98970
51710       WRITE N1-DATA FROM SG-WUC-TITLE-5.                               C98970
51720       WRITE N1-DATA FROM SG-WUC-FREQ-N1-1.                             C98970
51721       WRITE N1-DATA FROM SG-WUC-FREQ-N1-2.                             C98970
51722       WRITE N1-DATA FROM SG-WUC-FREQ-N1-3.                             C98970
51723       WRITE N1-DATA FROM SG-WUC-FREQ-N1-4.                             C98970
51724       WRITE N1-DATA FROM SG-WUC-FREQ-N1-5.                             C98970
51725       WRITE N1-DATA FROM SG-WUC-FREQ-N1-6.                             C98970
51730       ADD 14 TO NO-REC-PRINT-N1.                                       C98970
51740       MOVE 14 TO LINE-CNT-N1.                                          C98970
51800   WRITE-TITLE-ISC.                                                     C98970
51810       ADD 1 TO PAGE-NUMBER-N1                                          C98970
51820       MOVE PAGE-NUMBER-N1 TO PAGE-NO.                                  C98970
51830       WRITE N1-DATA FROM NEW-PAGE.                                     C98970
51835       MOVE CUR-WUC TO WUC-ISC.                                         C98970
51840       WRITE N1-DATA FROM TITLE-LINE-ISC.                               C98970
51850       WRITE N1-DATA FROM WHEN-DISC-CODE-TITLE.                         C98970
51860       WRITE N1-DATA FROM SG-WUC-TITLE-1.                               C98970
51870       WRITE N1-DATA FROM SG-WUC-TITLE-2                                C98970
51880       WRITE N1-DATA FROM SG-WUC-TITLE-3.                               C98970
51890       WRITE N1-DATA FROM SG-WUC-TITLE-4.                               C98970
51900       WRITE N1-DATA FROM SG-WUC-TITLE-5.                               C98970
51910       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-1.                            C98970
51920       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-2.                            C98970
51930       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-3.                            C98970
51940       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-4.                            C98970
51950       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-5.                            C98970
51960       WRITE N1-DATA FROM SG-WUC-FREQ-ISC-6.                            C98970
51970       ADD 14 TO NO-REC-PRINT-N1.                                       C98970
51980       MOVE 14 TO LINE-CNT-N1.                                          C98970
52200   OUTPUT-LINE-OF-N1-DATA.                                              C98970
52220       MOVE ZERO TO CNT.                                                C98970
52230   OUTPUT-LINE-N1-A.                                                    C98970
52240       ADD 1 TO CNT.                                                    C98970
52250       MOVE HMC-N1 (CNT) TO HMC-FREQ-RPT (CNT).                         C98970
52260       IF CNT IS LESS THAN NO-WUC-COLS GO TO OUTPUT-LINE-N1-A.          C98970
52390       MOVE HMC-FREQ-TOTAL-N1 TO HMC-FREQ-TOTAL-RPT.                    C98970
52392       IF LINE-CNT-N1 IS GREATER THAN LINE-PAGE AND CURISC IS EQUAL     C98970
52394       TO TWO, PERFORM WRITE-TITLE-N1.                                  C98970
52396       IF LINE-CNT-N1 IS GREATER THAN LINE-PAGE AND CURISC IS EQUAL     C98970
52397       TO ONE PERFORM WRITE-TITLE-ISC.                                  C98970
52400       WRITE N1-DATA FROM HMC-FREQ-LINE.                                C98970
52410       ADD 1 TO NO-REC-PRINT-N1.                                        C98970
52415       ADD 1 TO LINE-CNT-N1.                                            C98970
52420       MOVE SPACE TO N1-LINE-FLAG.                                      C98970
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52590 END-OUTPUT-LINE-NI-DATA.   EXIT.                                  C98970
53100 WRITE-WOC.                                                        C98970
53110     MOVE WOC-FREQ-NI-2  TO WOC-FREQ-RPT-2.                        C98970
53120     MOVE WOC-FREQ-NI-4  TO WOC-FREQ-RPT-4.                        C98970
53130     MOVE WOC-FREQ-NI-6  TO WOC-FREQ-RPT-6.                        C98970
53140     MOVE WOC-FREQ-NI-8  TO WOC-FREQ-RPT-8.                        C98970
53150     MOVE WOC-FREQ-NI-10 TO WOC-FREQ-RPT-10.                       C98970
53160     MOVE WOC-FREQ-NI-12 TO WOC-FREQ-RPT-12.                       C98970
53170     MOVE WOC-FREQ-NI-14 TO WOC-FREQ-RPT-14.                       C98970
53180     MOVE WOC-FREQ-NI-16 TO WOC-FREQ-RPT-16.                       C98970
53190     MOVE WOC-FREQ-NI-18 TO WOC-FREQ-RPT-18.                       C98970
53200     MOVE WOC-FREQ-NI-20 TO WOC-FREQ-RPT-20.                       C98970
53210     MOVE TOTAL-WOC-FREQ-NI TO TOTAL-WOC-FREQ-RPT.                 C98970
53220     WRITE NI-DATA FROM WOC-FREQ-LINE-RPT.                         C98970
53230     MOVE WOC-FREQ-NI-1  TO WOC-FREQ-RPT-1.                        C98970
53240     MOVE WOC-FREQ-NI-3  TO WOC-FREQ-RPT-3.                        C98970
53250     MOVE WOC-FREQ-NI-5  TO WOC-FREQ-RPT-5.                        C98970
53260     MOVE WOC-FREQ-NI-7  TO WOC-FREQ-RPT-7.                        C98970
53270     MOVE WOC-FREQ-NI-9  TO WOC-FREQ-RPT-9.                        C98970
53280     MOVE WOC-FREQ-NI-11 TO WOC-FREQ-RPT-11.                       C98970
53290     MOVE WOC-FREQ-NI-13 TO WOC-FREQ-RPT-13.                       C98970
53300     MOVE WOC-FREQ-NI-15 TO WOC-FREQ-RPT-15.                       C98970
53310     MOVE WOC-FREQ-NI-17 TO WOC-FREQ-RPT-17.                       C98970
53320     MOVE WOC-FREQ-NI-19 TO WOC-FREQ-RPT-19.                       C98970
53330     MOVE WOC-FREQ-NI-21 TO WOC-FREQ-RPT-21.                       C98970
53340     WRITE NI-DATA FROM WOC-FREQ-LINE-2-RPT.                       C98970
53350     ADD 2 TO NO-REC-PRINT-NI.                                     C98970
53390 END-WRITE-WOC. EXIT.                                              C98970
53700 OUTPUT-LINE.                                                      C98970
53710     IF NI-LINE-FLAG IS EQUAL TO SPACE GO TO END-OL.               C98970
53720     IF NI-TITLE-FLAG IS EQUAL TO SPACE AND CURISC IS EQUAL TO     C98970
53722     ONE PERFORM WRITE-TITLE-ISC.                                  C98970
53724     IF NI-TITLE-FLAG IS EQUAL TO SPACE AND CURISC IS EQUAL TO     C98970
53726     TWO PERFORM WRITE-TITLE-NI.                                   C98970
53730     MOVE ONE TO NI-TITLE-FLAG.                                    C98970
53740     PERFORM OUTPUT-LINE-OF-NI-DATA THRU                           C98970
53750           END-OUTPUT-LINE-NI-DATA.                                C98970
53760     MOVE SPACE TO NI-LINE-FLAG.                                   C98970
53790 END-OL.  EXIT.                                                    C98970
54900 ERROR-1.                                                          C98970
54910     DISPLAY ' INPUT DATA OUT OF SEQUENCE ' UPON CONSOLE.          C98970
55000 CLOSE-FILES.                                                      C98970
55010     PERFORM WRITE-WOC.                                            C98970
55165     DISPLAY ' NO OF W.U.C. ' NO-WUC UPON CONSOLE.                 C98970
55180     DISPLAY ' NO NI  PRINT REC ' NO-REC-PRINT-NI  UPON CONSOLE.   C98970
55190     DISPLAY ' END OF JOB C9897 ' UPON CONSOLE.                    C98970
55200     CLOSE OUT-DATA.                                               C98970
55240           OUT-PRINT-NI.                                           C98970
55250           OUT-TITLES WITH LOCK.                                   C98970
55290     GOBACK.                                                       C98970
61500 ACC-HMC.                                                          C98970
61510     ADD HMC-IN-1  TO HMC-NI-1.                                    C98970
61520     ADD HMC-IN-2  TO HMC-NI-2.                                    C98970
61530     ADD HMC-IN-3  TO HMC-NI-3.                                    C98970
61540     ADD HMC-IN-4  TO HMC-NI-4.                                    C98970
61550     ADD HMC-IN-5  TO HMC-NI-5.                                    C98970
61560     ADD HMC-IN-6  TO HMC-NI-6.                                    C90970
61570     ADD HMC-IN-7  TO HMC-NI-7.                                    C90970
61580     ADD HMC-IN-8  TO HMC-NI-8.                                    C98970
61590     ADD HMC-IN-9  TO HMC-NI-9.                                    C98970
61600     ADD HMC-IN-10 TO HMC-NI-10.                                   C98970
61610     ADD HMC-IN-11 TO HMC-NI-11.                                   C98970
61620     ADD HMC-IN-12 TO HMC-NI-12.                                   C98970
61630     ADD HMC-IN-13 TO HMC-NI-13.                                   C90970
61640     ADD HMC-IN-14 TO HMC-NI-14.                                   C98970
61650     ADD HMC-IN-15 TO HMC-NI-15.                                   C98970
61660     ADD HMC-IN-16 TO HMC-NI-16.                                   C98970
61670     ADD HMC-IN-17 TO HMC-NI-17.                                   C98970
61680     ADD HMC-IN-18 TO HMC-NI-18.                                   C98970
61690     ADD HMC-IN-19 TO HMC-NI-19.                                   C98970
61700     ADD HMC-IN-20 TO HMC-NI-20.                                   C98970
61710     ADD HMC-IN-21 TO HMC-NI-21.                                   C98970
61720     ADD HMC-FREQ-IN TO HMC-FREQ-TOTAL-NI.                         C98970
61730     MOVE ONE TO NI-LINE-FLAG.                                     C98970
61740     GO TO READ-DATA.                                              C98970
61800 ACCUM-WOC-DATA.                                                   C98970
61810     ADD HMC-IN-1  TO WOC-FREQ-NI-1.                               C98970
61820     ADD HMC-IN-2  TO WOC-FREQ-NI-2.                               C98970
61830     ADD HMC-IN-3  TO WOC-FREQ-NI-3.                               C98970
61840     ADD HMC-IN-4  TO WOC-FREQ-NI-4.                               C98970
61850     ADD HMC-IN-5  TO WOC-FREQ-NI-5.                               C98970
61860     ADD HMC-IN-6  TO WOC-FREQ-NI-6.                               C98970
61870     ADD HMC-IN-7  TO WOC-FREQ-NI-7.                               C98970
61880     ADD HMC-IN-8  TO WOC-FREQ-NI-8.                               C98970
61890     ADD HMC-IN-9  TO WOC-FREQ-NI-9.                               C98970
61900     ADD HMC-IN-10 TO WOC-FREQ-NI-10.                              C98970
61910     ADD HMC-IN-11 TO WOC-FREQ-NI-11.                              C98970
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61920       ADD HMC-IN-12 TO WDC-FREQ-NI-12.                                C98970
61930       ADD HMC-IN-13 TO WDC-FREQ-NI-13.                                C98970
61940       ADD HMC-IN-14 TO WDC-FREQ-NI-14.                                C98970
61950       ADD HMC-IN-15 TO WDC-FREQ-NI-15.                                C98970
61960       ADD HMC-IN-16 TO WDC-FREQ-NI-16.                                C98970
61970       ADD HMC-IN-17 TO WDC-FREQ-NI-17.                                C98970
61980       ADD HMC-IN-18 TO WDC-FREQ-NI-18.                                C98970
61990       ADD HMC-IN-19 TO WDC-FREQ-NI-19.                                C98970
62000       ADD HMC-IN-20 TO WDC-FREQ-NI-20.                                C98970
62010       ADD HMC-IN-21 TO WDC-FREQ-NI-21.                                C98970
62020       ADD HMC-FREQ-IN TO TOTAL-WDC-FREQ-NI.                           C98970
70500  RESET-WDC-FREQ.                                                      C98970
70510       MOVE ZERO TO WDC-FREQ-NI-1.                                     C98970
70520       MOVE ZERO TO WDC-FREQ-NI-2.                                     C98970
70530       MOVE ZERO TO WDC-FREQ-NI-3.                                     C98970
70540       MOVE ZERO TO WDC-FREQ-NI-4.                                     C98970
70550       MOVE ZERO TO WDC-FREQ-NI-5.                                     C98970
70560       MOVE ZERO TO WDC-FREQ-NI-6.                                     C98970
70570       MOVE ZERO TO WDC-FREQ-NI-7.                                     C98970
70580       MOVE ZERO TO WDC-FREQ-NI-8.                                     C98970
70590       MOVE ZERO TO WDC-FREQ-NI-9.                                     C98970
70600       MOVE ZERO TO WDC-FREQ-NI-10.                                    C98970
70610       MOVE ZERO TO WDC-FREQ-NI-11.                                    C98970
70620       MOVE ZERO TO WDC-FREQ-NI-12.                                    C98970
70630       MOVE ZERO TO WDC-FREQ-NI-13.                                    C98970
70640       MOVE ZERO TO WDC-FREQ-NI-14.                                    C98970
70650       MOVE ZERO TO WDC-FREQ-NI-15.                                    C98970
70660       MOVE ZERO TO WDC-FREQ-NI-16.                                    C98970
70670       MOVE ZERO TO WDC-FREQ-NI-17.                                    C98970
70680       MOVE ZERO TO WDC-FREQ-NI-18.                                    C98970
70690       MOVE ZERO TO WDC-FREQ-NI-19.                                    C98970
70700       MOVE ZERO TO WDC-FREQ-NI-20.                                    C98970
70710       MOVE ZERO TO WDC-FREQ-NI-21.                                    C98970
70720       MOVE ZERO TO TOTAL-WDC-FREQ-NI.                                 C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFG1N     DD   *,SPACE>(CYL,(1,1))                                    1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>=F1,UNIT>T=F1                  T12
//TPR.TU14      DD   DISP>(OLD,KEEP),VOL>SER>=F3,UNIT>T=F3                  T14
//TPR.TU24      DD   DISP>(OLD,KEEP),VOL>SER>=F7,UNIT>T=F7                  T24
//TPR.TPR1N     DD   *,SPACE>(TRK,(1,1))
T/P  TU12     10101302130
T/P  TU14     10101302130
T/P  TU24     11001308000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.8 PROGRAMS FOR MANHOUR AND NOR TIME ANALYSES

6.8.1 PREPROCESSOR - TASK II

```
//T9897N JOB   01,1 G WANG      1,PRTY>02,TYPRUN>HOLD
//C9897B EXEC  P9655L,TIME>15,ACCT>D35323007
//CHG.TU14     DD   DISP>[,PASS],UNIT>[T+F3,1,DEFER],DSN>+C.9897416,   CT14
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3] T14    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[T+F5,1,DEFER],DSN>+E.9897432,   CT22    1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5] T22    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[T+F7,1,DEFER],DSN>+G.9897429,   CT24    1
//              VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7] T24    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                1440 CDS
00000          COMBINE     COMPILE                  G, WANG.           C98970
01040  DATE-WRITTEN. 20 APR 72.                                        C98970
01050  REMARKS.                                                        C98970
01060          PHASE 11 PROGRAM                                        C98970
01070          TASK 2A      MANHOUR AND NOR TIME ANALYSIS.             C98970
02000  ENVIRONMENT DIVISION.                                           C98970
02010  CONFIGURATION SECTION.                                          C98970
02020  SOURCE-COMPUTER. IBM-360.                                       C98970
02030  OBJECT-COMPUTER. IBM-360.                                       C98970
02100  INPUT-OUTPUT SECTION.                                           C98970
02110  FILE-CONTROL.                                                   C98970
02120      SELECT IN-FILE-D-B            ASSIGN TO UT-S-TU14           C98970
02130          RESERVE 1 ALTERNATE AREA.                               C98970
02140      SELECT IN-FILE-ISC            ASSIGN TO DA-S-DT01           C98970
02150          RESERVE 1 ALTERNATE AREA.                               C98970
02160      SELECT MSG-FILE               ASSIGN TO DA-S-DT02           C98970
02170          RESERVE 1 ALTERNATE AREA.                               C98970
02180      SELECT OUT-FILE-1             ASSIGN TO UT-S-TU24           C98970
02190          RESERVE 1 ALTERNATE AREA.                               C98970
02200      SELECT OUT-FILE-2             ASSIGN TO UT-S-TU22           C98970
02210          RESERVE 1 ALTERNATE AREA.                               C98970
10000  DATA DIVISION.                                                  C98970
10010  FILE SECTION.                                                   C98970
10100  FD  IN-FILE-D-B                                                 C98970
10120      RECORDING MODE IS F                                         C98970
10130      BLOCK CONTAINS 40 RECORDS                                   C98970
10140      RECORD CONTAINS 70            CHARACTERS                    C98970
10150      LABEL RECORDS ARE OMITTED                                   C98970
10160      DATA RECORDS ARE IN-REC-D-B.                                C98970
10200  01  IN-REC-D-B SYNC.                                           C98970
10210      02  FILLER                    PICTURE X[70].               C98970
10220                                                                  C98970
11300  FD  IN-FILE-ISC                                                 C98970
11320      RECORDING MODE IS F                                         C98970
11330      BLOCK CONTAINS 20 RECORDS                                   C98970
11340      RECORD CONTAINS 80            CHARACTERS                    C98970
11350      LABEL RECORDS ARE STANDARD                                  C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                C98970
11400  01  IN-REC-ISC SYNC.                                           C98970
11410      02  FILLER                    PICTURE X[80].               C98970
12100  FD  OUT-FILE-1                                                  C98970
12120      RECORDING MODE IS F                                         C98970
12130      BLOCK CONTAINS 90 RECORDS                                   C98970
12140      RECORD CONTAINS 20            CHARACTERS                    C98970
12150      LABEL RECORDS ARE OMITTED                                   C98970
12160      DATA RECORDS ARE OUT-REC-1.                                 C98970
12200  01  OUT-REC-1 SYNC.                                            C98970
12210      02  FILLER                    PICTURE X[20].               C98970
13300  FD  MSG-FILE                                                    C98970
13320      RECORDING MODE IS F                                         C98970
13330      BLOCK CONTAINS 20 RECORDS                                   C98970
13340      RECORD CONTAINS 80            CHARACTERS                    C98970
13350      LABEL RECORDS ARE STANDARD                                  C98970
13360      DATA RECORDS ARE MSG-REC.                                   C98970
13400  01  MSG-REC SYNC.                                              C98970
13410      02  FILLER                    PICTURE X[80].               C98970
14100  FD  OUT-FILE-2                                                  C98970
14120      RECORDING MODE IS F                                         C98970
14130      BLOCK CONTAINS 90 RECORDS                                   C98970
14140      RECORD CONTAINS 20            CHARACTERS                    C98970
14150      LABEL RECORDS ARE OMITTED                                   C98970
14160      DATA RECORDS ARE OUT-REC-2.                                 C98970
14200  01  OUT-REC-2 SYNC.                                            C98970
14210      02  FILLER                    PICTURE X[20].               C98970
30000  WORKING-STORAGE SECTION.                                        C98970
30012  77  WUC-FLAG  SYNC  PICTURE X  VALUE SPACE.                    C98970
30015  77  FLT-FLAG  SYNC  PICTURE X  VALUE SPACE.                    C98970
30016  77  CUR-65  SYNC  PICTURE X  VALUE SPACE.                      C98970
30017  77  DATA-65 SYNC  PICTURE X  VALUE SPACE.                      C98970
30020  77  CURWEEK SYNC              PICTURE 999.                     C98970
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30030  77  CUR-SER-NO SYNC                PICTURE X[8].                    C98970
30040  77  CUR-ISC      SYNC              PICTURE X.                       C98970
30050  77  KNT SYNC COMPUTATIONAL         PICTURE S999.                    C98970
30060  77  WEEK-TEMP SYNC                PICTURE 999.                     C98970
30070  77  DELTA-WEEK SYNC               PICTURE S999.                    C98970
30080  77  DELTA-FLT-HRS SYNC            PICTURE S999999.                 C98970
30090  77  CUR-FLT-HRS SYNC              PICTURE S999999.                 C98970
30100  77  FLAG SYNC COMPUTATIONAL       PICTURE S999 VALUE ZERO.         C98970
30110  77  HMC-TEMP SYNC                 PICTURE XXX.                     C98970
30120  77  NO-HMC SYNC COMPUTATIONAL      PICTURE S999 VALUE <100.         C98970
30130  77  NO-REC-1    SYNC              PICTURE S9[7] VALUE ZERO.        C98970
30140  77  NO-REC-2    SYNC              PICTURE S9[7] VALUE ZERO.        C98970
30150  77  MAX-NO-HMC SYNC COMPUTATIONAL                                  C98970
30160                                     PICTURE S999  VALUE ZERO.        C98970
30170  77  CNY SYNC COMPUTATIONAL        PICTURE S999.                    C98970
30380  77  ONE  SYNC                     PICTURE X VALUE !1!.             C98970
30390  77  TWO  SYNC                     PICTURE X VALUE !2!.             C98970
30391  77  THREE    SYNC                 PICTURE X    VALUE !3!.          C98970
30392  77  FOUR     SYNC                 PICTURE X    VALUE !4!.          C98970
30400  77  ISC-TEMP          SYNC        PICTURE X[8] VALUE SPACE.        C98970
30410  77  PREV-TESTED-TN    SYNC        PICTURE X[8] VALUE SPACE.        C98970
30420  77  ISC-FLAG          SYNC        PICTURE X    VALUE SPACE.        C98970
30430  77  MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.     C98970
30500  77  CURWUC        SYNC     PICTURE X[5].                           C98970
30506  77  CUR-HMC  SYNC                 PICTURE XXX.                     C98970
30510  77  ISCHRONAL     SYNC     PICTURE X.                              C98970
30520  77  SUM-NORM      SYNC     PICTURE S9[6] VALUE ZERO.               C98970
30530  77  SUM-MAN-HR    SYNC     PICTURE S9[6] VALUE ZERO.               C98970
30540  77  SUM-MA        SYNC     PICTURE S9[5] VALUE ZERO.               C98970
30550  77  CUR-ID        SYNC     PICTURE 9.                              C98970
31010  01  NO-ISC SYNC.                                                   C98970
31020      02  FILLER                    PICTURE XX.                      C98970
31030      02  NO-ISC-AC                 PICTURE S999.                    C98970
31040      02  FILLER                    PICTURE X[75].                   C98970
31050  01  ISC-A-C SYNC.                                                  C98970
31060      02  FILLER                    PICTURE XX.                      C98970
31070      02  ISC-TN                    PICTURE X[8].                    C98970
31080      02  FILLER                    PICTURE XX.                      C98970
31090      02  ISC-WK                    PICTURE  999.                    C98970
31100      02  FILLER                    PICTURE X[65].                   C98970
31200  01  FILLER SYNC.                                                   C98970
31205      02  FILLER OCCURS 36 TIMES.                                    C98970
31210          03  ISC-AC-TN             PICTURE X[8].                    C98970
31220          03  ISC-AC-WK COMPUTATIONAL PICTURE S999.                  C98970
31300  01  DATA-BANK-INPUT SYNC.                                          C98970
31310      02  FILLER                    PICTURE X[5].                    C98970
31320      02  SERIAL-NO                 PICTURE X[8].                    C98970
31330      02  WEEK                      PICTURE 999.                     C98970
31340      02  WUC                       PICYURE X[5].                    C98970
31350      02  WUC-B REDEFINES WUC.                                       C98970
31360          03  WUC-2                 PICTURE XX.                      C98970
31370          03  FILLER                PICTURE XXX.                     C98970
31380      02  FILLER                    PICTURE X.                       C98970
31390      02  HMC                       PICTURE XXX.                     C98970
31400      02  UNITS                     PICTURE S999.                    C98970
31401      02  MAN-HR          PICTURE S9[4].                             C98970
31402      02  FILLER          PICYURE X[3].                              C98970
31403      02  NORM-HR         PICTURE S9[4].                             C98970
31404      02  NORS-HR         PICTURE S9[4].                             C98970
31405      02  FILLER          PICTURE X[5].                              C98970
31420      02  IDENT                     PICTURE 9.                       C98970
31450      02  FILLER  PICTURE X[4].                                      C98970
31460      02  FLT-HRS  PICTURE S9[6].                                    C98970
31470      02  FILLER  PICTURE X[11].                                     C98970
31500  01  OUT-DATA SYNC.                                                 C98970
31510      02  WUC-OUT         PICTURE X[5].                              C98970
31520      02  HMC-OUT                   PICTURE XXX.                     C98970
31530      02  FILLER                    PICTURE X VALUE  SPACE.          C98970
31540      02  OBS                       PICTURE S9[6].                   C98970
31550      02  FILLER                    PICTURE X VALUE  SPACE.          C98970
31560      02  ISC-OUT         PICTURE X.                                 C98970
31570      02  FILLER                    PICTURE X VALUE  SPACE.          C98970
31580      02  DATA-TYPE                 PICTURE X.                       C98970
31590      02  FILLER                    PICTURE X    VALUE !1!.          C98970
31600  01  NINE SYNC.                                                     C98970
31610      02  FILLER                    PICTURE X[20] VALUE              C98970
31620                        !99999999999999999999!.                      C98970
32000  01  SPEC-WUC  SYNC.                                                C98970
32010      05  C1-HPF          PICTURE X[5].                              C98970
32020      05  C1-MA1-1        PICTURE X[5].                              C98970
32030      05  C1-MA1-2        PICTURE X[5].                              C98970
32040      05  C1-MA1-3        PICTURE X[5].                              C98970
32050      05  C1-PER1         PICTURE X[5].                              C98970
32060      05  C1-IRAN         PICTURE X[5].                              C98970
32070      05  C1-PREFLT       PICTURE X[5].                              C98970
32080      05  C1-UPOST        PICTURE X[5].                              C98970
32090      05  C1-SHPCST       PICTURE X[5].                              C98970
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32100      05  GAP-WK-1          PICTURE 99.                                  C98970
32110      05  GAP-WK-2          PICTURE 99.                                  C98970
32120      05  FILLER            PICTURE X(31).                               C98970
50000  PROCEDURE DIVISION.                                                   C98970
50010  OPEN-FILES.                                                           C98970
50020      OPEN INPUT IN-FILE-D-B, IN-FILE-ISC.                              C98970
50030      OPEN OUTPUT MSG-FILE.                                             C98970
50040      OPEN OUTPUT OUT-FILE-1, OUT-FILE-2.                               C98970
50050      PERFORM READ-ISC-A-C THRU END-RIAC.                               C98970
50060  READ-INITIAL.                                                         C98970
50070      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                            C98970
50080                      AT END GO TO CLOSE-FILES.                         C98970
50100  CHECK-DATA.                                                           C98970
50120      IF IDENT IS EQUAL TO 3 AND WUC-2 IS EQUAL TO 1031 GO TO           C98970
50130                          PROC-II-1.                                    C98970
50140      IF IDENT IS EQUAL TO 3 AND WUC-2 IS EQUAL TO 1041 GO TO           C98970
50150                          PROC-II-1.                                    C98970
50160      IF IDENT IS EQUAL TO 3 AND WUC-2 IS GREATER THAN 1091 GO TO       C98970
50170                          PROC-II-2A.                                   C98970
50180      IF IDENT IS EQUAL TO 4 GO TO PROC-II-2B.                          C98970
50190      GO TO READ-INITIAL.                                               C98970
50200  PROC-II-1.                                                            C98970
50210      PERFORM CHECK-ISCHRONAL THRU END-CI.                              C98970
50220      MOVE ISCHRONAL TO CUR-ISC.                                        C98970
50222      MOVE IDENT TO CUR-ID.                                             C98970
50230      MOVE WUC TO CURWUC.                                               C98970
50240      MOVE WEEK TO CURWEEK.                                             C98970
50250      MOVE SERIAL-NO TO CUR-SER-NO.                                     C98970
50251      MOVE FLT-HRS TO CUR-FLT-HRS.                                      C98970
50252      MOVE TWO TO CUR-65.                                               C98970
50253      IF NORM-HR LESS    THAN ZERO MOVE ONE TO CUR-65.                  C98970
50260  INIT-SET.                                                             C98970
50270      MOVE ONE TO FLT-FLAG.                                             C98970
50271      IF WUC EQUAL TO CI-PREFLT MOVE TWO TO FLT-FLAG.                   C98970
50272      IF WUC EQUAL TO CI-BPOST  MOVE TWO TO FLT-FLAG.                   C98970
50273      IF WUC EQUAL TO CI-SHPOST MOVE TWO TO FLT-FLAG.                   C98970
50274      COMPUTE SUM-NORM > 0.                                             C98970
50275      IF FLT-FLAG EQUAL TO ONE AND NORM-HR GREATER THAN ZERO            C98970
50276              MOVE NORM-HR TO SUM-NORM.                                 C98970
50280      MOVE MAN-HR TO SUM-MAN-HR.                                        C98970
50290  ACC-SET.                                                              C98970
50300      READ IN-FILE-D-B INTO DATA-BANK-INPUT                             C98970
50310                      AT END GO TO CLOSE-FILES.                         C98970
50315      PERFORM CHECK-ISCHRONAL THRU END-CI.                              C98970
50320      IF ISCHRONAL IS NOT EQUAL TO CUR-ISC GO TO SET-BREAK.             C98970
50322      IF IDENT NOT EQUAL TO CUR-ID GO TO SET-BREAK.                     C98970
50330      IF WUC NOT EQUAL TO CURWUC GO TO SET-BREAK.                       C98970
50340      IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO SET-BREAK.             C98970
50345      MOVE TWO TO DATA-65.                                              C98970
50346      IF NORM-HR LESS    THAN ZERO MOVE ONE TO DATA-65.                 C98970
50347      GO TO CHECK-TYPE.                                                 C98970
50348  NOT-SP-TYPE.                                                          C98970
50350      SUBTRACT CURWEEK FROM WEEK GIVING WEEK-TEMP.                      C98970
50360      IF WEEK-TEMP NOT EQUAL TO 1                                       C98970
50370              GO TO INTERNAL-BREAK.                                     C98970
50380      ADD MAN-HR TO SUM-MAN-HR.                                         C98970
50385      MOVE ONE TO FLT-FLAG.                                             C98970
50390      IF WUC EQUAL TO CI-PREFLT MOVE TWO TO FLT-FLAG.                   C98970
50400      IF WUC EQUAL TO CI-BPOST  MOVE TWO TO FLT-FLAG.                   C98970
50410      IF WUC EQUAL TO CI-SHPOST MOVE TWO TO FLT-FLAG.                   C98970
50420      IF FLT-FLAG EQUAL TO ONE AND NORM-HR GREATER THAN ZERO            C98970
50421              ADD NORM-HR TO SUM-NORM.                                  C98970
50425      IF FLT-FLAG EQUAL TO TWO COMPUTE SUM-NORM > 0.                    C98970
50440      MOVE WEEK TO CURWEEK.                                             C98970
50442      MOVE FLT-HRS TO CUR-FLT-HRS.                                      C98970
50443      IF CUR-65 EQUAL TO TWO OR DATA-65 EQUAL TO TWO                    C98970
50444              MOVE TWO TO CUR-65.                                       C98970
50446      MOVE IDENT TO CUR-ID.                                             C98970
50450      GO TO ACC-SET.                                                    C98970
50460  SET-BREAK.                                                            C98970
50470      PERFORM WRITE-I THRU END-WRITE-1.                                 C98970
50472      COMPUTE SUM-NORM > 0.                                             C98970
50474      COMPUTE  SUM-MAN-HR > 0.                                          C98970
50480      GO TO CHECK-DATA.                                                 C98970
50490  INTERNAL-BREAK.                                                       C98970
50500      PERFORM WRITE-I THRU END-WRITE-1.                                 C98970
50510      MOVE WEEK TO CURWEEK.                                             C98970
50512      MOVE FLT-HRS TO CUR-FLT-HRS.                                      C98970
50515      MOVE DATA-65 TO CUR-65.                                           C98970
50516      MOVE IDENT TO CUR-ID.                                             C98970
50520      GO TO INIT-SET.                                                   C98970
50530      NOTE    WRITE NORM-HR AND MAN-HR TOTALS ON OUTPUT FILE.           C98970
50540  WRITE-I.                                                              C98970
50550      MOVE CUR-ISC TO ISC-OUT.                                          C98970
50560      MOVE CURWUC TO WUC-OUT.                                           C98970
50570      MOVE SPACE TO HMC-OUT.                                            C98970
50575      IF FLT-FLAG EQUAL TO TWO GO TO WRITE-I-A.                         C98970
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50576      IF CUR-65 EQUAL TO ONE GO TO WRITE-1-A.                          C98970
50580      MOVE SUM-NORM TO O8S.                                            C98970
50590      MOVE ONE TO DATA-TYPE.                                           C98970
50600      WRITE OUT-REC-2 FROM OUT-DATA.                                   C98970
50610      ADD 1 TO NO-REC-2.                                               C98970
50615  WRITE-I-A.                                                           C98970
50620      MOVE SUM-MAN-HR TO O8S.                                          C98970
50630      MOVE TWO TO DATA-TYPE.                                           C98970
50640      WRITE OUT-REC-2 FROM OUT-DATA.                                   C98970
50650      ADD 1 TO NO-REC-2.                                               C98970
50660  END-WRITE-I. EXIT.                                                   C98970
51000  CHECK-TYPE.                                                          C98970
51010      MOVE ONE TO WUC-FLAG.                                            C98970
51020      IF WUC EQUAL TO CI-HPF    MOVE TWO TO WUC-FLAG.                  C98970
51030      IF WUC EQUAL TO CI-MA1-1  MOVE TWO TO WUC-FLAG.                  C98970
51040      IF WUC EQUAL TO CI-MA1-2  MOVE TWO TO WUC-FLAG.                  C98970
51050      IF WUC EQUAL TO CI-MA1-3  MOVE TWO TO WUC-FLAG.                  C98970
51060      IF WUC EQUAL TO CI-PERI   MOVE TWO TO WUC-FLAG.                  C98970
51070      IF WUC EQUAL TO CI-IRAN   MOVE TWO TO WUC-FLAG.                  C98970
51080      IF WUC-FLAG EQUAL TO ONE GO TO NOT-SP-TYPE.                      C98970
51090      SUBTRACT CURWEEK FROM WEEK GIVING WEEK-TEMP.                     C98970
51100  SP-TYPE.                                                             C98970
51110      IF WUC LESS THAN CI-PERI AND WEEK-TEMP GREATER THAN GAP-WK-1     C98970
51111              GO TO INTERNAL-8REAK.                                    C98970
51120      IF WUC GREATER THAN CI-MA1-3 AND WEEK-TEMP GREATER THAN          C98970
51121          GAP-WK-2  GO TO INTERNAL-8REAK.                              C98970
51132      ADD MAN-HR TO SUM-MAN-HR.                                        C98970
51134      IF NORM-HR GREATER THAN ZERO ADD NORM-HR TO SUM-NORM.            C98970
51140      MOVE WEEK TO CURWEEK.                                            C98970
51150      MOVE FLT-HRS TO CUR-FLT-HRS.                                     C98970
51152      IF DATA-65 EQUAL TO TWO OR CUR-65 EQUAL TO TWO                   C98970
51153                      MOVE TWO TO CUR-65.                              C98970
51154      MOVE IDENT TO CUR-ID.                                            C98970
51160      GO TO ACC-SET.                                                   C98970
55000  PROC-II-2A.                                                          C98970
55010      PERFORM CHECK-ISCHRONAL THRU END-CI.                             C98970
55020      MOVE ISCHRONAL TO CUR-ISC.                                       C98970
55030      MOVE WUC TO CURWUC.                                              C98970
55050      MOVE SERIAL-NO TO CUR-SER-NO.                                    C98970
55060      MOVE IDENT TO CUR-ID.                                            C98970
55070      PERFORM WRITE-2 THRU END-WRITE-2.                                C98970
55072      MOVE TWO TO CUR-65.                                              C98970
55073      IF NORM-HR LESS    THAN ZERO MOVE ONE TO CUR-65.                 C98970
55075  SET-NEW.                                                             C98970
55080      COMPUTE SUM-NORM > 0.                                            C98970
55081      IF NORM-HR GREATER THAN ZERO MOVE NORM-HR TO SUM-NORM.           C98970
55090      MOVE UNITS TO SUM-MA.                                            C98970
55092      IF UNITS EQUAL TO ZERO GO TO SET-FLAG.                           C98970
55093      MOVE CURWUC TO WUC-OUT.                                          C98970
55094      MOVE CUR-ISC TO ISC-OUT.                                         C98970
55095      PERFORM WRITE-3 THRU END-WRITE-3.                                C98970
55096      READ IN-FILE-D-8 INTO DATA-8ANK-INPUT AT END GO TO EOF-8RK.      C98970
55097      GO TO 8REAK-1.                                                   C98970
55100  SET-FLAG.                                                            C98970
55130      READ IN-FILE-D-8 INTO DATA-8ANK-INPUT                            C98970
55140                      AT END GO TO EOF-8RK.                            C98970
55150      PERFORM CHECK-ISCHRONAL THRU END-CI.                             C98970
55160      IF IDENT EQUAL TO CUR-ID                                         C98970
55170                  PERFORM WRITE-2 THRU END-WRITE-2.                    C98970
55180      IF ISCHRONAL NOT EQUAL TO CUR-ISC GO TO 8REAK-I.                 C98970
55190      IF WUC NOT EQUAL TO CURWUC GO TO 8REAK-1.                        C98970
55200      IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO 8REAK-1.              C98970
55210      IF IDENT NOT EQUAL TO CUR-ID GO TO 8REAK-1.                      C98970
55212      MOVE TWO TO DATA-65.                                             C98970
55213      IF NORM-HR LESS    THAN ZERO MOVE ONE TO DATA-65.                C98970
55215      IF CUR-65 EQUAL TO TWO OR DATA-65 EQUAL TO TWO                   C98970
55216                  MOVE TWO TO CUR-65.                                  C98970
55220      IF NORM-HR GREATER THAN ZERO ADD NORM-HR TO SUM-NORM.            C98970
55230      ADD UNITS TO SUM-MA.                                             C98970
55231      IF UNITS NOT EQUAL TO ZERO GO TO INT-8REAK.                      C98970
55232      GO TO SET-FLAG.                                                  C98970
55240  INT-8REAK.                                                           C98970
55250      MOVE CURWUC TO WUC-OUT.                                          C98970
55260      MOVE CUR-ISC TO ISC-OUT.                                         C98970
55270      PERFORM WRITE-3 THRU END-WRITE-3.                                C98970
55280      COMPUTE SUM-NORM > 0.                                            C98970
55282      COMPUTE SUM-MA > 0.                                              C98970
55284      GO TO SET-FLAG.                                                  C98970
55290  8REAK-1.                                                             C98970
55322      COMPUTE SUM-NORM > 0.                                            C98970
55324      COMPUTE SUM-MA > 0.                                              C98970
55330      GO TO CHECK-DATA.                                                C98970
55390  WRITE-2.                                                             C98970
55395      IF NORM-HR LESS THAN ZERO GO TO END-WRITE-2.                     C98970
55400      MOVE ISCHRONAL TO ISC-OUT.                                       C98970
55410      MOVE WUC TO WUC-OUT.                                             C98970
55420      MOVE SPACE TO HMC-OUT.                                           C98970
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55430       MOVE NORS-HR TO OBS.                                              C98970
55440       MOVE FOUR TO DATA-TYPE.                                           C98970
55450       WRITE OUT-REC-2 FROM OUT-DATA.                                    C98970
55460       ADD 1 TO NO-REC-2.                                                C98970
55470  END-WRITE-2. EXIT.                                                     C98970
55480  WRITE-3.                                                               C98970
55482       IF CUR-65 EQUAL TO ONE GO TO END-WRITE-3.                         C98970
55500       MOVE SPACE TO HMC-OUT.                                            C98970
55510       DIVIDE SUM-MA INTO SUM-NORM GIVING OBS.                           C98970
55520       MOVE THREE TO DATA-TYPE.                                          C98970
55530       WRITE OUT-REC-2 FROM OUT-DATA.                                    C98970
55540       ADD 1 TO NO-REC-2.                                                C98970
55550  END-WRITE-3. EXIT.                                                     C98970
55551  EOF-BRK.                                                               C98970
55552       IF SUM-NORM EQUAL TO ZERO GO TO CLOSE-FILES.                      C98970
55553       MOVE CUR-WUC TO WUC-OUT.                                          C98970
55554       MOVE CUR-ISC TO ISC-OUT.                                          C98970
55555       PERFORM WRITE-3 THRU END-WRITE-3.                                 C98970
55556       GO TO CLOSE-FILES.                                                C98970
55560  REMARK-2.                                                              C98970
55570       NOTE     COMPUTE  RATIO OF MH TOTAL OVER MA TOTAL                 C98970
55580              DATA BANK RECORD TYPE 4.                                   C98970
60000  PROC-II-2B.                                                            C98970
60010       PERFORM CHECK-ISCHRONAL THRU END-CI.                              C98970
60020       MOVE ISCHRONAL TO CUR-ISC.                                        C98970
60030       MOVE WUC TO CURWUC.                                               C98970
60050       MOVE SERIAL-NO TO CUR-SER-NO.                                     C98970
60060       MOVE IDENT TO CUR-ID.                                             C98970
60070       MOVE HMC TO CUR-HMC.                                              C98970
60080  SET-NEW-2.                                                             C98970
60090       MOVE MAN-HR TO SUM-MAN-HR.                                        C98970
60100       MOVE UNITS TO SUM-MA.                                             C98970
60102       IF UNITS EQUAL TO ZERO GO TO SET-FLAG-2.                          C98970
60103       PERFORM WRITE-4 THRU END-WRITE-4.                                 C98970
60104       READ IN-FILE-D-B INTO DATA-BANK-INPUT AT END GO TO EOF-BRK-2.     C98970
60105       GO TO BREAK-2.                                                    C98970
60110  SET-FLAG-2.                                                            C98970
60140       READ IN-FILE-D-B INTO DATA-BANK-INPUT                             C98970
60150                                AT END GO TO EOF-BRK-2.                  C98970
60160       PERFORM CHECK-ISCHRONAL THRU END-CI.                              C98970
60170       IF ISCHRONAL NOT EQUAL TO CUR-ISC GO TO BREAK-2.                  C98970
60180       IF WUC NOT EQUAL TO CURWUC GO TO BREAK-2.                         C98970
60190       IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO BREAK-2.               C98970
60200       IF IDENT NOT EQUAL TO CUR-ID GO TO BREAK-2.                       C98970
60210       IF HMC NOT EQUAL TO CUR-HMC GO TO BREAK-2.                        C98970
60220       ADD MAN-HR TO SUM-MAN-HR.                                         C98970
60230       ADD UNITS TO SUM-MA.                                              C98970
60231       IF UNITS NOT EQUAL TO ZERO GO TO INT-BREAK-2.                     C98970
60232       GO TO SET-FLAG-2.                                                 C98970
60240  INT-BREAK-2.                                                           C98970
60250       PERFORM WRITE-4 THRU END-WRITE-4.                                 C98970
60260       COMPUTE SUM-MAN-HR > 0.                                           C98970
60262       COMPUTE SUM-MA > 0.                                               C98970
60264       GO TO SET-FLAG-2.                                                 C98970
60270  BREAK-2.                                                               C98970
60282       COMPUTE SUM-MAN-HR > 0.                                           C98970
60284       COMPUTE SUM-MA > 0.                                               C98970
60290       GO TO CHECK-DATA.                                                 C98970
60330  WRITE-4.                                                               C98970
60340       MOVE CURWUC TO WUC-OUT.                                           C90970
60350       MOVE CUR-ISC TO ISC-OUT.                                          C90970
60360       MOVE CUR-HMC TO HMC-OUT.                                          C98970
60370       IF SUM-MA EQUAL TO ZERO ADD  1 TO SUM-MA.                         C90970
60380       DIVIDE SUM-MA INTO SUM-MAN-HR                                     C98970
60390                        GIVING OBS.                                      C98970
60400       MOVE ONE TO DATA-TYPE.                                            C98970
60410       WRITE OUT-REC-1 FROM OUT-DATA.                                    C98970
60420       ADD 1 TO NO-REC-1.                                                C90970
60430  END-WRITE-4. EXIT.                                                     C98970
60440  EOF-BRK-2.                                                             C98970
60450       IF SUM-MAN-HR EQUAL TO ZERO GO TO CLOSE-FILES.                    C98970
60460       PERFORM WRITE-4 THRU END-WRITE-4.                                 C98970
60470       GO TO CLOSE-FILES.                                                C98970
70000  READ-ISC-A-C.                                                          C98970
70005       READ IN-FILE-ISC INTO SPEC-WUC AT END GO TO END-RIAC.             C98970
70010       READ IN-FILE-ISC INTO NO-ISC AT END GO TO END-RIAC.               C98970
70020       MOVE ZERO TO KNT.                                                 C98970
70030  RIAC.                                                                  C98970
70040       ADD 1 TO KNT.                                                     C98970
70050       READ IN-FILE-ISC INTO ISC-A-C AT END GO TO END-RIAC.              C98970
70060       MOVE ISC-TN TO ISC-AC-TN (KNT).                                   C98970
70070       MOVE ISC-WK TO ISC-AC-WK (KNT).                                   C98970
70075       IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK                   C98970
70076                 TO MIN-ISC-WEEK.                                        C98970
70080       IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                         C98970
70085       CLOSE IN-FILE-ISC WITH LOCK.                                      C98970
70090  END-RIAC. EXIT.                                                        C98970
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70200  CHECK-ISCHRONAL.                                                C98970
70210      IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-I-2. C98970
70220      IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                    C98970
70230      IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN       C98970
70232                        MIN-ISC-WEEK, THEN GO TO END-CI.           C98970
70240  CHECK-I-2.                                                       C98970
70250      MOVE TWO TO ISCHRONAL.                                       C98970
70260      IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.              C98970
70270      MOVE ZERO TO CNT.                                            C98970
70280  CHECK-I-1.                                                       C98970
70290      ADD I TO CNT.                                                C98970
70300      MOVE ISC-AC-TN (CNT) TO ISC-TEMP.                            C98970
70310      IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-I-4.          C98970
70320      IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-I-1A.         C98970
70330      IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.               C98970
70340  CHECK-I-4.                                                       C98970
70350      MOVE TWO TO ISC-FLAG.                                        C98970
70360      GO TO CHECK-I-3.                                             C98970
70370  CHECK-I-1A.                                                      C98970
70380      MOVE ISC-AC-WK (CNT) TO WEEK-TEMP.                           C98970
70390      IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN        C98970
70400         WEEK-TEMP MOVE ONE TO ISCHRONAL,                          C98970
70410      MOVE ONE TO ISC-FLAG.                                        C98970
70430  CHECK-I-3.                                                       C98970
70440      MOVE SERIAL-NO TO PREV-TESTED-SN.                            C98970
70450  END-CI. EXIT.                                                    C98970
70510  NINE-FILL-2.                                                     C98970
70520      WRITE OUT-REC-2  FROM NINE.                                  C98970
70530      ADD I TO KNT.                                                C98970
70540      IF KNT IS LESS THAN 90 GO TO NINE-FILL-2.                    C98970
70550  N-F-2. EXIT.                                                     C98970
70600  NINE-FILL-1.                                                     C98970
70610      WRITE OUT-REC-I  FROM NINE.                                  C98970
70620      ADD I TO KNT.                                                C98970
70630      IF KNT IS LESS THAN 90 GO TO NINE-FILL-1.                    C98970
70640  N-F-I. EXIT.                                                     C98970
71800  CLOSE-FILES.                                                     C98970
71810      COMPUTE KNT > NO-REC-I - NO-REC-I / 90 * 90.                 C98970
71820      IF KNT IS ZERO GO TO CF-2.                                   C98970
71830      PERFORM NINE-FILL-I THRU N-F-I.                              C98970
71840  CF-2.                                                            C98970
71850      COMPUTE KNT > NO-REC-2 - NO-REC-2 / 90 * 90.                 C98970
71860      IF KNT IS ZERO GO TO CF-3.                                   C98970
71870      PERFORM NINE-FILL-2 THRU N-F-2.                              C98970
71900  CF-3.                                                            C98970
71910      DISPLAY ' NUMBER RECORDS-1 : NO-REC-I UPON CONSOLE.          C98970
71920      DISPLAY ' NUMBER RECORDS-2 : NO-REC-2 UPON CONSOLE.          C98970
71940      DISPLAY ' END OF JOB C9897: UPON CONSOLE.                    C98970
71950      CLOSE IN-FILE-O-B, MSG-FILE, OUT-FILE-1,                     C98970
71960                         OUT-FILE-2 WITH LOCK.                     C98970
71990      GOBACK.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.IFGIN    DD   *,SPACE=(CYL,(I,I))                                1440 CDS
IFG  DI01    11  020Z080
0330003310033200333003400036000310003200032I00204
   34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324
  59000901  331
  59000002  33I
  59000003  331
  59000005  331
  59000006  33I
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  59000141  324
  59000143  324
  59000144  324
  59000145  324
```

```
  59000147  324
  59000151  324
  59000152  324
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3                  T14
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5                  T22
//TPR.TU24      DD   DISP>[OLD,KEEP],VOL>SER>+F7,UNIT>T+F7                  T24
//TPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  DT01     101008^Z080
T/P  DT02     1010080Z080
T/P  TU14     101007uZ070
T/P  TU22     1010021Z020
T/P  TU24     1010029Z020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.8.2 SORT FOR SCHEDULED NORM HOURS

```
//T9897N JOB    01,: G WANG      :,PRTY>02,TYPRUN>HOLD
//C9897F EXEC   P962 N,#>060,TIME>04,ACCT>D35323007
//CHG.SORTIN    DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                    CT22/23 1
//               DSN>+E.9897432,                                          CT22    2
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,    CT22    3
//               I+F5 J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//               DCB>[LRECL>0020,BLKSIZE>1800],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT   DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897430,     CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//               I+F1 J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0020,BLKSIZE>1800]
//CHG.SYSIN     DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[017,001,CH,A,019,001,CH,A,001,005,CH,A],SIZE>E0350000
 MODS  E15>[E15,008-SORTL1B,N],E18>[E18,024,SORTL1B,N]
/*
```

6.8.3 CUMULATIVE DISTRIBUTION FOR SCHEDULED NORM HOURS

```
//C9897C EXEC   P965S ,TIME>30,ACCT>D35323007
//CHG.TU12      DD   DISP>[,PASS],UNIT>[T+F1,1,DEFER],DSN>+A.9897430,     CT12    1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12     3
//CHG.TU25      DD   DISP>[,PASS],UNIT>[T+F8,1,DEFER],DSN>+H.9897431,     CT25    1
//               VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,    CT25    2
//               I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8]  T25     3
//CHG.INPUT     DD   *,SPACE>[CYL,[1,1]]                                 1440 CDS
00000          COMBINE     COMPILE                  0, WANG,                C98970
01040  DATE-WRITTEN.  7 APR 72.                                            C98970
01050  REMARKS.                                                            C98970
01060          TASK 2   HIST OF WUC.                                       C98970
02000  ENVIRONMENT DIVISION.                                               C98970
02010  CONFIGURATION SECTION.                                              C98970
02020  SOURCE-COMPUTER. IBM-360.                                           C98970
02030  OBJECT-COMPUTER. IBM-360.                                           C98970
02100  INPUT-OUTPUT SECTION.                                               C98970
02110  FILE-CONTROL.                                                       C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12               C98970
02130          RESERVE 1 ALTERNATE AREA.                                   C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25               C98970
02150          RESERVE 1 ALTERNATE AREA.                                   C98970
02200      SELECT IN-FILE-1SC            ASSIGN TO DA-S-DT01               C98970
02210          RESERVE 1 ALTERNATE AREA.                                   C98970
10000  DATA DIVISION.                                                      C98970
10010  FILE SECTION.                                                       C98970
11100  FD  IN-FILE                                                         C98970
11120      RECORDING MODE IS F                                             C98970
11130      BLOCK CONTAINS 90 RECORDS                                       C98970
11140      RECORD CONTAINS 20            CHARACTERS                        C98970
11150      LABEL RECORDS ARE OMITTED                                       C98970
11160      DATA RECORDS ARE IN-REC.                                        C98970
11170  01  IN-REC SYNC.                                                   C98970
11180      02  WUC                     PICTURE X[5].                      C98970
11182      02  FILLER                  PICTURE X[4].                      C98970
11183      02  OBS                     PICTURE S9[6].                     C98970
11184      02  OBS-1 REDEFINES OBS     PICTURE S99999V9.                  C98970
11185      02  FILLER                  PICTURE X.                         C98970
11186      02  ISCHRONAL-NEW           PICTURE X.                         C98970
11187      02  FILLER                  PICTURE X.                         C98970
11188      02  DATA-TYPE-NEW           PICTURE X.                         C98970
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11189      02  FILLER                    PICTURE X.                          C98970
11300  FD  IN-FILE-ISC                                                       C98970
11320      RECORDING MODE IS F                                               C98970
11330      BLOCK CONTAINS 20 RECORDS                                         C98970
11340      RECORD CONTAINS 80           CHARACTERS                           C98970
11350      LABEL RECORDS ARE STANDARD                                        C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                      C98970
11400  01  IN-REC-ISC SYNC.                                                 C98970
11410      02  FILLER                    PICTURE X[80].                      C98970
12100  FD  HIST-FILE                                                         C98970
12120      RECORDING MODE IS F                                               C98970
12130      BLOCK CONTAINS 15 RECORDS                                         C98970
12140      RECORD CONTAINS 130          CHARACTERS                           C98970
12150      LABEL RECORDS ARE OMITTED                                         C98970
12160      DATA RECORDS ARE HIST-REC.                                        C98970
12170  01  HIST-REC SYNC.                                                   C98970
12180      02  FILLER                    PICTURE X[130].                     C98970
30000  WORKING-STORAGE SECTION.                                              C98970
30010  77  KNT SYNC PICTURE S9[5].                                          C98970
30012  77  OBS-ISO  SYNC  PICTURE S9[5]V99999.                              C98970
30014  77  OBS-NI   SYNC  PICTURE S9[5]V99999.                              C98970
30020  01  FILLER  SYNC.                                                    C98970
30030      02  FREQ-HIST-VALUE OCCURS 2000 TIMES PICTURE S9[5]              C98970
30040          COMPUTATIONAL.                                                C98970
30050  01  A PICTURE S9[5] COMPUTATIONAL.                                   C98970
30060  01  NO-OF-HISTS          SYNC   PICTURE 99999 VALUE ZERO.            C98970
30080  01  ONE          SYNC           PICTURE X VALUE :1:.                C98970
30081  01  TWO      SYNC     PICTURE X  VALUE :2:.                         C98970
30082  01  THREE    SYNC     PICTURE X  VALUE :3:.                         C98970
30083  01  FOUR     SYNC     PICTURE X  VALUE :4:.                         C98970
30084  01  FIVE     SYNC     PICTURE X  VALUE :5:.                         C98970
30090  01  CNT SYNC                     PICTURE S9[5] COMPUTATIONAL.        C98970
30100  01  CUR-WUC-T SYNC.                                                  C98970
30110      02  FILLER                    PICTURE X[5] VALUE I WUC>I.        C98970
30120      02  CUR-WUC                   PICTURE X[5].                      C98970
30170  01  ISOTROPAL SYNC               PICTURE X.                          C98970
30180  01  DATA-TYPE   SYNC             PICTURE X.                          C98970
30190  01  MINUS-ONE COMPUTATIONAL      PICTURE S999 VALUE -1 SYNC.         C98970
32000  01  REPORT-ID SYNC.                                                  C98970
32010      02  FILLER                    PICTURE X[50] VALUE                C98970
32020           :$98978b0  TF7919-01 142-8 1       1/2              :.      C98970
32030      02  FILLER                    PICTURE X[50] VALUE SPACE.         C98970
32040      02  FILLER                    PICTURE X[30] VALUE                C98970
32050           :                              #I.                          C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9[7]V99.                    C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9[7]V99.                    C98970
46020  01  TEMP-COMP                   PICTURE S9[7]V99.                    C98970
46100  01  MEAN-VARIANCE-LINE SYNC.                                         C98970
46110      02  FILLER                    PICTURE X[50] VALUE                C98970
46120           :S                                                  I.       C98970
46130      02  FILLER                    PICTURE X[19] VALUE                C98970
46140           :                  MEAN >:.                                  C98970
46150      02  MEAN-RPT                  PICTURE ZZZ9.9.                    C98970
46160      02  FILLER                    PICTURE X[30] VALUE                C98970
46170           :                          VARIANCE >1.                      C98970
46180      02  VARIANCE-RPT              PICTURE ZZZZZZ9.9.                 C98970
46190      02  FILLER                    PICTURE X[16] VALUE                C98970
46200                                   #:.                                  C98970
46300  01  MEAN-U  COMPUTATIONAL  SYNC  PICTURE S9[5]V99999 VALUE ZERO.     C98970
46310  01  VARIANCE-B  COMPUTATIONAL SYNC PICTURE S9[5]V99999               C98970
46315          VALUE ZERO.                                                   C98970
46320  01  TEMP-COMP-I                SYNC PICTURE S9[5]V99999               C98970
46325          VALUE ZERO.                                                   C98970
46330  01  HIST-NO-OF-OBS-B           SYNC PICTURE S9[5]V99999               C98970
46335          VALUE ZERO.                                                   C98970
46400  01  MEAN-VARIANCE-LINE-B    SYNC.                                    C98970
46410      02  FILLER          PICTURE X[50]  VALUE                         C98970
46420           :S                                                  I.       C98970
46430      02  FILLER       PICTURE X[16]  VALUE                           C98970
46440           :              MEAN>:.                                       C98970
46450      02  MEAN-RPT-B       PICTURE   ZZ9.99999.                       C98970
46460      02  FILLER           PICTURE  X[28]   VALUE                     C98970
46470                                  VARIANCE >:.                         C98970
46480      02   VARIANCE-RPT-B      PICTURE  ZZZZ9.99999.                  C98970
46490      02  FILLER        PICTURE X[16]   VALUE                          C98970
46500           :                    #:.                                   C98970
47000  01  HIST-VALUE-MAX SYNC          PICTURE S9999V99 VALUE -9999.9.     C98970
47010  01  HIST-VALUE-MIN SYNC          PICTURE S9999V99 VALUE <9999.9.     C98970
47015  01  HIST-VALUE-MI  SYNC          PICTURE S9999V99 VALUE <9999.9.     C98970
47020  01  HIST-NO-OF-OBS SYNC          PICTURE S9[5]  VALUE ZERO.          C98970
47030  01  HIST-NO-OF-INTERVALS SYNC    PICTURE 999V99 VALUE 50.            C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC    PICTURE 9      VALUE ZERO.          C98970
47050  01  HIST-DIST SYNC               PICTURE X      VALUE :1I.           C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                    C98970
47070                                  PICTURE S999   VALUE ZERO.          C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                  C98970
47090                                  PICTURE S999   VALUE ZERO.          C98970
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47100  01  HIST-TEMP SYNC                  PICTURE S99999V99 VALUE ZERO.      C98970
47110  01  HIST-INTERVAL-SIZE SYNC         PICTURE S999V99 VALUE ZERO         C98970
47120              COMPUTATIONAL.                                             C98970
47150  01  HIST-FLAG SYNC                  PICTURE X       VALUE ;0;.         C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                C98970
47170                                       PICTURE S999    VALUE <1.        C98970
47180  01  HIST-PERCENT SYNC               PICTURE S999V99 COMPUTATIONAL.     C98970
47190  01  HIST-CUM SYNC                   PICTURE S999V99 COMPUTATIONAL.     C98970
47200  01  HIST-LINE S NC COMPUTATIONAL                                       C98970
47210                                       PICTURE S999  VALUE ZERO.        C98970
47220  01  HIST-PAGE-FLAG SYNC             PICTURE S999 VALUE <75.            C98970
47230  01  HIST-LINE-CNT  SYNC             PICTURE S999.                      C98970
47300  01  HIST-ERR-1 SYNC                 PICTURE X(10)  VALUE               C98970
47310                          ;ERROR NO OF.                                  C98970
47320  01  HIST-ERR-3 SYNC.                                                   C98970
47330      02  FILLER                      PICTURE X(5)   VALUE ;BS > ;.      C98970
47340      02  HIST-ERR-2                  PICTURE S9(5)  VALUE ZERO.         C98970
47350  01  HIST-ERR-4 SYNC                 PICTURE X(10)  VALUE               C98970
47360                          ;ERROR  MAX;.                                  C98970
47370  01  HIST-ERR-5 SYNC                 PICTURE X(10)  VALUE               C98970
47380                          ;-MIN BAD. ;.                                  C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC       PICTURE S999 COMPUTATIONAL.        C98970
47500  01  FILLER SYNC.                                                       C98970
47510      02  FILLER OCCURS 200 TIMES.                                       C98970
47530          03  HIST-TABLE              PICTURE S9(5) COMPUTATIONAL.       C98970
47540          03  HIST-UPPER-LIMIT        PICTURE S9999V99 COMPUTATIONAL.    C98970
47550          03  HIST-TABLE-SCALED       PICTURE S999V99 COMPUTATIONAL.     C98970
47560  01  HIST-NEW-PAGE SYNC.                                                C98970
47570      02  FILLER                      PICTURE X     VALUE ;1;.           C98970
47580      02  FILLER                      PICTURE X(122) VALUE SPACE.        C98970
47582      02  FILLER                      PICTURE X(5) VALUE ;PAGE ;.        C98970
47584      02  HIST-PAGE-NO                PICTURE 9.                         C98970
47590      02  FILLER                      PICTURE X     VALUE ;#;.           C98970
47600  01  HIST-TITLE SYNC.                                                   C98970
47610      02  FILLER                      PICTURE X(3) VALUE ;S  ;.          C98970
47620      02  HIST-TITLE-1.                                                  C98970
47621          03  FILLER                  PICTURE X(10) VALUE SPACE.         C98970
47630      02  HIST-TITLE-2.                                                  C98970
47631          03  FILLER                  PICTURE X(10) VALUE SPACE.         C98970
47640      02  HIST-TITLE-3                PICTURE X(10) VALUE SPACE.         C98970
47650      02  HIST-TITLE-4                PICTURE X(10) VALUE SPACE.         C98970
47660      02  FILLER                      PICTURE X(24) VALUE                C98970
47670              ;    NO OF OBSERVATIONS >;.                                 C98970
47680      02  HIST-NO-OF-OBS-RPT          PICTURE ZZZZ9.                     C98970
47690      02  FILLER                      PICTURE X(13) VALUE                C98970
47700              ; VALUE MAX > ;.                                           C98970
47710      02  HIST-VALUE-MAX-RPT          PICTURE -----.9.                   C98970
47720      02  FILLER                      PICTURE X(13) VALUE                C98970
47730              ; VALUE MIN > ;.                                           C98970
47740      02  HIST-VALUE-MIN-RPT          PICTURE -----.9.                   C98970
47750      02  FILLER                      PICTURE X(10) VALUE                C98970
47760                  ;                     #;.                             C98970
47900  01  HIST-DOT-LINE SYNC.                                                C98970
47910      02  FILLER                      PICTURE X(50)  VALUE               C98970
47920              ;/-------------------------------------------------;.      C98970
47922      02  FILLER                      PICTURE X(80) VALUE                C98970
47930      ;-------------------------------------------------------------     C98970
47940 -    ;----------------------;.                                          C98970
47950  01  HIST-LABEL SYNC.                                                   C98970
47960      02  FILLER                      PICTURE X(50)  VALUE               C98970
47970              ;/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.;.      C98970
47974      02  FILLER                      PICTURE X(80) VALUE          ;..   C98970
47980 -    ;25...30...35...40...45...50...55...60...65...70...75...80...      C98970
47990 -    ;85...90...95..100#;.                                              C98970
48000  01  HIST-LINE-OUT SYNC.                                                C98970
48010      02  FILLER                      PICTURE X VALUE ;/;.               C98970
48020      02  HIST-LINE-RPT               PICTURE ZZ9.                       C98970
48030      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48040      02  HIST-MID POINT-RPT          PICTURE -----.9.                   C98970
48060      02  HIST-PERCENT-RPT            PICTURE ZZ9.9.                     C98970
48070      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48080      02  HIST-CUM RPT                PICTURE ZZ9.9.                     C98970
48100      02  HIST-FREQ-RPT               PICTURE ZZZZ9.                     C98970
48110      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48120      02  HIST-POINT OCCURS 100 TIMES                                    C98970
48130                                       PICTURE X.                       C98970
48140      02  FILLER                      PICTURE X VALUE ;#;.               C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                           C98970
48160      02  FILLER                      PICTURE X(35) VALUE                C98970
48170              ;/   NUMBER OF OUT OF RANGE VALUES >;.                     C98970
48180      02  HIST-OUT-RANGE-RPT          PICTURE ZZ9.                       C98970
48190      02  FILLER                      PICTURE X(91) VALUE SPACE.         C98970
48191      02  FILLER                      PICTURE X VALUE ;#;.               C98970
48200  01  HIST-SCALE-LINE SYNC.                                              C98970
48210      02  FILLER                      PICTURE X(27) VALUE                C98970
48220              ;/          SCALING FACTOR > ;.                            C98970
40230      02  HIST-SCALE-RPT              PICTURE ZZ9.                       C98970
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48240      02  FILLER                      PICTURE X(099) VALUE SPACE.        C98970
48250      02  FILLER                      PICTURE X VALUE 1#.                C98970
48300  01  FILLER SYNC.                                                       C98970
48310      02  HIST-VALUE OCCURS 2000 TIMES                                   C98970
48320                                      PICTURE S9999V9 COMPUTATIONAL.     C98970
48350  01  NORS-AC-WK  SYNC.                                                  C98970
48360      05  NO-AC-WK-ISO          PICTURE S9(5).                          C98970
48370      05  NO-AC-WK-N1           PICTURE S9(5).                          C98970
48380      05  CUTOFF-ISO            PICTURE S9(2).                          C98970
48390      05  CUTOFF-N1             PICTURE S9(2).                          C98970
48395      05  FILLER                PICTURE X(66).                          C98970
50000  PROCEDURE DIVISION.                                                   C98970
50010      OPEN INPUT IN-FILE, IN-FILE-ISC.                                  C98970
50020      OPEN OUTPUT HIST-FILE.                                            C98970
50022      READ IN-FILE-ISC INTO NORS-AC-WK AT END GO TO CLOSE-FILES.        C98970
50023      MOVE NO-AC-WK-ISO TO OBS-ISO.                                     C98970
50024      MOVE NO-AC-WK-N1 TO OBS-N1.                                       C98970
50030      MOVE 2000 TO KNT.                                                 C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50050      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50060      WRITE HIST-REC FROM REPORT-ID.                                    C98970
50100  PARA-1.                                                               C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                         C98970
50120      MOVE WUC TO CUR-WUC.                                              C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                                  C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                                  C98970
50160      IF DATA-TYPE IS EQUAL TO  FIVE GO TO WEEKS-DATA ELSE GO TO        C98970
50170               FLT-DATA.                                                C98970
50200  READ1.                                                                C98970
50210      READ IN-FILE  AT END GO TO CLOSE-FILES.                           C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO 19: GO TO CLOSE-FILES.               C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                      C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                          C98970
50260      IF DATA-TYPE IS EQUAL TO FIVE GO TO WEEKS-DATA ELSE GO TO         C98970
50270                        FLT-DATA.                                       C98970
50300  PARA-2.                                                               C98970
50310      PERFORM SET-HISTOG THRU END-SH.                                   C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50330      GO TO PARA-1.                                                     C98970
50400  RESET-TABLE.                                                          C98970
50410      MOVE ZERO TO CNT.                                                 C98970
50420  RST.                                                                  C98970
50430      ADD 1 TO CNT.                                                     C98970
50440      MOVE MINUS-ONE TO HIST-VALUE (CNT).                               C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE (CNT).                               C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                                C98970
50455      MOVE ZERO TO KNT.                                                 C98970
50460  END-RST-TABLE. EXIT.                                                  C98970
50510  SET-HISTOG.                                                           C98970
50515      IF HIST-NO-OF-OBS IS NOT GREATER THAN CUTOFF-N1 AND ISCHRONAL     C98970
50516              NOT EQUAL TO ONE GO TO END-SH.                            C98970
50517      IF HIST-NO-OF-OBS IS NOT GREATER THAN CUTOFF-ISO AND              C98970
50518         ISCHRONAL IS EQUAL TO ONE GO TO END-SH.                        C98970
50520      IF ISCHRONAL IS EQUAL TO ONE MOVE : ISO       1 TO               C98970
50530         HIST-TITLE-4, ELSE MOVE : NON-ISO  : TO HIST-TITLE-4.         C98970
50540      IF DATA-TYPE EQUAL TO ONE MOVE : NORM-HR  : TO HIST-TITLE-3.      C98970
50541      IF DATA-TYPE EQUAL TO TWO MOVE : MAN-HR   : TO HIST-TITLE-3.      C98970
50542      IF DATA-TYPE EQUAL TO THREE MOVE : NORM/MA  :                     C98970
50544              TO HIST-TITLE-3.                                          C98970
50545      IF DATA-TYPE EQUAL TO FOUR  MOVE : NORS     :                     C98970
50546              TO HIST-TITLE-3.                                          C98970
50560      MOVE CUR-WUC-T TO HIST-TITLE-1.                                   C98970
50580      PERFORM WRITE-HISTOGRAM THRU END-HIST.                            C98970
50600      IF HIST-FLAG IS     EQUAL TO 11 THEN GO TO CF1.                   C98970
50610      ADD 1 TO NO-OF-HISTS.                                             C98970
50620  END-SH. EXIT.                                                         C98970
51000  WEEKS-DATA.                                                           C98970
51010      MOVE ZERO TO CNT.                                                 C98970
51020  WEEK-A.                                                               C98970
51030      ADD 1 TO CNT.                                                     C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.              C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.           C98970
51060      IF CNT IS LESS THAN 2000 GO TO WEEK-A.                            C98970
51070      DISPLAY : MORE THAN 2000 FREQUENCY OCCURENCES 1 UPON CONSOLE.     C98970
51080      GO TO CF1.                                                        C98970
51090  WEEK-B.                                                               C98970
51100      MOVE OBS   TO HIST-VALUE (CNT).                                   C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                  C98970
51120  WEEK-C.                                                               C98970
51130      ADD 1 TO FREQ-HIST-VALUE (CNT).                                   C98970
51140      GO TO READ1.                                                      C98970
52000  FLT-DATA.                                                             C98970
52010      MOVE ZERO TO CNT.                                                 C98970
52020  FLT-A.                                                                C98970
52030      ADD 1 TO CNT.                                                     C98970
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52040      IF OBS-I  IS EQUAL TO HIST-VALUE [CNT] GO TO FLT-C.                C98970
52050      IF FREQ-HIST-VALUE [CNT] IS EQUAL TO ZERO GO TO FLT-B.             C98970
52060      IF CNT IS LES  THAN 2000 GO TO FLT-A.                              C98970
52070      DISPLAY ' MORE THAN 2000 FREQUENCY OCCURENCES ' UPON CONSOLE.      C98970
52080      GO TO CFI.                                                         C98970
52090  FLT-B.                                                                 C98970
52100      MOVE OBS-I TO HIST-VALUE [CNT].                                    C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                   C98970
52120  FLT-C.                                                                 C98970
52130      ADD 1 TO FREQ-HIST-VALUE [CNT].                                    C98970
52140      GO TO READI.                                                       C98970
52200  CLOSE-FILES.                                                           C98970
52205      PERFORM SET-HISTOG THRU END-SH.                                    C98970
52207  CFI.                                                                   C98970
52210      CLOSE IN-FILE  HIST-FILE, IN-FILE-ISC.                             C98970
52211      IF HIST-FLAG IS EQUAL TO '1' DISPLAY ' HIST ERROR ' UPON           C98970
52212          CONSOLE.                                                       C98970
52215      DISPLAY ' NO  F HISTOGRAMS > I NO-OF-HISTS UPON CONSOLE.           C98970
52220      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                                C98970
52230      GOBACK.                                                            C98970
94000  COMPUTE-M-V.                                                           C98970
94010      IF ISCHRONAL EQUAL TO ONE MOVE OBS-ISO TO HIST-NO-OF-OBS-B         C98970
94020          ELSE MOVE OBS-NI TO HIST-NO-OF-OBS-B.                          C98970
94030      MOVE ZERO TO CNT.                                                  C98970
94040      MOVE ZERO TO MEAN-B.                                               C98970
94050  CMV-1-B.                                                               C98970
94060      ADD 1 TO CNT.                                                      C98970
94070      COMPUTE TEMP-COMP-B > HIST-VALUE [CNT] *                           C98970
94080                  FREQ-HIST-VALUE [CNT].                                 C98970
94090      ADD TEMP-COMP-B TO MEAN-B.                                         C98970
94100      IF CNT IS LESS THAN KNT GO TO CMV-1-B.                             C98970
94110      DIVIDE HIST-NO-OF-OBS-B INTO MEAN-B.                               C98970
94120      MOVE ZERO TO CNT.                                                  C98970
94130      MOVE ZERO TO VARIANCE-B.                                           C98970
94140  CMV-2-B.                                                               C98970
94150      ADD 1 TO CNT.                                                      C98970
94160      COMPUTE TEMP-COMP-B > [[HIST-VALUE [CNT] - MEAN-B]  ** 2] *        C98970
94170                  FREQ-HIST-VALUE [CNT].                                 C98970
94180      ADD TEMP-COMP-B TO VARIANCE-B.                                     C98970
94190      IF CNT LESS THAN KNT GO TO CMV-2-B.                                C98970
94200      COMPUTE VARIANCE-B > VARIANCE-B / [HIST-NO-OF-OBS-B - 1].          C98970
94210      MOVE MEAN-B TO MEAN-RPT-B.                                         C98970
94220      MOVE VARIANCE-B TO VARIANCE-RPT-B.                                 C98970
94250      WRITE HIST-REC FROM MEAN-VARIANCE-LINE-B.                          C98970
94260  END-CMV-B.  EXIT.                                                      C98970
95000  COMPUTE-MEAN-VARIANCE.                                                 C98970
95005      IF HIST-NO-OF OBS EQUAL TO 1 GO TO CMV-3.                          C98970
95010      MOVE ZERO TO CNT.                                                  C98970
95020      MOVE ZERO TO MEAN.                                                 C98970
95030  CMV-1.                                                                 C98970
95040      ADD 1 TO CNT.                                                      C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE [CNT] * FREQ-HIST-VALUE [CNT].      C98970
95060      ADD TEMP-COMP TO MEAN.                                             C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                               C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                                   C98970
95090      MOVE ZERO TO CNT.                                                  C98970
95100      MOVE ZERO TO VARIANCE.                                             C98970
95110  CMV-2.                                                                 C98970
95120      ADD 1 TO CNT.                                                      C98970
95130      COMPUTE TEMP-COMP > [[HIST-VALUE [CNT] - MEAN] ** 2] *             C98970
95140                                  FREQ-HIST-VALUE [CNT].                 C98970
95150      ADD TEMP-COMP TO VARIANCE.                                         C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                               C98970
95170      COMPUTE VARIANCE > VARIANCE / [HIST-NO-OF-OBS - 1].                C98970
95180      MOVE MEAN TO MEAN-RPT.                                             C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                                     C98970
95191      GO TO CMV-4.                                                       C98970
95192  CMV-3.                                                                 C98970
95193      MOVE ZERO TO VARIANCE-RPT.                                         C98970
95194      MOVE HIST-VALUE [1] TO MEAN-RPT.                                   C98970
95195  CMV-4.                                                                 C98970
95200      WRITE HIST-REC FROM MEAN-VARIANCE-LINE.                            C98970
95290  END-CMV.       EXIT.                                                   C98970
95300  DET-NO-OBS.                                                            C98970
95311      IF DATA-TYPE NOT EQUAL TO FOUR GO TO NOT-NOBS.                     C98970
95312      IF ISCHRONAL EQUAL TO ONE MOVE OBS-ISO TO HIST-NO-OF-OBS-RPT       C98970
95313          ELSE MOVE OBS-NI TO HIST-NO-OF-OBS-RPT.                        C98970
95314      GO TO BOTH-NOBS.                                                   C98970
95315  NOT-NOBS.                                                              C98970
95320      MOVE HIST-NO-OF-OBS TO HIST-NO-OF-OBS-RPT.                         C98970
95325  BOTH-NOBS.                                                             C98970
95330  END-DET-NO-OBS.  EXIT.                                                 C98970
97000  WRITE-HISTOGRAM.                                                       C98970
97080      MOVE '0' TO HIST-FLAG.                                             C98970
97090      MOVE ZERO TO HIST-OUT-RANGE-VALUE.                                 C98970
97100      MOVE ZERO TO HIST-PAGE-NO.                                         C98970
97140      MOVE -9999.9 TO HIST-VALUE-MAX.                                    C98970
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97150      MOVE <9999.9 TO HIST-VALUE-MIN.                                  C98970
97200      MOVE ZERO TO HIST-INDEX.                                         C98970
97210  HIST-FIND-VMAX-VMIN.                                                 C98970
97220      ADD 1 TO HIST-INDEX.                                             C98970
97230      MOVE HIST-VALUE (HIST-INDEX) TO HIST-TEMP.                       C98970
97240      IF HIST-TEMP IS GREATER THAN HIST-VALUE-MAX THEN MOVE            C98970
97250                 HIST-TEMP TO HIST-VALUE-MAX.                          C98970
97260      IF HIST-TEMP IS LESS    THAN HIST-VALUE-MIN THEN MOVE            C98970
97270                 HIST-TEMP TO HIST-VALUE-MIN.                          C98970
97280      IF HIST-INDEX IS LESS THAN KNT            THEN GO TO             C98970
97281                           HIST-FIND-VMAX-VMIN.                        C98970
97282      MOVE ZERO TO HIST-TEMP.                                          C98970
97283      MOVE HIST-VALUE-MIN TO HIST-VALUE-MI.                            C98970
97284  SET-LOW.                                                             C98970
97285      IF HIST-VALUE-MI LESS THAN 100 GO TO GOT-LOW.                    C98970
97286      SUBTRACT 100 FROM HIST-VALUE-MI.                                 C98970
97287      ADD 100 TO HIST-TEMP.                                            C98970
97288      GO TO SET-LOW.                                                   C98970
97289  GOT-LOW.                                                             C98970
97290      MOVE HIST-TEMP TO HIST-VALUE-MI.                                 C98970
97292                                  COMPUTE HIST-NO-OF-INTERVALS >       C98970
97294         (HIST-VALUE-MAX - HIST-VALUE-MI) / 4 < 4.                     C98970
97300  HIST-PRINT-TITLE.                                                    C98970
97301      IF HIST-NO-OF-INTERVALS IS LESS THAN 50 MOVE 50 TO               C98970
97302         HIST-NO-OF-INTERVALS.                                         C98970
97304      ADD 1 TO HIST-PAGE-NO.                                           C98970
97306      MOVE 5 TO HIST-LINE-CNT.                                         C98970
97310      WRITE HIST-REC FROM HIST-NEW-PAGE.                               C98970
97311      PERFORM DET-NO-OBS THRU END-DET-NO-OBS.                          C98970
97330      MOVE HIST-VALUE-MAX TO HIST-VALUE-MAX-RPT.                       C98970
97340      MOVE HIST-VALUE-MIN TO HIST-VALUE-MIN-RPT.                       C98970
97350      WRITE HIST-REC FROM HIST-TITLE.                                  C98970
97351      IF DATA-TYPE NOT EQUAL TO FOUR PERFORM COMPUTE-MEAN-VARIANCE     C98970
97352         THRU END-CMV     ELSE PERFORM COMPUTE-M-V THRU END-CMV-B.     C98970
97356      IF HIST-VALUE-MAX EQUAL TO ZERO GO TO END-HIST.                  C98970
97358      IF DATA-TYPE EQUAL TO FOUR GO TO END-HIST.                       C98970
97360      WRITE HIST-REC FROM HIST-DOT-LINE.                               C98970
97370      WRITE HIST-REC FROM HIST-LABEL.                                  C98970
97380      WRITE HIST-REC FROM HIST-DOT-LINE.                               C98970
97390  HIST-DUMMY.                                                          C98970
97410      IF HIST-VALUE-MAX IS LESS THAN HIST-VALUE-MIN THEN GO TO         C98970
97420                              HIST-ERROR-2.                            C98970
97430      IF HIST-NO-OF-INTERVALS IS GREATER THAN 200 THEN MOVE 200        C98970
97440                       TO HIST-NO-OF-INTERVALS.                        C98970
97441      MOVE ZERO TO HIST-INDEX.                                         C98970
97442  HIST-RST.                                                            C98970
97443      ADD 1 TO HIST-INDEX.                                             C98970
97444      MOVE ZERO TO HIST-TABLE (HIST-INDEX).                            C98970
97445      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS                  C98970
97446                       THEN GO TO HIST-RST.                            C98970
97450                                    MOVE 4.0 TO HIST-INTERVAL-SIZE.    C98970
97500      NOTE COMPUTE UPPER LIMIT FOR EACH INTERVAL.                      C98970
97510      MOVE ZERO TO HIST-INDEX.                                         C98970
97520      MOVE HIST-VALUE-MI TO HIST-TEMP.                                 C98970
97530  HIST-INC-INTERVAL.                                                   C98970
97540      ADD 1 TO HIST-INDEX.                                             C98970
97550      ADD HIST-INTERVAL-SIZE TO HIST-TEMP.                             C98970
97560      MOVE HIST-TEMP TO HIST-UPPER-LIMIT (HIST-INDEX).                 C98970
97570      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN             C98970
97580                       GO TO HIST-INC-INTERVAL.                        C98970
97600      NOTE PLACE OCCURANCE INTO APPROPRIATE CHANNEL.                   C98970
97610      MOVE ZERO TO HIST-INDEX-2.                                       C98970
97620  HIST-OCCURANCE.                                                      C98970
97630      ADD 1 TO HIST-INDEX-2.                                           C98970
97640      MOVE HIST-VALUE (HIST-INDEX-2) TO HIST-TEMP.                     C98970
97650      MOVE ZERO TO HIST-INDEX.                                         C98970
97660  HIST-INTERVAL.                                                       C98970
97670      ADD 1 TO HIST-INDEX.                                             C98970
97675      MOVE FREQ-HIST-VALUE (HIST-INDEX-2) TO A.                        C98970
97680      IF HIST-TEMP IS NOT GREATER THAN HIST-UPPER-LIMIT                C98970
97690          (HIST-INDEX) THEN GO TO HIST-ADD-TABLE.                      C98970
97700      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO       C98970
97710                              HIST-INTERVAL.                           C98970
97720      ADD A TO HIST-OUT-RANGE-VALUE.                                   C98970
97730      GO TO HIST-NO-ADD.                                               C98970
97740  HIST-ADD-TABLE.                                                      C98970
97750      ADD A TO HIST-TABLE (HIST-INDEX).                                C98970
97751  HIST-NO-ADD.                                                         C98970
97760      IF HIST-INDEX-2 IS LESS THAN KNT            GO TO HIST-OCCURANCE.C98970
97800      NOTE COMPUTE SCALE VALUE.                                        C98970
97810      MOVE HIST-TABLE (1) TO HIST-TEMP.                                C98970
97820      MOVE 1 TO HIST-INDEX.                                            C98970
97830  HIST-SCALE.                                                          C98970
97840      ADD 1 TO HIST-INDEX.                                             C98970
97850      IF HIST-TABLE (HIST-INDEX) IS GREATER THAN HIST-TEMP THEN        C98970
97860          MOVE HIST-TABLE (HIST-INDEX) TO HIST-TEMP.                   C98970
97870      IF HIST-INDEX IS LESS    THAN HIST-NO-OF-INTERVALS THEN GO TO    C98970
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97880                                   HIST-SCALE.                                  C98970
97890       COMPUTE HIST-SCALE-VALUE > (HIST-TEMP < 99) / 100.                       C98970
97895       IF HIST-SCALE-VALUE LESS THAN 1 MOVE 1 TO HIST-SCALE-VALUE.              C98970
97900       MOVE ZERO TO HIST-INDEX.                                                 C98970
97910   HIST-SCALED-VALUE.                                                           C98970
97920       ADD 1 TO HIST-INDEX.                                                     C98970
97930       COMPUTE HIST-TABLE-SCALED (HIST-INDEX) >                                 C98970
97940               HIST-TABLE (HIST-INDEX) / HIST-SCALE-VALUE.                      C98970
97950       IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO               C98970
97960                                   HIST-SCALED-VALUES.                          C98970
98000       NOTE PREPARE OUTPUT DATA.                                                C98970
98010       DIVIDE 2 INTO HIST-INTERVAL-SIZE.                                        C98970
98020       MOVE ZERO TO HIST-CUM.                                                   C98970
98030       MOVE ZERO TO HIST-LINE.                                                  C98970
98040   HIST-PREPARE.                                                                C98970
98050       ADD 1 TO HIST-LINE.                                                      C98970
98060       MOVE HIST-LINE TO HIST-LINE-RPT.                                         C98970
98070       COMPUTE HIST-TEMP > HIST-UPPER-LIMIT (HIST-LINE)                         C98970
98080                                   - HIST-INTERVAL-SIZE.                        C98970
98090       MOVE HIST-TEMP TO HIST-MID-POINT-RPT.                                    C98970
98100       COMPUTE HIST-PERCENT > HIST-TABLE (HIST-LINE) * 100                      C98970
98110                                   / HIST-NO-OF-OBS.                            C98970
98120       MOVE HIST-PERCENT TO HIST-PERCENT-RPT.                                   C98970
98130       ADD HIST-PERCENT TO HIST-CUM.                                            C98970
98140       MOVE HIST-CUM TO HIST-CUM-RPT.                                           C98970
98150       MOVE HIST-TABLE (HIST-LINE) TO HIST-FREQ-RPT.                            C98970
98160       MOVE ZERO TO HIST-INDEX.                                                 C98970
98170       IF HIST-DIST IS NOT EQUAL TO :0:  GO TO HIST-CUM-1.                      C98970
98180       COMPUTE HIST-INDEX-2 > HIST-TABLE-SCALED (HIST-LINE) < 0.5.              C98970
98190       IF HIST-INDEX-2 IS EQUAL TO ZERO GO TO HIST-PREP-SPACE.                  C98970
98200   HIST-PREP-DIST.                                                              C98970
98210       ADD 1 TO HIST-INDEX.                                                     C98970
98220       MOVE :*: TO HIST-POINT (HIST-INDEX).                                     C98970
98230       IF HIST-INDEX IS LESS THAN HIST-INDEX-2 GO TO HIST-PREP-DIST.            C98970
98240       IF HIST-INDEX IS EQUAL TO 100 THEN GO TO HIST-WRITE.                     C98970
98250   HIST-PREP-SPACE.                                                             C98970
98260       ADD 1 TO HIST-INDEX.                                                     C98970
98270       MOVE SPACE TO HIST-POINT (HIST-INDEX).                                   C98970
98280       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-PREP-SPACE.               C98970
98290       GO TO HIST-WRITE.                                                        C98970
98300   HIST-CUM-1.                                                                  C98970
98310       ADD 1 TO HIST-INDEX.                                                     C98970
98320       MOVE SPACE TO HIST-POINT (HIST-INDEX).                                   C98970
98330       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-CUM-1.                    C98970
98338       COMPUTE HIST-INDEX > HIST-CUM < 0.5.                                     C98970
98339       IF HIST-INDEX IS EQUAL TO ZERO GO TO HIST-WRITE.                         C98970
98340       MOVE :*: TO HIST-POINT (HIST-INDEX).                                     C98970
98400   HIST-WRITE.                                                                  C98970
98410       WRITE HIST-REC FROM HIST-LINE-OUT.                                       C98970
98412       ADD 1 TO HIST-LINE-CNT.                                                  C98970
98414       IF HIST-PAGE-FLAG IS EQUAL TO ZERO GO TO HIST-NO-PAGING.                 C98970
98415       IF HIST-LINE-CNT IS EQUAL TO HIST-PAGE-FLAG                              C98970
98416                               THEN PERFORM HIST-PRINT-TITLE.                   C98970
98417   HIST-NO-PAGING.                                                              C98970
98420       IF HIST-LINE IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO                C98970
98430                                   HIST-PREPARE.                                C98970
98440       WRITE HIST-REC FROM HIST-DOT-LINE.                                       C98970
98450       MOVE HIST-SCALE-VALUE TO HIST-SCALE-RPT.                                 C98970
98460       WRITE HIST-REC FROM HIST-SCALE-LINE.                                     C98970
98470       IF HIST-OUT-RANGE-VALUE IS EQUAL TO ZERO GO TO HIST-WRITE-B.             C98970
98480       MOVE HIST-OUT-RANGE-VALUE TO HIST-OUT-RANGE-RPT.                         C98970
98490       WRITE HIST-REC FROM HIST-OUT-RANGE-REC.                                  C98970
98500   HIST-WRITE-B.                                                                C98970
98510       WRITE HIST-REC FROM HIST-DOT-LINE.                                       C98970
98520       GO TO END-HIST.                                                          C98970
99000   HIST-ERROR-1.                                                                C98970
99010       WRITE HIST-REC FROM HIST-TITLE.                                          C98970
99020       MOVE HIST-ERR-1 TO HIST-TITLE-1.                                         C98970
99030       MOVE HIST-NO-OF-OBS TO HIST-ERR-2.                                       C98970
99040       WRITE HIST-REC FROM HIST-TITLE.                                          C98970
99050       MOVE :1: TO HIST-FLAG.                                                   C98970
99060       GO TO END-HIST.                                                          C98970
99100   HIST-ERROR-2.                                                                C98970
99110       MOVE HIST-ERR-4 TO HIST-TITLE-1.                                         C98970
99120       MOVE HIST-ERR-5 TO HIST-TITLE-2.                                         C98970
99130       WRITE HIST-REC FROM HIST-TITLE.                                          C98970
99140       MOVE :1: TO HIST-FLAG.                                                   C98970
99150       GO TO END-HIST.                                                          C98970
99200   HIST-ERR-3.                                                                  C98970
99210       MOVE :1: TO HIST-FLAG.                                                   C98970
99990   END-HIST. EXIT.                                                              C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                                            1440 CDS
TFG  DIDI    11  0202080
01028210220515
*END
```

```
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                    T12
//TPR.TU25      DD   DISP>(OLD,KEEP),VOL>SER>+F8,UNIT>T+F8                    T25
//TPR.TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  DT01     1010080Z080
T/P  TU12     1010020Z020
T/P  TU25     1100130R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.8.4 SORT FOR UNSCHEDULED MANHOURS

```
//T9897N JOB   01,' G WANG      ',PRTY>02,TYPRUN>HOLD
//C9897F EXEC  P962ZN,W>(60,TIME>04,ACCT>D35323007
//CHG.SORT1N   DD   DISP>(,KEEP),UNIT>(A+F5,2,DEFER),                       CT22/23 1
//             DSN>+E.9897429,                                              CT22    2
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,        CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    4
//             DCB>(LRECL>0020,BLKSIZE>1800),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(A+F1,2,DEFER),DSN>+A.9897430,        CT12/13 1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,        CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0020,BLKSIZE>1800)
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(017,001,CH,A,019,001,CH,A,001,005,CH,A,006,003,CH,A),   C
             SIZE>E0250000
 MODS  E15>(E15,006,SORTLIB,NJ),E18>(E18,024,SORTLIB,NJ)
/*
```

6.8.5 CUMULATIVE DISTRIBUTION FOR UNSCHEDULED MANHOURS

```
//C9897N EXEC  P9655L,TIME>16,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A.9897430,       CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,        CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12
//CHG.TU25     DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>+H.9897431,       CT25    1
//             VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,        CT25    2
//             I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                    1440 CDS
00000          COMBINE     COMPILE                  G. WANG,                C98970
01040  DATE-WRITTEN.  7 APR 72.                                             C98970
01050  REMARKS.                                                             C98970
01060          TASK 2C  HIST OF WUC<HMC.                                    C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12              C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25              C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
02200      SELECT IN-FILE-ISC            ASSIGN TO DA-S-DT01              C98970
02210          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
11100  FD  IN-FILE                                                          C98970
11120      RECORDING MODE IS F                                              C98970
11130      BLOCK CONTAINS 90 RECORDS                                        C98970
11140      RECORD CONTAINS 20            CHARACTERS                         C98970
11150      LABEL RECORDS ARE OMITTED                                        C98970
11160      DATA RECORDS ARE IN-REC.                                         C98970
11170  01  IN-REC SYNC.                                                    C98970
11180      02  WUC                       PICTURE X(5).                     C98970
11181      02 HMC                        PICTURE X(3).                     C98970
11182      02  FILLER                    PICTURE X.                        C98970
11183      02  OBS                       PICTURE S9(6).                    C98970
11184      02  OBS-1 REDEFINES OBS       PICTURE S99999V9.                 C98970
11185      02  FILLER                    PICTURE X.                        C98970
11186      02  ISCHRONAL-NEW             PICTURE X.                        C98970
11187      02  FILLER                    PICTURE X.                        C98970
11188      02  DATA-TYPE-NEW             PICTURE X.                        C98970
11189      02  FILLER                    PICTURE X.                        C98970
11300  FD  IN-FILE-ISC                                                      C98970
11320      RECORDING MODE IS F                                              C98970
11330      BLOCK CONTAINS 20 RECORDS                                        C98970
11340      RECORD CONTAINS 80            CHARACTERS                         C98970
11350      LABEL RECORDS ARE STANDARD                                       C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                     C98970
11400  01  IN-REC-ISC SYNC.                                                C98970
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11410      02  FILLER                    PICTURE X(80).                        C98970
12100  FD  HIST-FILE                                                           C98970
12120      RECORDING MODE IS F                                                 C98970
12130      BLOCK CONTAINS 15 RECORDS                                           C98970
12140      RECORD CONTAINS 130          CHARACTERS                             C98970
12150      LABEL RECORDS ARE OMITTED                                           C98970
12160      DATA RECORDS A E HIST-REC.                                          C98970
12170  01  HIST-REC SYNC.                                                      C98970
12180      02  FILLER                    PICTURE X(130).                       C98970
30000  WORKING-STORAGE SECTION.                                                C98970
30010  77  KNT SYNC PICTURE S9(5).                                            C98970
30020  01  FILLER  SYNC.                                                       C98970
30030      02  FREQ-HIST-VALUE OCCURS 1000 TIMES PICTURE S9(5)                C98970
30040          COMPUTATIONAL.                                                  C98970
30050  01  A PICTURE S9(5) COMPUTATIONAL.                                      C98970
30060  01  NO-OF-HISTS          SYNC     PICTURE 9999 VALUE ZERO.              C98970
30080  01  ONE           SYNC            PICTURE X VALUE :1:.                  C98970
30082  01  TWO           SYNC            PICTURE X VALUE :2:.                  C98970
30090  01  CNT SYNC                      PICTURE S9(5) COMPUTATIONAL.          C98970
30100  01  CUR-WUC-T SYNC.                                                     C98970
30110      02  FILLER                    PICTURE X(5) VALUE : WUC>I,           C98970
30120      02  CUR-WUC                   PICTURE X(5).                         C98970
30130  01  CUR-HMC-T SYNC.                                                     C98970
30140      02  FILLER                    PICTURE X(5) VALUE : HMC>I,           C98970
30150      02  CUR-HMC                   PICTURE X(3).                         C98970
30160      02  FILLER                    PICTURE XX VALUE SPACE.               C98970
30170  01  ISCHRONAL SYNC                PICTURE X.                            C98970
30180  01  DATA-TYPE   SYNC              PICTURE X.                            C98970
30190  01  MINUS-ONE COMPUTATIONAL       PICTURE S999 VALUE -1 SYNC.           C98970
32000  01  REPORT-10 SYNC.                                                     C98970
32010      02  FILLER                    PICTURE X(50) VALUE                   C98970
32020           !$9897960  TF79I9-01 I42-A 1       1/2              1.        C98970
32030      02  FILLER                    PICTURE X(50) VALUE SPACE.            C98970
32040      02  FILLER                    PICTURE X(30) VALUE                   C98970
32050           :                                 #:.                          C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9(7)V99.                       C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9(7)V99.                       C98970
46020  01  TEMP-COMP                     PICTURE S9(7)V99.                     C98970
46100  01  MEAN-VARIANCE-LINE SYNC.                                            C98970
46110      02  FILLER                    PICTURE X(50) VALUE                   C98970
46120           :S                                                  1.         C98970
46130      02  FILLER                    PICTURE X(19) VALUE                   C98970
46140           :                MEAN >:.                                       C98970
46150      02  MEAN-RPT                  PICTURE ZZZ9.9.                       C98970
46160      02  FILLER                    PICTURE X(30) VALUE                   C98970
46170           :                          VARIANCE >:.                        C98970
46180      02  VARIANCE-RPT              PICTURE ZZZZZZ9.9.                    C98970
46190      02  FILLER                    PICTURE X(16) VALUE                   C98970
46200           :                       #:.                                    C98970
47000  01  HIST-VALUE-MAX SYNC           PICTURE S9999V99 VALUE -9999.9.       C98970
47010  01  HIST-VALUE-MIN SYNC           PICTURE S9999V99 VALUE <9999.9.       C98970
47015  01  HIST-VALUE-M1  SYNC           PICTURE S9999V99 VALUE <9999.9.       C98970
47020  01  HIST-NO-OF-OBS SYNC           PICTURE S9(5)  VALUE ZERO.            C98970
47030  01  HIST-NO-OF-INTERVALS SYNC     PICTURE 999V99 VALUE 50.              C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC     PICTURE 9      VALUE ZERO.            C98970
47050  01  HIST-UIST SYNC                PICTURE X      VALUE :1:.             C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                       C98970
47070                                     PICTURE S999   VALUE ZERO.          C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                     C98970
47090                                     PICTURE S999   VALUE ZERO.          C98970
47100  01  HIST-TEMP SYNC                PICTURE S99999V99 VALUE ZERO.         C98970
47110  01  HIST-INTERVAL-SIZE SYNC       PICTURE S999V99 VALUE ZERO            C98970
47120              COMPUTATIONAL.                                              C98970
47150  01  HIST-FLAG SYNC                PICTURE X      VALUE 101.             C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                 C98970
47170                                     PICTURE S999   VALUE <1.            C98970
47180  01  HIST-PERCENT S NC             PICTURE S999V99 COMPUTATIONAL.        C98970
47190  01  HIST-CUM SYNC                 PICTURE S999V99 COMPUTATIONAL.        C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                        C98970
47210                                     PICTURE S999  VALUE ZERO.           C98970
47220  01  HIST-PAGE-FLAG SYNC           PICTURE S999 VALUE <75.               C98970
47230  01  HIST-LINE-CNT  SYNC           PICTURE S999.                         C98970
47300  01  HIST-ERR-1 SYNC               PICTURE X(10)  VALUE                  C98970
47310                          :ERROR NO 0:.                                   C98970
47320  01  HIST-ERR-3 SYNC.                                                    C98970
47330      02  FILLER                    PICTURE X(5)   VALUE :RS > 1.         C98970
47340      02  HIST-ERR-2                PICTURE S9(5)  VALUE ZERO.            C98970
47350  01  HIST-ERR-4 SYNC               PICTURE X(10)  VALUE                  C98970
47360                          :ERROR  MAX:.                                   C98970
47370  01  HIST-ERR-5 SYNC               PICTURE X(10)  VALUE                  C98970
47380                          :-MIN BAD. :.                                   C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC     PICTURE S999 COMPUTATIONAL.           C98970
47500  01  FILLER SYNC.                                                        C98970
47510      02  FILLER OCCURS 200 TIMES.                                        C98970
47530          03  HIST-TABLE            PICTURE S9(5) COMPUTATIONAL.          C98970
47540          03  HIST-UPPER-LIMIT      PICTURE S9999V99 COMPUTATIONAL.       C98970
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47550          05  HIST-TABLE-SCALED   PICTURE S999V99 COMPUTATIONAL.     C98970
47560  01  HIST-NL*-PAGE SYNC.                                            C98970
47570      02  FILLER                  PICTURE X    VALUE II:.           C98970
47580      02  FILLER                  PICTURE X(122) VALUE SPACE.       C98970
47582      02  FILLER                  PICTURE X(5) VALUE IPAGE :.       C98970
47584      02  HIST-PAGE-NO            PICTURE 9.                        C98970
47590      02  FILLER                  PICTURE X    VALUE :#:.           C98970
47600  01  HIST-TITLE SYNC.                                               C98970
47610      02  FILLER                  PICTURE X(3) VALUE :S  :.         C98970
47620      02  HIST-TITLE-1.                                             C98970
47621          05  FILLER              PICTURE X(10) VALUE SPACE.        C98970
47630      02  HIST-TITLE-2.                                             C98970
47631          05  FILLER              PICTURE X(10) VALUE SPACE.        C98970
47640      02  HIST-TITLE-3            PICTURE X(10) VALUE SPACE.        C98970
47650      02  HIST-TITLE-4            PICTURE X(10) VALUE SPACE.        C98970
47660      02  FILLER                  PICTURE X(24) VALUE               C98970
47670              :    NO OF OBSERVATIONS >:.                           C98970
47680      02  HIST-NO-OF-OBS-RPT      PICTURE ZZZZ9.                    C98970
47690      02  FILLER                  PICTURE X(13) VALUE               C98970
47700              : VALUE MAX > :.                                       C98970
47710      02  HIST-VALUE-MAX-RPT      PICTURE -----.9.                  C98970
47720      02  FILLER                  PICTURE X(13) VALUE               C98970
47730              : VALUE MIN > :.                                       C98970
47740      02  HIST-VALUE-MIN-RPT      PICTURE -----.9.                  C98970
47750      02  FILLER                  PICTURE X(18) VALUE               C98970
47760                   :                 #:.                           C98970
47900  01  HIST-OUT-LINE SYNC.                                            C98970
47910      02  FILLER                  PICTURE X(50)  VALUE              C98970
47920              :/-------------------------------------------------1.  C98970
47922      02  FILLER                  PICTURE X(80) VALUE               C98970
47930      :-------------------------------------------------------------C98970
47940 -    :---------------#:.                                            C98970
47950  01  HIST-LABEL SYNC.                                               C98970
47960      02  FILLER                  PICTURE X(50)  VALUE              C98970
47970              :/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.:.  C98970
47974      02  FILLER                  PICTURE X(80) VALUE               :..C98970
47980 -    :25...30...35...40...45...50...55...60...65...70...75...80...  C98970
47990 -    :85...90...95. 100#:.                                          C98970
48000  01  HIST-LINE-OUT SYNC.                                            C98970
48010      02  FILLER                  PICTURE X VALUE :/:.              C98970
48020      02  HIST-LINE-RPT           PICTURE Z29.                      C98970
48030      02  FILLER                  PICTURE X VALUE SPACE.            C98970
48040      02  HIST-MID-POINT-RPT      PICTURE -----.9.                  C98970
48060      02  HIST-PERCENT-RPT        PICTURE Z29.9.                    C98970
48070      02  FILLER                  PICTURE X VALUE SPACE.            C98970
48080      02  HIST-CUM-RPT            PICTURE Z29.9.                    C98970
48100      02  HIST-FREQ-RPT           PICTURE ZZZZ9.                    C98970
48110      02  FILLER                  PICTURE X VALUE SPACE.            C98970
48120      02  HIST-POINT OCCURS 100 TIMES                               C98970
48130                                  PICTURE X.                        C98970
48140      02  FILLER                  PICTURE X VALUE :#:.              C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                       C98970
48160      02  FILLER                  PICTURE X(35) VALUE               C98970
48170              :/   NUMBER OF OUT OF RANGE VALUES >:.                 C98970
48180      02  HIST-OUT-RANGE-RPT      PICTURE Z29.                      C98970
48190      02  FILLER                  PICTURE X(91) VALUE SPACE.        C98970
48191      02  FILLER                  PICTURE X VALUE :#:.              C98970
48200  01  HIST-SCALE-LINE SYNC.                                          C98970
48210      02  FILLER                  PICTURE X(27) VALUE               C98970
48220              :/          SCALING FACTOR > :.                        C98970
48230      02  HIST-SCALE-RPT          PICTURE Z29.                      C98970
48240      02  FILLER                  PICTURE X(099) VALUE SPACE.       C98970
48250      02  FILLER                  PICTURE X VALUE :#:.              C98970
48300  01  FILLER SYNC.                                                   C98970
48310      02  HIST-VALUE OCCURS 1000 TIMES                              C98970
48320                                  PICTURE S9999V9 COMPUTATIONAL.    C98970
48350  01  HIST-AC-WK  SYNC.                                              C98970
48380      05  CUTOFF-ISO          PICTURE S9(2).                        C98970
48390      05  CUTOFF-NI           PICTURE S9(2).                        C98970
48395      05  FILLER              PICTURE X(76).                        C98970
50000  PROCEDURE DIVISION                                               C98970
50010      OPEN INPUT IN-FILE, IN-FILE-ISC.                             C98970
50020      OPEN OUTPUT HIST-FILE.                                       C98970
50022      READ IN-FILE-ISC INTO HIST-AC-WK AT END GO TO CLOSE-FILES.   C98970
50030      MOVE 1000 TO ANT.                                            C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                      C98970
50050      READ IN-FILE, AT END GO TO CLOSE-FILES.                      C98970
50060      WRITE HIST-REC FROM REPORT-ID.                               C98970
50100  PARA-1.                                                          C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                    C98970
50120      MOVE WUC TO CUR-WUC.                                         C98970
50130      MOVE HMC TO CUR-HMC.                                         C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                             C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                             C98970
50160      IF DATA-TYPE NOT EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO    C98970
50170              FLT-DATA.                                            C98970
```

```
50200  READ1.                                                          C98970
50210      READ IN-FILE, AT END GO TO CLOSE-FILES.                     C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO :9: GO TO CLOSE-FILES.         C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                C98970
50240      IF HMC IS NOT EQUAL TO CUR-HMC GO TO PARA-2.                C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                    C98970
50260      IF DATA-TYPE NOT EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO   C98970
50270                        FLT-DATA.                                 C98970
50300  PARA-2.                                                         C98970
50310      PERFORM SET-HISTOG THRU END-SH.                             C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                     C98970
50330      GO TO PARA-1.                                               C98970
50400  RESET-TABLE.                                                    C98970
50410      MOVE ZERO TO CNT.                                           C98970
50420  RST.                                                            C98970
50430      ADD 1 TO CNT.                                               C98970
50440      MOVE MINUS-ONE TO HIST-VALUE [CNT].                         C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE [CNT].                         C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                          C98970
50455      MOVE ZERO TO KNT.                                           C98970
50460  END-RST-TABLE. EXIT.                                            C98970
50510  SET-HISTOG.                                                     C98970
50515      IF HIST-NO-OF-OBS IS NOT GREATER THAN CUTOFF-NI AND ISCHRONAL C98970
50516              NOT EQUAL TO ONE GO TO END-SH.                      C98970
50517      IF HIST-NO-OF-OBS IS NOT GREATER THAN CUTOFF-ISO AND        C98970
50518         ISCHRONAL IS EQUAL TO ONE GO TO END-SH.                  C98970
50520      IF ISCHRONAL IS EQUAL TO ONE MOVE : ISO      : TO          C98970
50530          HIST-TITLE-4, ELSE MOVE : NON-ISO  : TO HIST-TITLE-4.   C98970
50540      IF DATA-TYPE IS EQUAL TO ONE MOVE : MAN-HR/MA: TO           C98970
50550          HIST-TITLE-3, ELSE MOVE : FLT-HOURS: TO HIST-TITLE-3.   C98970
50560      MOVE CUR-WUC-T TO HIST-TITLE-1.                             C98970
50570      MOVE CUR-HMC-T TO HIST-TITLE-2.                             C98970
50580      PERFORM WRITE HISTOGRAM THRU END-HIST.                      C98970
50600      IF HIST-FLAG IS     EQUAL TO :I: THEN GO TO CFI.            C98970
50610      ADD 1 TO NO-OF-HISTS.                                       C98970
50620  END-SH. EXIT.                                                   C98970
51000  WEEKS-DATA.                                                     C98970
51010      MOVE ZERO TO CNT.                                           C98970
51020  WEEK-A.                                                         C98970
51030      ADD 1 TO CNT.                                               C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE [CNT] GO TO WEEK-C.        C98970
51050      IF FREQ-HIST-VALUE [CNT] IS EQUAL TO ZERO GO TO WEEK-B.     C98970
51060      IF CNT IS LESS THAN 1000 GO TO WEEK-A.                      C98970
51070      DISPLAY : MORE THAN 1000 FREQUENCY OCCURENCES : UPON CONSOLE. C98970
51080      GO TO CFI.                                                  C98970
51090  WEEK-B.                                                         C98970
51100      MOVE OBS   TO HIST-VALUE [CNT].                             C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.            C98970
51120  WEEK-C.                                                         C98970
51130      ADD 1 TO FREQ-HIST-VALUE [CNT].                             C98970
51140      GO TO READ1.                                                C98970
52000  FLT-DATA.                                                       C98970
52010      MOVE ZERO TO CNT.                                           C98970
52020  FLT-A.                                                          C98970
52030      ADD 1 TO CNT.                                               C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE [CNT] GO TO FLT-C.         C98970
52050      IF FREQ-HIST-VALUE [CNT] IS EQUAL TO ZERO GO TO FLT-B.      C98970
52060      IF CNT IS LESS THAN 1000 GO TO FLT-A.                       C98970
52070      DISPLAY : MORE THAN 1000 FREQUENCY OCCURENCES : UPON CONSOLE. C98970
52080      GO TO CFI.                                                  C98970
52090  FLT-B.                                                          C98970
52100      MOVE OBS-1 TO HIST-VALUE [CNT].                             C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.            C98970
52120  FLT-C.                                                          C98970
52130      ADD 1 TO FREQ-HIST-VALUE [CNT].                             C98970
52140      GO TO READ1.                                                C98970
52200  CLOSE-FILES.                                                    C98970
52205      PERFORM SET-H.STOG THRU END-SH.                             C98970
52207  CFI.                                                            C98970
52210      CLOSE IN-FILE, HIST-FILE, IN-FILE-ISC.                      C98970
52211      IF HIST-FLAG IS EQUAL TO :I DISPLAY I HIST ERROR I UPON     C98970
52212           CONSOLE.                                               C98970
52215      DISPLAY : NO OF HISTOGRAMS > I NO-OF-HISTS UPON CONSOLE.    C98970
52220      DISPLAY : EOJ C9897P : UPON CONSOLE.                        C98970
52230      GOBACK.                                                     C98970
95000  COMPUTE-MEAN-VARIANCE.                                          C98970
95005      IF HIST-NO-OF-OBS EQUAL TO 1 GO TO CMV-3.                   C98970
95010      MOVE ZERO TO CNT.                                           C98970
95020      MOVE ZERO TO MEAN.                                          C98970
95030  CMV-1.                                                          C98970
95040      ADD 1 TO CNT.                                               C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE [CNT] * FREQ-HIST-VALUE [CNT]. C98970
95060      ADD TEMP-COMP TO MEAN.                                      C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                        C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                            C98970
95090      MOVE ZERO TO CNT.                                           C98970
95100      MOVE ZERO TO VARIANCE.                                      C98970
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95110  CMV-2.                                                                  C98970
95120      ADD 1 TO CNT.                                                       C98970
95130      COMPUTE TEMP-COMP > ((HIST-VALUE (CNT) - MEAN) ** 2) *              C98970
95140                                        FREQ-HIST-VALUE (CNT).            C98970
95150      ADD TEMP-COMP TO VARIANCE.                                          C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                                C98970
95170      COMPUTE VARIANCE > VARIANCE / (HIST-NO-OF-OBS - 1).                 C98970
95180      MOVE MEAN TO MEAN-RPT.                                              C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                                      C98970
95191      GO TO CMV-4.                                                        C98970
95192  CMV-3.                                                                  C98970
95193      MOVE ZERO TO VARIANCE-RPT.                                          C98970
95194      MOVE HIST-VALUE (1) TO MEAN-RPT.                                    C98970
95195  CMV-4.                                                                  C98970
95200      WRITE HIST-REC FROM MEAN-VARIANCE-LINE.                             C98970
95290  END-CMV.                                                                C98970
97000  WRITE-HISTOGRAM.                                                        C98970
97080      MOVE 00 TO HIST-FLAG.                                               C98970
97090      MOVE ZERO TO HIST-OUT-RANGE-VALUE.                                  C98970
97100      MOVE ZERO TO HIST-PAGE-NO.                                          C98970
97140      MOVE -9999.9 TO HIST-VALUE-MAX.                                     C98970
97150      MOVE +9999.9 TO HIST-VALUE-MIN.                                     C98970
97200      MOVE ZERO TO HIST-INDEX.                                            C98970
97210  HIST-FIND-VMAX-VMIN.                                                    C98970
97220      ADD 1 TO HIST-INDEX.                                                C98970
97230      MOVE HIST-VALUE (HIST-INDEX) TO HIST-TEMP.                          C98970
97240      IF HIST-TEMP IS GREATER THAN HIST-VALUE-MAX THEN MOVE               C98970
97250                 HIST-TEMP TO HIST-VALUE-MAX.                             C98970
97260      IF HIST-TEMP IS LESS    THAN HIST-VALUE-MIN THEN MOVE               C98970
97270                 HIST-TEMP TO HIST-VALUE-MIN.                             C98970
97280      IF HIST-INDEX IS LESS THAN KNT              THEN GO TO              C98970
97281                           HIST-FIND-VMAX-VMIN.                           C98970
97282      MOVE ZERO TO HIST-VALUE-MI.                                         C98970
97283      MOVE HIST-VALUE-MIN TO HIST-TEMP.                                   C98970
97284  SET-LOW.                                                                C98970
97285      IF HIST-TEMP LESS THAN 100 GO TO GOT-LOW.                           C98970
97286      SUBTRACT 100 FROM HIST-TEMP.                                        C98970
97287      ADD 100 TO HIST-VALUE-MI.                                           C98970
97288      GO TO SET-LOW.                                                      C98970
97289  GOT-LOW.                                                                C98970
97292                                      COMPUTE HIST-NO-OF-INTERVALS >      C98970
97294         (HIST-VALUE-MAX - HIST-VALUE-MI) / 1.0 < 4.                      C98970
97300  HIST-PRINT-TITLE.                                                       C98970
97301      IF HIST-NO-OF-INTERVALS IS LESS THAN 50 MOVE 50 TO                  C98970
97302         HIST-NO-OF-INTERVALS.                                            C98970
97304      ADD 1 TO HIST-PAGE-NO.                                              C98970
97306      MOVE 5 TO HIST-LINE-CNT.                                            C98970
97310      WRITE HIST-REC FROM HIST-NEW-PAGE.                                  C98970
97320      MOVE HIST-NO-OF-OBS TO HIST-NO-OF-OBS-RPT.                          C98970
97330      MOVE HIST-VALUE-MAX TO HIST-VALUE-MAX-RPT.                          C98970
97340      MOVE HIST-VALUE-MIN TO HIST-VALUE-MIN-RPT.                          C98970
97350      WRITE HIST-REC FROM HIST-TITLE.                                     C98970
97355      PERFORM COMPUTE-MEAN-VARIANCE THRU END-CMV.                         C98970
97356      IF HIST-VALUE-MAX EQUAL TO ZERO GO TO END-HIST.                     C98970
97360      WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
97370      WRITE HIST-REC FROM HIST-LABEL.                                     C98970
97380      WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
97390  HIST-DUMMY.                                                             C98970
97410      IF HIST-VALUE-MAX IS LESS THAN HIST-VALUE-MIN THEN GO TO            C98970
97420                                  HIST-ERROR-2.                           C98970
97430      IF HIST-NO-OF-INTERVALS IS GREATER THAN 200 THEN MOVE 200           C98970
97440                        TO HIST-NO-OF-INTERVALS.                          C98970
97441      MOVE ZERO TO HIST-INDEX.                                            C98970
97442  HIST-RST.                                                               C98970
97443      ADD 1 TO HIST-INDEX.                                                C98970
97444      MOVE ZERO TO HIST-TABLE (HIST-INDEX).                               C98970
97445      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS                     C98970
97446                        THEN GO TO HIST-RST.                              C98970
97450                                  MOVE 1.0 TO HIST-INTERVAL-SIZE.         C98970
97500      NOTE COMPUTE UPPER LIMIT FOR EACH INTERVAL.                         C98970
97510      MOVE ZERO TO HIST-INDEX.                                            C98970
97520      MOVE HIST-VALUE-MI TO HIST-TEMP.                                    C98970
97530  HIST-INC-INTERVAL.                                                      C98970
97540      ADD 1 TO HIST-INDEX.                                                C98970
97550      ADD HIST-INTERVAL-SIZE TO HIST-TEMP.                                C98970
97560      MOVE HIST-TEMP TO HIST-UPPER-LIMIT (HIST-INDEX).                    C98970
97570      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN                C98970
97580                        GO TO HIST-INC-INTERVAL.                          C98970
97600      NOTE PLACE OCCURANCE INTO APPROPRIATE CHANNEL.                      C98970
97610      MOVE ZERO TO HIST-INDEX-2.                                          C98970
97620  HIST-OCCURANCE.                                                         C98970
97630      ADD 1 TO HIST-INDEX-2.                                              C98970
97640      MOVE HIST-VALUE (HIST-INDEX-2) TO HIST-TEMP.                        C98970
97650      MOVE ZERO TO HIST-INDEX.                                            C98970
97660  HIST-INTERVAL.                                                          C98970
97670      ADD 1 TO HIST-INDEX.                                                C98970
97675      MOVE FREQ-HIST-VALUE (HIST-INDEX-2) TO A.                           C98970
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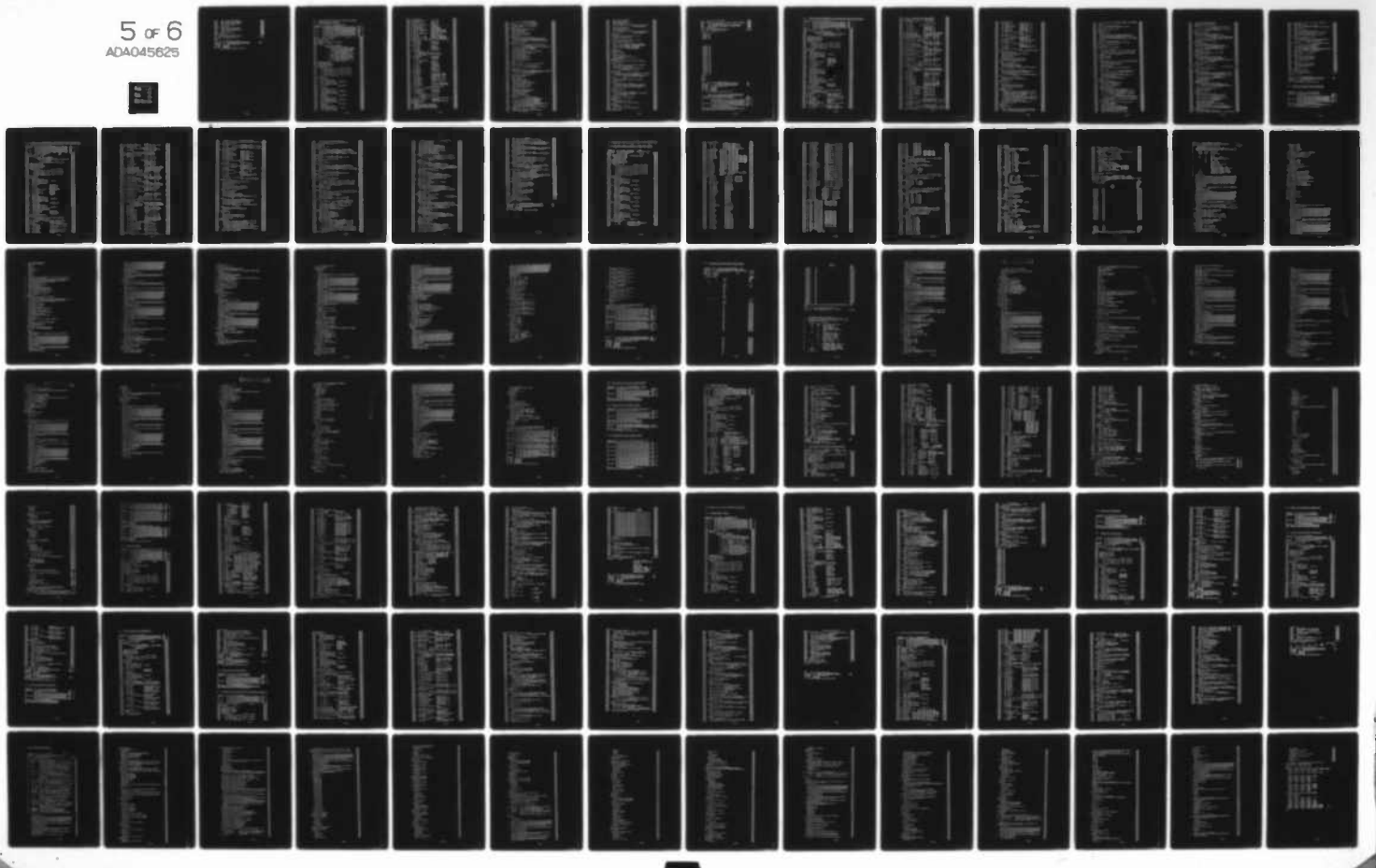
97680      IF HIST-TEMP .S NOT GREATER THAN HIST-UPPER-LIMIT                C98970
97690          (HIST-INDEX) THEN GO TO HIST-ADD-TABLE.                      C98970
97700      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO       C98970
97710                              HIST-INTERVAL.                           C98970
97720      ADD A TO HIST-OUT-RANGE-VALUE.                                   C98970
97730      GO TO HIST-NO-ADD.                                               C98970
97740  HIST-ADD-TABLE.                                                      C98970
97750      ADD A TO HIST-TABLE (HIST-INDEX).                                C98970
97751  HIST-NO-ADD.                                                         C98970
97760      IF HIST-INDEX-2 IS LESS KNT              GO TO HIST-OCCURANCE.   C98970
97800      NOTE COMPUTE SCALE VALUE.                                        C98970
97810      MOVE HIST-TABLE (1) TO HIST-TEMP.                                C98970
97820      MOVE 1 TO HIST-INDEX.                                            C98970
97830  HIST-SCALE.                                                          C98970
97840      ADD 1 TO HIST-INDEX.                                             C98970
97850      IF HIST-TABLE (HIST-INDEX) IS GREATER THAN HIST-TEMP THEN        C98970
97860          MOVE HIST-TABLE (HIST-INDEX) TO HIST-TEMP.                   C98970
97870      IF HIST-INDEX IS LESS     THAN HIST-NO-OF-INTERVALS THEN GO TO   C98970
97880                                   HIST-SCALE.                         C98970
97890      COMPUTE HIST-SCALE-VALUE > (HIST-TEMP < 99) / 100.               C98970
97895      IF HIST-SCALE-VALUE LESS THAN 1 MOVE 1 TO HIST-SCALE-VALUE.      C98970
97900      MOVE ZERO TO HIST-INDEX.                                         C98970
97910  HIST-SCALED-VALUES.                                                  C98970
97920      ADD 1 TO HIST-INDEX.                                             C98970
97930      COMPUTE HIST-TABLE-SCALED (HIST-INDEX) >                         C98970
97940              HIST-TABLE (HIST-INDEX) / HIST-SCALE-VALUE.              C98970
97950      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO       C98970
97960                                   HIST-SCALED-VALUES.                 C98970
98000      NOTE PREPARE OUTPUT DATA.                                        C98970
98010      DIVIDE 2 INTO HIST-INTERVAL-SIZE.                                C98970
98020      MOVE ZERO TO HIST-CUM.                                           C98970
98030      MOVE ZERO TO HIST-LINE.                                          C98970
98040  HIST-PREPARE.                                                        C98970
98050      ADD 1 TO HIST-LINE.                                              C98970
98060      MOVE HIST-LINE TO HIST-LINE-RPT.                                 C98970
98070      COMPUTE HIST-TEMP > HIST-UPPER-LIMIT (HIST-LINE)                 C98970
98080                                - HIST-INTERVAL-SIZE.                  C98970
98090      MOVE HIST-TEMP TO HIST-MID-POINT-RPT.                            C98970
98100      COMPUTE HIST-PERCENT > HIST-TABLE (HIST-LINE) * 100              C98970
98110                               / HIST-NO-OF-OBS.                       C98970
98120      MOVE HIST-PERCENT TO HIST-PERCENT-RPT.                           C98970
98130      ADD HIST-PERCENT TO HIST-CUM.                                    C98970
98140      MOVE HIST-CUM TO HIST-CUM-RPT.                                   C98970
98150      MOVE HIST-TABLE (HIST-LINE) TO HIST-FREQ-RPT.                    C98970
98160      MOVE ZERO TO HIST-INDEX.                                         C98970
98170      IF HIST-DIST .S NOT EQUAL TO :0:  GO TO HIST-CUM-1.              C98970
98180      COMPUTE HIST-INDEX-2 > HIST-TABLE-SCALED (HIST-LINE) < 0.5.      C98970
98190      IF HIST-INDEX-2 IS EQUAL TO ZERO GO TO HIST-PREP-SPACE.          C98970
98200  HIST-PREP-DIST.                                                      C98970
98210      ADD 1 TO HIST-INDEX.                                             C98970
98220      MOVE :*: TO HIST-POINT (HIST-INDEX).                             C98970
98230      IF HIST-INDEX IS LESS THAN HIST-INDEX-2 GO TO HIST-PREP-DIST.    C98970
98240      IF HIST-INDEX IS EQUAL TO 100 THEN GO TO HIST-WRITE.             C98970
98250  HIST-PREP-SPACE.                                                     C98970
98260      ADD 1 TO HIST-INDEX.                                             C98970
98270      MOVE SPACE TO HIST-POINT (HIST-INDEX).                           C98970
98280      IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-PREP-SPACE.       C98970
98290      GO TO HIST-WRITE.                                                C98970
98300  HIST-CUM-1.                                                          C98970
98310      ADD 1 TO HIST-INDEX.                                             C98970
98320      MOVE SPACE TO HIST-POINT (HIST-INDEX).                           C98970
98330      IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-CUM-1.            C98970
98338      COMPUTE HIST-INDEX > HIST-CUM < 0.5.                             C98970
98339      IF HIST-INDEX IS EQUAL TO ZERO GO TO HIST-WRITE.                 C98970
98340      MOVE :*: TO HIST-POINT (HIST-INDEX).                             C98970
98400  HIST-WRITE.                                                          C98970
98410      WRITE HIST-REC FROM HIST-LINE-OUT.                               C98970
98412      ADD 1 TO HIST-LINE-CNT.                                          C98970
98414      IF HIST-PAGE-FLAG IS EQUAL TO ZERO GO TO HIST-NO-PAGING.         C98970
98415      IF HIST-LINE-CNT IS EQUAL TO HIST-PAGE-FLAG                      C98970
98416                          THEN PERFORM HIST-PRINT-TITLE.               C98970
98417  HIST-NO-PAGING.                                                      C98970
98420      IF HIST-LINE IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO        C98970
98430                                   HIST-PREPARE.                       C98970
98440      WRITE HIST-REC FROM HIST-DOT-LINE.                               C98970
98450      MOVE HIST-SCALE-VALUE TO HIST-SCALE-RPT.                         C98970
98460      WRITE HIST-REC FROM HIST-SCALE-LINE.                             C98970
98470      IF HIST-OUT-RANGE-VALUE IS EQUAL TO ZERO GO TO HIST-WRITE-B.     C98970
98480      MOVE HIST-OUT-RANGE-VALUE TO HIST-OUT-RANGE-RPT.                 C98970
98490      WRITE HIST-REC FROM HIST-OUT-RANGE-REC.                          C98970
98500  HIST-WRITE-B.                                                        C98970
98510      WRITE HIST-REC FROM HIST-DOT-LINE.                               C98970
98520      GO TO END-HIST.                                                  C98970
99000  HIST-ERROR-1.                                                        C98970
```

AD-A045 625 GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV F/G 1/5
F-106 SCHEDULED MAINTENANCE STUDY. USER'S MANUAL,(U)
SEP 72 G WANG, R S GROTE , J R COOPER F41608-71-D-1383
UNCLASSIFIED GDCA-AHD72-006 NL

5 OF 6
ADA045625



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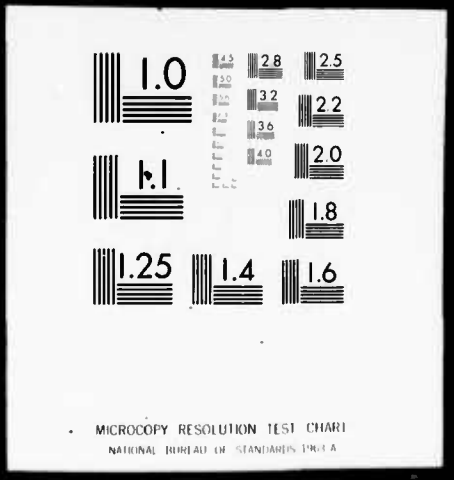
ADA045625



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99010       WRITE HIST-REC FROM HIST-TITLE.                                  C98970
99020       MOVE HIST-ERR-1 TO HIST-TITLE-1.                                 C98970
99030       MOVE HIST-NO-OF-OBS TO HIST-ERR-2.                               C98970
99040       WRITE HIST-REC FROM HIST-TITLE.                                  C98970
99050       MOVE :1: TO HIST-FLAG.                                           C98970
99060       GO TO END-HIST.                                                  C98970
99100   HIST-ERR0R-2.                                                        C98970
99110       MOVE HIST-ERR-4 TO HIST-TITLE-1.                                 C98970
99120       MOVE HIST-ERR-5 TO HIST-TITLE-2.                                 C98970
99130       WRITE HIST-REC FROM HIST-TITLE.                                  C98970
99140       MOVE :1: TO HIST-FLAG.                                           C98970
99150       GO TO END-HIST.                                                  C98970
99200   HIST-ERR-3.                                                          C98970
99210       MOVE :1: TO HIST-FLAG.                                           C98970
99990   END-HIST. EXIT.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
TFG  DT01     11  020Z080
0515
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=+F1,UNIT=T+F1                  T12
//TPR.TU25      DD   DISP=(OLD,KEEP),VOL=SER=+F8,UNIT=T+F8                  T25
//TPR.TPKIN     DD   *,SPACE=(TRK,(1,1))
T/P  DT01     10100802080
T/P  TU12     10100202020
T/P  TU25     1100130R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.9 PROGRAMS FOR INTERVAL LENGTH ANALYSES

6.9.1 PREPROCESSOR - TASK III

```
//C98978 JOB   01:: G. WANG.   ;,PR7Y>02,7YPRUN>HOLD
//C98978 EXEC  P9655L,TIME>03,ACCT>D35323007                              3A
//CHG.TU14     DD   DISP>[,PASS],UNIT>[A+F3,2,DEFER],DSN>+C.9897416,   CT14/15 1
//               VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//               I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[A+F5,2,DEFER],DSN>+E.9897429,   CT22/23 1
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[T+F7,1,DEFER],DSN>+G.9897426,   CT24    1
//               VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//               1+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                  1440 CDS
00000          COMBINE     COMPILE                 G. WANG.               C98970
01000  IDENTIFICATION DIVISION.                                           C98970
01010  PROGRAM-ID. C9897                                                  C98970
01020  AUTHOR. A. J. BOWKER.                                              C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                            C98970
01040  DATE-WRITTEN. 20 MAR 72.                                           C98970
01050  REMARKS.                                                           C98970
01060          MAINTENANCE STUDY   PROGRAM 3A.                            C98970
01070              INTERVAL LENGTH ANALYSIS.                              C98970
01080                TOTAL TASK COMPRISES OF FIVE PARTS                   C98970
01090                  1. CALCULATION OF INERVALS FOR ALL AIRCRAFT        C98970
01100                       SUB-SET, FOR BOTH INSPECTION INTERVAL         C98970
01110                       LENGTHS AND REPAIR ACTION INTERVALS.          C98970
01120                       ALL OBSERVATION ACCUMULATED IN T#0            C98970
01130                           TAPE-FILES (PROGRAM 3A)                   C98970
01140                  2. SORTING OF INSPECTION INTERVAL LENGHS TO        C98970
01150                       GROUP AIRCRAFT SUB-SETS AND WUC.              C98970
01160                  3. SORTING OF REPAIR INTERVAL LENGTHS TO           C98970
01170                       GROUP AIRCRAFT SUB-SETS, WUC AND MMC.         C98970
01180                  4. PREPARE DISTRIBUTIONS FOR INSPECTION            C98970
01190                           INTERVALS (PROGRAM 3B).                   C98970
01200                  5. PREPARE DISTRIBUTIONS FOR REPAIR ACTION         C98970
01210                           INTERVALS (PROGRAM 3C).                   C98970
02000  ENVIRONMENT DIVISION.                                              C98970
02010  CONFIGURATION SECTION.                                             C98970
02020  SOURCE-COMPUTER. IBM-360.                                          C98970
02030  OBJECT-COMPUTER. IBM-360.                                          C98970
02100  INPUT-OUTPUT SECTION.                                              C98970
02110  FILE-CONTROL.                                                      C98970
02120      SELECT IN-FILE-D-8            ASSIGN TO UT-S-TU14              C98970
02130          RESERVE 1 ALTERNATE AREA.                                  C98970
02140      SELECT IN-FILE-ISC            ASSIGN TO DA-S-DT01              C98970
02150          RESERVE 1 ALTERNATE AREA.                                  C98970
02160      SELECT OUT-FILE-1             ASSIGN TO UT-S-TU22              C98970
02190          RESERVE 1 ALTERNATE AREA.                                  C98970
02200      SELECT OUT-FILE-2             ASSIGN TO UT-S-TU24              C98970
02210          RESERVE 1 ALTERNATE AREA.                                  C98970
10000  DATA DIVISION.                                                     C98970
10010  FILE SECTION.                                                      C98970
10100  FD  IN-FILE-D-8                                                    C98970
10120      RECORDING MODE IS F                                            C98970
10130      BLOCK CONTAINS 40 RECORDS                                      C98970
10140      RECORD CONTAINS 70            CHARACTERS                       C98970
10150      LABEL RECORDS ARE OMITTED                                      C98970
10160      DATA RECORDS ARE IN-REC-D-8.                                   C98970
10200  01  IN-REC-D-8 SYNC.                                              C98970
10210      02  FILLER                    PICTURE X(70).                   C98970
10220                                                                     C98970
11300  FD  IN-FILE-ISC                                                    C98970
11320      RECORDING MODE IS F                                            C98970
11330      BLOCK CONTAINS 20 RECORDS                                      C98970
11340      RECORD CONTAINS 80            CHARACTERS                       C98970
11350      LABEL RECORDS ARE STANDARD                                     C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                   C98970
11400  01  IN-REC-ISC SYNC.                                              C98970
11410      02  FILLER                    PICTURE X(80).                   C98970
12100  FD  OUT-FILE-1                                                     C98970
12120      RECORDING MODE IS F                                            C98970
12130      BLOCK CONTAINS 90 RECORDS                                      C98970
12140      RECORD CONTAINS 20            CHARACTERS                       C98970
12150      LABEL RECORDS ARE OMITTED                                      C98970
12160      DATA RECORDS ARE OUT-REC-1,                                    C98970
12200  01  OUT-REC-1 SYNC.                                               C98970
12210      02  FILLER                    PICTURE X(20).                   C98970
14100  FD  OUT-FILE-2                                                     C98970
14120      RECORDING MODE IS F                                            C98970
14130      BLOCK CONTAINS 90 RECORDS                                      C98970
14140      RECORD CONTAINS 20            CHARACTERS                       C98970
14150      LABEL RECORDS ARE OMITTED                                      C98970
14160      DATA RECORDS ARE OUT-REC-2.                                    C98970
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14200  01  OUT-REC-2 SYNC.                                                  C98970
14210      02  FILLER                      PICTURE X[20].                   C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30020  77  CURWEEK SYNC                    PICTURE 999.                     C98970
30030  77  CUR-SER-NO SYNC                 PICTURE X[8].                    C98970
30040  77  CUR-ISC      SYNC               PICTURE X.                       C98970
30050  77  KNT SYNC COMPUTATIONAL          PICTURE S999.                    C98970
30060  77  WEEK-TEMP SYNC                  PICTURE 999.                     C98970
30070  77  DELTA-WEEK SYNC                 PICTURE S999.                    C98970
30080  77  DELTA-FLT-HRS SYNC              PICTURE S999999.                 C98970
30090  77  CUR-FLT-HRS SYNC                PICTURE S999999.                 C98970
30100  77  FLAG SYNC COMPUTATIONAL         PICTURE S999 VALUE ZERO.         C98970
30130  77  NO-REC-1   SYNC                 PICTURE S9[7] VALUE ZERO.        C98970
30140  77  NO-REC-2   SYNC                 PICTURE S9[7] VALUE ZERO.        C98970
30170  77  CNT SYNC COMPUTATIONAL          PICTURE S999.                    C98970
30380  77  ONE  SYNC                       PICTURE X VALUE '1'.             C98970
30390  77  TWO  SYNC                       PICTURE X VALUE '2'.             C98970
30400  77  ISC-TEMP          SYNC          PICTURE X[8] VALUE SPACE.        C98970
30410  77  PREV-TESTED-SW    SYNC          PICTURE X[8] VALUE SPACE.        C98970
30420  77  ISC-FLAG          SYNC          PICTURE X    VALUE SPACE.        C98970
30430  77  MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.       C98970
31010  01  NO-ISC SYNC.                                                     C98970
31020      02  FILLER                      PICTURE XX.                      C98970
31030      02  NO-ISC-AC                   PICTURE S999.                    C98970
31040      02  FILLER                      PICTURE X[75].                   C98970
31050  01  ISC-A-C SYNC.                                                    C98970
31060      02  FILLER                      PICTURE XX.                      C98970
31070      02  ISC-TN                      PICTURE X[8].                    C98970
31080      02  FILLER                      PICTURE XX.                      C98970
31090      02  ISC-WK                      PICTURE  999.                    C98970
31100      02  FILLER                      PICTURE X[65].                   C98970
31200  01  FILLER SYNC.                                                     C98970
31205      02  FILLER OCCURS 36 TIMES.                                      C98970
31210          03  ISC-AC-TN               PICTURE X[8].                    C98970
31220          03  ISC-AC-WK COMPUTATIONAL PICTURE S999.                    C98970
31300  01  DATA-BANK-INPUT SYNC.                                            C98970
31310      02  FILLER                      PICTURE X[5].                    C98970
31320      02  SERIAL-NO                   PICTURE X[8].                    C98970
31330      02  WEEK                        PICTURE 999.                     C98970
31340      02  WUC                         PICTURE X[5].                    C98970
31350      02  WUC-B REDEFINES WUC.                                         C98970
31360          03  WUC-2                   PICTURE XX.                      C98970
31370          03  FILLER                  PICTURE XXX.                     C98970
31380      02  FILLER                      PICTURE X.                       C98970
31390      02  HMC                         PICTURE XXX.                     C98970
31400      02  UNITS                       PICTURE S999.                    C98970
31410      02  FILLER                      PICTURE X[20].                   C98970
31420      02  IDENT                       PICTURE 9.                       C98970
31430      02  FILLER                      PICTURE X[4].                    C98970
31440      02  FLT-HRS                     PICTURE S9[6].                   C98970
31450      02  FILLER                      PICTURE X[11].                   C98970
31500  01  OUT-DATA SYNC.                                                   C98970
31510      02  CURWUC                      PICTURE X[5].                    C98970
31520      02  CURHMC                      PICTURE XXX VALUE SPACE.         C98970
31530      02  FILLER                      PICTURE X VALUE  SPACE.          C98970
31540      02  OBS                         PICTURE S9[6].                   C98970
31550      02  FILLER                      PICTURE X VALUE  SPACE.          C98970
31560      02  ISCHRONAL                   PICTURE X.                       C98970
31570      02  FILLER                      PICTURE X VALUE  SPACE.          C98970
31580      02  DATA-TYPE                   PICTURE X.                       C98970
31590      02  FILLER                      PICTURE X   VALUE '#'.           C98970
31690  01  FILLER SYNC.                                                     C98970
31720      02  WEEK-HMC                    PICTURE S999 COMPUTATIONAL.      C98970
31730      02  FLT-HRS-HMC                 PICTURE S9[6] COMPUTATIONAL.     C98970
31800  01  NINE SYNC.                                                       C98970
31810      02  FILLER                      PICTURE X[20] VALUE              C98970
31820                          '99999999999999999999#'.                      C98970
41370  01  SPEC-SG-WUC-REC SYNC.                                            C98970
41380      02  SPEC-SG-WUC                 PICTURE X[5].                    C98970
41390      02  SPEC-WEEK-A                 PICTURE 999.                     C98970
41400      02  FILLER                      PICTURE X[72].                   C98970
45000  01      FILLER  SYNC.                                                C98970
45010      02  SPEC-SGWUC-LIST             PICTURE X[5]                     C98970
45020              OCCURS 10 TIMES.                                          C98970
45030      02  SPEC-WEEK-LIST              PICTURE 999                      C98970
45040              OCCURS 10 TIMES.                                          C98970
45050  01   NO-SPEC-SG-WUC SYNC             PICTURE S999 COMPUTATIONAL.      C98970
45060  01  SPEC-WUC      SYNC               PICTURE X[5].                    C98970
45070  01  SPEC-WEEK  SYNC                  PICTURE 999.                     C98970
45080  01  SPEC-INDEX  SYNC                 PICTURE S999 COMPUTATIONAL.      C98970
50000  PROCEDURE DIVISION.                                                  C98970
50010  OPEN-FILES.                                                          C98970
50020      OPEN INPUT IN-FILE-D-8, IN-FILE-ISC.                             C98970
50040      OPEN OUTPUT OUT-FILE-1, OUT-FILE-2.                              C98970
50050      PERFORM READ-ISC-A-C THRU END-RIAC.                              C98970
50055      PERFORM READ-SPEC-SG-WUC THRU END-RSSW.                          C98970
50060  READ-INITIAL.                                                        C98970
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50070      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                          C98970
50080                          AT END GO TO CLOSE-FILES.                   C98970
50100  CHECK-DATA.                                                         C98970
50120      IF IDENT IS EQUAL TO 3 GO TO PROC-III-2.                        C98970
50160      IF IDENT IS EQUAL TO 4 GO TO PROC-III-1.                        C98970
50170      GO TO READ-INITIAL.                                             C98970
50200  PROC-III-2.                                                         C98970
50201      PERFORM CHECK-ISCHRONAL THRU END-CI.                            C98970
50202      MOVE ISCHRONAL TO CUR-ISC.                                      C98970
50210      MOVE WUC TO CURWUC.                                             C98970
50220      MOVE WEEK TO CURWEEK.                                           C98970
50230      MOVE SERIAL-NO TO CUR-SER-NO.                                   C98970
50250      MOVE FLT-HRS TO CUR-FLT-HRS.                                    C98970
50260      GO TO SET-FLAG.                                                 C98970
50300  PROC-III-2A.                                                        C98970
50301      PERFORM CHECK-ISCHRONAL THRU END-CI.                            C98970
50302      IF ISCHRONAL IS NOT EQUAL TO CUR-ISC GO TO CHECK-DATA.          C98970
50310      IF WUC IS NOT EQUAL TO CURWUC GO TO CHECK-DATA.                 C98970
50320      IF SERIAL-NO IS NOT EQUAL TO CUR-SER-NO GO TO CHECK-DATA.       C98970
50330      MOVE ZERO TO SPEC-INDEX.                                        C98970
50331  PROC-III-2B.                                                        C98970
50332      ADD 1 TO SPEC-INDEX.                                            C98970
50333      IF WUC IS EQUAL TO SPEC-SGWUC-LIST (SPEC-INDEX) GO TO           C98970
50334                          PROC-SPEC-SGWUC.                            C98970
50335      IF SPEC-INDEX IS LESS THAN NO-SPEC-SG-WUC GO TO PROC-III-2B.    C98970
50337      IF UNITS IS NEGATIVE GO TO READ-SUB.                            C98970
50340      COMPUTE DELTA-WEEK > WEEK - CURWEEK - 1.                        C98970
50350      MOVE WEEK TO CURWEEK.                                           C98970
50360      COMPUTE DELTA-FLT-HRS > FLT-HRS - CUR-FLT-HRS.                  C98970
50380      MOVE FLT-HRS TO CUR-FLT-HRS.                                    C98970
50400      IF FLAG EQUAL ZERO GO TO SET-FLAG.                              C98970
50410      MOVE DELTA-WEEK TO OBS.                                         C98970
50420      MOVE ONE TO DATA-TYPE.                                          C98970
50430      WRITE OUT-REC-2 FROM OUT-DATA.                                  C98970
50440      MOVE DELTA-FLT-HRS TO OBS.                                      C98970
50450      MOVE TWO TO DATA-TYPE.                                          C98970
50460      WRITE OUT-REC-2 FROM OUT-DATA.                                  C98970
50465      ADD 2 TO NO-REC-2.                                              C98970
50500  SET-FLAG.                                                           C98970
50510      MOVE 1 TO FLAG.                                                 C98970
50520      IF UNITS IS EQUAL TO ZERO THEN MOVE ZERO TO FLAG.               C98970
50525  READ-SUB.                                                           C98970
50530      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                          C98970
50540                           AT END GO TO CLOSE-FILES.                  C98970
50550      GO TO PROC-III-2A.                                              C98970
50600  PROC-SPEC-SGWUC.                                                    C98970
50610      COMPUTE DELTA-WEEK > WEEK - CURWEEK - 1.                        C98970
50615      SUBTRACT 2 FROM SPEC-WEEK-LIST (SPEC-INDEX) GIVING SPEC-WEEK.   C98970
50620      IF DELTA-WEEK IS GREATER THAN SPEC-WEEK GO TO                   C98970
50625                          END-SG-WUC-INSPEC.                          C98970
50630  NOT-END-SG-WUC-INSPEC.                                              C98970
50640      MOVE FLT-HRS TO CUR-FLT-HRS.                                    C98970
50650      MOVE WEEK TO CURWEEK.                                           C98970
50660      GO TO READ-SUB.                                                 C98970
50700  END-SG-WUC-INSPEC.                                                  C98970
50710      MOVE DELTA-WEEK TO OBS.                                         C98970
50720      MOVE ONE TO DATA-TYPE.                                          C98970
50730      WRITE OUT-REC-2 FROM OUT-DATA.                                  C98970
50740      COMPUTE OBS > FLT-HRS - CUR-FLT-HRS.                            C98970
50750      MOVE TWO TO DATA-TYPE.                                          C98970
50760      WRITE OUT-REC-2 FROM OUT-DATA.                                  C98970
50770      ADD 2 TO NO-REC-2.                                              C98970
50780      GO TO NOT-END-SG-WUC-INSPEC.                                    C98970
51000  PROC-III-1.                                                         C98970
51030      MOVE WUC TO CURWUC.                                             C98970
51040      PERFORM CHECK-ISCHRONAL THRU END-CI.                            C98970
51050      MOVE SERIAL-NO TO CUR-SER-NO.                                   C98970
51060      MOVE ISCHRONAL TO CUR-ISC.                                      C98970
51070      MOVE HMC TO CURHMC.                                             C98970
51080      MOVE WEEK TO WEEK-HMC.                                          C98970
51090      MOVE FLT-HRS TO FLT-HRS-HMC.                                    C98970
51100  READ-III-1.                                                         C98970
51110      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                          C98970
51120                           AT END GO TO CLOSE-FILES.                  C98970
51130      IF IDENT IS EQUAL TO 9 THEN GO TO CLOSE-FILES.                  C98970
51140      IF IDENT IS NOT EQUAL TO 4 GO TO READ-III-1.                    C98970
51145      IF UNITS IS EQUAL TO ZERO GO TO READ-III-1.                     C98970
51150      IF HMC IS NOT EQUAL TO CURHMC GO TO PROC-III-1.                 C98970
51160      IF SERIAL-NO IS NOT EQUAL TO CUR-SER-NO GO TO PROC-III-1.       C98970
51170      IF WUC IS NOT EQUAL TO CURWUC GO TO PROC-III-1.                 C98970
51180      PERFORM CHECK-ISCHRONAL THRU END-CI.                            C98970
51190      IF ISCHRONAL IS NOT EQUAL TO CUR-ISC GO TO PROC-III-1.          C98970
51300  WRITE-HMC.                                                          C98970
51310      COMPUTE DELTA-WEEK > WEEK - WEEK-HMC.                           C98970
51320      COMPUTE DELTA-FLT-HRS > FLT-HRS - FLT-HRS-HMC.                  C98970
51340      MOVE    WEEK TO WEEK-HMC.                                       C98970
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51350      MOVE FLT-HRS TO FL7-HRS-HMC.                                    C98970
51360      MOVE DELTA-WEEK TO OBS.                                         C98970
51370      MOVE ONE TO DATA-TYPE.                                          C98970
51390      WRITE OUT-REC-1 FROM OUT-DATA.                                  C98970
51395      ADD 1 TO NO-REC-1.                                              C98970
51397      IF UNITS IS GREATER THAN <1 PERFORM WRITE-ZERO-DATA THRU         C98970
51398                                        END-WRITE-ZERO-DATA.          C98970
51400      MOVE DELTA-FLT-HRS TO OBS.                                      C98970
51410      MOVE TWO TO DATA-TYPE.                                          C98970
51420      WRITE OUT-REC-1 FROM OUT-DATA.                                  C98970
51425      ADD 1 TO NO-REC-1.                                              C98970
51430      IF UNITS IS GREATER THAN <1 PERFORM WRITE-ZERO-DATA THRU         C98970
51432                                        END-WRITE-ZERO-DATA.          C98970
51480      GO TO PROC-1-1-1.                                               C98970
51800 CLOSE-FILES.                                                         C98970
51810      COMPUTE KNT > NO-REC-1 - NO-REC-1 / 90 * 90.                    C98970
51820      IF KNT IS ZERO GO TO CF-2.                                      C98970
51830      PERFORM NINE-FILL-1 THRU N-F-1.                                 C98970
51840 CF-2.                                                                C98970
51850      COMPUTE KNT > NO-REC-2 - NO-REC-2 / 90 * 90.                    C98970
51860      IF KNT IS ZERO GO TO CF-3.                                      C98970
51870      PERFORM NINE-FILL-2 THRU N-F-2.                                 C98970
51900 CF-3.                                                                C98970
51910      DISPLAY ' NUMBER RECORDS-1 ' NO-REC-1 UPON CONSOLE.             C98970
51920      DISPLAY ' NUMBER RECORDS-2 ' NO-REC-2 UPON CONSOLE.             C98970
51940      DISPLAY ' END OF JOB C9897B' UPON CONSOLE.                      C98970
51950      CLOSE IN-FILE-D-B, OUT-FILE-1, IN-FILE-ISC,                     C98970
51960                         OUT-FILE-2 WITH LOCK.                        C98970
51990      GOBACK.                                                         C98970
52000 WRITE-ZERO-DATA.                                                     C98970
52010      MOVE UNITS TO CNT.                                              C98970
52020      MOVE ZERO TO OBS.                                               C98970
52030 W-Z-D.                                                               C98970
52040      SUBTRACT 1 FROM CNT.                                            C98970
52050      WRITE OUT-REC-1 FROM OUT-DATA.                                  C98970
52055      ADD 1 TO NO-REC-1.                                              C98970
52060      IF CNT IS GREATER THAN 1 GO TO W-Z-D.                           C98970
52070 END-WRITE-ZERO-DATA.                                                 C98970
70000 READ-ISC-A-C.                                                        C98970
70010      READ IN-FILE-ISC INTO NO-ISC AT END GO TO END-RIAC.             C98970
70020      MOVE ZERO TO KNT.                                               C98970
70030 RIAC.                                                                C98970
70040      ADD 1 TO KNT.                                                   C98970
70050      READ IN-FILE-ISC INTO ISC-A-C AT END GO TO END-RIAC.            C98970
70060      MOVE ISC-TN TO ISC-AC-TN (KNT).                                 C98970
70070      MOVE ISC-WK TO ISC-AC-WK (KNT).                                 C98970
70075      IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK                 C98970
70076                 TO MIN-ISC-WEEK.                                     C98970
70080      IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                       C98970
70090 END-RIAC. EXIT.                                                      C98970
70200 CHECK-ISCHRONAL.                                                     C98970
70210      IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-I-2.    C98970
70220      IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                       C98970
70230      IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN          C98970
70232                       MIN-ISC-WEEK, THEN GO TO END-CI.               C98970
70240 CHECK-1-2.                                                           C98970
70250      MOVE TWO TO ISCHRONAL.                                          C98970
70260      IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.                 C98970
70270      MOVE ZERO TO CNT.                                               C98970
70280 CHECK-1-1.                                                           C98970
70290      ADD 1 TO CNT.                                                   C98970
70300      MOVE ISC-AC-TN (CNT) TO ISC-TEMP.                               C98970
70310      IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-I-4.             C98970
70320      IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-I-1A.            C98970
70330      IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.                  C98970
70340 CHECK-1-4.                                                           C98970
70350      MOVE TWO TO ISC-FLAG.                                           C98970
70360      GO TO CHECK-1-3.                                                C98970
70370 CHECK-I-1A.                                                          C98970
70380      MOVE ISC-AC-WK (CNT) TO WEEK-TEMP.                              C98970
70390      IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN           C98970
70400         WEEK-TEMP MOVE ONE TO ISCHRONAL.                             C98970
70410      MOVE ONE TO ISC-FLAG.                                           C98970
70430 CHECK-1-3.                                                           C98970
70440      MOVE SERIAL-NO TO PREV-TESTED-SN.                               C98970
70450 END-CI. EXIT.                                                        C98970
70510 NINE-FILL-2.                                                         C98970
70520      WRITE OUT-REC-2  FROM NINE.                                     C98970
70530      ADD 1 TO KNT.                                                   C98970
70540      IF KNT IS LESS THAN 90 GO TO NINE-FILL-2.                       C98970
70550 N-F-2. EXIT.                                                         C98970
70600 NINE-FILL-1.                                                         C98970
70610      WRITE OUT-REC-1  FROM NINE.                                     C98970
70620      ADD 1 TO KNT.                                                   C98970
70630      IF KNT IS LESS THAN 90 GO TO NINE-FILL-1.                       C98970
70640 N-F-1. EXIT.                                                         C98970
85000 READ-SPEC-SG-WUC.                                                    C98970
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85010       MOVE ZERO TO NO-SPEC-SG-WUC.                                    C98970
85020   READ-SPEC.                                                          C98970
85030       READ IN-FILE-ISC INTO SPEC-SG-WUC-REC AT END GO TO END-RSSW.    C98970
85040       ADD 1 TO NO-SPEC-SG-WUC.                                        C98970
85050       MOVE SPEC-SG-WUC TO SPEC-SGWUC-LIST (NO-SPEC-SG-WUC).           C98970
85060       MOVE SPEC-WEEK-A TO SPEC-WEEK-LIST  (NO-SPEC-SG-WUC).           C98970
85070       GO TO READ-SPEC.                                                C98970
85090   END-RSSW. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.IFOIN     DD   *,SPACE=(CYL,(1,1))                                   1440 CDB
T/P  DT01     11  0202080
  34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324

  58000901  331
  59000002  331
  59000003  331
  59000005  331
  59000006  331
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  59000141  324
  59000143  324
  59000144  324
  59000145  324
  59000147  324
  59000151  324
  59000152  324
03300   3
03310   3
03320   3
03330   3
03400   5
03600   5
*END
/*       PLACE TPG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP=(OLD,KEEP),VOL=SER=+F3,UNIT=T+F3                 T14
//TPR.TU22      DD   DISP=(OLD,KEEP),VOL=SER=+F5,UNIT=T+F5                 T22
//TPR.TU24      DD   DISP=(OLD,KEEP),VOL=SER=+F7,UNIT=T+F7                 T24
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  DT01     1010080208
T/P  TU14     10100702070
T/P  TU22     10100202020
T/P  TU24     1010020202(
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.9.2 SORT FOR INSPECTION LENGTH INTERVALS

```
//C9897F EXEC  P9622N,WK=060,TIME=03,ACCT=035323007                        3BS
//CHG.SORTIN   DD   DISP=(,KEEP),UNIT=(A+F5,2,DEFER),                     CT22/23 1
//               DSN=+E.9897426.                                          CT22    2
//               VOL=SER=,+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,    CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    4
//               DCB=(LRECL=0020,BLKSIZE=1800),LABEL=(,NSL,RETPD=099)
//CHG.SORTOUT  DD   DISP=(,KEEP),UNIT=(A+F1,2,DEFER),DSN=+A.9897427.      CT12/13 1
//               VOL=SER=(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//               DCB=(LRECL=0020,BLKSIZE=1800)
//CHG.SYSIN    DD   *,DCB=BLKSIZE=0080,SPACE=(TRK,(1,1))
 SORT  FIELDS=(017,001,CH,A,019,001,CH,A,001,005,CH,A),SIZE=E0200000
 MODS  E15=(E15,008,SORTLIB,N),E18=(E18,024,SORTLIB,N)
/*
```

6.9.3 CUMULATIVE DISTRIBUTION FOR INSPECTION LENGTH INTERVALS

```
//C9897E EXEC  P9655L,TIME>04,ACCT>D35323007                              38
//CHG.TU12     DD   DISP>[,PASS],UNIT>[T+F1,1,DEFER],DSN>+A.9897427,    CT12    1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//               I+F1,J+F ,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU25     DD   DISP>[,PASS],UNIT>[T+F8,1,DEFER],DSN>+H,9897428,    CT25    1
//               VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,    CT25    2
//               1+F8,J+F ,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8]  T25    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000          COMBINE     COMPILE                  6, WANG,              C98970
01050  REMARKS.                                                           C98970
01060          MAINTENANCE STUDY   PROGRAM 3B.                           C98970
01070              INSPECTION INTERVAL LENGTHS.                          C98970
01080                PREPARES CUMULATIVE DISTRIBUTION OF INSPECTION      C98970
01090                          INTERVAL LENGTHS.                         C98970
01110                      AIRCRAFT SUB-SET, DATA-TYPE, WUC.             C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12           C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25           C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
09000      SELECT CUT-OFF-FILE           ASSIGN TO DA-S-DT03           C98970
09010          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE                                                       C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 90 RECORDS                                     C98970
11140      RECORD CONTAINS 20            CHARACTERS                      C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE IN-REC.                                      C98970
11170  01  IN-REC SYNC.                                                 C98970
11180      02  WUC                       PICTURE X[5].                  C98970
11182      02  FILLER                    PICTURE X[4].                  C98970
11183      02  OBS                       PICTURE S9[6].                 C98970
11184      02  OBS-1 REDEFINES OBS       PICTURE S99999V9.              C98970
11185      02  FILLER                    PICTURE X.                     C98970
11186      02  ISCHRONAL-NEW             PICTURE X.                     C98970
11187      02  FILLER                    PICTURE X.                     C98970
11188      02  DATA-TYPE-NEW             PICTURE X.                     C98970
11189      02  FILLER                    PICTURE X.                     C98970
12100  FD  HIST-FILE                                                     C98970
12120      RECORDING MODE IS F                                           C98970
12130      BLOCK CONTAINS 15 RECORDS                                     C98970
12140      RECORD CONTAINS 130           CHARACTERS                      C98970
12150      LABEL RECORDS ARE OMITTED                                     C98970
12160      DATA RECORDS ARE HIST-REC.                                    C98970
12170  01  HIST-REC SYNC.                                               C98970
12180      02  FILLER                    PICTURE X[130].                C98970
29000  FD  CUT-OFF-FILE                                                  C98970
29010      RECORDING MODE IS F                                           C98970
29020      BLOCK CONTAINS 20 RECORDS                                     C98970
29030      RECORD CONTAINS 80            CHARACTERS                      C98970
29040      LABEL RECORDS ARE STANDARD                                    C98970
29050      DATA RECORDS ARE CUT-OFF-REC.                                 C98970
29060  01  CUT-OFF-REC SYNC.                                            C98970
29070      05  NI-CUT-OFF                PICTURE 9[5].                  C98970
29080      05  ISO-CUT-OFF               PICTURE 9[5].                  C98970
29090      05  FILLER                    PICTURE X[70].                 C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  77  KNT SYNC PICTURE S9[5].                                      C98970
30020  01  FILLER  SYNC.                                                C98970
30030      02  FREQ-HIST-VALUE OCCURS 1000 TIMES PICTURE S9[5]          C98970
30040          COMPUTATIONAL.                                            C98970
30050  01  A PICTURE S9[5] COMPUTATIONAL.                               C98970
30060  01  NO-OF-HISTS          SYNC     PICTURE 9999 VALUE ZERO.       C98970
30070  01  TWO SYNC                      PICTURE X VALUE 121.           C98970
30080  01  ONE           SYNC            PICTURE X VALUE 111.           C98970
30090  01  CNT SYNC                      PICTURE S9[5] COMPUTATIONAL.   C98970
30100  01  CUR-WUC-T SYNC.                                              C98970
30110      02  FILLER                    PICTURE X[5] VALUE 1 WUC>1.    C98970
30120      02  CUR-WUC                   PICTURE X[5].                  C98970
30170  01  ISCHRONAL SYNC                PICTURE X.                     C98970
30180  01  DATA-TYPE    SYNC             PICTURE X.                     C98970
30190  01  MINUS-ONE COMPUTATIONAL       PICTURE S999 VALUE -1 SYNC.    C98970
32000  01  REPORT-ID SYNC.                                              C98970
32010      02  FILLER                    PICTURE X[50] VALUE            C98970
32020            1598897B60  TF7919-02 142-8 1       1/2          1,    C98970
32030      02  FILLER                    PICTURE X[50] VALUE SPACE.     C98970
32040      02  FILLER                    PICTURE X[30] VALUE            C98970
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32050                 :                                  *I.                                  C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9(7)V99.                                      C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9(7)V99.                                      C98970
46020  01  TEMP-COMP                  PICTURE S9(7)V99.                                      C98970
46100  01  MEAN-VARIANCE-LINE SYNC.                                                          C98970
46110      02  FILLER                 PICTURE X(50) VALUE                                    C98970
46120            :S                                                              :.          C98970
46130      02  FILLER                 PICTURE X(19) VALUE                                    C98970
46140            :              MEAN >:.                                                     C98970
46150      02  MEAN-RPT               PICTURE ZZZ9.9.                                        C98970
46160      02  FILLER                 PICTURE X(30) VALUE                                    C98970
46170            :                      VARIANCE >I.                                       C98970
46180      02  VARIANCE-RPT           PICTURE ZZZZZZ9.9.                                     C98970
46190      02  FILLER                 PICTURE X(16) VALUE                                    C98970
46200            :                   *:.                                                   C98970
47000  01  HIST-VALUE-MAX SYNC        PICTURE S9999V99 VALUE -9999.9.                        C98970
47010  01  HIST-VALUE-MIN SYNC        PICTURE S9999V99 VALUE +9999.9.                        C98970
47020  01  HIST-NO-OF-OBS SYNC        PICTURE S9(5)  VALUE ZERO.                             C98970
47030  01  HIST-NO-OF-INTERVALS SYNC  PICTURE 999V99 VALUE 50.                               C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC  PICTURE 9      VALUE ZERO.                             C98970
47050  01  HIST-DIST SYNC             PICTURE X      VALUE :I:.                              C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                                     C98970
47070                                 PICTURE S999   VALUE ZERO.                             C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                                   C98970
47090                                 PICTURE S999   VALUE ZERO.                             C98970
47100  01  HIST-TEMP SYNC             PICTURE S99999V99 VALUE ZERO.                          C98970
47110  01  HIST-INTERVAL-SIZE SYNC    PICTURE S999V99 VALUE ZERO                             C98970
47120                COMPUTATIONAL.                                                        C98970
47150  01  HIST-FLAG SYNC             PICTURE X      VALUE :0:.                              C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                               C98970
47170                                 PICTURE S999   VALUE <I.                               C98970
47180  01  HIST-PERCENT SYNC          PICTURE S999V99 COMPUTATIONAL.                         C98970
47190  01  HIST-CUM SYNC              PICTURE S999V99 COMPUTATIONAL.                         C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                                      C98970
47210                                 PICTURE S999  VALUE ZERO.                              C98970
47220  01  HIST-PAGE-FLAG SYNC        PICTURE S999 VALUE <75.                                C98970
47230  01  HIST-LINE-CNT SYNC         PICTURE S999.                                          C98970
47300  01  HIST-ERR-1 SYNC            PICTURE X(10)  VALUE                                   C98970
47310                          :ERROR NO 0:.                                               C98970
47320  01  HIST-ERR-3 SYNC.                                                                  C98970
47330      02  FILLER                 PICTURE X(5)   VALUE :BS > I.                          C98970
47340      02  HIST-ERR-2             PICTURE S9(5)  VALUE ZERO.                             C98970
47350  01  HIST-ERR-4 SYNC            PICTURE X(10)  VALUE                                   C98970
47360                          :ERROR  MAX:.                                               C98970
47370  01  HIST-ERR-5 SYNC            PICTURE X(10)  VALUE                                   C98970
47380                          :-MIN BAD. :.                                               C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC    PICTURE S999 COMPUTATIONAL.                          C98970
47500  01  FILLER SYNC.                                                                      C98970
47510      02  FILLER OCCURS 200 TIMES.                                                      C98970
47530          03  HIST-TABLE         PICTURE S9(5) COMPUTATIONAL.                           C98970
47540          03  HIST-UPPER-LIMIT   PICTURE S9999V99 COMPUTATIONAL.                        C98970
47550          03  HIST-TABLE-SCALED  PICTURE S999V99 COMPUTATIONAL.                         C98970
47560  01  HIST-NEW-PAGE SYNC.                                                               C98970
47570      02  FILLER                 PICTURE X    VALUE :1:.                                C98970
47580      02  FILLER                 PICTURE X(122) VALUE SPACE.                            C98970
47582      02  FILLER                 PICTURE X(5) VALUE :PAGE :.                            C98970
47584      02  HIST-PAGE-NO           PICTURE 9.                                             C98970
47590      02  FILLER                 PICTURE X    VALUE :*:.                                C98970
47600  01  HIST-TITLE SYNC.                                                                  C98970
47610      02  FILLER                 PICTURE X(3) VALUE :S  :.                              C98970
47620      02  HIST-TITLE-1.                                                                 C98970
47621          03  FILLER             PICTURE X(10) VALUE SPACE.                             C98970
47630      02  HIST-TITLE-2.                                                                 C98970
47631          03  FILLER             PICTURE X(10) VALUE SPACE.                             C98970
47640      02  HIST-TITLE-3           PICTURE X(10) VALUE SPACE.                             C98970
47650      02  HIST-TITLE-4           PICTURE X(10) VALUE SPACE.                             C98970
47660      02  FILLER                 PICTURE X(24) VALUE                                    C98970
47670            :    NO OF OBSERVATIONS >:.                                               C98970
47680      02  HIST-NO-OF-OBS-RPT     PICTURE ZZZZ9.                                         C98970
47690      02  FILLER                 PICTURE X(13) VALUE                                    C98970
47700            : VALUE MAX > :.                                                          C98970
47710      02  HIST-VALUE-MAX-RPT     PICTURE -----.9.                                       C98970
47720      02  FILLER                 PICTURE X(13) VALUE                                    C98970
47730            : VALUE MIN > :.                                                          C98970
47740      02  HIST-VALUE-MIN-RPT     PICTURE -----.9.                                       C98970
47750      02  FILLER                 PICTURE X(18) VALUE                                    C98970
47760                 I                 *:.                                               C98970
47900  01  HIST-DOT-LINE SYNC.                                                               C98970
47910      02  FILLER                 PICTURE X(50)  VALUE                                   C98970
47920            :/-------------------------------------------------:.                     C98970
47922      02  FILLER                 PICTURE X(80) VALUE                                    C98970
47930      :----------  ------------------------------------------------------------------  C98970
47940 -    :----------  ------*:.                                                           C98970
47950  01  HIST-LABEL SYNC.                                                                  C98970
47960      02  FILLER                 PICTURE X(50)  VALUE                                   C98970
47970            :/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.I.                     C98970
47974      02  FILLER                 PICTURE X(80) VALUE           :..                      C98970
47980 -    :25...30...35...40...45...50...55...60...65...70...75...80...                  C98970
47990 -    :85...90...95..I00*:.                                                          C98970
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48000  01  HIST-LINE-OUT SYNC.                                                  C98970
48010      02  FILLER                    PICTURE X VALUE '/'.                  C98970
48020      02  HIST-LINE-RPT             PICTURE ZZ9.                          C98970
48030      02  FILLER                    PICTURE X VALUE SPACE.                C98970
48040      02  HIST-MID-POINT-RPT        PICTURE -----.9.                      C98970
48060      02  HIST-PERCENT-RPT          PICTURE ZZ9.9.                        C98970
48070      02  FILLER                    PICTURE X VALUE SPACE.                C98970
48080      02  HIST-CUM RPT              PICTURE ZZ9.9.                        C98970
48100      02  HIST-FREQ-RPT             PICTURE ZZZZ9.                        C98970
48110      02  FILLER                    PICTURE X VALUE SPACE.                C98970
48120      02  HIST-POINT OCCURS 100 TIMES                                     C98970
48130                                    PICTURE X.                            C98970
48140      02  FILLER                    PICTURE X VALUE '*'.                  C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                            C98970
48160      02  FILLER                    PICTURE X(35) VALUE                   C98970
48170          '/   NUMBER OF OUT OF RANGE VALUES >'.                          C98970
48180      02  HIST-OUT-RANGE-RPT        PICTURE ZZ9.                          C98970
48190      02  FILLER                    PICTURE X(91) VALUE SPACE.            C98970
48191      02  FILLER                    PICTURE X VALUE '*'.                  C98970
48200  01  HIST-SCALE-LINE SYNC.                                               C98970
48210      02  FILLER                    PICTURE X(27) VALUE                   C98970
48220          '/         SCALING FACTOR > 1.                                 C98970
48230      02  HIST-SCALE-RPT            PICTURE ZZ9.                          C98970
48240      02  FILLER                    PICTURE X(099) VALUE SPACE.           C98970
48250      02  FILLER                    PICTURE X VALUE '*'.                  C98970
48300  01  FILLER SYNC.                                                        C98970
48310      02  HIST-VALUE OCCURS 1000 TIMES                                    C98970
48320                                    PICTURE S9999V9 COMPUTATIONAL.        C98970
50000  PROCEDURE DIVISION.                                                   C98970
50001      OPEN INPUT CUT-OFF-FILE.                                          C98970
50002      READ CUT-OFF-FILE AT END GO TO CLOSE-FILES.                       C98970
50003      CLOSE CUT-OFF-FILE WITH LOCK.                                     C98970
50010      OPEN INPUT IN-FILE.                                               C98970
50020      OPEN OUTPUT HIST-FILE.                                            C98970
50030      MOVE 1000 TO KNT.                                                 C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50050      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50060      WRITE HIST-REC FROM REPORT-ID.                                    C98970
50100  PARA-1.                                                               C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                         C98970
50120      MOVE WUC TO CUR-WUC.                                              C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                                  C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                                  C98970
50160      IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO          C98970
50170              FLT-DATA.                                                 C98970
50200  READ1.                                                                C98970
50210      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO '9' GO TO CLOSE-FILES.               C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                      C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                          C98970
50260      IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO          C98970
50270                      FLT-DATA.                                         C98970
50300  PARA-2.                                                               C98970
50310      PERFORM SET-HISTOG THRU END-SH.                                   C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50330      GO TO PARA-1.                                                     C98970
50400  RESET-TABLE.                                                          C98970
50410      MOVE ZERO TO CNT.                                                 C98970
50420  RST.                                                                  C98970
50430      ADD 1 TO CNT.                                                     C98970
50440      MOVE MINUS-ONE TO HIST-VALUE (CNT).                               C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE (CNT).                               C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                                C98970
50455      MOVE ZERO TO CNT.                                                 C98970
50460  END-RST-TABLE. EXIT.                                                  C98970
50510  SET-HISTOG.                                                           C98970
50512      IF ISCHRONAL IS EQUAL TO ONE AND HIST-NO-OF-OBS IS NOT            C98970
50514        GREATER THAN ISO-CUT-OFF GO TO END-SH.                          C98970
50516      IF ISCHRONAL IS EQUAL TO TWO AND HIST-NO-OF-OBS IS NOT            C98970
50518        GREATER THAN  NI-CUT-OFF GO TO END-SH.                          C98970
50520      IF ISCHRONAL IS EQUAL TO ONE MOVE ' ISO      ' TO                 C98970
50530          HIST-TITLE-4, ELSE MOVE ' NON-ISO  ' TO HIST-TITLE-4.         C98970
50540      IF DATA-TYPE IS EQUAL TO ONE MOVE '  WEEKS   ' TO                C98970
50550          HIST-TITLE-3, ELSE MOVE ' FLT-HOURS' TO HIST-TITLE-3.         C98970
50560      MOVE CUR-WUC-T TO HIST-TITLE-1.                                   C98970
50590      PERFORM WRITE-HISTOGRAM THRU END-HIST.                            C98970
50600      IF HIST-FLAG IS     EQUAL TO '1' THEN GO TO CFI.                  C98970
50610      ADD 1 TO NO-OF-HISTS.                                             C98970
50620  END-SH. EXIT.                                                         C98970
51000  WEEKS-DATA.                                                           C98970
51010      MOVE ZERO TO CNT.                                                 C98970
51020  WEEK-A.                                                               C98970
51030      ADD 1 TO CNT                                                      C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.              C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.           C98970
51060      IF CNT IS LESS THAN 1000 GO TO WEEK-A.                            C98970
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51070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.   C98970
51080      GO TO CF1.                                                     C98970
51090  WEEK-B.                                                            C98970
51100      MOVE OBS   TO HIST-VALUE [CNT].                                C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.               C98970
51120  WEEK-C.                                                            C98970
51130      ADD 1 TO FREQ-HIST-VALUE [CNT].                                C98970
51140      GO TO READ1.                                                   C98970
52000  FLT-DATA.                                                          C98970
52010      MOVE ZERO TO CNT.                                              C98970
52020  FLT-A.                                                             C98970
52030      ADD 1 TO CNT.                                                  C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE [CNT] GO TO FLT-C.            C98970
52050      IF FREQ-HIST-VALUE [CNT] IS EQUAL TO ZERO GO TO FLT-B.         C98970
52060      IF CNT IS LESS THAN 1000 GO TO FLT-A.                          C98970
52070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.  C98970
52080      GO TO CF1.                                                     C98970
52090  FLT-B.                                                             C98970
52100      MOVE OBS-1 TO HIST-VALUE [CNT].                                C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.               C98970
52120  FLT-C.                                                             C98970
52130      ADD 1 TO FREQ-HIST-VALUE [CNT].                                C98970
52140      GO TO READ1.                                                   C98970
52200  CLOSE-FILES.                                                       C98970
52205      PERFORM SET-HISTOG THRU END-SH.                                C98970
52207  CF1.                                                               C98970
52210      CLOSE IN-FILE, HIST-FILE.                                      C98970
52211      IF HIST-FLAG IS EQUAL TO 111 DISPLAY ' HIST ERROR ' UPON       C98970
52212          CONSOLE.                                                   C98970
52215      DISPLAY ' NO OF HISTOGRAMS > ' NO-OF-HISTS UPON CONSOLE.       C98970
52220      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                            C98970
52230      GOBACK.                                                        C98970
95000  COMPUTE-MEAN-VARIANCE.                                             C98970
95010      MOVE ZERO TO CNT.                                              C98970
95020      MOVE ZERO TO MEAN.                                             C98970
95030  CMV-1.                                                             C98970
95040      ADD 1 TO CNT.                                                  C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE [CNT] * FREQ-HIST-VALUE [CNT].  C98970
95060      ADD TEMP-COMP TO MEAN.                                         C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                           C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                               C98970
95090      MOVE ZERO TO CNT.                                              C98970
95100      MOVE ZERO TO VARIANCE.                                         C98970
95105      IF HIST-NO-OF-OBS IS LESS THAN 2 GO TO END-CMV.                C98970
95110  CMV-2.                                                             C98970
95120      ADD 1 TO CNT.                                                  C98970
95130      COMPUTE TEMP-COMP > [[HIST-VALUE [CNT] - MEAN] ** 2] *         C98970
95140                                        FREQ-HIST-VALUE [CNT].       C98970
95150      ADD TEMP-COMP TO VARIANCE.                                     C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                           C98970
95170      COMPUTE VARIANCE > VARIANCE / [HIST-NO-OF-OBS - 1].            C98970
95180      MOVE MEAN TO MEAN-RPT.                                         C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                                 C98970
95200      WRITE HIST-REC FROM MEAN-VARIANCE-LINE.                        C98970
95290  END-CMV.      EXIT.                                                C98970
97000  WRITE-HISTOGRAM.                                                   C98970
97080      MOVE 101 TO HIST-FLAG.                                         C98970
97090      MOVE ZERO TO HIST-OUT-RANGE-VALUE.                             C98970
97100      MOVE ZERO TO HIST-PAGE-NO.                                     C98970
97140      MOVE -9999.9 TO HIST-VALUE-MAX.                                C98970
97150      MOVE +9999.9 TO HIST-VALUE-MIN.                                C98970
97200      MOVE ZERO TO HIST-INDEX.                                       C98970
97210  HIST-FIND-VMAX-VMIN.                                               C98970
97220      ADD 1 TO HIST-INDEX.                                           C98970
97230      MOVE HIST-VALUE [HIST-INDEX] TO HIST-TEMP.                     C98970
97240      IF HIST-TEMP IS GREATER THAN HIST-VALUE-MAX THEN MOVE          C98970
97250                HIST-TEMP TO HIST-VALUE-MAX.                         C98970
97260      IF HIST-TEMP IS LESS    THAN HIST-VALUE-MIN THEN MOVE          C98970
97270                HIST-TEMP TO HIST-VALUE-MIN.                         C98970
97280      IF HIST-INDEX IS LESS THAN KNT            THEN GO TO           C98970
97290                           HIST-FIND-VMAX-VMIN.                      C98970
97292      IF DATA-TYPE IS EQUAL TO ONE COMPUTE HIST-NO-OF-INTERVALS >    C98970
97294          HIST-VALUE-MAX < 4.                                        C98970
97296      IF DATA-TYPE IS EQUAL TO TWO COMPUTE HIST-NO-OF-INTERVALS >    C98970
97298          HIST-VALUE-MAX / 8 < 4.                                    C98970
97300  HIST-PRINT-TITLE.                                                  C98970
97301      IF HIST-NO-OF-INTERVALS IS LESS THAN 50 MOVE 50 TO             C98970
97302         HIST-NO-OF-INTERVALS.                                       C98970
97304      ADD 1 TO HIST-PAGE-NO.                                         C98970
97306      MOVE 5 TO HIST-LINE-CNT.                                       C98970
97310      WRITE HIST-REC FROM HIST-NEW-PAGE.                             C98970
97320      MOVE HIST-NO-OF-OBS TO HIST-NO-OF-OBS-RPT.                     C98970
97330      MOVE HIST-VALUE-MAX TO HIST-VALUE-MAX-RPT.                     C98970
97340      MOVE HIST-VALUE-MIN TO HIST-VALUE-MIN-RPT.                     C98970
97350      WRITE HIST-REC FROM HIST-TITLE.                                C98970
97355      PERFORM COMPUTE-MEAN-VARIANCE THRU END-CMV.                    C98970
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97360      WRITE HIST-REC FROM HIST-DOT-LINE.                                C98970
97370      WRITE HIST-REC FROM HIST-LABEL.                                   C98970
97380      WRITE HIST-REC FROM HIST-DOT-LINE.                                C98970
97390  HIST-DUMMY.                                                           C98970
97410      IF HIST-VALUE-MAX IS LESS THAN HIST-VALUE-MIN THEN GO TO          C98970
97420                                HIST-ERROR-2.                           C98970
97430      IF HIST-NO-OF-INTERVALS IS GREATER THAN 200 THEN MOVE 200         C98970
97440                          TO HIST-NO-OF-INTERVALS.                      C98970
97441      MOVE ZERO TO HIST-INDEX.                                          C98970
97442  HIST-RST.                                                             C98970
97443      ADD 1 TO HIST-INDEX.                                              C98970
97444      MOVE ZERO TO HIST-TABLE (HIST-INDEX).                             C98970
97445      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS                   C98970
97446                          THEN GO TO HIST-RST.                          C98970
97450      IF DATA-TYPE IS EQUAL TO ONE MOVE 1.0 TO HIST-INTERVAL-SIZE,      C98970
97460                                ELSE MOVE 8.0 TO HIST-INTERVAL-SIZE.    C98970
97500      NOTE COMPUTE UPPER LIMIT FOR EACH INTERVAL.                       C98970
97510      MOVE ZERO TO HIST-INDEX.                                          C98970
97520      MOVE ZERO              TO HIST-TEMP.                              C98970
97530  HIST-INC-INTERVAL.                                                    C98970
97540      ADD 1 TO HIST-INDEX.                                              C98970
97550      ADD HIST-INTERVAL-SIZE TO HIST-TEMP.                              C98970
97560      MOVE HIST-TEMP TO HIST-UPPER-LIMIT (HIST-INDEX).                  C98970
97570      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN              C98970
97580                          GO TO HIST-INC-INTERVAL.                      C98970
97600      NOTE PLACE OCCURANCE INTO APPROPRIATE CHANNEL.                    C98970
97610      MOVE ZERO TO HIST-INDEX-2.                                        C98970
97620  HIST-OCCURANCE.                                                       C98970
97630      ADD 1 TO HIST-INDEX-2.                                            C98970
97640      MOVE HIST-VALUE (HIST-INDEX-2) TO HIST-TEMP.                      C98970
97650      MOVE ZERO TO HIST-INDEX.                                          C98970
97660  HIST-INTERVAL.                                                        C98970
97670      ADD 1 TO HIST-INDEX.                                              C98970
97675      MOVE FREQ-HIST-VALUE (HIST-INDEX-2) TO A.                         C98970
97680      IF HIST-TEMP IS NOT GREATER THAN HIST-UPPER-LIMIT                 C98970
97690          (HIST-INDEX) THEN GO TO HIST-ADD-TABLE.                       C98970
97700      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO        C98970
97710                                HIST-INTERVAL.                          C98970
97720      ADD A TO HIST-OUT-RANGE-VALUE.                                    C98970
97730      GO TO HIST-NO-ADD.                                                C98970
97740  HIST-ADD-TABLE.                                                       C98970
97750      ADD A TO HIST-TABLE (HIST-INDEX).                                 C98970
97751  HIST-NO-ADD.                                                          C98970
97760      IF HIST-INDEX < 2 TO TEST AND                  ## IN HIST=OCCURANCE. C98970
97800      NOTE COMPUTE SCALE VALUE.                                         C98970
97810      MOVE HIST-TABLE (1) TO HIST-TEMP.                                 C98970
97820      MOVE 1 TO HIST-INDEX.                                             C98970
97830  HIST-SCALE.                                                           C98970
97840      ADD 1 TO HIST-INDEX.                                              C98970
97850      IF HIST-TABLE (HIST-INDEX) IS GREATER THAN HIST-TEMP THEN         C98970
97860          MOVE HIST-TABLE (HIST-INDEX) TO HIST-TEMP.                    C98970
97870      IF HIST-INDEX IS LESS     THAN HIST-NO-OF-INTERVALS THEN GO TO    C98970
97880                                HIST-SCALE.                             C98970
97890      COMPUTE HIST-SCALE-VALUE > (HIST-TEMP < 99) / 100.                C98970
97895      IF HIST-SCALE-VALUE IS LESS THAN 1 MOVE 1 TO                      C98970
97896         HIST-SCALE-VALUE.                                              C98970
97900      MOVE ZERO TO HIST-INDEX.                                          C98970
97910  HIST-SCALED-VALUES.                                                   C98970
97920      ADD 1 TO HIST-INDEX.                                              C98970
97930      COMPUTE HIST-TABLE-SCALED (HIST-INDEX) >                          C98970
97940              HIST-TABLE (HIST-INDEX) / HIST-SCALE-VALUE.               C98970
97950      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO        C98970
97960                                HIST-SCALED-VALUES.                     C98970
98000      NOTE PREPARE OUTPUT DATA.                                         C98970
98010      DIVIDE 2 INTO HIST-INTERVAL-SIZE.                                 C98970
98020      MOVE ZERO TO HIST-CUM.                                            C98970
98030      MOVE ZERO TO HIST-LINE.                                           C98970
98040  HIST-PREPARE.                                                         C98970
98050      ADD 1 TO HIST-LINE.                                               C98970
98060      MOVE HIST-LINE TO HIST-LINE-RPT.                                  C98970
98070      COMPUTE HIST-TEMP > HIST-UPPER-LIMIT (HIST-LINE)                  C98970
98080                                - HIST-INTERVAL-SIZE.                   C98970
98090      MOVE HIST-TEMP TO HIST-MID-POINT-RPT.                             C98970
98100      COMPUTE HIST-PERCENT > HIST-TABLE (HIST-LINE) * 100               C98970
98110                                / HIST-NO-OF-OBS.                       C98970
98120      MOVE HIST-PERCENT TO HIST-PERCENT-RPT.                            C98970
98130      ADD HIST-PERCENT TO HIST-CUM.                                     C98970
98140      MOVE HIST-CUM TO HIST-CUM-RPT.                                    C98970
98150      MOVE HIST-TABLE (HIST-LINE) TO HIST-FREQ-RPT.                     C98970
98160      MOVE ZERO TO HIST-INDEX.                                          C98970
98170      IF HIST-DIST IS NOT EQUAL TO :0:  GO TO HIST-CUM-1.               C98970
98180      COMPUTE HIST-INDEX-2 > HIST-TABLE-SCALED (HIST-LINE) < 0.5.       C98970
98190      IF HIST-INDEX-2 IS EQUAL TO ZERO GO TO HIST-PREP-SPACE.           C98970
98200  HIST-PREP-DIST.                                                       C98970
98210      ADD 1 TO HIST-INDEX.                                              C98970
98220      MOVE :*: TO HIST-POINT (HIST-INDEX).                              C98970
98230      IF HIST-INDEX IS LESS THAN HIST-INDEX-2 GO TO HIST-PREP-DIST.     C98970
```

```
98240       IF HIST-INDEX IS EQUAL TO 100 THEN GO TO HIST-WRITE.                C98970
98250   HIST-PREP-SPACE.                                                        C98970
98260       ADD 1 TO HIST-INDEX.                                                C98970
98270       MOVE SPACE TO HIST-POINT (HIST-INDEX).                              C98970
98280       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-PREP-SPACE.          C98970
98290       GO TO HIST-WRITE.                                                   C98970
98300   HIST-CUM-1.                                                             C98970
98310       ADD 1 TO HIST-INDEX.                                                C98970
98320       MOVE SPACE TO HIST-POINT (HIST-INDEX).                              C98970
98330       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-CUM-1.               C98970
98338       COMPUTE HIST-INDEX > HIST-CUM < 0.5.                                C98970
98339       IF HIST-INDEX IS EQUAL TO ZERO GO TO HIST-WRITE.                    C98970
98340       MOVE ':' TO HIST-POINT (HIST-INDEX).                                C98970
98400   HIST-WRITE.                                                             C98970
98410       WRITE HIST-REC FROM HIST-LINE-OUT.                                  C98970
98412       ADD 1 TO HIST-LINE-CNT.                                             C98970
98414       IF HIST-PAGE-FLAG IS EQUAL TO ZERO GO TO HIST-NO-PAGING.            C98970
98415       IF HIST-LINE-CNT IS EQUAL TO HIST-PAGE-FLAG                         C98970
98416                           THEN PERFORM HIST-PRINT-TITLE.                  C98970
98417   HIST-NO-PAGING.                                                         C98970
98420       IF HIST-LINE IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO           C98970
98430                                       HIST-PREPARE.                       C98970
98440       WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
98450       MOVE HIST-SCALE-VALUE TO HIST-SCALE-RPT.                            C98970
98460       WRITE HIST-REC FROM HIST-SCALE-LINE.                                C98970
98470       IF HIST-OUT-RANGE-VALUE IS EQUAL TO ZERO GO TO HIST-WRITE-B.        C98970
98480       MOVE HIST-OUT-RANGE-VALUE TO HIST-OUT-RANGE-RPT.                    C98970
98490       WRITE HIST-REC FROM HIST-OUT-RANGE-REC.                             C98970
98500   HIST-WRITE-B.                                                           C98970
98510       WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
98520       GO TO END-HIST.                                                     C98970
99000   HIST-ERROR-1.                                                           C98970
99010       WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99020       MOVE HIST-ERR-1 TO HIST-TITLE-1.                                    C98970
99030       MOVE HIST-NO-OF-OBS TO HIST-ERR-2.                                  C98970
99040       WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99050       MOVE '1' TO HIST-FLAG.                                              C98970
99060       GO TO END-HIST.                                                     C98970
99100   HIST-ERROR-2.                                                           C98970
99110       MOVE HIST-ER -4 TO HIST-TITLE-1.                                    C98970
99120       MOVE HIST-ERR-5 TO HIST-TITLE-2.                                    C98970
99130       WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99140       MOVE '1' TO HIST-FLAG.                                              C98970
99150       GO TO END-HIST.                                                     C98970
99200   HIST-ERR-3.                                                             C98970
99210       MOVE '1' TO HIST-FLAG.                                              C98970
99990   END-HIST. EXIT.                                                         C98970
/*        PLACE COBOL SOURCE BEFORE
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                      1440 CDS
TFG  DT03     I1  020Z080
   5     0
*END
/*        PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=+F1,UNIT=T+F1                     T12
//TPR.TU25      DD   DISP=(OLD,KEEP),VOL=SER=+F8,UNIT=T+F8                     T25
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU25     I998I30R000
/*        PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.9.4 SORT FOR REPAIR ACTION INTERVALS

```
//T9897J JOB    01,': G WANG      :,PRTY=02,TYPRUN=HOLD
//C9897F EXEC   P962ZN,W.060,TIME=05,ACCT=D35323007                          SCS
//CHG.SORTIN    DD   DISP=(,KEEP),UNIT=(A+F5,2,DEFER),                       CT22/23 1
//               DSN=+E.9897429,                                             CT22    2
//               VOL=SER=(L+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,      CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),    CT22    4
//               DCB=(LRECL=0020,BLKSIZE=1800),LABEL=(,NSL,RETPD=099)
//CHG.SORTOUT   DD   DISP=(,KEEP),UNIT=(A+F1,2,DEFER),DSN=+A.9897430,        CT12/13 1
//               VOL=SER=(L+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,      CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),    CT12    3
//               DCB=(LRECL=0020,BLKSIZE=1800)
//CHG.SYSIN     DD   *,DCB=BLKSIZE=0080,SPACE=(TRK,(1,1))
 SORT  FIELDS=(017,001,CH,A,019,001,CH,A,001,005,CH,A,006,003,CH,A),        C
               SIZE=E0300000
 MODS  E15=(E15,008,SORTLIB,N),E18=(E18,024,SORTLIB,N)
/*
```

6.9.5 CUMULATIVE DISTRIBUTION FOR REPAIR ACTION INTERVALS

```
//C9897C EXEC  P9h55L,TIME>10,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(A+F1,2,DEFER),DSN>+A.9897430,   CT12/13 1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1) T12     3
//CHG.TU25     DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>+H.9897431,   CT25    1
//             VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25    2
//             I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8) T25     3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                1440 CDS
00000        COMBINE     COMPILE                  G. WANG.              C98970
01040  DATE-WRITTEN.  7 APR 72.                                         C98970
01050  REMARKS.                                                         C98970
01060          MAINTENANCE STUDY   PROGRAM 3C.                          C98970
01070              REPAIR ACTION INTERVALS.                             C98970
01080                PREPARES CUMULATIVE DISTRIBUTION OF REPAIR ACTION  C98970
01090                              INTERVALS.                           C98970
01100                INPUT SORT SEQUENCE                                C98970
01110                      AIRCRAFT SUB-SET, DATA-TYPE, WUC, HMC,       C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12          C98970
02130          RESERVE 1 ALTERNATE AREA.                                C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25          C98970
02150          RESERVE 1 ALTERNATE AREA.                                C98970
09000      SELECT CUT-OFF-FILE           ASSIGN TO DA-S-DT03          C98970
09010          RESERVE 1 ALTERNATE AREA.                                C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
11100  FD  IN-FILE                                                      C98970
11120      RECORDING MODE IS F                                          C98970
11130      BLOCK CONTAINS 90 RECORDS                                    C98970
11140      RECORD CONTAINS 20          CHARACTERS                       C98970
11150      LABEL RECORDS ARE OMITTED                                    C98970
11160      DATA RECORDS ARE IN-REC.                                     C98970
11170  01  IN-REC SYNC.                                                C98970
11180      02  WUC                     PICTURE X(5).                   C98970
11181      02 HMC                      PICTURE X(3).                   C98970
11182      02  FILLER                  PICTURE X.                      C98970
11183      02  OBS                     PICTURE S9(6).                  C98970
11184      02  OBS-1 REDEFINES OBS     PICTURE S99999V9.               C98970
11185      02  FILLER                  PICTURE X.                      C98970
11186      02  ISCHRONAL-NEW           PICTURE X.                      C98970
11187      02  FILLER                  PICTURE X.                      C98970
11188      02  DATA-TYPE-NEW           PICTURE X.                      C98970
11189      02  FILLER                  PICTURE X.                      C98970
12100  FD  HIST-FILE                                                    C98970
12120      RECORDING MODE IS F                                          C98970
12130      BLOCK CONTAINS 15 RECORDS                                    C98970
12140      RECORD CONTAINS 130         CHARACTERS                       C98970
12150      LABEL RECORDS ARE OMITTED                                    C98970
12160      DATA RECORDS ARE HIST-REC.                                   C98970
12170  01  HIST-REC SYNC.                                              C98970
12180      02  FILLER                  PICTURE X(130).                 C98970
29000  FD  CUT-OFF-FILE                                                 C98970
29010      RECORDING MODE IS F                                          C98970
29020      BLOCK CONTAINS 20 RECORDS                                    C98970
29030      RECORD CONTAINS 80          CHARACTERS                       C98970
29040      LABEL RECORDS ARE STANDARD                                   C98970
29050      DATA RECORDS ARE CUT-OFF-REC.                                C98970
29060  01  CUT-OFF-REC SYNC.                                           C98970
29070      05  NI-CUT-OFF              PICTURE 9(5).                   C98970
29080      05  ISO-CUT-OFF             PICTURE 9(5).                   C98970
29090      05  FILLER                  PICTURE X(70).                  C98970
30000  WORKING-STORAGE SECTION.                                         C98970
30010  77  KNT SYNC PICTURE S9(5).                                     C98970
30020  01  FILLER  SYNC.                                               C98970
30030      02  FREQ-HIST-VALUE OCCURS 1000 TIMES PICTURE S9(5)         C98970
30040          COMPUTATIONAL.                                           C98970
30050  01  A PICTURE S9(5) COMPUTATIONAL.                              C98970
30060  01  NO-OF-HISTS          SYNC   PICTURE 9999 VALUE ZERO.        C98970
30070  01  TWO SYNC                    PICTURE X VALUE :2:.            C98970
30080  01  ONE           SYNC          PICTURE X VALUE !1!.            C98970
30090  01  CNT SYNC                    PICTURE S9(5) COMPUTATIONAL.    C98970
30100  01  CUR-WUC-T SYNC.                                             C98970
30110      02  FILLER                  PICTURE X(5) VALUE : WUC>I.     C98970
30120      02  CUR-WUC                 PICTURE X(5).                   C98970
30130  01  CUR-HMC-T SYNC.                                             C98970
30140      02  FILLER                  PICTURE X(5) VALUE I HMC>I.     C98970
30150      02  CUR-HMC                 PICTURE X(3).                   C98970
30160      02  FILLER                  PICTURE XX VALUE SPACE.         C98970
30170  01  ISCHRONAL SYNC              PICTURE X.                      C98970
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30180  01  DATA-TYPE   SYNC              PICTURE X.                              C98970
30190  01  MINUS-ONE COMPUTATIONAL       PICTURE S999 VALUE -1 SYNC.             C98970
32000  01  REPORT-IO SYNC.                                                       C98970
32010      02  FILLER                    PICTURE X(50) VALUE                     C98970
32020            :$989/A60  TF7919-02 142-8 1       1/2                 :.      C98970
32030      02  FILLER                    PICTURE X(50) VALUE SPACE.              C98970
32040      02  FILLER                    PICTURE X(30) VALUE                     C98970
32050            :                          #:.                                 C98970
46000  01  MEAN     COMPUTATIONAL SYNC.  PICTURE S9(7)V99.                       C98970
46010  01  VARIANCE COMPUTATIONAL SYNC   PICTURE S9(7)V99.                       C98970
46020  01  TEMP-COMP                     PICTURE S9(7)V99.                       C98970
46100  01  MEAN-VARIANCE-LINE SYNC.                                              C98970
46110      02  FILLER                    PICTURE X(50) VALUE                     C98970
46120            :S                                                      :.      C98970
46130      02  FILLER                    PICTURE X(19) VALUE                     C98970
46140            :                MEAN >:.                                      C98970
46150      02  MEAN-RPT                  PICTURE ZZZ9.9.                         C98970
46160      02  FILLER                    PICTURE X(30) VALUE                     C98970
46170            :                         VARIANCE >:.                         C98970
46180      02  VARIANCE-RPT              PICTURE ZZZZZZ9.9.                      C98970
46190      02  FILLER                    PICTURE X(16) VALUE                     C98970
46200            :                      #:.                                     C98970
47000  01  HIST-VALUE-MAX SYNC           PICTURE S9999V99 VALUE -9999.9.         C98970
47010  01  HIST-VALUE-MIN SYNC           PICTURE S9999V99 VALUE +9999.9.         C98970
47020  01  HIST-NO-OF-OBS SYNC           PICTURE S9(5)  VALUE ZERO.              C98970
47030  01  HIST-NO-OF-INTERVALS SYNC     PICTURE 999V99 VALUE 50.                C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC     PICTURE 9      VALUE ZERO.              C98970
47050  01  HIST-DIST SYNC                PICTURE X      VALUE :1:.               C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                         C98970
47070                                     PICTURE S999   VALUE ZERO.             C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                       C98970
47090                                     PICTURE S999   VALUE ZERO.             C98970
47100  01  HIST-TEMP SYNC                PICTURE S99999V99 VALUE ZERO.           C98970
47110  01  HIST-INTERVAL-SIZE SYNC       PICTURE S999V99 VALUE ZERO              C98970
47120                COMPUTATIONAL.                                             C98970
47150  01  HIST-FLAG SYNC                PICTURE X      VALUE :0:.               C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                   C98970
47170                                     PICTURE S999   VALUE <1.               C98970
47180  01  HIST-PERCENT SYNC             PICTURE S999V99 COMPUTATIONAL.          C98970
47190  01  HIST-CUM SYNC                 PICTURE S999V99 COMPUTATIONAL.          C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                          C98970
47210                                     PICTURE S999  VALUE ZERO.              C98970
47220  01  HIST-PAGE-FLAG SYNC           PICTURE [illegible] VALUE <75.          C98970
47230  01  HIST-LINE-CNT  SYNC           PICTURE S999.                           C98970
47300  01  HIST-ERR-1 SYNC               PICTURE X(10)  VALUE                    C98970
47310                          :ERROR NO 0:.                                     C98970
47320  01  HIST-ERR-3 SYNC.                                                      C98970
47330      02  FILLER                    PICTURE X(5)   VALUE :BS > :.           C98970
47340      02  HIST-ERR-2                PICTURE S9(5)  VALUE ZERO.              C98970
47350  01  HIST-ERR-4 SYNC               PICTURE X(10)  VALUE                    C98970
47360                          :ERROR  MAX:.                                     C98970
47370  01  HIST-ERR-5 SYNC               PICTURE X(10)  VALUE                    C98970
47380                         :-MIN BAD. :.                                      C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC     PICTURE S999 COMPUTATIONAL.             C98970
47400  01  FILLER SYNC.                                                          C98970
47510      02  FILLER OCCURS 200 TIMES.                                          C98970
47530          03  HIST-TABLE            PICTURE S9(5) COMPUTATIONAL.            C98970
47540          03  HIST-UPPER-LIMIT      PICTURE S9999V99 COMPUTATIONAL.         C98970
47550          03  HIST-TABLE-SCALED     PICTURE S999V99 COMPUTATIONAL.          C98970
47560  01  HIST-NEW-PAGE SYNC.                                                   C98970
47570      02  FILLER                    PICTURE X      VALUE :1:.               C98970
47580      02  FILLER                    PICTURE X(122) VALUE SPACE.             C98970
47582      02  FILLER                    PICTURE X(5) VALUE :PAGE :.             C98970
47584      02  HIST-PAGE-NO              PICTURE 9.                              C98970
47590      02  FILLER                    PICTURE X      VALUE :#:.               C98970
47600  01  HIST-TITLE SYNC.                                                      C98970
47610      02  FILLER                    PICTURE X(3) VALUE :S  :.               C98970
47620      02  HIST-TITLE-1.                                                     C98970
47621          03  FILLER                PICTURE X(10) VALUE SPACE.              C98970
47630      02  HIST-TITLE-2.                                                     C98970
47631          03  FILLER                PICTURE X(10) VALUE SPACE.              C98970
47640      02  HIST-TITLE-3              PICTURE X(10) VALUE SPACE.              C98970
47650      02  HIST-TITLE-4              PICTURE X(10) VALUE SPACE.              C98970
47660      02  FILLER                    PICTURE X(24) VALUE                     C98970
47670            :    NO OF OBSERVATIONS >:.                                    C98970
47680      02  HIST-NO-OF-OBS-RPT        PICTURE ZZZZ9.                          C98970
47690      02  FILLER                    PICTURE X(13) VALUE                     C98970
47700            : VALUE MAX > :.                                               C98970
47710      02  HIST-VALUE-MAX-RPT        PICTURE -----.9.                        C98970
47720      02  FILLER                    PICTURE X(13) VALUE                     C98970
47730            : VALUE MIN > :.                                               C98970
47740      02  HIST-VALUE-MIN-RPT        PICTURE -----.9.                        C98970
47750      02  FILLER                    PICTURE X(18) VALUE                     C98970
47760            :                          #:.                                 C98970
47900  01  HIST-OUT-LINE SYNC.                                                   C98970
47910      02  FILLER                    PICTURE X(50) VALUE                     C98970
47920            :/---.----------------------------------------------------:.   C98970
```

```
47922       02  FILLER                      PICTURE X(80) VALUE                  C98970
47930       :-------------------------------------------------------------------C98970
47940 -     :-----------.-------#:.                                              C98970
47950   01  HIST-LABEL SYNC.                                                    C98970
47960       02  FILLER                      PICTURE X(50)  VALUE                 C98970
47970             :/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.:.         C98970
47974       02  FILLER                      PICTURE X(80) VALUE          :..    C98970
47980 -     :25...30...35...40...45...50...55...60...65...70...75...80...      C98970
47990 -     :85...90...95..100#:.                                               C98970
48000   01  HIST-LINE-OUT SYNC.                                                 C98970
48010       02  FILLER                      PICTURE X VALUE :/:.                 C98970
48020       02  HIST-LINE-RPT               PICTURE ZZ9.                         C98970
48030       02  FILLER                      PICTURE X VALUE SPACE.               C98970
48040       02  HIST-MID-POINT-RPT          PICTURE -----.9.                     C98970
48060       02  HIST-PERCENT-RPT            PICTURE ZZ9.9.                       C98970
48070       02  FILLER                      PICTURE X VALUE SPACE.               C98970
48080       02  HIST-CUM-RPT                PICTURE ZZ9.9.                       C98970
48100       02  HIST-FREQ-RPT               PICTURE ZZZZ9.                       C98970
48110       02  FILLER                      PICTURE X VALUE SPACE.               C98970
48120       02  HIST-POINT OCCURS 100 TIMES                                     C98970
48130                                        PICTURE X.                           C98970
48140       02  FILLER                      PICTURE X VALUE :#:.                 C98970
48150   01  HIST-OUT-RANGE-REC SYNC.                                            C98970
48160       02  FILLER                      PICTURE X(35) VALUE                  C98970
48170             :/   NUMBER OF OUT OF RANGE VALUES >:.                        C98970
48180       02  HIST-OUT-RANGE-RPT          PICTURE ZZ9.                         C98970
48190       02  FILLER                      PICTURE X(91) VALUE SPACE.           C98970
48191       02  FILLER                      PICTURE X VALUE :#:.                 C98970
48200   01  HIST-SCALE-LINE SYNC.                                               C98970
48210       02  FILLER                      PICTURE X(27) VALUE                  C98970
48220             :/          SCALING FACTOR > :.                                C98970
48230       02  HIST-SCALE-RPT              PICTURE ZZ9.                         C98970
48240       02  FILLER                      PICTURE X(099) VALUE SPACE.          C98970
48250       02  FILLER                      PICTURE X VALUE :#:.                 C98970
48300   01  FILLER SYNC.                                                        C98970
48310       02  HIST-VALUE OCCURS 1000 TIMES                                    C98970
48320                                        PICTURE S9999V9 COMPUTATIONAL.       C98970
50000   PROCEDURE DIVISION.                                                      C98970
50001       OPEN INPUT CUT-OFF-FILE.                                             C98970
50002       READ CUT-OFF-FILE AT END GO TO CLOSE-FILES.                          C98970
50003       CLOSE CUT-OFF-FILE WITH LOCK.                                        C98970
50010       OPEN INPUT IN-FILE.                                                  C98970
50020       OPEN OUTPUT HIST-FILE.                                               C98970
50030       MOVE 1000 TO CNT.                                                    C98970
50040       PERFORM RESET-TABLE THRU END-RST-TABLE.                              C98970
50050       READ IN-FILE. AT END GO TO CLOSE-FILES.                              C98970
50060       WRITE HIST-REC FROM REPORT-ID.                                       C98970
50100   PARA-1.                                                                  C98970
50110       MOVE 1 TO HIST-NO-OF-OBS.                                            C98970
50120       MOVE WUC TO CUR-WUC.                                                 C98970
50130       MOVE HMC TO CUR-HMC.                                                 C98970
50140       MOVE DATA-TYPE-NEW TO DATA-TYPE.                                     C98970
50150       MOVE ISCHRONAL-NEW TO ISCHRONAL.                                     C98970
50160       IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO             C98970
50170 -               FLT-DATA.                                                  C98970
50200   READ1.                                                                   C98970
50210       READ IN-FILE, AT END GO TO CLOSE-FILES.                              C98970
50220       IF DATA-TYPE-NEW IS EQUAL TO :9: GO TO CLOSE-FILES.                  C98970
50230       IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                         C98970
50240       IF HMC IS NOT EQUAL TO CUR-HMC GO TO PARA-2.                         C98970
50250       ADD 1 TO HIST-NO-OF-OBS.                                             C98970
50260       IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO             C98970
50270                         FLT-DATA.                                          C98970
50300   PARA-2.                                                                  C98970
50310       PERFORM SET-HISTOG THRU END-SH.                                      C98970
50320       PERFORM RESET-TABLE THRU END-RST-TABLE.                              C98970
50330       GO TO PARA-1.                                                        C98970
50400   RESET-TABLE.                                                             C98970
50410       MOVE ZERO TO CNT.                                                    C98970
50420   RST.                                                                     C98970
50430       ADD 1 TO CNT.                                                        C98970
50440       MOVE MINUS-ONE TO HIST-VALUE (CNT).                                  C98970
50445       MOVE ZERO TO FREQ-HIST-VALUE (CNT).                                  C98970
50450       IF CNT IS LESS THAN KNT GO TO RST.                                   C98970
50455       MOVE ZERO TO KNT.                                                    C98970
50460   END-RST-TABLE. EXIT.                                                     C98970
50510   SET-HISTOG.                                                              C98970
50512       IF ISCHRONAL IS EQUAL TO ONE AND HIST-NO-OF-OBS IS NOT               C98970
50514         GREATER THAN ISO-CUT-OFF GO TO END-SH.                             C98970
50516       IF ISCHRONAL IS EQUAL TO TWO AND HIST-NO-OF-OBS IS NOT               C98970
50518         GREATER THAN NI-CUT-OFF GO TO END-SH.                              C98970
50520       IF ISCHRONAL IS EQUAL TO ONE MOVE :   ISO    : TO                    C98970
50530           HIST-TITLE-4, ELSE MOVE : NON-ISO  : TO HIST-TITLE-4.            C98970
50540       IF DATA-TYPE IS EQUAL TO ONE MOVE :  WEEKS   : TO                    C98970
50550           HIST-TITLE-3, ELSE MOVE : FLT-HOURS: TO HIST-TITLE-3.            C98970
50560       MOVE CUR-WUC-T TO HIST-TITLE-1.                                      C98970
50570       MOVE CUR-HMC-T TO HIST-TITLE-2.                                      C98970
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50590      PERFORM WRITE-HISTOGRAM THRU END-HIST.                          C98970
50600      IF HIST-FLAG IS     EQUAL TO 111 THEN GO TO CF1.                C98970
50610      ADD 1 TO NO-OF-HISTS.                                           C98970
50620  END-SH. EXIT.                                                       C98970
51000  WEEKS-DATA.                                                         C98970
51010      MOVE ZERO TO CNT.                                               C98970
51020  WEEK-A.                                                             C98970
51030      ADD 1 TO CNT.                                                   C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.            C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.         C98970
51060      IF CNT IS LESS THAN 1000 GO TO WEEK-A.                          C98970
51070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.   C98970
51080      GO TO CF1.                                                      C98970
51090  WEEK-B.                                                             C98970
51100      MOVE OBS   TO HIST-VALUE (CNT).                                 C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                C98970
51120  WEEK-C.                                                             C98970
51130      ADD 1 TO FREQ-HIST-VALUE (CNT).                                 C98970
51140      GO TO READ1.                                                    C98970
52000  FLT-DATA.                                                           C98970
52010      MOVE ZERO TO CNT.                                               C98970
52020  FLT-A.                                                              C98970
52030      ADD 1 TO CNT.                                                   C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE (CNT) GO TO FLT-C.             C98970
52050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO FLT-B.          C98970
52060      IF CNT IS LESS THAN 1000 GO TO FLT-A.                           C98970
52070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.   C98970
52080      GO TO CF1.                                                      C98970
52090  FLT-B.                                                              C98970
52100      MOVE OBS-1 TO HIST-VALUE (CNT).                                 C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                C98970
52120  FLT-C.                                                              C98970
52130      ADD 1 TO FREQ-HIST-VALUE (CNT).                                 C98970
52140      GO TO READ1.                                                    C98970
52200  CLOSE-FILES.                                                        C98970
52205      PERFORM SET-HISTOG THRU END-SH.                                 C98970
52207  CF1.                                                                C98970
52210      CLOSE IN-FILE  HIST-FILE.                                       C98970
52211      IF HIST-FLAG IS EQUAL TO '1' DISPLAY ' HIST ERROR ' UPON        C98970
52212          CONSOLE.                                                    C98970
52215      DISPLAY ' NO OF HISTOGRAMS > ' NO-OF-HISTS UPON CONSOLE.        C98970
52220      DISPLAY ' EOJ C9897P ' UPON CONSOLE.                            C98970
52230      GOBACK.                                                         C98970
95000  COMPUTE-MEAN-VARIANCE.                                              C98970
95010      MOVE ZERO TO CNT.                                               C98970
95020      MOVE ZERO TO MEAN.                                              C98970
95030  CMV-1.                                                              C98970
95040      ADD 1 TO CNT.                                                   C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE (CNT) * FREQ-HIST-VALUE (CNT).   C98970
95060      ADD TEMP-COMP TO MEAN.                                          C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                            C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                                C98970
95090      MOVE ZERO TO  NT.                                               C98970
95100      MOVE ZERO TO VARIANCE.                                          C98970
95105      IF HIST-NO-OF-OBS IS LESS THAN 2 GO TO END-CMV.                 C98970
95110  CMV-2.                                                              C98970
95120      ADD 1 TO CNT.                                                   C98970
95130      COMPUTE TEMP-COMP > ((HIST-VALUE (CNT) - MEAN) ** 2) *          C98970
95140                                    FREQ-HIST-VALUE (CNT).            C98970
95150      ADD TEMP-COMP TO VARIANCE.                                      C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                            C98970
95170      COMPUTE VARIANCE > VARIANCE / (HIST-NO-OF-OBS - 1).             C98970
95180      MOVE MEAN TO MEAN-RPT.                                          C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                                  C98970
95200      WRITE HIST-REC FROM MEAN-VARIANCE-LINE.                         C98970
95290  END-CMV.     EXIT.                                                  C98970
97000  WRITE-HISTOGRAM.                                                    C98970
97080      MOVE '0' TO HIST-FLAG.                                          C98970
97090      MOVE ZERO TO HIST-OUT-RANGE-VALUE.                              C98970
97100      MOVE ZERO TO HIST-PAGE-NO.                                      C98970
97140      MOVE -9999.9 TO HIST-VALUE-MAX.                                 C98970
97150      MOVE +9999.9 TO HIST-VALUE-MIN.                                 C98970
97200      MOVE ZERO TO HIST-INDEX.                                        C98970
97210  HIST-FIND-VMAX-VMIN.                                                C98970
97220      ADD 1 TO HIST-INDEX.                                            C98970
97230      MOVE HIST-VALUE (HIST-INDEX) TO HIST-TEMP.                      C98970
97240      IF HIST-TEMP IS GREATER THAN HIST-VALUE-MAX THEN MOVE           C98970
97250                HIST-TEMP TO HIST-VALUE-MAX.                          C98970
97260      IF HIST-TEMP IS LESS    THAN HIST-VALUE-MIN THEN MOVE           C98970
97270                HIST-TEMP TO HIST-VALUE-MIN.                          C98970
97280      IF HIST-INDEX IS LESS THAN KNT              THEN GO TO          C98970
97290                              HIST-FIND-VMAX-VMIN.                    C98970
97292      IF DATA-TYPE IS EQUAL TO ONE COMPUTE HIST-NO-OF-INTERVALS >     C98970
97294          HIST-VALUE-MAX < 4.                                         C98970
97296      IF DATA-TYPE IS EQUAL TO TWO COMPUTE HIST-NO-OF-INTERVALS >     C98970
97298          HIST-VALUE-MAX / 8 < 4.                                     C98970
97300  HIST-PRINT-TITLE.                                                   C98970
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97301      IF HIST-NO-OF-INTERVALS IS LESS THAN 50 MOVE 50 TO                C98970
97302         HIST-NO-OF-INTERVALS.                                          C98970
97304      ADD 1 TO HIST-PAGE-NO.                                            C98970
97306      MOVE 5 TO HIST-LINE-CNT.                                          C98970
97310      WRITE HIST-REC FROM HIST-NEW-PAGE.                                C98970
97320      MOVE HIST-NO-OF-OBS TO HIST-NO-OF-OBS-RPT.                        C98970
97330      MOVE HIST-VALUE-MAX TO HIST-VALUE-MAX-RPT.                        C98970
97340      MOVE HIST-VALUE-MIN TO HIST-VALUE-MIN-RPT.                        C98970
97350      WRITE HIST-REC FROM HIST-TITLE.                                   C98970
97355      PERFORM COMPUTE-MEAN-VARIANCE THRU END-CMV.                       C98970
97360      WRITE HIST-REC FROM HIST-DOT-LINE.                                C98970
97370      WRITE HIST-REC FROM HIST-LABEL.                                   C98970
97380      WRITE HIST-REC FROM HIST-DOT-LINE.                                C98970
97390 HIST-DUMMY.                                                            C98970
97410      IF HIST-VALUE-MAX IS LESS THAN HIST-VALUE-MIN THEN GO TO          C98970
97420                                  HIST-ERROR-2.                         C98970
97430      IF HIST-NO-OF-INTERVALS IS GREATER THAN 200 THEN MOVE 200         C98970
97440                        TO HIST-NO-OF-INTERVALS.                        C98970
97441      MOVE ZERO TO HIST-INDEX.                                          C98970
97442 HIST-RST.                                                              C98970
97443      ADD 1 TO HIST INDEX.                                              C98970
97444      MOVE ZERO TO HIST-TABLE (HIST-INDEX).                             C98970
97445      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS                   C98970
97446                        THEN GO TO HIST-RST.                            C98970
97450      IF DATA-TYPE IS EQUAL TO ONE MOVE 1.0 TO HIST-INTERVAL-SIZE,      C98970
97460                                  ELSE MOVE 8.0 TO HIST-INTERVAL-SIZE.  C98970
97500      NOTE COMPUTE UPPER LIMIT FOR EACH INTERVAL.                       C98970
97510      MOVE ZERO TO HIST-INDEX.                                          C98970
97520      MOVE ZERO              TO HIST-TEMP.                              C98970
97530 HIST-INC-INTERVAL.                                                     C98970
97540      ADD 1 TO HIST-INDEX.                                              C98970
97550      ADD HIST-INTERVAL-SIZE TO HIST-TEMP.                              C98970
97560      MOVE HIST-TEMP TO HIST-UPPER-LIMIT (HIST-INDEX).                  C98970
97570      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN              C98970
97580                        GO TO HIST-INC-INTERVAL.                        C98970
97600      NOTE PLACE OCCURANCE INTO APPROPRIATE CHANNEL.                    C98970
97610      MOVE ZERO TO HIST-INDEX-2.                                        C98970
97620 HIST-OCCURANCE.                                                        C98970
97630      ADD 1 TO HIST-INDEX-2.                                            C98970
97640      MOVE HIST-VALUE (HIST-INDEX-2) TO HIST-TEMP.                      C98970
97650      MOVE ZERO TO HIST-INDEX.                                          C98970
97660 HIST-INTERVAL.                                                         C98970
97670      ADD 1 TO HIST-INDEX.                                              C98970
97675      MOVE FREQ-HIST-VALUE (HIST-INDEX-2) TO A.                         C98970
97680      IF HIST-TEMP IS NOT GREATER THAN HIST-UPPER-LIMIT                 C98970
97690         (HIST-INDEX) THEN GO TO HIST-ADD-TABLE.                        C98970
97700      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO        C98970
97710                              HIST-INTERVAL.                            C98970
97720      ADD A TO HIST-OUT-RANGE-VALUE.                                    C98970
97730      GO TO HIST-NO ADD.                                                C98970
97740 HIST-ADD-TABLE.                                                        C98970
97750      ADD A TO HIST-TABLE (HIST-INDEX).                                 C98970
97751 HIST-NO-ADD.                                                           C98970
97760      IF HIST-INDEX 2 IS LESS KNT              GO TO HIST-OCCURANCE.    C98970
97800      NOTE COMPUTE SCALE VALUE.                                         C98970
97810      MOVE HIST-TABLE (1) TO HIST-TEMP.                                 C98970
97820      MOVE 1 TO HIST-INDEX.                                             C98970
97830 HIST-SCALE.                                                            C98970
97840      ADD 1 TO HIST-INDEX.                                              C98970
97850      IF HIST-TABLE (HIST-INDEX) IS GREATER THAN HIST-TEMP THEN         C98970
97860          MOVE HIST-TABLE (HIST-INDEX) TO HIST-TEMP.                    C98970
97870      IF HIST-INDEX IS LESS    THAN HIST-NO-OF-INTERVALS THEN GO TO     C98970
97880                                  HIST-SCALE.                           C98970
97890      COMPUTE HIST-SCALE-VALUE > (HIST-TEMP < 99) / 100.                C98970
97895      IF HIST-SCALE-VALUE IS LESS THAN 1 MOVE 1 TO                      C98970
97896         HIST-SCALE-VALUE.                                              C98970
97900      MOVE ZERO TO HIST-INDEX.                                          C98970
97910 HIST-SCALED-VALUES.                                                    C98970
97920      ADD 1 TO HIST-INDEX.                                              C98970
97930      COMPUTE HIST-TABLE-SCALED (HIST-INDEX) >                          C98970
97940              HIST-TABLE (HIST-INDEX) / HIST-SCALE-VALUE.               C98970
97950      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO        C98970
97960                                  HIST-SCALED-VALUES.                   C98970
98000      NOTE PREPARE OUTPUT DATA.                                         C98970
98010      DIVIDE 2 INTO HIST-INTERVAL-SIZE.                                 C98970
98020      MOVE ZERO TO HIST-CUM.                                            C98970
98030      MOVE ZERO TO HIST-LINE.                                           C98970
98040 HIST-PREPARE.                                                          C98970
98050      ADD 1 TO HIST-LINE.                                               C98970
98060      MOVE HIST-LINE TO HIST-LINE-RPT.                                  C98970
98070      COMPUTE HIST-TEMP > HIST-UPPER-LIMIT (HIST-LINE)                  C98970
98080                                  - HIST-INTERVAL-SIZE.                 C98970
98090      MOVE HIST-TEMP TO HIST-MID-POINT-RPT.                             C98970
98100      COMPUTE HIST-PERCENT > HIST-TABLE (HIST-LINE) * 100               C98970
98110                                  / HIST-NO-OF-OBS.                     C98970
98120      MOVE HIST-PERCENT TO HIST-PERCENT-RPT.                            C98970
98130      ADD HIST-PERCENT TO HIST-CUM.                                     C98970
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98140       MOVE HIST-CUM TO HIST-CUM-RPT.                                  C98970
98150       MOVE HIST-TABLE (HIST-LINE) TO HIST-FREQ-RPT.                   C98970
98160       MOVE ZERO TO HIST-INDEX.                                        C98970
98170       IF HIST-DIST IS NOT EQUAL TO :0:  GO TO HIST-CUM-1.             C98970
98180       COMPUTE HIST-INDEX-2 > HIST-TABLE-SCALED (HIST-LINE) < 0.5.     C98970
98190       IF HIST-INDEX-2 IS EQUAL TO ZERO GO TO HIST-PREP-SPACE.         C98970
98200   HIST-PREP-DIST.                                                     C98970
98210       ADD 1 TO HIST-INDEX.                                            C98970
98220       MOVE :*: TO HIST-POINT (HIST-INDEX).                            C98970
98230       IF HIST-INDEX IS LESS THAN HIST-INDEX-2 GO TO HIST-PREP-DIST.   C98970
98240       IF HIST-INDEX IS EQUAL TO 100 THEN GO TO HIST-WRITE.            C98970
98250   HIST-PREP-SPACE.                                                    C98970
98260       ADD 1 TO HIST-INDEX.                                            C98970
98270       MOVE SPACE TO HIST-POINT (HIST-INDEX).                          C98970
98280       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-PREP-SPACE.      C98970
98290       GO TO HIST-WRITE.                                               C98970
98300   HIST-CUM-1.                                                         C98970
98310       ADD 1 TO HIST-INDEX.                                            C98970
98320       MOVE SPACE TO HIST-POINT (HIST-INDEX).                          C98970
98330       IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-CUM-1.           C98970
98338       COMPUTE HIST-INDEX > HIST-CUM < 0.5.                            C98970
98339       IF HIST-INDEX IS EQUAL TO ZERO GO TO HIST-WRITE.                C98970
98340       MOVE :*: TO HIST-POINT (HIST-INDEX).                            C98970
98400   HIST-WRITE.                                                         C98970
98410       WRITE HIST-REC FROM HIST-LINE-OUT.                              C98970
98412       ADD 1 TO HIST-LINE-CNT.                                         C98970
98414       IF HIST-PAGE-FLAG IS EQUAL TO ZERO GO TO HIST-NO-PAGING.        C98970
98415       IF HIST-LINE-CNT IS EQUAL TO HIST-PAGE-FLAG                     C98970
98416                         THEN PERFORM HIST-PRINT-TITLE.                C98970
98417   HIST-NO-PAGING.                                                     C98970
98420       IF HIST-LINE IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO       C98970
98430                                    HIST-PREPARE.                      C98970
98440       WRITE HIST-REC FROM HIST-DOT-LINE.                              C98970
98450       MOVE HIST-SCALE-VALUE TO HIST-SCALE-RPT.                        C98970
98460       WRITE HIST-REC FROM HIST-SCALE-LINE.                            C98970
98470       IF HIST-OUT-RANGE-VALUE IS EQUAL TO ZERO GO TO HIST-WRITE-B.    C98970
98480       MOVE HIST-OUT-RANGE-VALUE TO HIST-OUT-RANGE-RPT.                C98970
98490       WRITE HIST-REC FROM HIST-OUT-RANGE-REC.                         C98970
98500   HIST-WRITE-B.                                                       C98970
98510       WRITE HIST-REC FROM HIST-DOT-LINE.                              C98970
98520       GO TO END-HIST.                                                 C98970
99000   HIST-ERROR-1.                                                       C98970
99010       WRITE HIST-REC FROM HIST-TITLE.                                 C98970
99020       MOVE HIST-ERR-1 TO HIST-TITLE-1.                                C98970
99030       MOVE HIST-NO-OF-OBS TO HIST-ERR-2.                              C98970
99040       WRITE HIST-REC FROM HIST-TITLE.                                 C98970
99050       MOVE :I: TO HIST-FLAG.                                          C98970
99060       GO TO END-HIST.                                                 C98970
99100   HIST-ERROR-2.                                                       C98970
99110       MOVE HIST-ERR-4 TO HIST-TITLE-1.                                C98970
99120       MOVE HIST-ERR-5 TO HIST-TITLE-2.                                C98970
99130       WRITE HIST-REC FROM HIST-TITLE.                                 C98970
99140       MOVE :I: TO HIST-FLAG.                                          C98970
99150       GO TO END-HIST.                                                 C98970
99200   HIST-ERR-3.                                                         C98970
99210       MOVE :I: TO HIST-FLAG.                                          C98970
99990   END-HIST. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                                    1440 CDS
TFG  DT03    11  0202080
  10    4
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP=(OLD,KEEP),VOL=SER=+F1,UNIT=T+F1                  T12
//TPR.TU25     DD   DISP=(OLD,KEEP),VOL=SER=+F8,UNIT=T+F8                  T25
//TPR.TPRIN    DD   *,SPACE=(TRK,(1,1))
T/P  TU12    10100202020
T/P  TU25    11001308000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
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6.10 PROGRAMS FOR EFFECT OF TIME AFTER INSPECTION

6.10.1 MEASURE OBSERVATIONS AT AIRCRAFT LEVEL

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//C9897X JOB   01,: G. WANG,   1,PRTY>05          X3408
//C9897X EXEC  P9627E,TIME>1,ACCT>D35323007   PUT PROGRAM IN LIBRARY
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                  1440 CDS
00000          COMBINE     COMPILE                  G. WANG,             C98970
01040  DATE-WRITTEN. 05 APR 72.                                          C98970
01050  REMARKS. PHASE II- TASK IV- FORTRAN/COBOL LINKAGE.                 C98970
01060      MAIN DRIVER- FORTRAN.                                         C98970
01070      INPUT/OUTPUT - COBOL.                                         C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT CARD-FILE              ASSIGN TO UT-S-FT04F001         C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT OFILE1                 ASSIGN TO UT-S-FT08F001         C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
02160      SELECT RCD-KP-FILE            ASSIGN TO UT-S-FT11F001         C98970
02170          RESERVE 1 ALTERNATE AREA.                                 C98970
02180      SELECT SG-FILE                ASSIGN TO UT-S-FT03F001         C98970
02190          RESERVE 3 ALTERNATE AREA.                                 C98970
02200      SELECT NSG-FILE               ASSIGN TO UT-S-FT01F001         C98970
02210          RESERVE 5 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
13100  FD  RCD-KP-FILE                                                   C98970
13120      RECORDING MODE IS F                                           C98970
13130      BLOCK CONTAINS 25 RECORDS                                     C98970
13140      RECORD CONTAINS 80            CHARACTERS                      C98970
13150      LABEL RECORDS ARE OMITTED                                     C98970
13160      DATA RECORDS ARE RCD-KP.                                      C98970
13200  01  RCD-KP SYNC.                                                 C98970
13210      02  FILLER                PICTURE X(80).                     C98970
14100  FD  SG-FILE                                                       C98970
14120      RECORDING MODE IS F                                           C98970
14130      BLOCK CONTAINS 40 RECORDS                                     C98970
14140      RECORD CONTAINS  70           CHARACTERS                      C98970
14150      LABEL RECORDS ARE OMITTED                                     C98970
14160      DATA RECORDS ARE SG-REC.                                      C98970
14200  01  SG-REC SYNC.                                                 C98970
14210      02  FILLER                PICTURE X(70).                     C98970
15100  FD  NSG-FILE                                                      C98970
15120      RECORDING MODE IS F                                           C98970
15130      BLOCK CONTAINS 40 RECORDS                                     C98970
15140      RECORD CONTAINS  70           CHARACTERS                      C98970
15150      LABEL RECORDS ARE OMITTED                                     C98970
15160      DATA RECORDS ARE NSG-REC.                                     C98970
15200  01  NSG-REC SYNC.                                                C98970
15210      02  FILLER                PICTURE X(70).                     C98970
16100  FD  CARD-FILE                                                     C98970
16120      RECORDING MODE IS F                                           C98970
16130      BLOCK CONTAINS 10 RECORDS                                     C98970
16140      RECORD CONTAINS 80            CHARACTERS                      C98970
16150      LABEL RECORDS ARE OMITTED                                     C98970
16160      DATA RECORDS ARE CARD-REC.                                    C98970
16200  01  CARD-REC SYNC.                                               C98970
16210      02  FILLER                PICTURE X(80).                     C98970
17100  FD  OFILE1                                                        C98970
17120      RECORDING MODE IS F                                           C98970
17130      BLOCK CONTAINS 70  RECORDS                                    C98970
17140      RECORD CONTAINS  40           CHARACTERS                      C98970
17150      LABEL RECORDS ARE OMITTED                                     C98970
17160      DATA RECORDS ARE OFILE1-REC.                                  C98970
17200  01  OFILE1-REC SYNC.                                             C98970
17210      02  FILLER                PICTURE X(40).                     C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30130  01  NINE-40 SYNC.                                                C98970
30140      02  FILLER           PICTURE X(25)   VALUE                   C98970
30150                              '9999999999999999999999991.          C98970
30160      02  FILLER           PICTURE X(15)   VALUE                   C98970
30170                              '999999999999991.                    C98970
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30230  01  NINE-80 SYNC.                                                    C98970
30240      02  FILLER          PICTURE X(25)   VALUE                        C98970
30250                            :9999999999999999999999999I.              C98970
30260      02  FILLER          PICTURE X(25)   VALUE                        C98970
30270                            :9999999999999999999999999I.              C98970
30280      02  FILLER          PICTURE X(30)   VALUE                        C98970
30290                            :999999999999999999999999999999I.         C98970
30310  01  RECORDS-READ    PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30320  01  RECORDS-PASS    PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30330  01  CARD-CNT1       PICTURE 9(6)  SYNC VALUE ZERO.                   C98970
30340  01  CARD-CNT2       PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30350  01  CARD-CNT3       PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30355  01  SN-IOI-CNT      PICTURE 9(3)  SYNC VALUE ZERO.                   C98970
30360  01  HCD-RP-CNT      PICTURE S9(6) SYNC VALUE ZERO COMPUTATIONAL.     C98970
30370  01  SORTIES-CNT     PICTURE S9(5) SYNC VALUE ZERO COMPUTATIONAL.     C98970
30380  01  LANDINGS-CNT    PICTURE S9(5) SYNC VALUE ZERO COMPUTATIONAL.     C98970
30390  01  KNT             PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30400  01  KOUNT           PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30410  01  SGCNT           PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30420  01  NSGCNT          PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
30500  01  SG-CNT          PICTURE 9(6)  SYNC VALUE ZERO.                   C98970
30510  01  NSG-CNT         PICTURE 9(6)  SYNC VALUE ZERO.                   C98970
30520  01  SG-RCNT         PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30530  01  NSG-RCNT        PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30540  01  R1-G-CNT        PICTURE 9(6)  SYNC VALUE ZERO.                   C98970
30550  01  R2-G-CNT        PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30560  01  R3-G-CNT        PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30600  01  LFLAG           PICTURE X     SYNC VALUE IO:.                    C98970
30610  01  CARD-EOF-SW     PICTURE X     SYNC VALUE :0:.                    C98970
30700  01  NSG-IO          PICTURE S9(6) SYNC VALUE <12 COMPUTATIONAL.      C98970
30710  01  SGEOF           PICTURE X   VALUE :0:.                           C98970
30720  01  NSGEOF          PICTURE X   VALUE :0:.                           C98970
33000  01  TEST-A SYNC.                                                     C98970
33010      02  SN-A                PICTURE X(A)    VALUE SPACE.             C98970
33020      02  WK-A                PICTURE X(3)    VALUE SPACE.             C98970
33100  01  TEST-B SYNC.                                                     C98970
33110      02  SN-B                PICTURE X(8)    VALUE SPACE.             C98970
33120      02  WK-B                PICTURE X(3)    VALUE SPACE.             C98970
39000  01  CARD-DATA SYNC.                                                  C98970
39010      02  TEST-123            PICTURE XX.                              C98970
39020      02  DATA1-1             PICTURE X(8).                            C98970
39030      02  FILLER              PICTURE XX.                              C98970
39040      02  DATA2-1             PICTURE X(8).                            C98970
39050      02  ABLANK-1            PICTURE X(4).                            C98970
39060      02  FILLER              PICTURE X(6).                            C98970
39070      02  IBSGC1-2            PICTURE S9(3).                           C98970
39080      02  ABSGC2-2            PICTURE X.                               C98970
39090      02  ABSGC3-2            PICTURE X.                               C98970
39100      02  ABSGC4-2            PICTURE X.                               C98970
39110      02  FILLER              PICTURE X(4).                            C98970
39120      02  A1-3                PICTURE X.                               C98970
39130      02  A2-3                PICTURE X.                               C98970
39140      02  A3-3                PICTURE X.                               C98970
39150      02  A4-3                PICTURE X.                               C98970
39160      02  A5-3                PICTURE X.                               C98970
39170      02  A6-3                PICTURE X.                               C98970
39180      02  A7-3                PICTURE X.                               C98970
39190      02  A8-3                PICTURE X.                               C98970
39200      02  A9-3                PICTURE X.                               C98970
39210      02  FILLER              PICTURE X(31).                           C98970
40000  01  SG-NSG-REC SYNC.                                                 C98970
40010      02  SERIES              PICTURE X(5).                            C98970
40020      02  SN                  PICTURE X(A).                            C98970
40030      02  WK                  PICTURE X(3).                            C98970
40040      02  WUC12               PICTURE X(2).                            C98970
40050      02  WUC3                PICTURE X.                               C98970
40060      02  WUC4                PICTURE X.                               C98970
40070      02  WUC5                PICTURE X.                               C98970
40080      02  WUC                 PICTURE X.                               C98970
40090      02  HMC                 PICTURE X(3).                            C98970
40100      02  UNITS               PICTURE X(3).                            C98970
40110      02  LABOR               PICTURE X(4).                            C98970
40120      02  AIE                 PICTURE X(3).                            C98970
40130      02  NORM                PICTURE X(4).                            C98970
40140      02  NORS                PICTURE X(4).                            C98970
40150      02  U-ATC               PICTURE X(3).                            C98970
40160      02  FILLER              PICTURE X(2).                            C98970
40170      02  TYPE-M              PICTURE X(1).                            C98970
40180      02  FM                  PICTURE X(4).                            C98970
40190      02  SFM                 PICTURE X(6).                            C98970
40200      02  SSORT               PICTURE X(5).                            C98970
40210      02  SLAND               PICTURE X(5).                            C98970
40220      02  FILLER              PICTURE X(1).                            C98970
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40600  01  SN-TOTAL SYNC.                                                  C98970
40610      02  CAR-CONTROL          PICTURE X       VALUE SPACE.          C98970
40620      02  FH-TOT               PICTURE ZZZZZ9.                       C98970
40630      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40640      02  SORTIES-TOT          PICTURE ZZZZ9.                        C98970
40650      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40660      02  LANDINGS-TOT         PICTURE ZZZZ9.                        C98970
40670      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40680      02  TYPE-1-TOT           PICTURE ZZZZZ9.                       C98970
40690      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40700      02  TYPE-3-TOT           PICTURE ZZZZZZ9.                      C98970
40710      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40720      02  TYPE-4-TOT           PICTURE ZZZZZZ9.                      C98970
40730      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40740      02  SN-TOT               PICTURE X(8).                         C98970
40750      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40760      02  SG-TOT               PICTURE ZZZZZ9.                       C98970
40770      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40780      02  NSG-TOT              PICTURE ZZZZZ9.                       C98970
40790      02  REC-KP-TOT           PICTURE X(15)   VALUE SPACE.          C98970
40800  01  RCD-TOTALS SYNC.                                               C98970
40810      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40820      02  RECORDS-INPUT        PICTURE ZZZZZZ9.                      C98970
40830      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40840      02  OBSERVE-OUT          PICTURE ZZZZZZ9.                      C98970
40845      02  FILLER               PICTURE X(5)    VALUE SPACE.          C98970
40865      02  SG-GTOT              PICTURE ZZZZZZ9.                      C98970
40870      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40875      02  NSG-GTOT             PICTURE ZZZZZZ9.                      C98970
40880      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40890      02  P1-G-TOT             PICTURE ZZZZZZ9.                      C98970
40900      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40910      02  R2-G-TOT             PICTURE ZZZZZZ9.                      C98970
40920      02  FILLER               PICTURE X       VALUE SPACE.          C98970
40930      02  R3-G-TOT             PICTURE ZZZZZZ9.                      C98970
40940      02  FILLER               PICTURE X(20)   VALUE SPACE.          C98970
40980  01  RCD-KP-BLNK SYNC.                                              C98970
40990      02  FILLER               PICTURE X(80)   VALUE SPACE.          C98970
41000  01  RCD-KP-CARD SYNC.                                              C98970
41010      02  FILLER               PICTURE X(80)   VALUE SPACE.          C98970
41400  01  RCD-KP-TAPE SYNC.                                              C98970
41410      02  FILLER               PICTURE X(80)   VALUE SPACE.          C98970
42000  01  O-REC SYNC.                                                    C98970
42010      02  FILLER           PICTURE XX      VALUE SPACE.              C98970
42020      02  SN-O             PICTURE X(8).                             C98970
42030      02  ID-O             PICTURE X(6).                             C98970
42035      02  FILLER           PICTURE X       VALUE SPACE.              C98970
42040      02  OB-1             PICTURE X(6).                             C98970
42045      02  FILLER           PICTURE X       VALUE SPACE.              C98970
42050      02  OB-2             PICTURE X(6).                             C98970
42055      02  FILLER           PICTURE X       VALUE SPACE.              C98970
42060      02  OB-3             PICTURE X(6).                             C98970
42065      02  FILLER           PICTURE XX      VALUE SPACE.              C98970
42070      02  RCD-MK-O         PICTURE X       VALUE '*'.                C98970
48000  LINKAGE SECTION.                                                   C98970
48010  77  INTYP    PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48020  77  IEOFI    PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48070  77  ISN      PICTURE S9(8)   COMPUTATIONAL SYNC.                   C98970
48080  77  IWK      PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48090  77  IWUC12   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48100  77  XWUC3    PICTURE X(4).                                         C98970
48110  77  XWUC4    PICTURE X(4).                                         C98970
48120  77  XWUC5    PICTURE X(4).                                         C98970
48130  77  XWDC     PICTURE X(4).                                         C98970
48140  77  XHMC     PICTURE X(4).                                         C98970
48150  77  IUNITS   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48160  77  ILABOR   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48170  77  IAIE     PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48180  77  INORM    PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48190  77  INORS    PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48200  77  ITYPE    PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48220  77  ISFH     PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48230  77  ISSUPT   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
48240  77  ISLAND   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
49000  77  IN1      PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
49010  77  IT1      PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
49020  77  IDATA1   PICTURE S9(8)   COMPUTATIONAL SYNC.                   C98970
49030  77  IDATA2   PICTURE S9(8)   COMPUTATIONAL SYNC.                   C98970
49040  77  ABLANK   PICTURE X(4).                                         C98970
49220  77  IBSGC1   PICTURE S9(6)   COMPUTATIONAL SYNC.                   C98970
49230  77  ABSGC2   PICTURE X(4).                                         C98970
49240  77  ABSGC3   PICTURE X(4).                                         C98970
49250  77  ABSGC4   PICTURE X(4).                                         C98970
49300  77  IA1          PICTURE X(4).                                     C98970
49310  77  IA2          PICTURE X(4).                                     C98970
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49320  77  IA3          PICTURE X(4).                                          C98970
49330  77  IA4          PICTURE X(4).                                          C98970
49340  77  IA5          PICTURE X(4).                                          C98970
49350  77  IA6          PICTURE X(4).                                          C98970
49360  77  IA7          PICTURE X(4).                                          C98970
49370  77  IA8          PICTURE X(4).                                          C98970
49380  77  IA9          PICTURE X(4).                                          C98970
49400  77  ISNO         PICTURE S9(8)   COMPUTATIONAL SYNC.                    C98970
49410  77  IDO          PICTURE S9(6)   COMPUTATIONAL SYNC.                    C98970
49420  77  IOR1         PICTURE S9(6)   COMPUTATIONAL SYNC.                    C98970
49430  77  IOR2         PICTURE S9(6)   COMPUTATIONAL SYNC.                    C98970
49440  77  IOR3         PICTURE S9(6)   COMPUTATIONAL SYNC.                    C98970
50000  PROCEDURE DIVISION.                                                    C98970
50010  CARD1.                                                                 C98970
50012      ENTRY   :CREAD1: USING  IN1, IT1, IDATA1, IDATA2, ABLANK.          C98970
50020      IF  EFLAG EQUAL :1: GO TO READ-1.                                  C98970
50030      OPEN OUTPUT CD-KP-FILE OFILE1.                                     C98970
50035      OPEN INPUT  SG-FILE NSG-FILE CARD-FILE.                            C98970
50040      MOVE :1: TO EFLAG.                                                 C98970
51000  READ-1.                                                                C98970
51010      PERFORM READ A-CARD THRU CARD-EXIT.                                C98970
51020      IF  CARD-EOF-SW EQUAL :1: GO TO READ-1-EXIT.                       C98970
51030      ADD 1 TO CARD-CNT1.                                                C98970
51100  MOVE-LINK1.                                                            C98970
51120      MOVE DATA2-1     TO  IDATA2.                                       C98970
51130      MOVE ABLANK-1    TO  ABLANK.                                       C98970
51180  READ-1-EXIT.                                                           C98970
51185      MOVE DATA1-1     TO  IDATA1.                                       C98970
51190      GOBACK.                                                            C98970
52000  CARD2.                                                                 C98970
52010      ENTRY   :CREAD2: USING  IN1, IT1, IBSGC1, ABSGC2, ABSGC3,          C98970
52020          ABSGC4.                                                        C98970
52030      PERFORM READ-A-CARD THRU CARD-EXIT.                                C98970
52040      IF  CARD-EOF-SW EQUAL :1: GO TO READ-2-EXIT.                       C98970
52050      ADD 1 TO CARD-CNT2.                                                C98970
52100  MOVE-LINK2.                                                            C98970
52110      MOVE IBSGC1-2    TO  IBSGC1.                                       C98970
52120      MOVE ABSGC2-2    TO  ABSGC2.                                       C98970
52130      MOVE ABSGC3-2    TO  ABSGC3.                                       C98970
52140      MOVE ABSGC4-2    TO  ABSGC4.                                       C98970
52180  READ-2-EXIT.                                                           C98970
52190      GOBACK.                                                            C98970
53000  CARD3.                                                                 C98970
53010      ENTRY   :CREAD3: USING  IN1, IT1, IA1, IA2, IA3, IA4, IA5,         C98970
53020                                          IA6, IA7, IA8, IA9.           C98970
53030      PERFORM READ-A-CARD THRU CARD-EXIT.                                C98970
53040      IF  CARD-EOF-SW EQUAL :1: GO TO READ-3-EXIT.                       C98970
53050      ADD 1 TO CARD-CNT3.                                                C98970
53100  MOVE-LINK3.                                                            C98970
53110      MOVE     A1-3    TO  IA1.                                          C98970
53120      MOVE     A2-3    TO  IA2.                                          C98970
53130      MOVE     A3-3    TO  IA3.                                          C98970
53140      MOVE     A4-3    TO  IA4.                                          C98970
53150      MOVE     A5-3    TO  IA5.                                          C98970
53160      MOVE     A6-3    TO  IA6.                                          C98970
53170      MOVE     A7-3    TO  IA7.                                          C98970
53180      MOVE     A8-3    TO  IA8.                                          C98970
53190      MOVE     A9-3    TO  IA9.                                          C98970
53280  READ-3-EXIT.                                                           C98970
53290      GOBACK.                                                            C98970
55000  TAPES-IN.                                                              C98970
55020      ENTRY   :COPRD1: USING INTYP, IEOFI,                               C98970
55022          ISN, IWK, IWUC12, XWUC3, XWUC4, XWUC5, XWDC, XHMC,             C98970
55024          IUNITS, ILABOR, IAIE, INORM, INORS, ITYPE, ISFH,               C98970
55026          ISSORT, ISLAND.                                                C98970
55040      IF  INTYP EQUAL NSG-ID GO TO READ-NSG-1.                           C98970
55050      PERFORM READ-SG THRU READ-SG-EXIT.                                 C98970
55060      IF  IEOF1 EQUAL 1 GO TO TAPE-EXIT-SG.                              C98970
55070      ADD 1 TO SG-CNT.                                                   C98970
55100  MOVE-LINK-SG.                                                          C98970
55110      MOVE SN      TO  ISN.                                              C98970
55120      MOVE WK      TO  IWK.                                              C98970
55130      MOVE WUC12   TO  IWUC12.                                           C98970
55140      MOVE WUC3    TO  XWUC3.                                            C98970
55150      MOVE WUC4    TO  XWUC4.                                            C98970
55160      MOVE WUC5    TO  XWUC5.                                            C98970
55170      MOVE WDC     TO  XWDC.                                             C98970
55180      MOVE HMC     TO  XHMC.                                             C98970
55190      MOVE UNITS   TO  IUNITS.                                           C98970
55200      MOVE LABOR   TO  ILABOR.                                           C98970
55210      MOVE AIE     TO  IAIE.                                             C98970
55220      MOVE NORM    TO  INORM.                                            C98970
55230      MOVE NORS    TO  INORS.                                            C98970
55240      MOVE ITYPE-N TO  ITYPE.                                            C98970
55250      MOVE SFH     TO  ISFH.                                             C98970
55260      MOVE SSORT   TO  ISSORT.                                           C98970
55270      MOVE SLAND   TO  ISLAND.                                           C98970
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55400  TAPE-EXIT-SG.                                                    C98970
55410      GOBACK.                                                      C98970
55500  READ-NSG-1.                                                      C98970
55510      PERFORM READ-NSG THRU READ-NSG-EXIT.                         C98970
55520      IF  ILOF1 EQUAL 2 GO TO TAPE-EXIT-NSG.                       C98970
55530      ADD 1 TO NSG-CNT.                                            C98970
55600  MOVE-LINK-NSG.                                                   C98970
55610      MOVE SN      TO  ISN.                                        C98970
55620      MOVE WK      TO  IWK.                                        C98970
55630      MOVE WUC12   TO  IWUC12.                                     C98970
55640      MOVE WUC3    TO  XWUC3.                                      C98970
55650      MOVE WUC4    TO  XWUC4.                                      C98970
55660      MOVE WUC5    TO  XWUC5.                                      C98970
55670      MOVE WDC     TO  XWDC.                                       C98970
55680      MOVE HMC     TO  XHMC.                                       C98970
55690      MOVE UNITS   TO  IUNITS.                                     C98970
55700      MOVE LABOR   TO  ILABOR.                                     C98970
55705      IF TYPE-N EQUAL :4: GO TO BY-PASS-TYPE-4.                    C98970
55710      MOVE AIE     TO  IAIE.                                       C98970
55720      MOVE NORM    TO  INORM.                                      C98970
55730      MOVE NORS    TO  INORS.                                      C98970
55735  BY-PASS-TYPE-4.                                                  C98970
55740      MOVE TYPE-N TO  ITYPE.                                       C98970
55750      MOVE SFH     TO  ISFH.                                       C98970
55760      MOVE SSORT   TO  ISSORT.                                     C98970
55770      MOVE SLAND   TO  ISLAND.                                     C98970
55900  TAPE-EXIT-NSG.                                                   C98970
55910      GOBACK.                                                      C98970
57000  TAPE-01.                                                         C98970
57010      ENTRY   :COBOUT:    USING   ISN0, ID0, IOB1, IOB2, IOB3.     C98970
57040      MOVE    ISN0     TO  SN-0.                                   C98970
57050      MOVE    ID0      TO  ID-0.                                   C98970
57060      MOVE    IOB1     TO  OB-1.                                   C98970
57070      MOVE    IOB2     TO  OB-2.                                   C98970
57080      MOVE    IOB3     TO  OB-3.                                   C98970
57170      WRITE   OFILE1-REC  FROM O-REC.                              C98970
57180      ADD 1 TO RECORDS-PASS.                                       C98970
57190      GOBACK.                                                      C98970
59000  READ-A-CARD.                                                     C98970
59010      READ CARD-FILE INTO CARD-DATA                                C98970
59020              AT END GO TO CARD-EOF.                               C98970
59030      IF  TEST-123 EQUAL :99: GO  TO  CARD-EOF.                    C98970
59040      NOTE    DEBUG   WRITE CARD IMAGEX   XX  XX.                  C98970
59050      MOVE CARD-DATA TO RCD-KP-CARD.                               C98970
59060      WRITE RCD-KP FROM RCD-KP-CARD.                               C98970
59070      ADD 1   TO  RCD-KP-CNT.                                      C98970
59090      GO TO CARD-EXIT.                                             C98970
59100  CARD-EOF.                                                        C98970
59110      CLOSE CARD-FILE WITH LOCK.                                   C98970
59120      MOVE :1: TO CARD-EOF-SW.                                     C98970
59130  CARD-EXIT.          EXIT.                                        C98970
59200  READ-SG.                                                         C98970
59210      READ SG-FILE INTO SG-NSG-REC                                 C98970
59220              AT END GO TO SG-EOF.                                 C98970
59230      IF  TYPE-N   EQUAL :9:  GO  TO  SG-EOF.                      C98970
59290      GO TO READ-SG-EXIT.                                          C98970
59300  SG-EOF.                                                          C98970
59310      CLOSE SG-FILE   WITH LOCK.                                   C98970
59320      MOVE 1 TO ILOF1 SGEOF.                                       C98970
59330  READ-SG-EXIT.       EXIT.                                        C98970
59500  READ-NSG.                                                        C98970
59510      READ NSG-FILE INTO SG-NSG-REC                                C98970
59520                  AT END GO TO NSG-EOF.                            C98970
59530      IF  TYPE-N   EQUAL :4:  GO  TO  NSG-EOF.                     C98970
59590      GO TO READ-NSG-EXIT.                                         C98970
59600  NSG-EOF.                                                         C98970
59610      CLOSE NSG-FILE  WITH LOCK.                                   C98970
59620      MOVE 2 TO ILOF1 NSGEOF.                                      C98970
59630  READ-NSG-EXIT.      EXIT.                                        C98970
61000  BLOCK-CHECK.                                                     C98970
61010      ENTRY   :CLOSEF:    USING   IT1.                             C98970
61100  EOJ-RCD-KEEPING.                                                 C98970
61110      MOVE  SG-CN      TO  SG-GTOT.                                C98970
61120      MOVE NSG-CNT     TO  NSG-GTOT.                               C98970
61130      MOVE CARD-CNT1   TO  R1-G-TOT.                               C98970
61140      MOVE CARD-CNT2   TO  R2-G-TOT.                               C98970
61150      MOVE CARD-CNT3   TO  R3-G-TOT.                               C98970
61160      COMPUTE RECORDS-READ > CARD-CNT1 < CARD-CNT2 < CARD-CNT3.    C98970
61170      MOVE RECORDS-READ TO RECORDS-INPUT.                          C98970
61180      MOVE RECORDS-PASS TO OBSERVE-OUT.                            C98970
61300      WRITE RCD-KP     FROM RCD-TOTALS.                            C98970
61310      ADD 1   TO  RCD-KP-CNT.                                      C98970
62010      COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 703 * 703).  C98970
```

```
62040  LOOP3.                                                                  C98970
62050      WRITE OFILE1-REC  FROM NINE-40.                                     C98970
62060      ADD 1 TO KOUNT.                                                     C98970
62070      IF KOUNT IS LESS THAN 70 GO TO LOOP3.                               C98970
62100  BLOCK-CHECK-2.                                                          C98970
62115      COMPUTE KNT  >  RCD-KP-CNT -  ((RCD-KP-CNT / 25) * 25).             C98970
62130  LOOP4.                                                                  C98970
62140      WRITE RCD-KP          FROM NINE-80.                                 C98970
62150      ADD 1 TO KNT.                                                       C98970
62160      IF KNT  IS LESS THAN 25 GO TO LOOP4.                                C98970
64000  CLOSE-FILES.                                                            C98970
64002      IF  SGEOF EQUAL :1: GO TO TEST-NSGEOF.                              C98970
64004      CLOSE SG-FILE   WITH LOCK.                                          C98970
64006  TEST-NSGEOF.                                                            C98970
64008      IF  NSGEOF EQUAL :0:                                                C98970
64010      CLOSE NSG-FILE  WITH LOCK.                                          C98970
64020      CLOSE   OFILE1      WITH LOCK.                                      C98970
64030          CLOSE RCD-KP-FILE  WITH LOCK.                                   C98970
64110      DISPLAY : CARDS  IN : RECORDS-READ  UPON CONSOLE.                   C98970
64120      DISPLAY : OBSERVOUT : RECORDS-PASS  UPON CONSOLE.                   C98970
64125      DISPLAY : SG     IN : SG-CNT        UPON CONSOLE.                   C98970
64130      DISPLAY : NSG    IN : NSG-CNT       UPON CONSOLE.                   C98970
64140      DISPLAY : ECJ C9897 : UPON CONSOLE.                                 C98970
64150      GOBACK.                                                             C98970
/*
//CHG.SYSIN  DD  DATA,SPACE>(TRK,(I,I))
 NAME    C8777(R)
/*
//I98970 JOB   01,:G. KANG     :,PRTY>02,TYPRUN>HOLD      X13I0
//C98970 EXEC  C96U1N,TIME>02,ACCT>035323007     STAND ALONE TFG
//CHG.TU15     DD   DSN>+P.9897415,DISP>(,PASS),SPACE>(CYL,(009,001))   D15-OUT
//CHG.TFG1N    DD   *,SPACE>(CYL,(1,1))
TFG  TU15    11  010Z06J
       100       500                                                  STIME
  57000231  59000164                                                  STN-ETN
         3         1                                                  SGNI
         3         0                                                  SGPI
                          03300                                       HPH
                          033                                        MAI
                          03400                                      PERI
  57000236       331                                                  ISO A/C
  57000237       331                                                  ISO A/C
  57000243       324                                                  ISO A/C
  57000244       331                                                  ISO A/C
  57002545       331                                                  ISO A/C
  58000776       324                                                  ISO A/C
  58000901       331                                                  ISO A/C
  59000002       331                                                  ISO A/C
  59000003       331                                                  ISO A/C
  59000005       331                                                  ISO A/C
  59000006       331                                                  ISO A/C
  59000010       331                                                  ISO A/C
  59000012       331                                                  ISO A/C
  59000015       331                                                  ISO A/C
  59000018       331                                                  ISO A/C
  59000019       331                                                  ISO A/C
  59000026       331                                                  ISO A/C
  59000030       331                                                  ISO A/C
  59000054       324                                                  ISO A/C
  59000057       324                                                  ISO A/C
  59000058       324                                                  ISO A/C
  59000059       324                                                  ISO A/C
  59000104       331                                                  ISO A/C
  59000105       331                                                  ISO A/C
  59000108       324                                                  ISO A/C
  59000110       324                                                  ISO A/C
  59000119       324                                                  ISO A/C
  59000141       324                                                  ISO A/C
  59000143       324                                                  ISO A/C
  59000144       324                                                  ISO A/C
  59000145       324                                                  ISO A/C
  59000147       324                                                  ISO A/C
  59000151       324                                                  ISO A/C
  59000152       324                                                  ISO A/C
  99000152       324                                                 LAST
99999999999999999999999999999999999999999999999999999999999999999999 LAST
*END
/*
```

```
//C98970 EXEC  P9645G,PARM.ASSY='MAP,LIST,BCD',                          C
//             PARM.LKED='LIST,XREF',TIME=06,ACCT=D35323007
//ASSY.SYSIN   DD  DATA,SPACE=(CYL,(1,1))                          1440 CDS
C        FORTRAN-COBOL LINK TEST.  JOHN LINK.
C        19 APRIL 1972
C      THIS DRIVER CALCULATES OBSERVATIONS FOR GROUPS 1 - 6
C      THIS PROGRAM GENERATE OBSERVATION DATA TAPES FOR FUTURE ANALYSIS
C       OBSERVATION TAPE FOR AIRCRAFT LEVEL
C
C          COLUMN     VALUE      DESCRIPTION
C           3-10      ZERO       AIRCRAFT LEVEL
C
C            12          1        NON ISO
C                        2         ISO
C          13-14        01        NORM HOURS / PERIODIC
C                       02        NORM HOURS / HOURLY POSTFLIGHT
C                       03        AIE / SORTIE
C                       04        FH / WEEK
C                       05        SORTIE / WEEK
C                       06        LANDING /WEEK
C            15          1        ORIGINS - HOURLY POSTFLIGHT
C                        2        ORIGINS - MA
C                        3        ORIGINS - PERIODIC
C            16          1        INDEPENDENT VARIABLE - WEEK
C                        2        INDEPENDENT VARIABLE - FLIGHT HOURS
C                        3        INDEPENDENT VARIABLE - SORTIE
C                        4        INDEPENDENT VARIABLE - LANDING
C          18-23                  NUMERATOR OF DEPENDENT VARIABLE
C          25-30                  DENOMINATOR OF DEPENDENT VARIABLE
C          32-37                  INDEPENDENT VARIABLE
C
C      COMMON SECTION
C      *-*-*-*
```

```
  340 PDATA(1) = PSGWK
      PDATA(2) = PSGCFH
      PDATA(3) = PSGCS
      PDATA(4) = PSGCL
C     SET UP NEW ORIGINS
      DO 800    I=1,NSGBC
      PWKI(I) = CWK(I)
  800 CONTINUE
C     CHECK TO SEE IF INSPECTION IS A PERIODIC
  805 IF (CWK(SGPI)) 810,810,817
C     CHECK IF THERE WAS EVER A PERIODIC
  810 IF (PPI) 825,825,820
C     SAVE LAST PERIODIC INFORMATION
  817 PPI = 1
      PS = PSGCS
      PIDATA(1) = PSGWK
      PIDATA(2) = PSGCFH
      PIDATA(3) = PSGCS
      PIDATA(4) = PSGCL
C     CALCULATE GROUPS 3,4,5,6
  820 CALL FENSGI
C     WAS THERE A PREVIOUS INSPECTION
  825 IF (PSGI) 900,900,830
C     DO NORM DATA
  830 CALL VARIT2
  900 PSGI = CI
C     CHECK FOR CHANGE IN TAIL NUMBER
      IF (PTN - SGSN) 1000,920,1000
  920 IF (PTN - NSGSN)1000,930,1000
C     CHECK FOR END OF TIME
  930 IF (SETIME - SGWK) 1100,950,950
  950 IF (SETIME - NSGWK) 1100,335,335
C     TEST TAIL NUMBER AGAINST BLOCKING FLAG
 1000 IF (SGSN - 99999999) 1015,11000,11000
 1015 IF (SGEOF) 11000, 020,11000
 1020 IF (NSGSN - 99999999) 1025,11000,11000
 1025 IF (NSGEOF) 11000,1029,11000
C     CHECK FOR LAST TAIL NUMBER
 1029 IF (NSGSN - ETN)  1030,1030,11000
 1030 IF (SGSN - ETN)  1040,1040,11000
 1040 IWAY = 1
      GO TO 330
 1100 IWAY = 2
      GO TO 330
10000 CONTINUE
      WRITE (6,10010)
10010 FORMAT (7H STOP1 )
      GO TO 11010
11000 CONTINUE
      WRITE (6,11005)
11005 FORMAT (7H STOP4 )
11010 CONTINUE
      IT1 = 0
      CALL CLOSEF    (IT1)
      CALL EOJMSG
      CALL EXIT
      END
      SUBROUTINE CINI
C     THIS SUBROUTINE READS IN THE MODEL DEFINITION FOR GROUP 1
C     ALSO BASIC INITIALIZATION
C     COMMON SECTION
C     *-*-*-*
```

```
C     BASIC INITIALIZATION SECTION
C     INITIALIZE FILE NUMBERS
      OFILE1 = 1
      IN = 5
      OUT = 6
      SGF = 11
      NSGF = 12
C     INITIALIZE FLAGS
      LGENE = 0
      NSGEOF = 0
      1WAY = 1
      NNSG = 2
      NSGBC = 3
      IT = 1
C     *-*-*-*
```

```
C     *-*-*-*
```

```
  331 SETIME = ETIME
      GO TO 340
C     SET END TIME OF SUBSET
  332 SETIME = SSSWK
C     CHECK WEEK NUMBER AGAINST STARTING WEEK
  340 IF (SGWK - SSTIME) 345,349,349
C     READ A SUPPORT GENERAL RECORD FROM THE DATA BANK VIA COBOL ON SGF
  345 TYPE = I
      CALL COBI
C     CHECK BLOCKING FLAG
      IF (SGSN - 99999999) 347,10200,347
C     CHECK FOR END OF INFORMATION (EOF)
  347 IF( SGEOF) 10200,340,10200
C     *-*-*-*
```

```
C     SET TAIL NUMBER TO 99999999
  400 SGSN = 99999999
  405 CBSGI = NSGBC + 1
  410 CONTINUE
      CI = CBSGI
      RETURN
      END
      SUBROUTINE FNLSGI
C     THIS SUBROUTINE FINDS THE END OF  THE CURRENT INSPECTION AND
C     SUMS UP THE NORM HOURS
C     COMMON SECTION
C     +-+-+-+
```

```
      SUBROUTINE FLNSGI
C     THIS FINDS LEGAL NSG RECORD TYPE 3
C     COMMON SECTION
      COMMON      AIE,BLANK,BSGC,CBSGI,CI,CNORM,CSGN,CTYPE,CWK,DCT,DDN,
     1 DFH,DICT,DIFH,DIL,DIS,DL,DS,DUMMY,DWK,ENSGWK,ESGWK,ETIME,ETN,HMC,
     2 ID,IN,IT,IWAY,NNSG,NORS,NSGBC,NSGCFH,NSGCL,NSGCS,NSGEOF,NSGF,
     3 NSGHR,NSGN,NSGNOM,NSGSN,NSGU,NSGWK,NSGWUC,OAIE,OFILEI,OUT,PDATA,
     4 PIDATA    ,PNSGWK,PPI,PS,PSGCFH,PSGCL,PSGCS,PSGDL,PSGI,PSGK,PSGL,
     5 PSGWK,PTN,PWKI,SETIME,SGCFH,SGCL,SGCS,SGEOF,SGF,SGFH,SGHR,SGL,
     6 SGNI,SGNORM,SGPI,SGSN,SGU,SGWK,SGWUC,SSN,SSSWK,SSTIME,SSTNO,
     7STIME,STN,TYPE,WDC
C     *-*-*-*
```

```
C     *-*-*-*
```

```
C     CALCULATE ID FOR OUTPUT
      ID = 10000 * SSN + 300 + 10 * SGPI + 1
      CALL COROUT
     + (        PTN,ID,OFIE,DDN,DICT)
C     CALCULATE ID FOR OUTPUT
      ID = 10000 * SSN + 300 + 10 * SGPI + 2
      CALL COROUT
     * (        PTN,ID,OAIE,DDN,DIFH)
C     CALCULATE ID FOR OUTPUT
      ID = 10000 * SSN + 300 + 10 * SGPI + 3
      CALL COROUT
     + (        PTN,ID,OAIE,DDN,DIS)
C     CALCULATE ID FOR OUTPUT
      ID = 10000 * SSN + 300 + 10 * SGPI + 4
      CALL COROUT
     *-(        PTN,ID,OAIE,DDN,DIL)
  900 IF (UICT) 1000,1000,950
C     CALCULATE ID FOR OUTPUT
  950 CONTINUE
      ID = 10000 * SSN + 400 + 10 * SGPI + 2
      CALL COROUT
     * (        PTN,ID,O'FH,DICT,DIFH)
C     CALCULATE ID FOR OUTPUT
      ID = 10000* SSN + 500 + 10 * SGPI + 3
      CALL COROUT
     * (        PTN,ID,O'S,UICT,DIS)
C     CALCULATE ID FOR OUTPUT
      ID = 10000 * SSN   600 + 10 * SGPI + 4
      CALL COROUT
     * (        PTN,ID,UIL,UICT,DIL)
C     RESTORE TAIL NUMBER
 1000 CONTINUE
      PTN = IPIN
      RETURN
      END
/*       REQUIRED  PLACE FORTRAN OCD SOURCE BEFORE THIS CARD
//LKED.AUDCALL DD DSN>PGML1B,DISP>SHR,VOL>SER>TI1,UNIT>DSK
//LKED.SYSIN   DD  DATA,SPACE>(TRK,(5,5))                                  360 CDS
  INCLUDE      AUDCALLL(8777)
/*       REQUIRED  PLACE LINKEDIT CONTROLCARDS IF ANY BEFORE THIS CARD
//CHG.FT01F001 DD   DISP>(,PASS),UNIT>(A+F1,2,DEFER),DSN>+A,9897419,   CT12/13 1
//              VOL>SER>(+F1,A+F1,H+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.FT03F001 DD   DISP>(,PASS),UNIT>(T+F3,1,DEFER),DSN>+C,9897418,   CT14    1
//              VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.FT04F001 DD   DSN>+P,9897415,DISP>(OLD,PASS)                      D15-IN
//CHG.FT08F001 DD   DISP>(,PASS),UNIT>(A+F5,2,DEFER),DSN>+E,9897412,   CT22/23 1
//              VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.FT11F001 DD   DSN>+P,9897413,DISP>(,PASS),SPACE>(CYL,(009,001))   D25-OUT
/+
//C9897U EXEC  C96U3N,TIME>02,ACCT>D35323007  STDALONE JOHN LINK
//CHG.TU12     DD   UISP>(,KEEP),UNIT>(A+F1,2,DEFER),DSN>+A,9897419,   CT12/13 1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//              1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU14     DD   UISP>(,KEEP),UNIT>(T+F3,1,DEFER),DSN>+C,9897418,   CT14    1
//              VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.TU15     DD   DSN>+P,9897415,DISP>(OLD,DELETE)                    D15-IN




//CHG.TU22     DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),DSN>+E,9897412,   CT22    1
//              VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.TU25     DD   DSN>+P,9897413,DISP>(OLD,DELETE)                    D25-IN
//CHG.TPRIN    DD   *,SPACE>(TRK,(1,1))
I/P  TU15    10400802080
T/P  TU25    10400802080
T/P  TU22    10020402040
T/P  TU14    10020702070
T/P  TU12    10020702070
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.10.2 MEASURE OBSERVATIONS AT WUC LEVEL

```
//T9897BA JOB  01,,J. FOUNTAIN ,,PRTY>02,TYPRUN>HOLD      X131
//C9897B EXEC  C96U1N,TIME>02,ACCT>D35323007     STAND ALONE TFG
//CHG.TU15     DD   DSN>*P.9897415,DISP>(,PASS),SPACE>(CYL,(009,001))   D15-OUT
//CHG.TFG1N    DD   *,SPACE>(CYL,(1,1))
00000          GET TFG                          WANG                    C98970'T
010001 019999  REPLACE                                                       'T
TFG  TU15    11  010Z0F0
       100        500                                                    STIME
  57000231  57000232                                                    STN-ETN
         3          2                                                   NSGBC
                          03300                                         HPH
                          033                                           MA1
                          03400                                         PERI
       111          2
         3         11
                          03300                                         HPF
                          033                                            MA
                          03400                                          PER
                          74A
                          74B
                          74C
                          74D
                          74F
                          74H
                          74K
                          74L
                          74P
                          74Q
                          74000
       101          1                                                  GRP1D 1
         2         43
                          03300                                         HPF
                          03400                                          PER
                          11J                                          HPO PMN
                          11K                                          HPO PMN
                          11                                           HPO PMN
                          12B                                          HPO PMN
                          12                                           HPO PMN
                          13C                                          HPO PMN
                          13J                                          HPO PMN
                          13                                           HPO PMN
                          14                                           HPO PMN
                          23K                                          HPO PMN
                          23M                                          HPO PMN
                          23N                                          HPO PMN
                          23Q                                          HPO PMN
                          23S                                          HPO PMN
                          23                                           HPO PMN
                          41F                                          HPO PMN
                          41                                           HPO PMN
                          42E                                          HPO PMN
                          42F                                          HPO PMN
                          42G                                          HPO PMN
                          42                                           HPO PMN
                          44                                           HPO PMN
                          45E                                          HPO PMN
                          45J                                          HPO PMN
                          45                                           HPO PMN
                          46A                                          HPO PMN
                          46C                                          HPO PMN
                          46G                                          HPO PMN
                          46H                                          HPO PMN
                          46J                                          HPO PMN
                          46                                           HPO PMN
                          47                                           HPO PMN
                          49A                                          HPO PMN
                          49                                           HPO PMN
                          51                                           HPO PMN
                          52                                           HPO PMN
                          55                                           HPO PMN
                          63                                           HPO PMN
                          65                                           HPO PMN
                          71                                           HPO PMN
                          75                                           HPO PMN
                          93                                           HPO PMN
                          97                                           HPO PMN
```

```
                                        ABCDEFRV2                          WDC
                                        KTM                                WDCI
         1          3                                                      ABORTI
  57000236        331                                                      ISO A/C
  57000237        331                                                      ISO A/C
  57000243        324                                                      ISO A/C
  57000244        331                                                      ISO A/C
  57002545        331                                                      ISO A/C
  58000776        324                                                      ISO A/C
  58000901        331                                                      ISO A/C
  59000002        331                                                      ISO A/C
  59000003        331                                                      ISO A/C
  59000005        331                                                      ISO A/C
  59000006        331                                                      ISO A/C
  59000010        331                                                      ISO A/C
  59000012        331                                                      ISO A/C
  59000015        331                                                      ISO A/C
  59000018        331                                                      ISO A/C
  59000019        331                                                      ISO A/C
  59000026        331                                                      ISO A/C
  59000030        331                                                      ISO A/C
  59000054        324                                                      ISO A/C
  59000057        324                                                      ISO A/C
  59000058        324                                                      ISO A/C
  59000059        324                                                      ISO A/C
  59000104        331                                                      ISO A/C
  59000105        331                                                      ISO A/C
  59000108        324                                                      ISO A/C
  59000110        324                                                      ISO A/C
  59000119        324                                                      ISO A/C
  59000141        324                                                      ISO A/C
  59000143        324                                                      ISO A/C
  59000144        324                                                      ISO A/C
  59000145        324                                                      ISO A/C
  59000147        324                                                      ISO A/C
  59000151        324                                                      ISO A/C
  59000152        324                                                      ISO A/C
  99000152        324                                                     LAST
9999999999999999999999999999999999999999999999999999999999999999999999  LAST
*END
/*
//C98978 EXEC  P96456,PARM.ASSY>(MAP,LIST,BCD),                          C
//             PARM.LKED>:LIST,XREF:,TIME>20,ACCT>D35323007
//ASSY.SYSIN   DD  DATA,SPACE>(CYL,(1,1))                                1440 CDS
```

```
C       FORTRAN-COBOL LINK TEST,  JOHN LINK.
C     THIS DRIVER CALCULATES OBSERVATIONS FOR GROUPS 7 - 17
C     THIS PROGRAM GENERATE OBSERVATION DATA TAPES FOR FUTURE ANALYSIS
C     READ IN CARD INPUT DESCRIPTION FOR GROUPS 7-17
C      OBSERVATION TAPE FOR WUC LEVEL
C
C          COLUMN     VALUE      DESCRIPTION
C           3-7       03111      03300, 033Xx, 03400 ORIGIN
C                     00101      03300, 03600 ORIGIN
C           8-10                 WUC SET NUMBER
C            11          1       CURRENT INSPECTION - HPF
C                        2       CURRENT INSPECTION - MA
C                        3       CURRENT INSPECTION - PERIODIC
C            12          1       NON-ISO
C                        2        ISO
C          13-14        07       UNSCHEDULED MA / WEEK
C                       08       UNSCHEDULED MA / FLIGHT HOUR
C                       09       UNSCHEDULED MA / SORTIE
C                       10       UNSCHEDULED MA / LANDING
C                       18       REPAIR ACTION / INTERVAL
C                       20       ABORT MA /SORTIE
C            15          1       ORIGINS - HOURLY POSTFLIGHT
C                        2       ORIGINS - MA
C                        3       ORIGINS - PERIODIC
C
C            16          1       INDEPENDENT VARIABLE - WEEK
C                        2       INDEPENDENT VARIABLE - FLIGHT HOURS
C                        3       INDEPENDENT VARIABLE - SORTIE
C                        4       INDEPENDENT VARIABLE - LANDING
C          18-23                 NUMERATOR OF DEPENDENT VARIABLE
C          25-30                 DENOMINATOR OF DEPENDENT VARIABLE
C          32-37                 INDEPENDENT VARIABLE
C     COMMON SECTION
```

```
C     *-*-*-*
```

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```
C     SAVE INSPECTION INDEX TO CURRENT INDEX
      IP(I) = IPI
C     INITIALIZE CUMULATIVE MAINTENANCE ACTIONS TO ZERO
      DO  490   J=ISTAR,IEND
      CMA(J) = 0
      CRA(J) = 0
      CA(J) = 0
  490 CONTINUE
  500 CONTINUE
C     CALCULATE GROUPS 7,8,9,10
  805 CALL FLNSG2
C     CHECK FOR CHANGE IN TAIL NUMBER
      IF (PTN - SGSN) 1000,920,1000
  920 IF (PTN - NSGSN)1000,930,1000
C     CHECK FOR END OF TIME
  930 IF (SETIME - SGWK) 1100,950,950
  950 IF (SETIME - NSGWK) 1100,335,335
C     TEST TAIL NUMBER AGAINST BLOCKING FLAG
C     TEST FOR END OF INFORMATION FLAG
 1000 IF (SGSN - 99999999)  1010,11000,11000
 1010 IF (NSGSN - 99999999) 1020,11000,11000
C     CHECK FOR LAST TAIL NUMBER
 1020 IF (NSGSN - ETN)  1030,1030,11000
 1030 IF (SGSN - ETN)  1040,1040,11000
 1040 IWAY = 1
      GO TO 330
 1100 IWAY = 2
      GO TO 330
10000 CONTINUE
      WRITE (6,10010)
10010 FORMAT (7H STOP1 )
      GO TO 11010
11000 CONTINUE
      WRITE (6,11005)
11005 FORMAT (7H STOP4 )
11010 CONTINUE
      ITI = 0
      CALL CLOSEF (ITI)
      CALL EOJMSG
      CALL EXIT
      END
      SUBROUTINE CIN2
C     THIS SUBROUTINE READS IN THE MODEL DEFINITION FOR VARIABLES 7-17
C     ALSO BASIC INITIALIZATION
C     COMMON SECTION
C     *-*-*-*
```

```
C     *-*-*-*
```

```
C     INITIALIZE NUMBER OF WUC DEFINITIONS TO IEND
      NSET = ILND
      IT = 3
C     READ IN WHEN DISCOVERED CODE DICTIONARY
      CALL CREAD3
     I (IN,IT,WDCD(1),WDCD(2),WDCD(3),WDCD(4),WDCD(5),WDCD(6),WDCD(7),
     2 WUCD(8),WDCD 9))
C     READ IN WDC INSPECTION
      CALL CREAD3
     * (IN,IT,WDCI(1),WDCI(2),WDCI(3),DUMMY,DUMMY,DUMMY,DUMMY,DUMMY,
     * DUMMY,DUMMY,DUMMY)
      IT = I
C     READ IN ABORT INDICES
      CALL CREAD1
     * (IN,IT,ABOR)T(I),ABORTI(2),DUMMY)
C     READ IN FIRST AIRCRAFT SUBSET INFORMATION
      CALL CREAD1
     I (IN,IT,SSTNO,SSSWK,DUMMY)
      RETURN
      END
      SUBROUTINE COB2
C     THIS SUBROUTINE CALL A COBOL SUBROUTINE TO READ THE DATA BANK
C     COMMON SECTION
C     *-+-+-+
```

```
      RETURN
      END
      SUBROUTINE SGPOS2
C     THIS SUBROUTINE POSITION SG FILE FOR NEW AIRCRAFT SUBSET DEPENDING
C     ON IWAY FOR GROUPS 7-17
C     COMMON SECTION
C     *-*-*-*-*-*-* *-*-*-*-*-*
```

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```
  331 SETIME = ETIME
      GO TO 360
C     SETIME = ETIME (IME OF SUBSET
  332 SETIME = 999999
C     CHECK WEEK NUMBER AGAINST STARTING WEEK
  340 IF (SGWK - SSTIME) 345,349,349
C     READ A SUPPORT GENERAL RECORD FROM THE DATA BANK VIA COBOL ON SGF
  345 ITYPE = 1
      CALL COPY
C     CHECK BLOCKING FLAG
      IF (SGFN - 999999999) 347,10200,347
C     CHECK FOR END OF INFORMATION (EOF)
  347 IF (SGEOF) 10210,340,10200
C     *-*-*-*
```

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```
  365 CONTINUE
      GO TO 410
  369 CONTINUE
      ENTRY FNLSG2
      TYPE = I
C     READ A SG RECORD
      CALL CDR2
C     CHECK TAIL NUMBER AGAINST 99999999 PADDING OF LAST LAST BLOCK
      IF (SGSN - 99999999) 375,405,375
C     CHECK FOR EOF
  375 IF (SGEOF) 400,360,400
C     SET TAIL NUMBER TO 99999999
  400 SGSN = 99999999
  405 CHSGI = NSGBC - I
  410 CONTINUE
      CI = CHSGI
      RETURN
      END
      SUBROUTINE FLSG2
C     THIS SUBROUTINE FINDS THE END OF  THE CURRENT INSPECTION
C     COMMON SECTION
C     *-*-*-*
```

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```
      IPI = CI
C     FIND NEXT LEGAL SGWUC
   80 CALL FNESG2
C     CHECK FOR END TIME
      IF (SGWK - SETIME)  85,300,300
C     CHECK FOR CHANGE IN TAIL NUMBER
   85 IF (PTN - SGSN)  300,88,300
C     CALCULATE DIFFERENCE IN WEEK FIELD FOR CONSECTIVE SG RECORDS
   88 DWK = SGWK - PSGWK
C     CHECK FOR CHANGE IN WEEK
      IF (DWK) 300,20 90
C     IS PREVIOUS SG INDEX =3(3400).
   90 IF (PSGI-3) 95,100,95
C     IS DIFF. IN WEEKS MORE THAN 2.
   95 IF (DWK-3)  20,200,200
C     IS DIFF. IN WEEKS MORE THAN 4.
  100 IF (DWK-5)  20,200,200
  200 CONTINUE
      ESGWK = PSGWK
      RETURN
  300 CONTINUE
      ESGWK = SETIME + 1
      RETURN
      END
      SUBROUTINE FLNS52
C     THIS SUBROUTINE FINDS LEGAL NSG RECORD TYPE 4 RECORD FROM DATA BANK
C     COMMON SECTION
C     *-*-*-*-*-*-*-* *-*-*-*-*-*-*
```

```
C     CHECK WEEK BEFORE THE START OF NEXT INSPECTION
  400 IF (NSGWK -  SGWK) 410,410,810
  410 CONTINUE
      GO TO (420,430),ITIME
  420 CONTINUE
      ITIME = 2
C     SAVE PREVIOUS WEEK
      PNSGWK = NSGWK
      PNSGCF = NSGCFH
      PNSGCS = NSGCS
      PNSGCL = NSGCL
  430 CONTINUE
      IRA = 0
      MAI = 0
      AI = 0
C     CHECK FOR CHANGE IN WEEK
      IF (PNSGWK - NSGWK) 790,440,790
  440 CONTINUE
      IF (NSGSN - PTN) 790,450,790
  450 CONTINUE
C     CHECK FOR VALID WHEN DISCOVERED CODE
      DO  520  I=1,NWDC
      IF (WDCD(I) - WDC) 520,590,520
  520 CONTINUE
      DO  540   K=1,NSGBC
      IF (WDC - WUCI(K)) 540,550,540
  540 CONTINUE
      GO TO 570
  550 CONTINUE
      IRA = K
      GO TO 619
  590 CONTINUE
      MAI = I
  600 CONTINUE
      IF (I - ABORTI(I)) 602,615,602
  602 IF (I- ABOR(I(2)) 619,615,619
  615 AI = I
  619 CONTINUE
      ISTAR = 0
      IEND  = 0
      DO 700   I=1, NWUCGP
      ISTAR = IEND + I
      IEND = IEND + NENSGG(I)
      DO 690   J = ISTAR,IEND
      DO 680   K=1,4
      IF (BNSGC(K,J) - NSGWUC(K)) 620,680,620
  620 IF (BNSGC(K,J) - BLANK) 690,720,690
  680 CONTINUE
      GO TO 720
  690 CONTINUE
  700 CONTINUE
      GO TO 570
  720 CONTINUE
      IF (MAI)  725,750,725
  725 CONTINUE
C     ACCUMULATE MAINTENANCE ACTIONS
      CMA(J) = CMA(J) + SGU
      IF (AI)  730,570,730
  730 CA(J) = CA(J) + NSGU
      GO TO 570
  750 CONTINUE
      IF (IRA)  760,570,760
  760 CRA(J) = CRA(J) + NSGU
      GO TO 570
  790 CONTINUE
      CALL V7T10
C     ZERO OUT -CA- ARRAY -
      ISTAR = 0
      IEND = 0
      DO 795 I=1,NWUCGP
      ISTAR = IEND + 1
      IEND = IEND + NENSGG(I)
      DO 795 J=ISTAR,IEND
      CA(J) = 0
  795 CONTINUE
C     RE-INITIALIZE -ITIME- TO 1 -
      ITIME = 1
C     GO SEE IF TIME OF  NEXT INSPECTION IS EXCEEDED -
      GO TO 400
  800 NSGSN = 9999999
  805 ENSGWK = SETIME + I
  810 RETURN
      END
      SUBROUTINE V4R2
C     COMMON SECTION
```

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```
C     *-*-*-*
```

```
      IF (U%) IAN,IAN,175
  175 ID2 = 10000*SSN + K + 2000 +10*IMAX
      CAA = 10*CA(J)
      CALL COBOUT
     * (IDENT,ID2,CAA,CS,IV)
  180 CONTINUE
  190 CONTINUE
  200 CONTINUE
      PS2 = PNSGCS
      RETURN
      ENTRY V18
      UDN = 1
      IEND = 0
      ISTAR = 0
      DO  1200  IGRP=1, NUCGP
      ISTAR = IEND + 1
      IEND = IEND + NENSGG(IGRP)
      IF (IMAT(C1,IGRP), 1200,1200,300
  300 IMAX = IP(IGRP)
      IF (IMAX) 1200,1200,1100
 1100 CONTINUE
      UVD(1) = 10 * (PNSGWK - PDATA2(1,IMAX))
      UVD(2) = PNSGCF - PDATA2(2,IMAX)
      UVD(3) = 10 * (PNSGCS - PDATA2(3,IMAX))
      UVD(4) = 10 * (PNSGCL - PDATA2(4,IMAX))
      DO 1190  J=ISTAR,IEND
      ISET = J-ISTAR
C     CALCULATE SECOND HALF OF OUTPUT ID
      IDENT = 1000*GRP1D(IGRP) + GRPSEQ(IGRP) + ISET
      DO 1180  K=1,4
      ID2 = 10000*SSN + K + 1800 + 10*IMAX + 100000*CI
      CALL COROUT
     * (IDENT,ID2,CRA(J,,UDN,DVD(K))
 1180 CONTINUE
 1190 CONTINUE
 1200 CONTINUE
      RETURN
      END
/*       REQUIRED  PLACE FORTRAN BCD SOURCE BEFORE THIS CARD
//LKED.ADDCALL DD DSN>P,MLIB,DISP>SHR,VOL>SER>111,UNIT>DSK
//LKED.SYSIN   DD  DATA SPACE>(TRK,(5,5))                                  360 CDS
  INCLUDE      ADDCALL(A777)
/*       REQUIRED  PLACE  LINKEDIT CONTROL CARDS IF ANY BEFORE THIS CARD
//CHG.FT01F001 DD    DISP>(,PASS),UNIT>(A+F1,2,DEFER),DSN>*A.9897419,   CT12/13 1
//                   VOL>SER>(,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//                   I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.FT03F001 DD    DISP>(,PASS),UNIT>(T+F3,1,DEFER),DSN>*C.9897418,   CT14    1
//                   VOL>SER>(,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//                   I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.FT04F001 DD    DSN,*P.9897415,DISP>(OLD,PASS)                       D15=1N
//CHG.FT06F001 DD    DISP>(,PASS),UNIT>(A+F5,2,DEFER),DSN>*E.9897412,   CT22/23 1
//                   VOL>SER>(,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//                   I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.FT11F001 DD    DSN,*P.9897413,DISP>(,PASS),SPACE>(CYL,(009,001))    D25=OUT
/*
//C9897P EXEC  C9603N,TIME>02,ACCT>D35323007  STDALONE JOHN LINK
//CHG.TU12     DD    DISP>(,KEEP),UNIT>(A+F1,2,DEFER),DSN>*A.9897419,   CT12/13 1
//                   VOL>SER>(,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//                   I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU14     DD    DISP>(,KEEP),UNIT>(T+F3,1,DEFER),DSN>*C.9897418,   CT14    1
//                   VOL>SER>(,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//                   I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.TU15     DD    DSN>*P.9897415,DISP>(OLD,DELETE)                     D15=1N
//CHG.TU22     DD    DISP>(,KEEP),UNIT>(T+F5,1,DEFER),DSN>*E.9897412,   CT22    1
//                   VOL>SER>(,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//                   I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.TU25     DD    DSN>*P.9897413,DISP>(OLD,DELETE)                     D25=1N
//CHG.TPRIN    DD    *,SPACE>(TRK,(1,1))
T/P  TU15    1040000Z08
T/P  TU25    1040000Z08
T/P  TU22    1040040Z040
T/P  TU14    1040070Z07
T/P  TU12    1040070Z07
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.10.3 SORT AIRCRAFT LEVEL OBSERVATIONS

```
//T9897Z JOB   01,: G. WANG.   :,PRTY>02,TYPRUN>HOLD   X1310
//C9897Z EXEC  P9622N,W>I59,TIME>03,ACCT>D35323007   22/12 SORT
//CHG.SOR11N   DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                    CT22/23 1
//               DSN>+E.9897412,                                         CT22    2
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897411,     CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0040,BLKSIZE>2800]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[003,014,CH,A,032,006,CH,A],SIZE>E0600000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
```

6.10.4 SORT WUC LEVEL OBSERVATIONS

```
//T9897SB JOB  01,: G. WANG.   :,PRTY>02,TYPRUN>HOLD SORT IV-1A X1310
//C9897H EXEC  P9622N,W>1 9,TIME>06,ACCT>D35323007   22/12 SORT
//CHG.SORT1N   DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                    CT22/23 1
//               DSN>+E.9897412,                                         CT22    2
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    3
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>001]
//CHG.SORTOUT  DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897421,     CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0040,BLKSIZE>2800]
//CHG.SYSIN    DD   *,DCB,BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[003,014,CH,A,032,006,CH,A],SIZE>E1200000
 MODS  E15>[E15,008,SORTLIB,N],E18>[E18,024,SORTLIB,N]
/*
//C9897R EXEC  C9603N,TIME>01,ACCT>D35323007  STDALONE T P
//CHG.TUI2     DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897421,     CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TPRIN    DD   *,SPACE>[TRK,[1,1]]
T/P  TUI2    10040402040
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.10.5 MERGE WUC LEVEL OBSERVATIONS

```
//T9897MA JOB  01,: G. WANG.   :,PRTY>02,TYPRUN>HOLD MERGE X2 X1310
//C9897A EXEC  P9622N,TIME>10,ACCT>D35323007 MAX 7-WAY MERGE
//CHG.SORTIN01 DD   DISP>[,KEEP],UNIT>[T+F5,1,DEFER],DSN>+E.9897421,     CT22    1
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//               I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    3
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN02 DD   DISP>[,KEEP],UNIT>[T+F6,1,DEFER],DSN>+F.9897421,     CT23    1
//               VOL>SER>[+F6,A+F6,B+F6,C+F6,D+F6,E+F6,F+F6,G+F6,H+F6,   CT23    2
//               I+F6,J+F6,K+F6,L+F6,M+F6,N+F6,O+F6,P+F6,Q+F6,R+F6,S+F6],CT23    3
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN03 DD   DISP>[,KEEP],UNIT>[T+F7,1,DEFER],DSN>+G.9897421,     CT24    1
//               VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//               I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7],CT24    3
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN04 DD   DISP>[,KEEP],UNIT>[T+F8,1,DEFER],DSN>+H.9897421,     CT25    1
//               VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25    2
//               I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8],CT25    3
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTIN07 DD   DISP>[,KEEP],UNIT>[T+F4,1,DEFER],DSN>+D,9897421,     CT15    1
//               VOL>SER>[+F4,A+F4,B+F4,C+F4,D+F4,E+F4,F+F4,G+F4,H+F4,   CT15    2
//               I+F4,J+F4,K+F4,L+F4,M+F4,N+F4,O+F4,P+F4,Q+F4,R+F4,S+F4],CT15    3
//               DCB>[LRECL>0040,BLKSIZE>2800],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A,9897411,     CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//               DCB>[LRECL>0040,BLKSIZE>2800]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 MERGE FIELDS>[003,014,CH,A,032,006,CH,A]
/*
```

6.10.6 OBSERVATION COUNT

```
//L98972 EXEC  P9655L,TIME=01,ACCT=D35323007
//CHG.TU12     DD   DISP=(,PASS),UNIT=(A+F1,2,DEFER),DSN=+A.9897#11,    CT12/13 1
//               VOL=SER=(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1) T12     3
//CHG.TU24     DD   DISP=(,PASS),UNIT=(T+F7,1,DEFER),DSN=+G.9897#14,    CT24    1
//               VOL=SER=(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//               I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7) T24     3
//CHG.INPUT    DD   *,SPACE=(CYL,(1,1))                                 1440 CDS
00000          COMBINE     COMPILE                  G. WANG.             C98970
01040  DATE-WRITTEN. 19 APR 72.                                          C98970
01050  REMARKS. PHASE II- TASK IV- OBSERVATION COUNT.                     C98970
01070      INPUT/OUTPUT - COBOL.                                         C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT OFILE1                ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 7 ALTERNATE AREA.                                 C98970
02140      SELECT OFILECNT              ASSIGN TO UT-S-TU24             C98970
02150          RESERVE 3 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
17100  FD  OFILE1                                                        C98970
17120      RECORDING MODE IS F                                           C98970
17130      BLOCK CONTAINS 70  RECORDS                                    C98970
17140      RECORD CONTAINS  40          CHARACTERS                       C98970
17150      LABEL RECORDS ARE OMITTED                                     C98970
17160      DATA RECORDS ARE OFILE1-REC.                                  C98970
17200  01  OFILE1-REC SYNC.                                             C98970
17210      02  FILLER                PICTURE X(40).                     C98970
18100  FD  OFILECNT                                                      C98970
18120      RECORDING MODE IS F                                           C98970
18130      BLOCK CONTAINS 90 RECORDS                                     C98970
18140      RECORD CONTAINS 30           CHARACTERS                       C98970
18150      LABEL RECORDS ARE OMITTED                                     C98970
18160      DATA RECORDS ARE OBS-REC-CNT.                                 C98970
18200  01  OBS-REC-CNT SYNC.                                            C98970
18210      02  FILLER                PICTURE X(30).                     C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30130  01  NINE-30 SYNC.                                                C98970
30140      02  FILLER           PICTURE X(25)   VALUE                   C98970
30150                              '999999999999999999999999$'.         C98970
30160      02  FILLER           PICTURE X(5)    VALUE                   C98970
30170                              '9999$'.                             C98970
30280      02  FILLER           PICTURE X(30)   VALUE                   C98970
30290                              '999999999999999999999999999999$1'.  C98970
30310  01  RECORDS-READ     PICTURE 9(7)  SYNC VALUE ZERO.              C98970
30320  01  RECORDS-PASS     PICTURE 9(7)  SYNC VALUE ZERO.              C98970
30400  01  KOUNT            PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL. C98970
31000  01  FIRST-REC-SW     PICTURE X     VALUE 'Y' SYNC.               C98970
31010  01  OBS-CNT          PICTURE 9(6) VALUE ZERO COMPUTATIONAL SYNC.  C98970
31020  01  OBS-SN-CNT       PICTURE 9(6) VALUE ZERO COMPUTATIONAL SYNC.  C98970
42000  01  O-REC SYNC.                                                  C98970
42010      02  FILLER           PICTURE XX      VALUE SPACE.            C98970
42020      02  SN-O             PICTURE X(8) VALUE SPACE.               C98970
42030      02  IU-O             PICTURE X(6) VALUE SPACE.               C98970
42035      02  FILLER           PICTURE X       VALUE SPACE.            C98970
42040      02  OB-1             PICTURE X(6).                           C98970
42045      02  FILLER           PICTURE X       VALUE SPACE.            C98970
42050      02  OB-2             PICTURE X(6).                           C98970
42055      02  FILLER           PICTURE X       VALUE SPACE.            C98970
42060      02  OB-3             PICTURE X(6).                           C98970
42065      02  FILLER           PICTURE XX      VALUE SPACE.            C98970
42070      02  REC-MK-O         PICTURE X       VALUE '1'.              C98970
42100  01  O-REC-A SYNC.                                                C98970
42110      02  SN-A             PICTURE X(8).                           C98970
42120      02  IU-A             PICTURE X(6).                           C98970
42200  01  O-REC-B SYNC.                                                C98970
42210      02  SN-B             PICTURE X(8).                           C98970
42220      02  IU-B             PICTURE X(6).                           C98970
42300  01  O-REC-CNT SYNC.                                              C98970
42310      02  FILLER           PICTURE XX      VALUE SPACE.            C98970
42320      02  SN-C             PICTURE X(8).                           C98970
42330      02  IU-C             PICTURE X(6).                           C98970
42340      02  CNT-C            PICTURE X(6)       VALUE '000001'.      C98970
42350      02  FILLER              PICTURE X       VALUE SPACE.         C98970
42355      02  SN-OBS-CNT          PICTURE Z(6)9   VALUE '0000001'.     C98970
42360      02  REC-MK-C         PICTURE X       VALUE '1'.              C98970
50000  PROCEDURE DIVISION.                                               C98970
50010  OPEN-EM.                                                          C98970
```

```
50020      OPEN INPUT  OFILE1  OUIPUT  OFILECNT.                                C98970
50030  READ-IN.                                                                 C98970
50040      READ OFILE1 INTO O-REC                                               C98970
50050          AT  END GO  TO  RECORD-KEEP.                                     C98970
50070      IF FIRST-REC-SW EQUAL :1: GO TO TEST-SN.                             C98970
50080      MOVE SN-O    TO  SN-C.                                               C98970
50090      MOVE ID-O    TO  ID-C.                                               C98970
50095      MOVE ZEROS  TO  OBS-CNT OBS-SN-CNT SN-OBS-CNT.                       C98970
50100      MOVE :1: TO FIRST-REC-SW.                                            C98970
50105      GO  TO  READ-IN.                                                     C98970
50110  TEST-SN.                                                                 C98970
50115      ADD 1    TO  OBS-CNT RECORDS-READ.                                   C98970
50120      IF SN-O EQUAL SN-C  GO TO TEST-ID.                                   C98970
50125  LAST-CHANGE.                                                             C98970
50130      MOVE OBS-CNT TO CNT-C.                                               C98970
50140      ADD  OBS-CNT TO OBS-SN-CNT.                                          C98970
50150      MOVE OBS-SN-CNT TO SN-OBS-CNT.                                       C98970
50155      ADD 1 TO RECORDS-PASS.                                               C98970
50160      WRITE OBS-REC-CNT FROM O-REC-CNT.                                    C98970
50170      MOVE ZEROS  TO  OBS-CNT OBS-SN-CNT SN-OBS-CNT.                       C98970
50180      MOVE SN-O    TO  SN-C.                                               C98970
50190      MOVE ID-O    TO  ID-C.                                               C98970
50195      IF SN-O EQUAL :999999999:                                            C98970
50196          GO TO RECORD-KEEP.                                               C98970
50200      GO  TO  READ-IN.                                                     C98970
50210  TEST-ID.                                                                 C98970
50220      IF  ID-O EQUAL ID-C GO TO READ-IN.                                   C98970
50230      MOVE OBS-CNT TO CNT-C.                                               C98970
50240      ADD OBS-CNT TO  OBS-SN-CNT.                                          C98970
50250      WRITE OBS-REC-CNT FROM O-REC-CNT.                                    C98970
50255      ADD 1 TO RECORDS-PASS.                                               C98970
50260      MOVE ZEROS TO OBS-CNT.                                               C98970
50270      MOVE SN-O    TO  SN-C.                                               C98970
50280      MOVE ID-O    TO  ID-C.                                               C98970
50290      GO  TO  READ-IN.                                                     C98970
61000  RECORD-KEEP.                                                             C98970
61010      COMPUTE KOUNT > RECORDS-PASS - ((RECORDS-PASS / 90) * 90).           C98970
61020  LOOP3.                                                                   C98970
61030      WRITE   OBS-REC-CNT FROM NINE-30.                                    C98970
61040      ADD 1 TO KOUNT.                                                      C98970
61050      IF KOUNT IS LESS THAN 90 GO TO LOOP3.                                C98970
64000  CLOSE-FILES.                                                             C98970
64010      CLOSE   OFILECNT OFILE1 WITH LOCK.                                   C98970
64020      DISPLAY : IN  : RECORDS-READ UPON CONSOLE.                           C98970
64030      DISPLAY : OUT : RECORDS-PASS UPON CONSOLE.                           C98970
64040      DISPLAY : EOJ 9897 : UPON CONSOLE.                                   C98970
64050      GOBACK.                                                              C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE>(CYL,(1,1))
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                  T12
//TPR.TU24      DD   DISP>(OLD,KEEP),VOL>SER>+F7,UNIT>T+F7                  T24
//TPR.TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  TU24    1100030Z030
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.10.7 REGRESSION AND CORRELATION ANALYSIS

```
//C9897T JOB   01,: G. WANG,   :,PRTY>05          XI310
//C9897T EXEC  P9627L,TIME>1,ACCT>D35323007   PUT PROGRAM IN LIBRARY
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                  1440 CDS
00000          COMBINE     COMPILE                  O, WANO,              C98970
01040  DATE-WRITTEN. 25 APR 72.                                           C98970
01050  REMARKS. PHASE II- TASK IV- II-STATISTICS FORTRAN COBOL LINK.       C98970
01070      INPUT/OUTPUT - COBOL.                                          C98970
02000  ENVIRONMENT DIVISION.                                              C98970
02010  CONFIGURATION SECTION.                                             C98970
02020  SOURCE-COMPUTER. IBM-360.                                          C98970
02030  OBJECT-COMPUTER. IBM-360.                                          C98970
02100  INPUT-OUTPUT SECTION.                                              C98970
02110  FILE-CONTROL.                                                      C98970
02120      SELECT OFILE1                ASSIGN TO UT-S-FT01F001           C98970
02130          RESERVE 1 ALTERNATE AREA.                                  C98970
02140      SELECT OFILECNT              ASSIGN TO UT-S-FT10F001           C98970
02150          RESERVE 1 ALTERNATE AREA.                                  C98970
02180      SELECT STATREPORT            ASSIGN TO UT-S-FT11F001           C98970
02190          RESERVE   ALTERNATE AREA.                                  C98970
10000  DATA DIVISION.                                                     C98970
10010  FILE SECTION.                                                      C98970
14100  FD  STATREPORT                                                     C98970
14120      RECORDING MODE IS F                                            C98970
14130      BLOCK CONTAINS 15 RECORDS                                      C98970
14140      RECORD CONTAINS 130          CHARACTERS                        C98970
14150      LABEL RECORD  ARE OMITTED                                      C98970
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14160      DATA RECORDS ARE STATREPORT-REC.                                  C98970
14200  01  STAT-REC SYNC.                                                   C98970
14210      02  FILLER          PICTURE X(130).                              C98970
17100  FD  OFILE1                                                           C98970
17120      RECORDING MODE IS F                                               C98970
17130      BLOCK CONTAINS 70  RECORDS                                        C98970
17140      RECORD CONTAINS  40          CHARACTERS                           C98970
17150      LABEL RECORDS ARE OMITTED                                         C98970
17160      DATA RECORDS ARE OFILE1-REC.                                      C98970
17200  01  OFILE1-REC SYNC.                                                 C98970
17210      02  FILLER              PICTURE X(40).                           C98970
18100  FD  OFILECNT                                                         C98970
18120      RECORDING MODE IS F                                               C98970
18130      BLOCK CONTAINS 90 RECORDS                                         C98970
18140      RECORD CONTAINS 30          CHARACTERS                           C98970
18150      LABEL RECORDS ARE OMITTED                                         C98970
18160      DATA RECORDS ARE OBS-REC-CNT.                                     C98970
18200  01  OBS-REC-CNT SYNC.                                                C98970
18210      02  FILLER              PICTURE X(30).                           C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30100  01  BLNK-130 SYNC.                                                   C98970
30110      02  FILLER  PICTURE X(129)  VALUE SPACE.                         C98970
30120      02  RK-MK   PICTURE X       VALUE :#:.                           C98970
30200  01  PAGLCNT     PICTURE 9999    SYNC VALUE  ZERO.                    C98970
30210  01  LINL-CNT    PICTURE 99      SYNC VALUE  ZERO.                    C98970
30220  01  LINL-MAX-62 PICTURE 99      SYNC VALUE  62.                      C98970
30230  01  LINES-OUT   PICTURE 9(6)    SYNC VALUE  0.                       C98970
30240  01  FREQ-CNT    PICTURE 9(6)    SYNC VALUE  0.                       C98970
30250  01  OBS-CNT     PICTURE 9(6)    SYNC VALUE  0.                       C98970
30260  01  EFLAG       PICTURE X       SYNC VALUE  :0:.                     C98970
30270  01  FREQEOF     PICTURE X       SYNC VALUE  :0:.                     C98970
30280  01  OBSEOF      PICTURE X       SYNC VALUE  :0:.                     C98970
30290  01  STATCNT     PICTURE 9(6)    SYNC VALUE  0.                       C98970
30310  01  RECORDS-READ    PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30320  01  RECORDS-PASS    PICTURE 9(7)  SYNC VALUE ZERO.                   C98970
30400  01  KOUNT           PICTURE S999  SYNC VALUE ZERO COMPUTATIONAL.     C98970
32000  01  REPORT-ID SYNC.                                                  C98970
32010      02  FILLER                  PICTURE X(50) VALUE                  C98970
32020          :$9897T60  TF7919-01 142-8 1       1/2              1.      C98970
32030      02  FILLER                  PICTURE X(50) VALUE SPACE.           C98970
32040      02  FILLER                  PICTURE X(30) VALUE                  C98970
32050          :                                  $:.                      C98970
42000  01  O-REC SYNC.                                                      C98970
42010      02  FILLER          PICTURE XX      VALUE SPACE.                 C98970
42020      02  SN-O            PICTURE X(8) VALUE SPACE.                    C98970
42030      02  ID-O            PICTURE X(6) VALUE SPACE.                    C98970
42035      02  FILLER          PICTURE X       VALUE SPACE.                 C98970
42040      02  OB-1            PICTURE X(6).                                C98970
42045      02  FILLER          PICTURE X       VALUE SPACE.                 C98970
42050      02  OB-2            PICTURE X(6).                                C98970
42055      02  FILLER          PICTURE X       VALUE SPACE.                 C98970
42060      02  OB-3            PICTURE X(6).                                C98970
42065      02  FILLER          PICTURE XX      VALUE SPACE.                 C98970
42070      02  FCD-MK-O        PICTURE X       VALUE :#:.                   C98970
42360  01  O-REC-CNT SYNC.                                                  C98970
42310      02  FILLER          PICTURE XX      VALUE SPACE.                 C98970
42320      02  SN-C            PICTURE X(8).                                C98970
42330      02  ID-C            PICTURE X(6).                                C98970
42340      02  CNT-C           PICTURE X(6)        VALUE :000000:.          C98970
42350      02  FILLER              PICTURE X       VALUE SPACE.             C98970
42355      02  SN-OBS-CNT          PICTURE ZZZZZ9  VALUE :000000:.          C98970
42360      02  RCD-MK-C        PICTURE X       VALUE :#:.                   C98970
44000  01  TITLE-O SYNC.                                                    C98970
44010      02  CAR-O       PICTURE X       VALUE :1:.                       C98970
44020      02  FILLER      PICTURE X(45)   VALUE SPACE.                     C98970
44030      02  T-1-52-64   PICTURE X(16)   VALUE :CORRELATION; RE01.        C98970
44040      02  T-1-65-85   PICTURE X(18)   VALUE :RESSION STATISTICS:.      C98970
44050      02  FILLER      PICTURE X(38)   VALUE SPACE.                     C98970
44060      02  PAGE-NO-O   PICTURE X(5)    VALUE :PAGE 1.                   C98970
44070      02  PAGE-CNT    PICTURE ZZZ9.                                    C98970
44080      02  FILLER      PICTURE XX      VALUE SPACE.                     C98970
44090      02  T-O-RECMK   PICTURE X       VALUE :#:.                       C98970
44100  01  TITLE-BLK SYNC.                                                  C98970
44110      02  CAR-BL      PICTURE X       VALUE SPACE.                     C98970
44120      02  FILLER      PICTURE X(128)  VALUE SPACE.                     C98970
44130      02  T-BLK-RECMK PICTURE X       VALUE :#:.                       C98970
44200  01  TITLE-1 SYNC.                                                    C98970
44210      02  CAR-1       PICTURE X           VALUE SPACE.                 C98970
44220      02  SN-H        PICTURE X(8).                                    C98970
44230      02  ID-H        PICTURE X(6).                                    C98970
44240      02  CC-H        PICTURE X(5)        VALUE : CC> :.               C98970
44250      02  CC-O-H      PICTURE -(7).9(5).                               C98970
44260      02  A-H         PICTURE X(4)        VALUE : A> :.                C98970
44270      02  A-O-H       PICTURE -(8).9(5).                               C98970
44280      02  B-H         PICTURE X(4)        VALUE : B> :.                C98970
44290      02  B-O-H       PICTURE -(8).9(5).                               C98970
44300      02  SLH-H       PICTURE X(6)        VALUE : SE> :.               C98970
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44310      02  SER-D-R      PICTURE -(8).9(5).                                C98970
44320      02  SEE-R        PICTURE X(6)        VALUE I SEE> I.               C98970
44330      02  SEE-D-R      PICTURE -(8).9(5).                                C98970
44340      02  F-R          PICTURE X(4)        VALUE : F> :.                 C98970
44350      02  F-D-R        PICTURE -(8).9(5).                                C98970
44360      02  FILLER       PICTURE X           VALUE SPACE.                  C98970
44370      02  T-1-RECMK    PICTURE X           VALUE :#:.                    C98970
44400  01  TITLE-2 SYNC.                                                      C98970
44410      02  CAR-2        PICTURE X           VALUE SPACE.                  C98970
44420      02  FILLER       PICTURE X(14)       VALUE SPACE.                  C98970
44430      02  XBAR-R       PICTURE X(7)        VALUE : XBAR> I.              C98970
44440      02  XBAR-D-R     PICTURE -(8).9(5).                                C98970
44450      02  XSIG-R       PICTURE X(9)        VALUE I XSIGMA> I.            C98970
44460      02  XSIG-D-R     PICTURE -(8).9(5).                                C98970
44470      02  YBAR-R       PICTURE X(7)        VALUE : YBAR> I.              C98970
44480      02  YBAR-D-R     PICTURE -(8).9(5).                                C98970
44490      02  YSIG-R       PICTURE X(9)        VALUE : YSIGMA> I.            C98970
44500      02  YSIG-D-R     PICTURE -(8).9(5).                                C98970
44510      02  N-R          PICTURE X(4)        VALUE : N> I.                 C98970
44520      02  N-D-R        PICTURE ZZZZZ9.                                   C98970
44530      02  FILLER       PICTURE X(16)       VALUE SPACE.                  C98970
44540      02  T-2-RECMK    PICTURE X           VALUE :#I.                    C98970
48000  LINKAGE SECTION.                                                     C98970
48010  77  ISNOF    PICTURE S9(8)   COMPUTATIONAL SYNC.                     C98970
48020  77  IDNOF    PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48030  77  JFREQ    PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48040  77  ISNO     PICTURE S9(8)   COMPUTATIONAL SYNC.                     C98970
48050  77  IDO      PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48060  77  IOB1     PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48070  77  IOB2     PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48080  77  IOB3     PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48090  77  FSNS     PICTURE S9(8)   COMPUTATIONAL SYNC.                     C98970
48100  77  FID      PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48110  77  FCORR                    COMPUTATIONAL-1 SYNC.                  C98970
48120  77  FINTER                   COMPUTATIONAL-1 SYNC.                  C98970
48130  77  FSLOPE                   COMPUTATIONAL-1 SYNC.                  C98970
48140  77  FSTDEV                   COMPUTATIONAL-1 SYNC.                  C98970
48150  77  FSTDEE                   COMPUTATIONAL-1 SYNC.                  C98970
48160  77  FQUEST                   COMPUTATIONAL-1 SYNC.                  C98970
48170  77  FXBAR                    COMPUTATIONAL-1 SYNC.                  C98970
48180  77  FXSIG                    COMPUTATIONAL-1 SYNC.                  C98970
48190  77  FYBAR                    COMPUTATIONAL-1 SYNC.                  C98970
40200  77  FYSIG                    COMPUTATIONAL-1 SYNC.                  C98970
48210  77  IFREQ    PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
48220  77  ITI      PICTURE S9(6)   COMPUTATIONAL SYNC.                     C98970
50000  PROCEDURE DIVISION.                                                  C98970
50010  STATS-IN.                                                            C98970
50020      ENTRY   :COBFRO: USING  ISNOF, IDNOF, JFREQ.                     C98970
50030      IF  EFLAG EQUAL :1: GO TO FREQ-IN.                               C98970
50040      OPEN INPUT OFILECNT OFILE1.                                      C98970
50050      OPEN OUTPUT STATREPORT.                                          C98970
50060      MOVE :1: TO EFLAG.                                               C98970
50062      WRITE STAT-REC  FROM REPORT-ID.                                  C98970
50064      ADD 1 TO LINES-OUT.                                              C98970
50070      PERFORM PAGE-FLIP THRU PAGE-FLIP-EXIT.                           C98970
55100  FREQ-IN.                                                             C98970
55110      PERFORM READ-FREQ THRU READ-FREQ-EXIT.                           C98970
55120      IF FREQLOF EQUAL 111 GO TO FREQ-EXIT.                            C98970
55130      ADD 1 TO FREQ-CNT.                                               C98970
55140  MOVE-LINK-FREQ.                                                      C98970
55150      MOVE SN-C TO ISNOF.                                              C98970
55160      MOVE ID-C TO IDNOF.                                              C98970
55170      MOVE CNT-C TO JFREQ.                                             C98970
55200  FREQ-EXIT.                                                           C98970
55210      GOBACK.                                                          C98970
56010  OBSERVATIONS-IN.                                                     C98970
56020      ENTRY   :COBOBS: USING  ISNO, IDO, IOB1, IOB2, IOB3.            C98970
56030  OBS-IN.                                                              C98970
56040      PERFORM READ-OBS THRU READ-OBS-EXIT.                             C98970
56050      IF OBSEOF EQUAL :1: GO TO OBS-EXIT.                              C98970
56060      ADD 1 TO OBS-CNT.                                                C98970
56070  MOVE-LINK-OBS.                                                       C98970
56080      MOVE SN-O TO ISNO.                                               C98970
56090      MOVE ID-O TO IDO.                                                C98970
56100      MOVE OB-1 TO IOB1.                                               C98970
56110      MOVE OB-2 TO IOB2.                                               C98970
56120      MOVE OB-3 TO IOB3.                                               C98970
56200  OBS-EXIT.                                                            C98970
56210      GOBACK.                                                          C98970
57000  REPORT-OUT.                                                          C98970
57010      ENTRY   :COBOT2: USING  FSNS, FID, FCORR, FINTER, FSLOPE,        C98970
57020          FSTDV, FSTDEE, FQUEST, FXBAR, FXSIG, FYBAR, FYSIG,           C98970
57030          IFREQ.                                                       C98970
57040      WRITE STAT-REC FROM TITLE-BLK.                                   C98970
57050  LINE-1.                                                              C98970
57060      MOVE FSNS   TO  SN-R.                                            C98970
57070      MOVE FID    TO  ID-R.                                            C98970
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57080       MOVE FCORR  TO  CC-D-R.                                      C98970
57090       MOVE FINTER TO  A-D-R.                                       C98970
57100       MOVE FSLOPE TO  B-D-R.                                       C98970
57110       MOVE FSTDEV TO  SER-D-R.                                     C98970
57120       MOVE FSTDEE TO  SEE-D-R.                                     C98970
57130       MOVE FCOEST TO  F-.-R.                                       C98970
57150       WRITE STAT-REC  FROM TITLE-1.                                C98970
57160   LINE-2.                                                          C98970
57170       MOVE FXBAR  TO  XBAR-D-R.                                    C98970
57180       MOVE FXSTG  TO  XSIG-D-R.                                    C98970
57190       MOVE FYBAR  TO  YBAR-D-R.                                    C98970
57200       MOVE FYS.G  TO  YSIG-D-R.                                    C98970
57210       MOVE IFREQ  TO  N-D-R.                                       C98970
57220       WRITE STAT-REC  FROM TITLE-2.                                C98970
57225       ADD 1 TO STATCNT.                                            C98970
57230       ADD 3 TO LINE-CNT LINES-OUT.                                 C98970
57240       IF  LINE-CNT EQUAL LINE-MAX-62                               C98970
57250               PERFORM PAGE-FLIP THRU PAGE-FLIP-EXIT.               C98970
57300   REPORT-OUT-EXIT.                                                 C98970
57310       GOBACK.                                                      C98970
59000   READ-FREQ.                                                       C98970
59010       READ OFILECNT INTO O-REC-CNT                                 C98970
59020                   AT END GO TO FREQ-EOF.                           C98970
59030       IF  SN-C    EQUAL  :99999999: MOVE SN-C TO ISNOF             C98970
59040           GO TO FREQ-EOF.                                          C98970
59050       GO TO READ-FREQ-EXIT.                                        C98970
59060   FREQ-EOF.                                                        C98970
59080       MOVE :1: TO FREQEOF.                                         C98970
59100   READ-FREQ-EXIT.     EXIT.                                        C98970
59200   READ-OBS.                                                        C98970
59210       READ OFILE1 INTO O-REC                                       C98970
59220               AT END GO TO OBS-EOF.                                C98970
59230       IF  SN-O    EQUAL  :99999999: MOVE SN-O TO ISNO              C98970
59240           GO TO OBS-EOF.                                           C98970
59250       GO TO READ-OBS-EXIT.                                         C98970
59260   OBS-EOF.                                                         C98970
59280       MOVE :1: TO OBSEOF.                                          C98970
59300   READ-OBS-EXIT.      EXIT.                                        C98970
59400   PAGE-FLIP.                                                       C98970
59405       MOVE ZERO TO LINE-CNT.                                       C98970
59410       ADD 1 TO PAGECNT.                                            C98970
59420       MOVE PAGECNT TO PAGE-CNT.                                    C98970
59422       WRITE STAT-REC  FROM TITLE-BLK.                              C98970
59424       WRITE STAT-REC  FROM TITLE-BLK.                              C98970
59426       ADD 2 TO LINES-OUT.                                          C98970
59430       WRITE STAT-REC  FROM TITLE-O.                                C98970
59440       WRITE STAT-REC  FROM TITLE-BLK.                              C98970
59450       ADD 2 TO LINE-CNT LINES-OUT.                                 C98970
59490   PAGE-FLIP-EXIT.     EXIT.                                        C98970
61000   BLOCK-CHECK.                                                     C98970
61010       ENTRY   :CLOSEF: USING  IT1.                                 C98970
61020       COMPUTE KOUNT > LINES-OUT - ((LINES-OUT / 15) * 15).         C98970
61030   LOOP3.                                                           C98970
61040       WRITE STAT-REC  FROM TITLE-BLK.                              C98970
61050       ADD 1 TO KOUNT.                                              C98970
61060       IF KOUNT IS LESS THAN 15 GO TO LOOP3.                        C98970
64000   CLOSE-FILES.                                                     C98970
64010       CLOSE   OFILECNT OFILE1 STATREPORT WITH LOCK.                C98970
64020       DISPLAY : FREQ-IN : FREQ-CNT UPON CONSOLE.                   C98970
64030       DISPLAY : OBS -IN : OBS-CNT  UPON CONSOLE.                   C98970
64040       DISPLAY : STATS-O : STATCNT  UPON CONSOLE.                   C98970
64050       DISPLAY : EOJ 98971 UPON CONSOLE.                            C98970
64060       GOBACK.                                                      C98970
/*
//CHG.SYSIN  DD  DATA,SPACE>(TRK,(1,1))
 NAME    C8775(RJ
/*
//C98970 EXEC  P96,5G,PARM.ASSY>(MAP,LIST,BCD),                          C
//             PARM.LKED>:LIST,XREF:,TIME>04,ACCT>D35323007
//ASSY.SYSIN   DD  DATA,SPACE>(CYL,(1,1))                                1440 CDS
C       FORTRAN-COBOL LINK TEST.  JOHN LINK.     KELLY 8.
C       27 APRIL 1972
C     THIS IS THE DRIVER TO CALCULATE THE STATISTICS
      DIMENSION X(10000),XBAR(2),STD(2),SKEW(2),CURT(2),C(2),S(4),B(4),
     1 A(4),N(4),R(4),IDATA(3),ID1(2),ID2(2)
      DIMENSION BAD(2)
      INTEGER OFILE1,OFILE2,OUT
      L = 2
      NVAR = 2
      MAX = 5000
      BAD(1) = -9999.
      BAD(2) = -9999.
      MIN = 4
C     READ FREQUENCY TAPE
   10 CONTINUE
      CALL COBERR (ID1(1),ID1(2),NUMBER)
```

```
C      CHECK FOR BLOCKING FLAG
       IF (IDI(1) - 99999999) 20,1000,1000
   20 CONTINUE
C      CHECK FOR MINIMUM NUMBER OF OBSERVATIONS
       IF (NUMBER - MIN) 10,30,30
C      CHECK FOR MAXIMUM NUMBER OF OBSERVATIONS
   30 IF (NUMBER - MAX)  40,40,800
   40 NSKIP = 0
C      READ OBSERVATION TAPE AND POSITION IT
  300 CONTINUE
       CALL COBOBS (ID2(1),ID2(2),IDATA(1),IDATA(2),IDATA(3))
C      CHECK ID ON OBSERVATION TAPE VS ID ON FREQUENCY TAPE
       IF (IDI(1) - ID2(1)) 10,310,300
  310 IF (IDI(2) - ID2(2)) 10,320,300
  320 CONTINUE
C      DO FIRST POINT
       IF (IDATA(2)) 325,322,325
  322 CONTINUE
       IDATA(2) = 1
  325 CONTINUE
       X(1) = FLOAT (IDATA(1))/FLOAT(IDATA(2))
       J=NUMBER+1
       X(J) = FLOAT(IDATA(3)) / 10.0
       DO 390   I=2,NUMBER
       IF (NSKIP) 390,380,350
  350 DO 360 K = 1,NSKIP
  360 CALL COBOBS (ID2(1),ID2(2),IDATA(1),IDATA(2),IDATA(3))
C      READ IN OBSERVATIONS
  380 CONTINUE
       CALL COBOBS (ID2(1),ID2(2),IDATA(1),IDATA(2),IDATA(3))
       IF (IDATA(2)) 385,382,385
  382 CONTINUE
       IDATA(2) = 1
  385 CONTINUE
       X(I) = FLOAT(IDATA(1))/FLOAT(IDATA(2))
       J = NUMBER + I
       X(J) = FLOAT(IDATA(3)) / 10.0
  390 CONTINUE
C      DO DATA CORRELATION AND REGRESSION ANALYSIS
       CALL MISR (NUMBER,NVAR,X,BAD,XBAR,STD,SKEW,CURT,R,N,A,B,S,IER)
       IF (IER)  500,405,500
  405 CONTINUE
       CALL SEESUB (N      ,STD,R,L,SEE,F)
C      WRITE STATISTICS
  407 CONTINUE
       CALL COPOT2
      *(IDI(1),IDI(2),R(L),A(L),B(L),S(L),SEE,F,XBAR(2),STD(2),XBAR(1),
      * STD(1),NUMBER)
C      GO TO READ IN NEXT FREQUENCY
       GO TO 10
  500 CONTINUE
       R(L) = 0.0
       A(L) = 0.0
       B(L) = 0.0
       S(L) = 0.0
       SEE = 0.0
       F = 0.0
       STD(1) = 0.0
       STD(2) = 0.0
       GO TO 407
  800 CONTINUE
       NSKIP = NUMBER / MAX
       NUMBER = NUMBER / (NSKIP + 1)
       GO TO 300
 1000 CONTINUE
C      CLOSE ALL FILES
       ITI = 0
       CALL CLOSEF    (ITI)
       CALL EOJMSG
       CALL EXIT
       END
       SUBROUTINE MISR (NO,M,X,CODE,XBAR,STD,SKEW,CURT,R,N,A,B,S,IER)     MISR   0
C      DETAIL LEVEL STATISTICAL ANALYZER - SUB MISR
C                                                                         MISR  10
C                                                                         MISR  20
C      FOR A DESCRIPTION OF MISR USAGE AND EXPLANATION OF TERMS,          MISR  30
C        SEE THE SS/360 MANUAL.                                           MISR  40
C                                                                         MISR  50
       DIMENSION X(1),CODE(1),XBAR(1),STD(1),SKEW(1),CURT(1),R(1),N(1)   MISR  60
       DIMENSION A(1),B(1),S(1)                                          MISR  70
C                                                                         MISR  80
C         COMPUTE MEANS
```

```
C-                                                                      MISR  90
      IER=0                                                             MISR 100
      L=0                                                               MISR 110
      DO 50 J=1,M                                                       MISR 120
      FN=0.0                                                            MISR 130
      XBAR(J)=0.0                                                       MISR 140
      DO 20 I=1,NO                                                      MISR 150
      L=L+1                                                             MISR 160
      IF (X(L)-CODE(J)) 10,20,10                                        MISR 170
   10 FN=FN+1.0                                                         MISR 180
      XBAR(J)=XBAR(J)+X(L)                                              MISR 190
   20 CONTINUE                                                          MISR 200
      IF (FN) 30,30,40                                                  MISR 210
   30 XBAR(J)=0.0                                                       MISR 220
      GO TO 50                                                          MISR 230
   40 XBAR(J)=XBAR(J)/FN                                                MISR 240
   50 CONTINUE                                                          MISR 250
C                                                                       MISR 260
C        SET-UP WORK AREAS AND TEST WHETHER DATA IS MISSING             MISR 270
C                                                                       MISR 280
      L=0                                                               MISR 290
      DO 260 J=1,M                                                      MISR 300
      LJJ=NO*(J-1)                                                      MISR 310
      SKEW(J)=0.0                                                       MISR 320
      CURT(J)=0.0                                                       MISR 330
      KI=M*(J-1)                                                        MISR 340
      KJ=J-M                                                            MISR 350
      DO 250 I=1,J                                                      MISR 360
      KI=KI+I                                                           MISR 370
      KJ=KJ+M                                                           MISR 380
      SUMX=0.0                                                          MISR 390
      SUMY=0.0                                                          MISR 400
      TI=0.0                                                            MISR 410
      TJ=0.0                                                            MISR 420
      TII=0.0                                                           MISR 430
      TJJ=0.0                                                           MISR 440
      TIJ=0.0                                                           MISR 450
      NIJ=0                                                             MISR 460
      LI=NO*(I-1)                                                       MISR 470
      LJ=LJJ                                                            MISR 480
      L=L+I                                                             MISR 490
      DO 90 K=1,NO                                                      MISR 500
      LI=LI+I                                                           MISR 510
      LJ=LJ+I                                                           MISR 520
      IF (X(LI)-CODE(I)) 60,90,60                                       MISR 530
   60 IF (X(LJ)-CODE(J)) 70,90,70                                       MISR 540
C                                                                       MISR 550
C        BOTH DATA ARE PRESENT                                          MISR 560
C                                                                       MISR 570
   70 XX=X(LI)-XBAR(I)                                                  MISR 580
      YY=X(LJ)-XBAR(J)                                                  MISR 590
      TI=TI+XX                                                          MISR 600
      TII=TII+XX**2                                                     MISR 610
      TJ=TJ+YY                                                          MISR 620
      TJJ=TJJ+YY**2                                                     MISR 630
      TIJ=TIJ+XX*YY                                                     MISR 640
      NIJ=NIJ+1                                                         MISR 650
      SUMX=SUMX+X(LI)                                                   MISR 660
      SUMY=SUMY+X(LJ)                                                   MISR 670
      IF (I-J) 90,80,80                                                 MISR 680
   80 SKEW(J)=SKEW(J)+YY**3                                             MISR 690
      CURT(J)=CURT(J)+YY**4                                             MISR 700
   90 CONTINUE                                                          MISR 710
C                                                                       MISR 720
C        COMPUTE SUM OF CROSS-PRODUCTS OF DEVIATIONS                    MISR 730
C                                                                       MISR 740
      IF (NIJ) 110,110,100                                              MISR 750
  100 FN=NIJ                                                            MISR 760
      R(L)=TIJ-TI*TJ/FN                                                 MISR 770
      N(L)=NIJ                                                          MISR 780
      TII=TII-TI*TI/FN                                                  MISR 790
      TJJ=TJJ-TJ*TJ/FN                                                  MISR 800
C                                                                       MISR 810
C        COMPUTE STANDARD DEVIATION, SKEWNESS, AND KURTOSIS             MISR 820
C                                                                       MISR 830
  110 IF (I-J) 180, 20,180                                              MISR 840
  120 IF (NIJ-2) 130,130,140                                            MISR 850
  130 IER=1                                                             MISR 860
      R(L)=1.0E75                                                       MISR 870
      A(KI)=1.0E75                                                      MISR 880
      B(KI)=1.0E75                                                      MISR 890
      S(KI)=1.0E75                                                      MISR 900
      GO TO 160                                                         MISR 910
```

```
C                                                                       M1SR 920
  140 STD(J)=R(L)                                                       M1SR 930
      R(L)=1.0                                                          M1SR 940
      A(K1)=0.0                                                         M1SR 950
      B(K1)=1.0                                                         M1SR 960
      S(K1)=0.0                                                         M1SR 970
C                                                                       M1SR 980
      IF (STD(J)-(1.0E-20)) 150,150,170                                 M1SR 990
  150 IER=2                                                             M1SR1000
  160 STD(J)=1.0E75                                                     M1SR1010
      SKEW(J)=1.0E75                                                    M1SR1020
      CURT(J)=1.0E75                                                    M1SR1030
      GO TO 260                                                         M1SR1040
C                                                                       M1SR1050
  170 WORK=STD(J)/FN                                                    M1SR1060
      SKEW(J)=(SKEW(J)/FN)/(WORK*SQRT(WORK))                            M1SR1070
      CURT(J)=((CURT(J)/FN)/WORK**2)-3.0                                M1SR1080
      STD(J)=SQRT(STD(J)/(FN-1.0))                                      M1SR1090
      GO TO 260                                                         M1SR1100
C                                                                       M1SR1110
C        COMPUTE REGRESSION COEFFICIENTS                                M1SR1120
C                                                                       M1SR1130
  180 IF (N1J-2) 190,190,210                                            M1SR1140
  190 IER=1                                                             M1SR1150
  200 R(L)=1.0E75                                                       M1SR1160
      A(K1)=1.0E75                                                      M1SR1170
      B(K1)=1.0E75                                                      M1SR1180
      S(K1)=1.0E75                                                      M1SR1190
      A(KJ)=1.0E75                                                      M1SR1200
      B(KJ)=1.0E75                                                      M1SR1210
      S(KJ)=1.0E75                                                      M1SR1220
      GO TO 250                                                         M1SR1230
C                                                                       M1SR1240
  210 IF (T11-(1.0E-20)) 230,230,220                                    M1SR1250
  220 IF (TJJ-(1.0E-20)) 230,230,240                                    M1SR1260
  230 IER=2                                                             M1SR1270
      GO TO 200                                                         M1SR1280
C                                                                       M1SR1290
  240 SUMX=SUMX/FN                                                      M1SR1300
      SUMY=SUMY/FN                                                      M1SR1310
      B(K1)=R(L)/T11                                                    M1SR1320
      A(KJ)=SUMY-B(K1)*SUMX                                             M1SR1330
      B(KJ)=R(L)/TJJ                                                    M1SR1340
      A(KJ)=SUMX-B(KJ)*SUMY                                             M1SR1350
C                                                                       M1SR1360
C        COMPUTE CORRELATION COEFFICIENTS                               M1SR1370
C                                                                       M1SR1380
      R(L)=R(L)/(SQR.(T11)*SQRT(TJJ))                                   M1SR1390
C                                                                       M1SR1400
C        COMPUTE STANDARD ERRORS OF REGRESSION COEFFICIENTS             M1SR1410
C                                                                       M1SR1420
      RR=R(L)**2                                                        M1SR1430
      SUMX=(TJJ-TJJ*RR)/(FN-2)                                          M1SR1440
      S(K1) = SQRT (SUMX/T11)                                           M1SR1460
      SUMY=(T11-T11*RR)/(FN-2)                                          M1SR1470
      S(KJ) = SQRT (SUMY/TJJ)                                           M1SR1490
C                                                                       M1SR1500
  250 CONTINUE                                                          M1SR1510
  260 CONTINUE                                                          M1SR1520
C                                                                       M1SR1530
      RETURN                                                            M1SR1540
      END                                                               M1SR1550
      SUBROUTINE SEESUB (N, STD, R, K, SEE, F)                          SEEB   0
C     DETAIL LEVEL STATISTICAL ANALYZER - SUB SEESUB
C                                                                       SEEB  10
C     SUB TO COMPUTE STD ERROR OF ESTIMATE AND F LEVEL.                 SEEB  20
C                                                                       SEEB  30
      DIMENSION  N(1), R(1)                                             SEEB  40
      SEE = 0.0                                                         SEEB  50
      F = 0.0                                                           SEEB  60
      FN = N(K)                                                         SEEB  70
      IF (R(K) - 1.1)  5,5,20
    5 TEMP = 1.0 - R(K)*R(K)                                            SEEB  90
      IF (TEMP) 20,20,10                                                SEEB 100
   10 SEE = STD * SQRT (TEMP)                                           SEEB 110
      F = R(K)*R(K) * (FN-2.0) / TEMP                                   SEEB 120
   20 RETURN                                                            SEEB 130
      END                                                               SEEB 140
/*       REQUIRED  PLACE FORTRAN GCD SOURCE BEFORE THIS CARD
//LKED.ADDCALL DD DSN=SYS1.MACLIB,DISP=SHR,VOL=SER=111,UNIT=DSK
//LKED.SYSIN   DD  DATA,SPACE=(TRK,(5,5))                              360 COS
  INCLUDE      ADDCALL(IBCOM)
/*       REQUIRED  PLACE LINKEDIT CONTROLCARDS IF ANY BEFORE THIS CARD
//GMG.FT01F001 DD   DISP=(,PASS),UNIT=(A+F1,2,DEFER),DSN=&A.9897411,    CT12/13 I
//             VOL=SER=(0+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//             1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)   T12    3
```

```
//CHG.FT10F001 DD   DISP>(,PASS),UNIT>(T+F7,1,DEFER),DSN>+G,9897414,   CT24     1
//              VOL>SER>(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24     2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24     3
//CHG.FT11F001 DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>+H,9897425,   CT25     1
//              VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25     2
//              I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25     3
/*
//C9897U EXEC  C960JN,TIME>02,ACCT>D35323007  STDALONE JOHN LINK
//CHG.TU12     DD   DISP>(,PASS),UNIT>(A+F1,2,DEFER),DSN>+A,9897411,   CT12/13 1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12     2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12     3
//CHG.TU24     DD   DISP>(,PASS),UNIT>(T+F7,1,DEFER),DSN>+G,9897414,   CT24     1
//              VOL>SER>(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24     2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24     3
//CHG.TU25     DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>+H,9897425,   CT25     1
//              VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25     2
//              I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25     3
//CHG.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU25    1998130R000
T/P  TU24    1002030Z030
T/P  TU12    1002040Z040
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897U EXEC  C960JN,TIME>02,ACCT>D35323007  STDALONE JOHN LINK
//CHG.TU12     DD   DISP>(,KEEP),UNIT>(A+F1,2,DEFER),DSN>+A,9897411,   CT12/13 1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12     2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12     3
//CHG.TU24     DD   DISP>(,KEEP),UNIT>(T+F7,1,DEFER),DSN>+G,9897414,   CT24     1
//              VOL>SER>(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24     2
//              I+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24     3
//CHG,TU25     DD   DISP>(,KEEP),UNIT>(T+F8,1,DEFER),DSN>+H,9897425,   CT25     1
//              VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,   CT25     2
//              I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25     3
//CHG,IPRIN    DD   * SPACE>(TRK,(1,1))
T/P  TU25    1998130R000
T/P  TU24    1002030Z030
T/P  TU12    1002040Z 40
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.10.8 TREND ANALYSIS

```
//C9897E JOB   01,'G. WANG     ',PRTY>02,TYPRUN>HOLD TASK 4 TREND ANAL
//C9897E EXEC  P960CL,TIME>10,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A,9897414,   CT12     1
//              VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12     2
//              I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12     3
//CHG.TU14     DD   DISP>(,PASS),UNIT>(A+F3,2,DEFER),DSN>+C,9897411,   CT14/15 1
//              VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14     2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14     3
//CHG.TU22     DD   DISP>(,PASS),UNIT>(A+F5,2,DEFER),DSN>+E,9897415,   CT22/23 1
//              VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22     2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22     3
//CHG.INPUT    DD   *, PACE>(CYL,(1,1))                                 1440 CDS
00000           COMBINE     COMPILE                    G. WANG.          C98970
01000  IDENTIFICATION DIVISION.                                          C98970
01010  PROGRAM-ID. C9897.                                                C98970
01020  AUTHOR. A. J. BAKER                                               C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                           C98970
01040  DATE-WRITTEN.  3 MAY 72.                                          C98970
01050  REMARKS.                                                          C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT DBS-FILE                ASSIGN TO UT-S-TU14           C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT FREQ-FILE               ASSIGN TO UT-S-TU12           C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
02160      SELECT REPORT-FILE             ASSIGN TO UT-S-TU22           C98970
02170          RESERVE 1 ALTERNATE AREA,                                 C98970
03200      SELECT DEP-AXIS-FILE           ASSIGN TO UT-S-TU13           C98970
03210          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  FREQ-FILE                                                     C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 90 RECORDS                                     C98970
11140      RECORD CONTAINS 30             CHARACTERS                     C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE FREQ-REC.                                    C98970
11170  01  FREQ-REC PIC X(30.                                           C98970
```

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11180      02  FILLER                      PICTURE XX.                          C98970
11190      02  FREQ-IDENT.                                                      C98970
11200          03  AIRCRAFT-LEVEL          PICTURE X(8).                        C98970
11210          03  FILLER REDEFINES AIRCRAFT-LEVEL.                            C98970
11220              04  GROUP-ID            PICTURE X(5).                        C98970
11230              04  WUC-SET             PICTURE X(3).                        C98970
11240          03  FREQ-CUR-INSP           PICTURE X.                           C98970
11250          03  FREQ-ISO                PICTURE X.                           C98970
11260          03  FREQ-DATA-TYPE          PICTURE XX.                          C98970
11270          03  FREQ-ORIGIN             PICTURE X.                           C98970
11280          03  FREQ-IND-VAR            PICTURE X.                           C98970
11290      02  FREQ-OBS                    PICTURE 9(6).                        C98970
11300      02  FILLER                      PICTURE X.                           C98970
11310      02  FREQ-TOTAL-OBS              PICTURE X(6).                        C98970
11320      02  FILLER                      PICTURE X.                           C98970
12100  FD  OBS-FILE                                                            C98970
12120      RECORDING MODE IS F                                                 C98970
12130      BLOCK CONTAINS 70 RECORDS                                           C98970
12140      RECORD CONTAINS 40              CHARACTERS                          C98970
12150      LABEL RECORDS ARE OMITTED                                           C98970
12160      DATA RECORDS ARE OBS-REC.                                           C98970
12170  01  OBS-REC SYNC.                                                      C98970
12180      02  FILLER                      PICTURE XX.                          C98970
12190      02  OBS-IDENT                   PICTURE X(14).                       C98970
12200      02  FILLER                      PICTURE X.                           C98970
12210      02  OBS-NUM                     PICTURE 99999V9.                     C98970
12220      02  FILLER                      PICTURE X.                           C98970
12230      02  OBS-DENOM                   PICTURE 99999V9.                     C98970
12240      02  FILLER                      PICTURE X.                           C98970
12250      02  OBS-IND                     PICTURE 99999V9.                     C98970
12260      02  FILLER                      PICTURE XXX.                         C98970
22100  FD  REPORT-FILE                                                         C98970
22120      RECORDING MODE IS F                                                 C98970
22130      BLOCK CONTAINS 15 RECORDS                                           C98970
22140      RECORD CONTAINS 130             CHARACTERS                          C98970
22150      LABEL RECORDS ARE OMITTED                                           C98970
22160      DATA RECORDS ARE PLOT-REC.                                          C98970
22170  01  PLOT-REC SYNC.                                                     C98970
22180      02  FILLER                      PICTURE X(130).                      C98970
23100  FD  DEP-AXIS-FILE                                                       C98970
23120      RECORDING MODE IS F                                                 C98970
23130      BLOCK CONTAINS 20 RECORDS                                           C98970
23140      RECORD CONTAINS 80              CHARACTERS                          C98970
23150      LABEL RECORDS ARE OMITTED                                           C98970
23160      DATA RECORDS ARE DEP-AXIS-REC.                                      C98970
23170  01  DEP-AXIS-REC SYNC               PICTURE X(80).                       C98970
30000  WORKING-STORAGE SECTION.                                                C98970
30010  77  LINE-CNT                   SYNC PICTURE 9(4) VALUE ZERO.             C98970
30020  77  TOTAL-LINE-CNT             SYNC PICTURE 9(7) VALUE ZERO.             C98970
30040  77  TABLE-POS      COMPUTATIONAL    PICTURE S999 VALUE ZERO SYNC.        C98970
30050  77  NO-LINE        COMPUTATIONAL    PICTURE S999 VALUE <79  SYNC.        C98970
30060  77  TEMP-LOC       COMPUTATIONAL    PICTURE S99999V9(4) SYNC.            C98970
30070  77  LINE-POS       COMPUTATIONAL    PICTURE S999 VALUE ZERO SYNC.        C98970
30080  77  TEMP-VALUE     COMPUTATIONAL    PICTURE S99999V9(4) SYNC.            C98970
30090  77  DEP-INTERVAL   COMPUTATIONAL    PICTURE S99V9(4) SYNC.               C98970
30100  77  MIN-DEP-VALUE  COMPUTATIONAL    PICTURE S99999V9(4) SYNC.            C98970
30120  77  MONE           COMPUTATIONAL    PICTURE S99  VALUE -1 SYNC.          C98970
30130  77  CNT            COMPUTATIONAL    PICTURE S999 VALUE ZERO SYNC.        C98970
30140  77  PAGE-NO        COMPUTATIONAL    PICTURE S99  VALUE ZERO SYNC.        C98970
30150  77  MAX-DEP-VALUE COMPUTATIONAL     PICTURE S9(5)V9(4) SYNC.             C98970
30160  77  DEP-1          COMPUTATIONAL    PICTURE S9(5)V9(4) SYNC.             C98970
30170  77  DEP-2          COMPUTATIONAL    PICTURE S9(5)V9(4) SYNC.             C98970
30180  77  DEP-3          COMPUTATIONAL    PICTURE S9(5)V9(4) SYNC.             C98970
30190  77  DEP-4          COMPUTATIONAL    PICTURE S9(5)V9(4) SYNC.             C98970
30240  77  TEMP      COMPUTATIONAL SYNC    PICTURE S9(5).                       C98970
30250  77  IND-CNT   COMPUTATIONAL SYNC    PICTURE S999 VALUE ZERO.             C98970
30260  77  IND-INT COMPUTATIONAL SYNC      PICTURE S999.                        C98970
30270  77  SUM COMPUTATIONAL               PICTURE S99999V9(4).                 C98970
30280  77  NO-OF-OBS COMPUTATIONAL         PICTURE S9999V9(4).                  C98970
30290  77  OBS-CNT COMPUTATIONAL           PICTURE S999.                        C98970
30300  77  IND-CNT COMPUTATIONAL           PICTURE S999 VALUE ZERO.             C98970
30310  77  OBS-FACTOR COMPUTATIONAL        PICTURE S999 VALUE ZERO.             C98970
30320  77  START-FLAG                      PICTURE X VALUE SPACE.               C98970
30330  77  NO-PLOTS  SYNC                  PICTURE 9(6) VALUE ZERO.             C98970
30340  77  NINE SYNC                       PICTURE X(14) VALUE                  C98970
30350          '99999999999991.                                                C98970
30360  77  MAX-ALLOW-IND COMPUTATIONAL     PICTURE S9(7).                       C98970
30370  77  NUMERATOR COMPUTATIONAL         PICTURE S9(5)V9(4).                  C98970
30380  77  DENOMINATOR COMPUTATIONAL       PICTURE S9(5)V9(4).                  C98970
31000  01  DEP-TITLE SYNC.                                                    C98970
31010      02  FILLER                      PICTURE X(40) VALUE SPACE.           C98970
31020      02  DEPENDENT-TITLE             PICTURE X(80).                       C98970
31030      02  FILLER                      PICTURE X(10) VALUE ' '          #1. C98970
31100  01      INDEPEND-TITLE SYNC.                                            C98970
31110      02  IND-BLOCK                   PICTURE X(80).                       C98970
31120      02  FILLER REDEFINES IND-BLOCK.                                     C98970
31130          03  IND                     PICTURE X OCCURS 80 TIMES.           C98970
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31300  01  FILLER SYNC.                                                    C98970
31310      02  FILLER   OCCURS 200 TIMES.                                  C98970
31320          03  IND-VALUE            PICTURE S9[6].                     C98970
31330          03  DEP-VALUE            PICTURE S9[5]V9[4].                C98970
31400  01  PLOT-TITLE SYNC.                                                C98970
31410      02  FILLER                   PICTURE X[22]    VALUE             C98970
31420              :1     CURRENT IDENT   :.                                C98970
31430      02  CUR-ID                   PICTURE X[16] VALUE SPACE.         C98970
31440      02  FILLER                   PICTURE X[85]  VALUE SPACE.        C98970
31450      02  FILLER                   PICTURE X[4] VALUE :PAGE:.         C98970
31460      02  PAGE-NO-RPT              PICTURE Z9.                        C98970
31470      02  FILLER                   PICTURE X VALUE I#I.               C98970
31600  01  DEP-AXIS SYNC.                                                  C98970
31610      02  FILLER                   PICTURE X[14] VALUE SPACE.         C98970
31620      02  DEP-MIN-RPT              PICTURE ZZZZ9.999.                 C98970
31630      02  FILLER                   PICTURE X[11] VALUE SPACE.         C98970
31640      02  DEP-1-RPT                PICTURE ZZZZ9.999.                 C98970
31650      02  FILLER                   PICTURE X[11] VALUE SPACE.         C98970
31660      02  DEP-2-RPT                PICTURE ZZZZ9.999.                 C98970
31670      02  FILLER                   PICTURE X[11] VALUE SPACE.         C98970
31680      02  DEP-3-RPT                PICTURE ZZZZ9.999.                 C98970
31690      02  FILLER                   PICTURE X[11] VALUE SPACE.         C98970
31700      02  DEP-4-RPT                PICTURE ZZZZ9.999.                 C98970
31710      02  FILLER                   PICTURE X[11] VALUE SPACE.         C98970
31720      02  DEP-MAX-RPT              PICTURE ZZZZ9.999.                 C98970
31730      02  FILLER                  PICTURE X[7] VALUE                  C98970
31740                  :      #:.                                          C98970
31800  01  DEP-LINE SYNC.                                                  C98970
31810      02  FILLER                   PICTURE X[50] VALUE                C98970
31820              :                     ]---------]--------]---------II.  C98970
31830      02  FILLER                   PICTURE X[50] VALUE                C98970
31840              :- -------]---------]---------]--------]---------II.     C98970
31850      02  FILLER                   PICTURE X[30] VALUE                C98970
31860              :---------]---------]          #:.                      C98970
31900  01  PLOT-LINE SYNC.                                                 C98970
31910      02  FILLER                   PICTURE X[8] VALUE SPACE.          C98970
31920      02  IND-OUT                  PICTURE X.                         C98970
31930      02  FILLER                   PICTURE X[2] VALUE SPACE.          C98970
31940      02  WEEK-RPT                 PICTURE ZZZZZ9.                    C98970
31950      02  FILLER                   PICTURE XX VALUE SPACE.            C98970
31955      02  IND-AXIS-SYMB            PICTURE X VALUE 11:.               C98970
31960      02  OUTPUT-LINE  OCCURS 100 TIMES                               C98970
31970                                    PICTURE X.                         C98970
31980      02  FILLER                   PICTURE X[10] VALUE                C98970
31990              :        #:.                                             C98970
33000  01  REPORT-ID SYNC.                                                 C98970
33010      02  FILLER                   PICTURE X[50] VALUE                C98970
33020              :$0897C60  TF7919-01 142-8 1       1/2                  C98970
33030      02  FILLER                   PICTURE X[50] VALUE SPACE.         C98970
33040      02  FILLER                   PICTURE X[30] VALUE                C98970
33050              :                          #:.                           C98970
35300  01  FILLER SYNC.                                                    C98970
35310      02  DEP-AXIS-LIST OCCURS 15 TIMES                               C98970
35320                                    PICTURE X[80].                     C98970
39060  01  CUT-OFF-REC SYNC.                                               C98970
39070      05  CUTOFF                   PICTURE 9[5].                      C98970
39090      05  FILLER                   PICTURE X[75].                     C98970
50000  PROCEDURE DIVISION.                                                C98970
50010      OPEN INPUT OPS-FILE,                                           C98970
50020                 FREQ-FILE,                                          C98970
50025      DEP-AXIS-FILE,                                                 C98970
50030           OUTPU                              REPORT-FILE.           C98970
50040      MOVE 200 TO IND-CNT.                                           C98970
50050      PERFORM READ-DEP-AXIS THRU END-RDA.                            C98970
50070      WRITE PLOT-REC FROM REPORT-ID.                                 C98970
50100  READ-FREQ-FILE.                                                    C98970
50110      READ FREQ-FILE, AT END GO TO FREQ-ERROR.                       C98970
50115      IF FREQ-IDENT IS EQUAL TO NINE GO TO FREQ-ERROR.               C98970
50120      COMPUTE OBS-FACTOR > [FREQ-OBS < 4999] / 5000.                 C98970
50130      IF FREQ-IND-VAR IS EQUAL TO :1: PERFORM SET-WEEKS.             C98970
50140      IF FREQ-IND-VAR IS EQUAL TO 12: PERFORM SET-FLT-HRS.           C98970
50150      IF FREQ-IND-VAR IS EQUAL TO :3I PERFORM SET-SORTIES.           C98970
50160      IF FREQ-IND-VAR IS EQUAL TO :4: PERFORM SET-LANDING.           C98970
50170      COMPUTE MAX-ALLOW-IND > 200 * IND-INT.                         C98970
50190      MOVE IND-INT TO TEMP.                                          C98970
50200      MOVE ZERO TO SOM.                                              C98970
50210      MOVE ZERO TO NO-OF-OBS.                                        C98970
50220      PERFORM SET-DEP-TITLE THRU END-SDT.                            C98970
50230      PERFORM RESET-TABLE THRU END-R-T.                              C98970
50240      MOVE 1     TO IND-CNT.                                         C98970
50250      MOVE IND-INT TO IND-VALUE [IND-CNT].                           C98970
50300  READ-OPS-FILE.                                                     C98970
50305      IF START-FLAG IS EQUAL TO :1: MOVE SPACE TO START-FLAG,        C98970
50306          GO TO PROA.                                                C98970
50310      MOVE ZERO TO OBS-CNT.                                          C98970
50320  PROA.                                                              C98970
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50330      READ OBS-FILE, AT END GO TO CF-2.                                C98970
50335      IF OBS-IDENT IS EQUAL TO NINE GO TO CF-2.                        C98970
50340      ADD 1 TO OBS-CNT.                                                C98970
50350      IF OBS-CNT IS LESS THAN OBS-FACTOR GO TO ROF.                    C98970
50360  ROFA.                                                                C98970
50400      IF OBS-IDENT IS EQUAL TO FREQ-IDENT,                             C98970
50410                  GO TO CURRENT-DATA.                                  C98970
50415      IF NO-OF-OBS IS EQUAL TO ZERO GO TO FILL-IND-VALUE.              C98970
50416      COMPUTE DEP-VALUE (IND-CNT)  > SUM / NO-OF-OBS.                  C98970
50420  FILL-IND-VALUE                                                       C98970
50430      IF IND-CNT IS GREATER THAN 49 GO TO SET-PLOT.                    C98970
50440      ADD 1 TO IND-CNT, ADD IND-INT TO TEMP.                           C98970
50450      MOVE TEMP TO IND-VALUE (IND-CNT) GO TO FILL-IND-VALUE.           C98970
50460  SET-PLOT. PERFORM PLOT-DATA THRU END-PD.                             C98970
50470      GO TO READ-FREQ-FILE.                                            C98970
51000  PLOT-DATA.                                                           C98970
51004      IF FREQ-OBS IS LESS THAN CUTTOFF GO TO END-PD.                   C98970
51010      MOVE ZERO TO PAGE-NO.                                            C98970
51020      MOVE 99900 TO MIN-DEP-VALUE.                                     C98970
51030      MOVE ZERO TO CNT.                                                C98970
51040      MOVE ZERO TO MAX-DEP-VALUE.                                      C98970
51050      MOVE 111 TO START-FLAG.                                          C98970
51100  FIND-MIN-MAX.                                                        C98970
51110      ADD 1 TO CNT.                                                    C98970
51120      MOVE DEP-VALUE (CNT) TO TEMP-LOC.                                C98970
51125      IF TEMP-LOC IS EQUAL TO NONE, GO TO NEXT-VALUE.                  C98970
51130      IF TEMP-LOC IS GREATER THAN MAX-DEP-VALUE,                       C98970
51140                  MOVE TEMP-LOC TO MAX-DEP-VALUE.                      C98970
51150      IF TEMP-LOC IS LESS THAN MIN-DEP-VALUE,                          C98970
51160         MOVE TEMP-LOC TO MIN-DEP-VALUE.                               C98970
51210  NEXT-VALUE.                                                          C98970
51270      IF CNT IS  LESS THAN IND-CNT GO TO FIND-MIN-MAX.                 C98970
51280      IF MAX-DEP-VALUE IS EQUAL TO  ZERO GO TO END-PD.                 C98970
51282      IF MAX-DEP-VALUE IS NOT LESS THAN 10, GO TO HUND-SCALE.          C98970
51284      MOVE ZERO TO MIN-DEP-VALUE.                                      C98970
51286      IF MAX-DEP-VALUE IS NOT LESS THAN 1,                             C98970
51288           MOVE 10   TO MAX-DEP-VALUE, GO TO COMPUTE-INTERVAL.         C98970
51290      IF MAX-DEP-VALUE IS NOT LESS THAN 0.1,                           C98970
51292           MOVE 1    TO MAX-DEP-VALUE, GO TO COMPUTE-INTERVAL.         C98970
51294      IF MAX-DEP-VALUE IS NOT LESS THAN 0.01,                          C98970
51296           MOVE 0.1  TO MAX-DEP-VALUE, GO TO COMPUTE-INTERVAL.         C98970
51298           MOVE 0.01 TO MAX-DEP-VALUE.                                 C98970
51299  COMPUTE-INTERVAL.                                                    C98970
51300      COMPUTE DEP-INTERVAL > (MAX-DEP-VALUE - MIN-DEP-VALUE) / 100.    C98970
51310      COMPUTE DEP-1 > MIN-DEP-VALUE < (DEP-INTERVAL * 20).             C98970
51320      COMPUTE DEP-2 > MIN-DEP-VALUE < (DEP-INTERVAL * 40).             C98970
51330      COMPUTE DEP-3 > MIN-DEP-VALUE < (DEP-INTERVAL * 60).             C98970
51340      COMPUTE DEP-4 > MIN-DEP-VALUE < (DEP-INTERVAL * 80).             C98970
51350      MOVE MIN-DEP-VALUE TO DEP-MIN-RPT.                               C98970
51360      MOVE DEP-1         TO DEP-1-RPT.                                 C98970
51370      MOVE DEP-2         TO DEP-2-RPT.                                 C98970
51380      MOVE DEP-3         TO DEP-3-RPT.                                 C98970
51390      MOVE DEP-4         TO DEP-4-RPT.                                 C98970
51400      MOVE MAX-DEP-VALUE TO DEP-MAX-RPT.                               C98970
51410      MOVE FREQ-IDENT TO CUR-ID.                                       C98970
51420      ADD 1 TO NO-PLOTS.                                               C98970
51500  WRITE-PLOT-TITLE.                                                    C98970
51510      ADD 1 TO PAGE-NO.                                                C98970
51520      MOVE PAGE-NO TO PAGE-NO-RPT.                                     C98970
51530      WRITE PLOT-REC FROM PLOT-TITLE.                                  C98970
51540      WRITE PLOT-REC FROM DEP-TITLE.                                   C98970
51550      WRITE PLOT-REC FROM DEP-AXIS.                                    C98970
51560      WRITE PLOT-REC FROM DEP-LINE.                                    C98970
51570      MOVE 4 TO LINE-CNT.                                              C98970
51580      ADD 4 TO TOTAL-LINE-CNT.                                         C98970
51590      MOVE ZERO TO IND-KNT.                                            C98970
51600  END-WPT.                                                             C98970
51610      MOVE ZERO TO TABLE-POS.                                          C98970
51700  CLEAR-OUTPUT-BLOCK.                                                  C98970
51710      MOVE ZERO TO CNT.                                                C98970
51720  COB.                                                                 C98970
51730      ADD 1 TO CNT.                                                    C98970
51740      MOVE SPACE TO OUTPUT-LINE (CNT).                                 C98970
51750      IF CNT IS LESS THAN 100 GO TO COB.                               C98970
51760      ADD 1 TO TABLE-POS.                                              C98970
51770      MOVE IND-VALUE (TABLE-POS) TO WEEK-RPT.                          C98970
51780      ADD 1 TO IND-KNT. MOVE IND (IND-KNT) TO IND-OUT.                 C98970
51790      IF IND-KNT IS GREATER THAN 79, MOVE ZERO TO IND-KNT.             C98970
51900      MOVE 111 TO IND-AXIS-SYMB.                                       C98970
51920      MOVE DEP-VALUE (TABLE-POS) TO TEMP-LOC.                          C98970
51930      IF TEMP-LOC IS NOT EQUAL TO NONE, GO TO FILL-LN,                 C98970
51940      GO TO WRITE-LINE.                                                C98970
52000  FILL-LN.                                                             C98970
52001      IF TEMP-LOC IS EQUAL TO ZERO MOVE 101 TO IND-AXIS-SYMB,          C98970
52002                                   GO TO WRITE-LINE.                   C98970
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52010      MOVE ZERO TO LINE-POS.                                          C98970
52020      MOVE MIN-DEP-VALUE TO TEMP-VALUE.                               C98970
52100  FIND-LINE-POS.                                                      C98970
52110      ADD 1 TO LINE-POS.                                              C98970
52120      ADD DEP-INTERVAL TO TEMP-VALUE.                                 C98970
52130      IF TEMP-LOC IS NOT GREATER THAN TEMP-VALUE GO TO FILL-SPACE.    C98970
52140      IF LINE-POS IS LESS THAN 100 GO TO FIND-LINE-POS.               C98970
52150      NOTE THRU HERE IS AN ERROR.                                     C98970
52160      DISPLAY ' ERROR FIND-LINE-POS ' TEMP-LOC UPON CONSOLE.          C98970
52170      GO TO CF-ERROR.                                                 C98970
52200  FILL-SPACE.                                                         C98970
52210      MOVE '*' TO OUTPUT-LINE (LINE-POS).                             C98970
52300  WRITE-LINE.                                                         C98970
52310      IF LINE-CNT IS GREATER THAN NO-LINE, WRITE PLOT-REC FROM        C98970
52320       DEP-LINE, ADD 1 TO TOTAL-LINE-CNT, PERFORM WRITE-PLOT-TITLE.   C98970
52330      WRITE PLOT-REC FROM PLOT-LINE.                                  C98970
52340      ADD 1 TO LINE-CNT, ADD 1 TO TOTAL-LINE-CNT.                     C98970
52350      IF TABLE-POS IS LESS THAN IND-CNT,      GO TO                   C98970
52360           CLEAR-OUTPUT-BLOCK.                                        C98970
52370      WRITE PLOT-REC FROM DEP-LINE.                                   C98970
52390  END-PD. EXIT.                                                       C98970
52400  HUND-SCALE.                                                         C98970
52410      MOVE ZERO TO TEMP-LOC.                                          C98970
52420  HUND-MAX.                                                           C98970
52430      ADD 100 TO TEMP-LOC.                                            C98970
52440      IF TEMP-LOC IS LESS THAN MAX-DEP-VALUE, GO TO HUND-MAX.         C98970
52450      MOVE TEMP-LOC TO MAX-DEP-VALUE.                                 C98970
52470  HUND-MIN.                                                           C98970
52480      SUBTRACT 100 FROM TEMP-LOC.                                     C98970
52490      IF TEMP-LOC IS GREATER THAN MIN-DEP-VALUE, GO TO HUND-MIN.      C98970
52500      MOVE TEMP-LOC TO MIN-DEP-VALUE.                                 C98970
52510      GO TO COMPUTE-INTERVAL.                                         C98970
53000  CURRENT-DATA.                                                       C98970
53005      IF OBS-IND IS GREATER THAN MAX-ALLOW-IND GO TO READ-OBS-FILE.   C98970
53010      IF OBS-IND IS NOT GREATER THAN TEMP GO TO PRES-IND.             C98970
53020      IF NO-OF-OBS IS EQUAL TO ZERO GO TO ZERO-OBS.                   C98970
53030      COMPUTE DEP-VALUE (IND-CNT)   > SOM / NO-OF-OBS.                C98970
53040      GO TO INC-IND.                                                  C98970
53100  ZERO-OBS.                                                           C98970
53110      MOVE NONE TO  DEP-VALUE (IND-CNT).                              C98970
53130  INC-IND.                                                            C98970
53150      MOVE ZERO TO SOM.                                               C98970
53160      MOVE ZERO TO NO-OF-OBS.                                         C98970
53170      ADD IND-INT TO TEMP.                                            C98970
53175      ADD 1 TO IND-CNT.                                               C98970
53180      MOVE TEMP TO IND-VALUE (IND-CNT).                               C98970
53190      GO TO CURRENT-DATA.                                             C98970
53200  PRES-IND.                                                           C98970
53210      IF OBS-DENOM IS EQUAL TO ZERO GO TO READ-OBS-FILE.              C98970
53220      MOVE OBS-NUM TO NUMERATOR.                                      C98970
53222      MOVE OBS-DENOM TO DENOMINATOR.                                  C98970
53224      COMPUTE SOM > SOM < (NUMERATOR / DENOMINATOR).                  C98970
53230      ADD 1 TO NO-OF-OBS.                                             C98970
53240      GO TO READ-OBS-FILE.                                            C98970
53300  CF-2.                                                               C98970
53302      IF NO-OF-OBS IS EQUAL TO ZERO GO TO FILL-IND-VALUE-END.         C98970
53303      COMPUTE DEP-VALUE (IND-CNT)   > SOM / NO-OF-OBS.                C98970
53304  FILL-IND-VALUE-END.                                                 C98970
53305      IF IND-CNT IS GREATER THAN 49 GO TO SET-PLOT-END.               C98970
53306      ADD 1 TO IND-CNT, ADD IND-INT TO TEMP.                          C98970
53307      MOVE TEMP TO IND-VALUE (IND-CNT) GO TO FILL-IND-VALUE-END.      C98970
53308  SET-PLOT-END.                                                       C98970
53310      PERFORM PLOT-DATA       THRU END-PD.                            C98970
53320      DISPLAY ' TOTAL LINE COUNT ' TOTAL-LINE-CNT UPON CONSOLE.       C98970
53330      DISPLAY ' NUMBER OF PLOTS ' NO-PLOTS UPON CONSOLE.              C98970
53340  CF-ERROR.                                                           C98970
53350      CLOSE OBS-FILE,                                                 C98970
53360            FREQ-FILE,                                                C98970
53365               DEP-AXIS-FILE,                                         C98970
53370            REPORT-FILE.                                              C98970
53380      DISPLAY ' EOJ 9897 ' UPON CONSOLE.                              C98970
53390      GOBACK.                                                         C98970
54010  FREQ-ERROR.                                                         C98970
54020      DISPLAY ' ERROR READ END OF FREQ FILE ' UPON CONSOLE.           C98970
54030      GO TO CF-ERROR.                                                 C98970
62000  SET-WEEKS.                                                          C98970
62010      MOVE 1 TO IND-INT.                                              C98970
62020      MOVE    '                                WEEKS                  C98970
62030 -    '                              ' TO IND-BLOCK.                  C98970
62100  SET-FLT-HRS.                                                        C98970
62110      MOVE 5 TO IND-INT.                                              C98970
62120      MOVE    1                                FLIGHT HOURS           C98970
62130 -    '                              ' TO IND-BLOCK.                  C98970
62200  SET-SORTIES.                                                        C98970
62210      MOVE 3 TO IND-INT.                                              C98970
62220      MOVE    '                                SORTIES                C98970
62230 -    '                              ' TO IND-BLOCK.                  C98970
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62300  SET-LANDING.                                                          C98970
62310      MOVE 3 TO IND=INT.                                                C98970
62320      MOVE    :                                LANDINGS                 C98970
62330 -    :                                : TO IND-BLOCK.                  C98970
64000  SET-DEP-TITLE.                                                        C98970
64010      IF FREQ-DATA-TYPE IS EQUAL TO :01: MOVE DEP-AXIS-LIST [1]         C98970
64020      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64030      IF FREQ-DATA-TYPE IS EQUAL TO :02: MOVE DEP-AXIS-LIST [2]         C98970
64040      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64050      IF FREQ-DATA-TYPE IS EQUAL TO :03: MOVE DEP-AXIS-LIST [3]         C98970
64060      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64070      IF FREQ-DATA-TYPE IS EQUAL TO :04: MOVE DEP-AXIS-LIST [4]         C98970
64080      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64090      IF FREQ-DATA-TYPE IS EQUAL TO :05: MOVE DEP-AXIS-LIST [5]         C98970
64100      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64110      IF FREQ-DATA-TYPE IS EQUAL TO :06: MOVE DEP-AXIS-LIST [6]         C98970
64120      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64130      IF FREQ-DATA-TYPE IS EQUAL TO :07: MOVE DEP-AXIS-LIST [7]         C98970
64140      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64150      IF FREQ-DATA-TYPE IS EQUAL TO :08: MOVE DEP-AXIS-LIST [8]         C98970
64160      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64170      IF FREQ-DATA-TYPE IS EQUAL TO :09: MOVE DEP-AXIS-LIST [9]         C98970
64180      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64190      IF FREQ-DATA-TYPE IS EQUAL TO :10: MOVE DEP-AXIS-LIST [10]        C98970
64200      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64210      IF FREQ-DATA-TYPE IS EQUAL TO :11: MOVE DEP-AXIS-LIST [11]        C98970
64220      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64230      IF FREQ-DATA-TYPE IS EQUAL TO :12: MOVE DEP-AXIS-LIST [12]        C98970
64240      TO DEPENDENT-TITLE, GO TO END-SDT.                                C98970
64290  END-SDT. EXIT.                                                        C98970
64300  RESET-TABLE.                                                          C98970
64310      MOVE ZERO TO CNT.                                                 C98970
64320  RTA.                                                                  C98970
64330      ADD 1 TO CNT.                                                     C98970
64340      MOVE ZERO TO IND-VALUE [CNT].                                     C98970
64350      MOVE NONE TO DEP-VALUE [CNT].                                     C98970
64370      IF CNT IS LESS THAN IND-CNT GO TO RTA.                            C98970
64380  END-R-T. EXIT.                                                        C98970
65000  READ-DEP-AXIS.                                                        C98970
65005      READ DEP-AXIS-FILE INTO CUT-OFF-REC AT END GO TO END-RDA.         C98970
65010      MOVE ZERO TO CNT.                                                 C98970
65020  RDA.                                                                  C98970
65030      ADD 1 TO CNT.                                                     C98970
65040      READ DEP-AXIS-FILE INTO DEP-AXIS-LIST [CNT], AT END GO TO         C98970
65050                                          END-RDA.                      C98970
65060      GO TO RDA.                                                        C98970
65070  END-RDA. EXIT.                                                        C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE>[CYL,[1,1]]                                    1440 CDS
TFG  TU13     11  020Z180
    5
                                        NORM HOURS / PERIODIC
                                        NORM HOURS / HOURLY POSTFLIGHT
                                        AIE / SORTIE
                                        FH / WEEK
                                        SORTIE / WEEK
                                        LANDING / WEEK
                                        UNSCHEDULED MA / WEEK
                                        UNSCHEDULED MA / FLIGHT HOUR
                                        UNSCHEDULED MA / SORTIE
                                        UNSCHEDULED MA / LANDING
                                        REPAIR ACTION / INSPECTION
                                        ABORT MA / SORTIE
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>[OLD,KEEP],VOL>SER>+F1,UNIT>T+F1                  T12
//TPR.TU14      DD   DISP>[OLD,KEEP],VOL>SER>+F3,UNIT>T+F3                  T14
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>+F5,UNIT>T+F5                  T22
//TPR.TPRIN     DD   *,SPACE>[TRK,[1,1]]
T/P  TU12     10100302030
T/P  TU14     10100402040
T/P  TU22     1998130R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
/*             PLACE MARGEN CONTROL CARDS BEFORE THIS CARD
```

6.11 PROGRAMS FOR WUC REMOVAL ANALYSES

6.11.1 Preprocessor - Task V

```
//19897E JOB   01,: G. WANG,   1,PRTY>02,TYPRUN>HOLD
//C9897A EXEC  P96505L,TIME>04,ACCT>D35323007                                  5A
//CHG.TU14     DD   DISP>[,PASS],UNIT>[A+F3,2,DEFER],DSN>+C.9897416,   CT14    1
//               VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//               I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[T+F5,1,DEFER],DSN>+E.9897431,   CT22    1
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//               1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.TU24     DD   DISP>[,PASS],UNIT>[T+F7,1,DEFER],DSN>+G.9897435,   CT24    1
//               VOL>SER>[+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//               1+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7]  T24    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                    1440 CDS
00000          COMBINE     COMPILE                  G. WANG.                C98970
01040  DATE-WRITTEN. 20 MAR 72.                                             C98970
01050  REMARKS.                                                             C98970
01060          MAINTENANCE STUDY   PROGRAM 5A.                               C98970
01070              REMOVAL ACTION ANALYSIS.                                  C98970
01080                TOTAL TASK COMPRISES OF NINE PARTS.                     C98970
01090                  1. CALCULATION OF REMOVAL ACTION FREQUENCY AND        C98970
01100                       REMOVAL INTERVAL FOR EACH WUC [PROGRAM 5A].      C98970
01110                  2. SORTING OF WUC TO GROUP AIRCRAT SUB-SETS AND       C98970
01120                                WUC.                                    C98970
01130                  3. SORTING OF FREQUENCY FOR FIRST AIRCRAFT            C98970
01140                                SUB-SET.                                C98970
01150                  4. SORTING OF FREQUENCY FOR SECOND AIRCRAFT           C98970
01160                                SUB-SET.                                C98970
01170                  5. PREPARATION OF WUC LISTING FOR EACH AIRCRAFT       C98970
01180                                SUB-SET [PROGRAM 5B].                   C98970
01190                  6. PREPARATION OF FREQUENCY OF REMOVAL FOR FIRST      C98970
01200                                AIRCRAFT SUB-SET [PROGRAM 5E].          C98970
01210                  7. PREPARATION OF FREQUENCY OF REMOVAL FOR            C98970
01220                          SECOND AIRCRAFT SUB-SET [PROGRAM 5C].         C98970
01230                  8. SORTING OF REMOVAL INTERVALS TO GROUP AIRCRAFT     C98970
01240                                SUB-SETS, DATA-TYPES AND WUC.           C98970
01250                  9. PREPARATION OF DISTRIBUTIONS FOR REMOVAL           C98970
01260                                INTERVALS [PROGRAM 5D].                 C98970
02000  ENVIRONMENT DIVISION.                                                 C98970
02010  CONFIGURATION SECTION.                                                C98970
02020  SOURCE-COMPUTER. IBM-360.                                             C98970
02030  OBJECT-COMPUTER. IBM-360.                                             C98970
02100  INPUT-OUTPUT SECTION.                                                 C98970
02110  FILE-CONTROL.                                                         C98970
02120      SELECT IN-FILE-D-8            ASSIGN TO UT-S-TU14                 C98970
02130          RESERVE 1 ALTERNATE AREA.                                     C98970
02140      SELECT IN-FILE-ISC            ASSIGN TO DA-S-DTU1                 C98970
02150          RESERVE 1 ALTERNATE AREA.                                     C98970
02160      SELECT MSG-FILE               ASSIGN TO DA-S-DT02                 C98970
02170          RESERVE 1 ALTERNATE AREA.                                     C98970
02180      SELECT OUT-FILE-1             ASSIGN TO UT-S-TU22                 C98970
02190          RESERVE 1 ALTERNATE AREA.                                     C98970
02200      SELECT OUT-FILE-2             ASSIGN TO UT-S-TU24                 C98970
02210          RESERVE 1 ALTERNATE AREA.                                     C98970
10000  DATA DIVISION.                                                        C98970
10010  FILE SECTION.                                                         C98970
10100  FD  IN-FILE-D-8                                                       C98970
10120      RECORDING MODE IS F                                               C98970
10130      BLOCK CONTAINS 40 RECORDS                                         C98970
10140      RECORD CONTAINS 70            CHARACTERS                          C98970
10150      LABEL RECORDS ARE OMITTED                                         C98970
10160      DATA RECORDS ARE IN-REC-D-8.                                      C98970
10200  01  IN-REC-D-8 SYNC.                                                 C98970
10210      02  FILLER                    PICTURE X[70].                     C98970
10220                                                                        C98970
11300  FD  IN-FILE-ISC                                                       C98970
11320      RECORDING MODE IS F                                               C98970
11330      BLOCK CONTAINS 20 RECORDS                                         C98970
11340      RECORD CONTAINS 80            CHARACTERS                          C98970
11350      LABEL RECORDS ARE STANDARD                                        C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                      C98970
11400  01  IN-REC-ISC SYNC.                                                 C98970
11410      02  FILLER                    PICTURE X[80].                     C98970
12100  FD  OUT-FILE-1                                                        C98970
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12120      RECORDING MODE IS F                                              C98970
12130      BLOCK CONTAINS 90 RECORDS                                        C98970
12140      RECORD CONTAINS 20          CHARACTERS                           C98970
12150      LABEL RECORDS ARE OMITTED                                        C98970
12160      DATA RECORDS ARE OUT-REC-1.                                      C98970
12200  01  OUT-REC-1 SYNC.                                                 C98970
12210      02  FILLER                  PICTURE X(20).                       C98970
13300  FD  MSG-FILE                                                         C98970
13320      RECORDING MODE IS F                                              C98970
13330      BLOCK CONTAINS 20 RECORDS                                        C98970
13340      RECORD CONTAINS 80          CHARACTERS                           C98970
13350      LABEL RECORDS ARE STANDARD                                       C98970
13360      DATA RECORDS ARE MSG-REC.                                        C98970
13400  01  MSG-REC SYNC.                                                   C98970
13410      02  FILLER                  PICTURE X(80).                       C98970
14100  FD  OUT-FILE-2                                                       C98970
14120      RECORDING MODE IS F                                              C98970
14130      BLOCK CONTAINS 90 RECORDS                                        C98970
14140      RECORD CONTAINS 20          CHARACTERS                           C98970
14150      LABEL RECORDS ARE OMITTED                                        C98970
14160      DATA RECORDS ARE OUT-REC-2.                                      C98970
14200  01  OUT-REC-2 SYNC.                                                 C98970
14210      02  FILLER                  PICTURE X(20).                       C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30010  77  WEEK-TEMP                   PICTURE S999.                        C98970
30020  77  CUR-ISC SYNC                PICTURE X.                           C98970
30030  77  CUR-SER-NO SYNC             PICTURE X(8).                        C98970
30050  77  KNT SYNC COMPUTATIONAL      PICTURE S999.                        C98970
30100  77  FLAG SYNC COMPUTATIONAL     PICTURE S999 VALUE ZERO.             C98970
30120  77  NO-WUC SYNC COMPUTATIONAL   PICTURE S9999 VALUE ZERO.            C98970
30130  77  NO-REC-1   SYNC             PICTURE S9(6) VALUE ZERO.            C98970
30140  77  NO-REC-2   SYNC             PICTURE S9(6) VALUE ZERO.            C98970
30170  77  CNT SYNC COMPUTATIONAL      PICTURE S999.                        C98970
30380  77  ONE  SYNC                   PICTURE X VALUE '1'.                 C98970
30390  77  TWO  SYNC                   PICTURE X VALUE '2'.                 C98970
30400  77  ISC-TEMP          SYNC      PICTURE X(8) VALUE SPACE.            C98970
30410  77  PREV-TESTED-SN    SYNC      PICTURE X(8) VALUE SPACE.            C98970
30420  77  ISC-FLAG          SYNC      PICTURE X    VALUE SPACE.            C98970
30430  77  MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.      C98970
30440  77  START-WEEK COMPUTATIONAL    PICTURE S999 VALUE 100 SYNC.         C98970
31010  01  NO-ISC SYNC.                                                    C98970
31020      02  FILLER                  PICTURE XX.                          C98970
31030      02  NO-ISC-AC COMPUTATIONAL PICTURE S999.                        C98970
31040      02  FILLER                  PICTURE X(75).                       C98970
31050  01  ISC-A-C SYNC.                                                   C98970
31060      02  FILLER                  PICTURE XX.                          C98970
31070      02  ISC-IN                  PICTURE X(8).                        C98970
31080      02  FILLER                  PICTURE XX.                          C98970
31090      02  ISC-WX                  PICTURE  999.                        C98970
31100      02  FILLER                  PICTURE X(65).                       C98970
31200  01  FILLER SYNC.                                                    C98970
31205      02  FILLER OCCURS 36 TIMES.                                     C98970
31210          03  ISC-AC-IN           PICTURE X(8).                        C98970
31220          03  ISC-AC-WK COMPUTATIONAL PICTURE S999.                    C98970
31300  01  DATA-BANK-INPUT SYNC.                                           C98970
31310      02  FILLER                  PICTURE X(5).                        C98970
31320      02  SERIAL-NO               PICTURE X(8).                        C98970
31330      02  WEEK                    PICTURE 999.                         C98970
31340      02  WUC                     PICTURE X(5).                        C98970
31380      02  FILLER                  PICTURE X(22).                       C98970
31400      02  UNITS                   PICTURE S999.                        C98970
31410      02  FILLER                  PICTURE XX.                          C98970
31420      02  IDENT                   PICTURE 9.                           C98970
31430      02  FILLER                  PICTURE X(4).                        C98970
31440      02  FLT-HRS                 PICTURE S9(6).                       C98970
31450      02  FILLER                  PICTURE X(11).                       C98970
31500  01  OUT-DATA SYNC.                                                  C98970
31510      02  CUR-WUC                 PICTURE X(5).                        C98970
31530      02  FILLER                  PICTURE X(4) VALUE  SPACE.           C98970
31540      02  OBS                     PICTURE S9(6).                       C98970
31550      02  FILLER                  PICTURE X VALUE  SPACE.              C98970
31560      02  ISCHRONAL               PICTURE X.                           C98970
31570      02  FILLER                  PICTURE X VALUE  SPACE.              C98970
31580      02  DATA-TYPE               PICTURE X.                           C98970
31590      02  FILLER                  PICTURE X   VALUE '1'.               C98970
31690  01  FILLER SYNC.                                                    C98970
31705        03  WUC-DATA.                                                 C98970
31710          04  CURWUC              PICTURE XXXXX.                       C98970
31720          04  FREQ-ISC            PICTURE S9(5) VALUE ZERO.            C98970
31730          04  FREQ-NI             PICTURE S9(5) VALUE ZERO.            C98970
31735          04  FILLER              PICTURE X(5) VALUE     '     1    '1'.  C98970
31740  01  LAST-WEEK SYNC              PICTURE S999  COMPUTATIONAL.         C98970
31750  01  LAST-FLT-HRS SYNC           PICTURE S9(5) COMPUTATIONAL.         C98970
31800  01  NINE SYNC.                                                      C98970
31810      02  FILLER                  PICTURE X(20) VALUE                  C98970
31820                    '1999999999999999999'1'.                           C98970
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50000  PROCEDURE DIVISION.                                                    C98970
50010  OPEN-FILES.                                                            C98970
50020      OPEN INPUT IN-FILE-D-B, IN-FILE-ISC.                               C98970
50030      OPEN OUTPUT MSG-FILE.                                              C98970
50040      OPEN OUTPUT OUT-FILE-1, OUT-FILE-2.                                C98970
50050      PERFORM READ-ISC-A-C THRU END-RIAC.                                C98970
50060  READ-INITIAL.                                                          C98970
50070      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                             C98970
50080                          AT END GO TO CLOSE-FILES.                      C98970
50100      IF IDENT IS NOT EQUAL TO 3 GO TO READ-INITIAL.                     C98970
50104      IF WEEK IS LESS THAN START-WEEK GO TO READ-INITIAL.                C98970
50105      IF UNITS IS LESS THAN 1 GO TO READ-INITIAL.                        C98970
50106  NEW-WUC.                                                               C98970
50107      MOVE WUC TO CUR-WUC.                                               C98970
50108      ADD 1 TO NO-WUC.                                                   C98970
50110  NEW-BLOCK.                                                             C98970
50120      PERFORM CHECK-ISCHRONAL THRU END-CI.                               C98970
50130      MOVE ISCHRONAL TO CUR-ISC.                                         C98970
50140      MOVE SERIAL-NO TO CUR-SER-NO.                                      C98970
50160      MOVE WEEK TO LAST-WEEK.                                            C98970
50170      MOVE FLT-HRS TO LAST-FLT-HRS.                                      C98970
50180      IF ISCHRONAL IS EQUAL TO ONE ADD UNITS TO FREQ-ISC,                C98970
50190                                ELSE ADD UNITS TO FREQ-NI.               C98970
50200  READ-DATA.                                                             C98970
50210      READ IN-FILE-D-B INTO DATA-BANK-INPUT,                             C98970
50220                      AT END GO TO CLOSE-FILES.                          C98970
50230      IF IDENT IS NOT EQUAL TO 3 GO TO READ-DATA.                        C98970
50235      IF UNITS IS LESS THAN 1 GO TO READ-DATA.                           C98970
50236      IF WEEK IS LESS THAN START-WEEK GO TO READ-DATA.                   C98970
50237      IF WUC IS NOT EQUAL TO CUR-WUC GO TO WUC-INFO.                     C98970
50240      IF SERIAL-NO IS NOT EQUAL TO CUR-SER-NO GO TO NEW-BLOCK.           C98970
50250      PERFORM CHECK-ISCHRONAL THRU END-CI.                               C98970
50260      IF ISCHRONAL IS NOT EQUAL TO CUR-ISC, GO TO NEW-BLOCK.             C98970
50270      IF ISCHRONAL IS EQUAL TO ONE ADD UNITS TO FREQ-ISC,                C98970
50275                                ELSE ADD UNITS TO FREQ-NI.               C98970
50280      PERFORM WRITE-DATA.                                                C98970
50290      MOVE WEEK TO LAST-WEEK.                                            C98970
50300      MOVE FLT-HRS TO LAST-FLT-HRS.                                      C98970
50310      GO TO READ-DATA.                                                   C98970
50810  WUC-INFO.                                                              C98970
50820      MOVE CUR-WUC TO CURWUC.                                            C98970
50830      WRITE OUT-REC-1 FROM WUC-DATA.                                     C98970
50840      ADD 1 TO NO-REC-1.                                                 C98970
50910      MOVE ZERO  TO FREQ-ISC.                                            C98970
50920      MOVE ZERO  TO FREQ-NI.                                             C98970
50930      GO TO NEW-WUC.                                                     C98970
51800  CLOSE-FILES.                                                           C98970
51804      MOVE CUR-WUC TO CURWUC.                                            C98970
51805      WRITE OUT-REC-1 FROM WUC-DATA.                                     C98970
51806      ADD 1 TO NO-REC-1.                                                 C98970
51810      COMPUTE KNT > NO-REC-1 - NO-REC-1 / 90 * 90.                       C98970
51820      IF KNT IS ZERO GO TO CF-2.                                         C98970
51830      PERFORM NINE-FILL-1 THRU N-F-1.                                    C98970
51840  CF-2.                                                                  C98970
51850      COMPUTE KNT > NO-REC-2 - NO-REC-2 / 90 * 90.                       C98970
51860      IF KNT IS ZERO GO TO CF-3.                                         C98970
51870      PERFORM NINE-FILL-2 THRU N-F-2.                                    C98970
51900  CF-3.                                                                  C98970
51910      DISPLAY ' NUMBER RECORDS-1 ' NO-REC-1 UPON CONSOLE.                C98970
51920      DISPLAY ' NUMBER RECORDS-2 ' NO-REC-2 UPON CONSOLE.                C98970
51930      DISPLAY ' NUMBER WUC >' NO-WUC     UPON CONSOLE.                   C98970
51940      DISPLAY ' END OF JOB C9897A' UPON CONSOLE.                         C98970
51950      CLOSE IN-FILE-D-B, MSG-FILE, OUT-FILE-1,                           C98970
51960                           OUT-FILE-2 WITH LOCK.                         C98970
51990      GOBACK.                                                            C98970
52000  WRITE-DATA.                                                            C98970
52040      COMPUTE OBS > WEEK - LAST-WEEK.                                    C98970
52050      MOVE ONE TO DATA-TYPE.                                             C98970
52060      WRITE OUT-REC-2 FROM OUT-DATA.                                     C98970
52070      COMPUTE OBS > FLT-HRS - LAST-FLT-HRS.                              C98970
52080      MOVE TWO TO DATA-TYPE.                                             C98970
52090      WRITE OUT-REC-2 FROM OUT-DATA.                                     C98970
52095      ADD 2 TO NO-REC-2.                                                 C98970
70000  READ-ISC-A-C.                                                          C98970
70010      READ IN-FILE-ISC INTO NO-ISC AT END GO TO END-RIAC.                C98970
70020      MOVE ZERO TO KNT.                                                  C98970
70030  RIAC.                                                                  C98970
70040      ADD 1 TO KNT.                                                      C98970
70050      READ IN-FILE-ISC INTO ISC-A-C AT END GO TO END-RIAC.               C98970
70060      MOVE ISC-TN TO ISC-AC-TN (KNT).                                    C98970
70070      MOVE ISC-WK TO ISC-AC-WK (KNT).                                    C98970
70075      IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK                    C98970
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70076                TO MIN-ISC-WEEK.                                          C98970
70080          IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                       C98970
70085          CLOSE IN-FILE-ISC WITH LOCK.                                    C98970
70090    END-RIAC. EXIT.                                                       C98970
70200    CHECK-ISCHRONAL.                                                      C98970
70210          IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-I-2.    C98970
70220          IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                       C98970
70230          IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN          C98970
70232                          MIN-ISC-WEEK, THEN GO TO END-CI.                C98970
70240    CHECK-I-2.                                                            C98970
70250          MOVE TWO TO ISCHRONAL.                                          C98970
70260          IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.                 C98970
70270          MOVE ZERO TO CNT.                                               C98970
70280    CHECK-I-I.                                                            C98970
70290          ADD I TO CNT.                                                   C98970
70300          MOVE ISC-AC-TN (CNT) TO ISC-TEMP.                               C98970
70310          IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-1-4.             C98970
70320          IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-1-1A.            C98970
70330          IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.                  C98970
70340    CHECK-I-4.                                                            C98970
70350          MOVE TWO TO ISC-FLAG.                                           C98970
70360          GO TO CHECK-I-3.                                                C98970
70370    CHECK-I-IA.                                                           C98970
70380          MOVE ISC-AC-WK (CNT) TO WEEK-TEMP.                              C98970
70390          IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN           C98970
70400             WEEK-TEMP MOVE ONE TO ISCHRONAL.                             C98970
70410          MOVE ONE TO ISC-FLAG.                                           C98970
70430    CHECK-I-3.                                                            C98970
70440          MOVE SERIAL-NO TO PREV-TESTED-SN.                               C98970
70450    END-CI. EXIT.                                                         C98970
70510    NINE-FILL-2.                                                          C98970
70520          WRITE OUT-REC-2  FROM NINE.                                     C98970
70530          ADD I TO KNT.                                                   C98970
70540          IF KNT IS LESS THAN 90 GO TO NINE-FILL-2.                       C98970
70550    N-F-2. EXIT.                                                          C98970
70600    NINE-FILL-I.                                                          C98970
70610          WRITE OUT-REC-I  FROM NINE.                                     C98970
70620          ADD I TO KNT.                                                   C98970
70630          IF KNT IS LESS THAN 90 GO TO NINE-FILL-1.                       C98970
70640    N-F-I. EXIT.                                                          C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                      I440 CDS
TFG  DT01     I1  020Z080
   34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324
  5800090I  331
  59000002  331
  59000003  331
  59000005  331
  59000006  331
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  5900014I  324
  59000143  324
  59000144  324
  59000145  324
  59000147  324
  59000151  324
  59000152  324
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14      DD   DISP=(OLD,KEEP),VOL=SER=*.F3,UNIT=T+F3                   T14
//TPR.TU22      DD   DISP=(OLD,KEEP),VOL=SER=*.F8,UNIT=T+F8                   T22
//TPR.TU24      DD   DISP=(OLD,KEEP),VOL=SER=*.F7,UNIT=T+F7                   T24
//TPR.TPR1N     DD   *,SPACE=(TRK,(1,1))
T/P  DT01     10100*0Z080
T/P  TU14     10100*0Z070
T/P  TU22     10I0020Z020
T/P  TU24     1010020Z020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.11.2 SORT WUC FREQUENCY

```
//C98975 EXEC  P9622N,W>199,TIME>02,ACCT>D35323007                          58S
//CHG.SORT1N   DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),                       CT22    1
//             DSN>+E,9897431,                                              CT22    2
//             VOL>SER>(+FB,A+FB,B+FB,C+FB,D+FB,E+FB,F+FB,G+FB,H+FB,        CT22    3
//             I+FB,J+FB,K+FB,L+FB,M+FB,N+FB,O+FB,P+FB,Q+FB,R+FB,S+FB),CT22    4
//             DCB>(LRECL>0020,BLKSIZE>1800),LABEL>(,NSL,RETPD>099)]
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A,9897432,        CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,        CT12    2
//             1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0020,BLKSIZE>1800)]
//CHG.SYS1N    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))]
 SORT  FIELDS>(001,005,CH,A),SIZE>E0008000
 MODS  E15>(E15,0006,SORTLIB,N),E18>(E18,024,SORTLIB,N)
/*
```

6.11.3 WRITE WUC FREQUENCY

```
//C9897P EXEC  P9625L,TIME>02,ACCT>D35323007                               58
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A,9897432,       CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,        CT12    2
//             1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)]     T12     3
//CHG.TU24     DD   DSN>+P,9897433,SPACE>(CYL,(009,001))]                   D24-OUT
//CHG.TU25     DD   DSN>+P,9897435,SPACE>(CYL,(009,001))]                   D23-OUT
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))]                                    1440 CDS
00000          COMBINE     COMPILE                  G. WANG.                C98970
01040  DATE-WRITTEN.  1 APR 72.                                             C98970
01050  REMARKS.                                                             C98970
01060          MAINTENANCE STUDY   PROGRAM 5B.                              C98970
01070              PREPARES LISTING OF WUC -V- REMOVAL ACTION FREQUENCY.    C98970
01080                  INPUT SORT SEQUENCE                                  C98970
01090                      WUC.                                             C98970
02000  ENVIRONMENT DIVISION.                                                C98970
02010  CONFIGURATION SECTION.                                               C98970
02020  SOURCE-COMPUTER. IBM-360.                                            C98970
02030  OBJECT-COMPUTER. IBM-360.                                            C98970
02100  INPUT-OUTPUT SECTION.                                                C98970
02110  FILE-CONTROL.                                                        C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12              C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT OUT-FILE-1S            ASSIGN TO UT-S-TU25              C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
02160      SELECT OUT-FILE-N1            ASSIGN TO UT-S-TU24              C98970
02170          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
10100  FD  IN-FILE                                                          C98970
10120      RECORDING MODE IS F                                              C98970
10130      BLOCK CONTAINS 90 RECORDS                                        C98970
10140      RECORD CONTAINS 20            CHARACTERS                         C98970
10150      LABEL RECORDS ARE OMITTED                                        C98970
10160      DATA RECORDS ARE IN-REC.                                         C98970
10200  01  IN-REC      SYNC.                                               C98970
10210      02  WUC                       PICTURE X(5).                     C98970
10220      02  FREQ-1S                   PICTURE S9(5).                    C98970
10230      02  FREQ-N1                   PICTURE S9(5).                    C98970
10240      02  FILLER                    PICTURE X(5).                     C98970
11300  FD  OUT-FILE-1S                                                      C98970
11320      RECORDING MODE IS F                                              C98970
11330      BLOCK CONTAINS 40 RECORDS                                        C98970
11340      RECORD CONTAINS 70            CHARACTERS                         C98970
11350      LABEL RECORDS ARE OMITTED                                        C98970
11360      DATA RECORDS ARE OUT-REC-1S.                                     C98970
11400  01  OUT-DATA-1S SYNC.                                               C98970
11410      02  FILLER                    PICTURE X(70).                    C98970
13300  FD  OUT-FILE-N1                                                      C98970
13320      RECORDING MODE IS F                                              C98970
13330      BLOCK CONTAINS 40 RECORDS                                        C98970
13340      RECORD CONTAINS 70            CHARACTERS                         C98970
13350      LABEL RECORDS ARE OMITTED                                        C98970
13360      DATA RECORDS ARE OUT-REC-N1.                                     C98970
13400  01  OUT-REC-N1 SYNC.                                                C98970
13410      02  FILLER                    PICTURE X(70).                    C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30050  77  PAGE-N1 SYNC COMPUTATIONAL  PICTURE S999  VALUE ZERO.           C98970
30060  77  PAGE-1S SYNC COMPUTATIONAL  PICTURE S999  VALUE ZERO.           C98970
30130  77  LINE-N1 SYNC COMPUTATIONAL  PICTURE S999 VALUE ZERO.            C98970
30140  77  LINE-1S SYNC COMPUTATIONAL  PICTURE S999 VALUE ZERO.            C98970
```

```
30150  77  NO-LINE-PAGE SYNC COMPUTATIONAL PICTURE S999 VALUE <75.          C98970
31500  01  OUT-DATA SYNC.                                                  C98970
31510      02  FILLER                    PICTURE X VALUE !/!.              C98970
31515      02  FILLER                    PICTURE X(07) VALUE SPACE.        C98970
31520      02  WUC-OUT                   PICTURE XXXXX.                    C98970
31530      02  FILLER                    PICTURE X VALUE  SPACE.           C98970
31540      02  OBS                       PICTURE ZZZZ9.                    C98970
31550      02  FILLER                    PICTURE X(50) VALUE SPACE.        C98970
31590      02  FILLER                    PICTURE X   VALUE !#!.            C98970
32000  01  COM-TITLE-1 SYNC.                                              C98970
32010      02  FILLER                    PICTURE X(32) VALUE               C98970
32020          !I   LISTING OF WUC - FREQ   PAGE!.                         C98970
32030      02  PAGE-RPT                  PICTURE ZZ9.                      C98970
32040      02  FILLER                    PICTURE X(34) VALUE SPACE.        C98970
32050      02  FILLER                    PICTURE X VALUE !#!.              C98970
32100  01  COM-TITLE-2 SYNC.                                              C98970
32110      02  FILLER                    PICTURE X(19) VALUE               C98970
32120          !S        WUC   FREQ!.                                      C98970
32130      02  FILLER                    PICTURE X(50) VALUE SPACE.        C98970
32140      02  FILLER                    PICTURE X VALUE !#!.              C98970
32200  01  TITLE-ISC SYNC.                                                C98970
32210      02  FILLER                    PICTURE X(24) VALUE               C98970
32220          !S    FOR ISOCHRONAL A/C !.                                 C98970
32230      02  FILLER                    PICTURE X(45) VALUE !  SE.        C98970
32240      02  FILLER                    PICTURE X VALUE !#!.              C98970
32300  01  TITLE-NON-ISC SYNC.                                            C98970
32310      02  FILLER                    PICTURE X(28) VALUE               C98970
32320          !S    FOR NON-ISOCHRONAL A/C !.                           C98970
32330      02  FILLER                    PICTURE X(41) VALUE SPACE.        C98970
32340      02  FILLER                    PICTURE X VALUE !#!.              C98970
50000  PROCEDURE DIVISION.                                              C98970
50010  OPEN-FILES.                                                      C98970
50020      OPEN INPUT IN-FILE.                                          C98970
50040      OPEN OUTPUT                OUT-FILE-IS, OUT-FILE-NI.         C98970
50050      PERFORM TITLE-IS.                                            C98970
50060      PERFORM TITLE-NI.                                            C98970
50100  READ-INPUT.                                                      C98970
50110      READ IN-FILE, AT END GO TO CLOSE-FILES.                      C98970
50120      IF WUC IS EQUAL TO !99999! GO TO CLOSE-FILES.                C98970
50130      MOVE WUC TO WUC-OUT.                                         C98970
50140      IF FREQ-ISC IS EQUAL TO ZERO GO TO PROC-NI.                  C98970
50150      MOVE FREQ-ISC TO OBS.                                        C98970
50160      WRITE OUT-DATA-IS FROM OUT-DATA.                             C98970
50170      ADD 1 TO LINE-IS.                                            C98970
50180      IF LINE-IS IS GREATER THAN NO-LINE-PAGE PERFORM TITLE-IS.    C98970
50300  PROC-NI.                                                         C98970
50310      IF FREQ-NI IS EQUAL TO ZERO GO TO READ-INPUT.                C98970
50320      MOVE FREQ-NI TO OBS.                                         C98970
50330      WRITE OUT-REC-NI FROM OUT-DATA.                              C98970
50340      ADD 1 TO LINE-NI.                                            C98970
50350      IF LINE-NI IS GREATER THAN NO-LINE-PAGE PERFORM TITLE-NI.    C98970
50360      GO TO READ-INPUT.                                            C98970
50400  TITLE-IS.                                                        C98970
50410      ADD 1 TO PAGE-IS.                                            C98970
50420      MOVE PAGE-IS TO PAGE-RPT.                                    C98970
50430      WRITE OUT-DATA-IS FROM COM-TITLE-1.                          C98970
50440      WRITE OUT-DATA-IS FROM TITLE-ISC.                            C98970
50450      WRITE OUT-DATA-IS FROM COM-TITLE-2.                          C98970
50460      MOVE ZERO TO LINE-IS.                                        C98970
50500  TITLE-NI.                                                        C98970
50510      ADD 1 TO PAGE-NI.                                            C98970
50520      MOVE PAGE-NI TO PAGE-RPT.                                    C98970
50530      WRITE OUT-REC-NI FROM COM-TITLE-1.                           C98970
50540      WRITE OUT-REC-NI FROM TITLE-NON-ISC.                         C98970
50550      WRITE OUT-REC-NI FROM COM-TITLE-2.                           C98970
50560      MOVE ZERO TO LINE-NI.                                        C98970
50600  CLOSE-FILES.                                                     C98970
50610      CLOSE IN-FILE, OUT-FILE-IS, OUT-FILE-NI WITH LOCK.           C98970
50620      DISPLAY ! EOJ C9897P ! UPON CONSOLE.                         C98970
50630      GOBACK.                                                      C98970
/*       PLACE COBOL SOURCE BEFORE
//CH6,TFGIN    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR,TU12     DD   DISP>(OLD,KEEP),VOL>SER>+FI,UNIT>T+FI               T12
//TPR,TU24     DD   DISP>(OLD,PASS)                                     D24-PASS
//TPR,TU25     DD   DISP>(OLD,PASS)                                     D23-PASS
//TPR,TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU25    1998070R000
T/P  TU24    1998070R000
T/P  TU12    1010020Z020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897R EXEC  C96J3N,TIME>01,ACCT>D38323007
//CH6,TU24     DD   DSN>+P.9897433,DISP>(OLD,DELETE)                    D24-IN
//CH6,TU25     DD   DSN>+P.9897435,DISP>(OLD,DELETE)                    D25-IN
//CH6,TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU24    1998070R000
T/P  TU25    1998070R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.11.4 SORT NON-ISOCHRONAL FREQUENCY

```
//T9897J JOB   01,'  G WANG     ',PRTY=02,TYPRUN=HOLD
//C9897T EXEC  P9622N,W=I99,TIME=01,ACCT=D35323007                        SCS
//CHG.SORTIN   DD   DISP=(,KEEP),UNIT=(T+F5,I,DEFER),                     CT22    1
//             DSN=+E.9897431,                                            CT22    2
//             VOL=SER=(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,      CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    4
//             DCB=(LRECL=0020,BLKSIZE=1800),LABEL=(,NSL,RETPD=099)
//CHG.SORTOUT  DD   DISP=(,KEEP),UNIT=(T+F1,1,DEFER),DSN=+A.9897433,      CT12    1
//             VOL=SER=(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,      CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB=(LRECL=0020,BLKSIZE=1800)
//CHG.SYSIN    DD   *,DCB=BLKSIZE=0080,SPACE=(TRK,(1,1))
 SORT  FIELDS=(011,005,CH,D,001,005,CH,A),SIZE=E0003000
 MODS  E15=(E15,0C8,SORTLIB,N),E18=(E18,024,SORTLIB,N)
/*
```

6.11.5 WRITE NON-ISOCHRONAL FREQUENCY

```
//C9897K EXEC  P965SL,TIME=01,ACCT=D35323007                              SC
//CHG.TU12     DD   DISP=(,PASS),UNIT=(T+FI,1,DEFER),DSN=+A.9897433,      CT12    1
//             VOL=SER=(+FI,A+FI,B+FI,C+F1,D+FI,E+F1,F+F1,G+F1,H+F1,      CT12    2
//             I+FI,J+FI,K+F1,L+FI,M+F1,N+F1,O+FI,P+F1,Q+F1,R+F1,S+F1)    T12     3
//CHG.TU25     DD   DSN=+P.9897431,SPACE=(CYL,(009,001))                  D25-OUT
//CHG.INPUT    DD   *,SPACE=(CYL,(1,1))                                   1440 CDS
00000            COMBINE     COMPILE                  0, WANG.           C98970
01040  DATE-WRITTEN.  1 APR 72.                                           C98970
01050  REMARKS.                                                           C98970
01060            MAINTENANCE STUDY   PROGRAM 5C.                         C98970
01070                PREPARES LISTING OF FREQUENCY OF REMOVAL (AIRCRAFT   C98970
01080                          SUB-SET 1) -V- WUC.                       C98970
01090                    INPUT SORT SEQUENCE                             C98970
01100                        FREQUENCY.                                  C98970
02000  ENVIRONMENT DIVISION.                                              C98970
02010  CONFIGURATION SECTION.                                             C98970
02020  SOURCE-COMPUTER. IBM-360.                                          C98970
02030  OBJECT-COMPUTER. IBM-360.                                          C98970
02100  INPUT-OUTPUT SECTION.                                              C98970
02110  FILE-CONTROL.                                                      C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                  C98970
02160      SELECT OUT-FILE-NI            ASSIGN TO UT-S-TU25             C98970
02170          RESERVE 1 ALTERNATE AREA.                                  C98970
10000  DATA DIVISION.                                                     C98970
10010  FILE SECTION.                                                      C98970
10100  FD   IN-FILE                                                       C98970
10120      RECORDING MODE IS F                                            C98970
10130      BLOCK CONTAINS 90 RECORDS                                      C98970
10140      RECORD CONTAINS 20            CHARACTERS                       C98970
10150      LABEL RECORDS ARE OMITTED                                      C98970
10160      DATA RECORDS ARE IN-REC.                                       C98970
10200  01  IN-REC      SYNC.                                             C98970
10210      02  WUC                       PICTURE X(5).                   C98970
10220      02  FILLER                    PICTURE X(5).                   C98970
10230      02  FREQ-NI                   PICTURE S9(5).                  C98970
10240      02  FILLER                    PICTURE X(5).                   C98970
13300  FD   OUT-FILE-NI                                                   C98970
13320      RECORDING MODE IS F                                            C98970
13330      BLOCK CONTAINS 40 RECORDS                                      C98970
13340      RECORD CONTAINS 70            CHARACTERS                       C98970
13350      LABEL RECORDS ARE OMITTED                                      C98970
13360      DATA RECORDS ARE OUT-REC-NI.                                   C98970
13400  01  OUT-REC-NI SYNC.                                              C98970
13410      02  FILLER                    PICTURE X(70).                  C98970
30000  WORKING-STORAGE SECTION.                                           C98970
30050  77  PAGE-NI SYNC COMPUTATIONAL  PICTURE S999  VALUE ZERO.         C98970
30130  77  LINE-NI SYNC COMPUTATIONAL  PICTURE S999 VALUE ZERO.          C98970
30150  77  NO-LINE-PAGE SYNC COMPUTATIONAL PICTURE S999 VALUE +75.       C98970
31500  01  OUT-DATA SYNC.                                                C98970
31510      02  FILLER                    PICTURE X VALUE '/'.            C98970
31515      02  FILLER                    PICTURE X(06) VALUE SPACE.      C98970
31520      02  OBS                       PICTURE ZZZZ9.                  C98970
31530      02  FILLER                    PICTURE XXX VALUE  SPACE.       C98970
31540      02  WUC-OUT                   PICTURE XXXXX.                  C98970
31550      02  FILLER                    PICTURE X(49) VALUE SPACE,      C98970
31590      02  FILLER                    PICTURE X    VALUE '0'.         C98970
32000  01  COM-TITLE-1 SYNC.                                             C98970
32010      02  FILLER                    PICTURE X(32) VALUE             C98970
32020              '1   LISTING OF FREQ - WUC   PAGE'.                   C98970
```

```
32030      02  PAGE-RPT                  PICTURE ZZ9.                          C98970
32040      02  FILLER                    PICTURE X(34) VALUE SPACE.            C98970
32050      02  FILLER                    PICTURE X VALUE ':'.                  C98970
32100  01  COM-TITLE-2 SYNC.                                                   C98970
32110      02  FILLER                    PICTURE X(19) VALUE                   C98970
32120          ':S       FREQ    WUC:'.                                       C98970
32130      02  FILLER                    PICTURE X(50) VALUE SPACE.            C98970
32140      02  FILLER                    PICTURE X VALUE ':'.                  C98970
32300  01  TITLE-NON-ISC SYNC.                                                 C98970
32310      02  FILLER                    PICTURE X(28) VALUE                   C98970
32320          ':S    FOR NON-ISOCHRONAL A/C :'.                             C98970
32330      02  FILLER                    PICTURE X(41) VALUE SPACE.            C98970
32340      02  FILLER                    PICTURE X VALUE ':'.                  C98970
50000  PROCEDURE DIVISION.                                                   C98970
50010  OPEN-FILES.                                                           C98970
50020      OPEN INPUT IN-FILE.                                               C98970
50040      OPEN OUTPUT OUT-FILE-NI.                                          C98970
50060      PERFORM TITLE-NI.                                                 C98970
50100  READ-INPUT.                                                           C98970
50110      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50120      IF WUC IS EQUAL TO ':999999' GO TO READ-INPUT.                    C98970
50130      MOVE WUC TO WUC-OUT.                                              C98970
50310      IF FREQ-NI IS EQUAL TO ZERO GO TO READ-INPUT.                     C98970
50320      MOVE FREQ-NI TO OBS.                                              C98970
50330      WRITE OUT-REC-NI FROM OUT-DATA.                                   C98970
50340      ADD 1 TO LINE-NI.                                                 C98970
50350      IF LINE-NI IS GREATER THAN NO-LINE-PAGE PERFORM TITLE-NI.         C98970
50360      GO TO READ-INPUT.                                                 C98970
50500  TITLE-NI.                                                             C98970
50510      ADD 1 TO PAGE-NI.                                                 C98970
50520      MOVE PAGE-NI TO PAGE-RPT.                                         C98970
50530      WRITE OUT-REC-NI FROM COM-TITLE-1.                                C98970
50540      WRITE OUT-REC-NI FROM TITLE-NON-ISC.                              C98970
50550      WRITE OUT-REC-NI FROM COM-TITLE-2.                                C98970
50560      MOVE ZERO TO LINE-NI.                                             C98970
50600  CLOSE-FILES.                                                          C98970
50610      CLOSE IN-FILE,              OUT-FILE-NI WITH LOCK.                C98970
50620      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                               C98970
50630      GOBACK.                                                           C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.IFGIN    DD   *,SPACE>(CYL,(1,1))                                     1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TUI2     DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                   T12
//TPR.TU25     DD   DISP>(OLD,PASS)                                         D25-PASS
//TPR.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TUI2    1010020Z020
T/P  TU25    I998070R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897R EXEC  C9603N,TIME>01,ACCT>D35323007
//CHG.TU25     DD   DSN>+P.9897431,DISP>(OLD,DELETE)                        D25-IN
//CHG.TPRIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU25    I998070R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.11.6 SORT ISOCHRONAL FREQUENCY

```
//I9897L JOB   01,:  G WANG     :,PRTY>02,TYPRUN>HOLD
//C98970 EXEC  P9622N,W>199,TIME>01,ACCT>D35323007                          SES
//CHG.SORTIN   DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),                       CT22    1
//             DSN>+E.9897431,                                              CT22    2
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,        CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    4
//             DCB>(LRECL>0020,BLKSIZE>1800),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A.9897434,        CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,        CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0020,BLKSIZE>1800)
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(006,005,CH,D,001,005,CH,A),SIZE>E0003000
 MODS  E15>(E15,008,SORTLIB,N),E18>(E18,024,SORTLIB,N)
/*
```

6.11.7 WRITE ISOCHRONAL FREQUENCY

```
//C9897L EXEC  P965SL,TIME>01,ACCT>D35323007                                5E
//CHG.TU12     DD   DISP>[,PASS],UNIT>[T+F1,1,DEFER],DSN>+A.9897434,    CT12    1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,    CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]   T12    3
//CHG.TU2S     DD   DSN>+P.9897431,SPACE>[CYL,[009,001]]                 D25-OUT
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000          COMBINE     COMPILE                  G. WANG.                C98970
01040  DATE-WRITTEN.  1 APR 72.                                            C98970
01050  REMARKS.                                                            C98970
01060          MAINTENANCE STUDY   PROGRAM 5E.                             C98970
01070              PREPARES LISTING OF FREQUENCY OF REMOVAL [AIRCRAFT       C98970
01080                    SUB-SET 2] -V- WUC.                                C98970
01090                 INPUT SORT SEQUENCE                                   C98970
01100                    FREQUENCY.                                         C98970
02000  ENVIRONMENT DIVISION.                                               C98970
02010  CONFIGURATION SECTION.                                              C98970
02020  SOURCE-COMPUTER. IBM-360.                                           C98970
02030  OBJECT-COMPUTER. IBM-360.                                           C98970
02100  INPUT-OUTPUT SECTION.                                               C98970
02110  FILE-CONTROL.                                                       C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12               C98970
02130          RESERVE 1 ALTERNATE AREA.                                   C98970
02140      SELECT OUT-FILE-1S            ASSIGN TO UT-S-TU25               C98970
02150          RESERVE . ALTERNATE AREA.                                   C98970
10000  DATA DIVISION.                                                      C98970
10010  FILE SECTION.                                                       C98970
10100  FD  IN-FILE                                                         C98970
10120      RECORDING MODE IS F                                             C98970
10130      BLOCK CONTAINS 90 RECORDS                                       C98970
10140      RECORD CONTAINS 20          CHARACTERS                          C98970
10150      LABEL RECORDS ARE OMITTED                                       C98970
10160      DATA RECORDS ARE IN-REC.                                        C98970
10200  01  IN-REC     SYNC.                                               C98970
10210      02  WUC                     PICTURE X[5].                      C98970
10220      02  FREQ-ISC                PICTURE S9[5].                     C98970
10230      02  FILLER                  PICTURE X[10].                     C98970
11300  FD  OUT-FILE-1S                                                     C98970
11320      RECORDING MODE IS F                                             C98970
11330      BLOCK CONTAINS 40 RECORDS                                       C98970
11340      RECORD CONTAINS 70          CHARACTERS                          C98970
11350      LABEL RECORDS ARE OMITTED                                       C98970
11360      DATA RECORDS ARE OUT-REC-IS.                                    C98970
11400  01  OUT-DATA-IS SYNC.                                              C98970
11410      02  FILLER                  PICTURE X[70].                     C98970
30000  WORKING-STORAGE SECTION.                                            C98970
30060  77  PAGE-IS SYNC COMPUTATIONAL  PICTURE S999  VALUE ZERO.           C98970
30140  77  LINE-IS SYNC COMPUTATIONAL  PICTURE S999 VALUE ZERO.            C98970
30150  77  NO-LINE-PAGE SYNC COMPUTATIONAL PICTURE S999 VALUE <75,         C98970
31500  01  OUT-DATA SYNC.                                                 C98970
31510      02  FILLER                  PICTURE X VALUE 1/1,               C98970
31515      02  FILLER                  PICTURE X[07] VALUE SPACE,         C98970
31520      02  OBS                     PICTURE ZZZZ9.                     C98970
31530      02  FILLER                  PICTURE XX VALUE  SPACE.           C98970
31540      02  WUC-OUT                 PICTURE XXXXX.                     C98970
31550      02  FILLER                  PICTURE X[49] VALUE SPACE.         C98970
31590      02  FILLER                  PICTURE X   VALUE 1#1.             C98970
32000  01  COM-TITLE-1 SYNC.                                              C98970
32010      02  FILLER                  PICTURE X[32] VALUE                C98970
32020            :1   LISTING OF FREQ - WUC   PAGE1.                      C98970
32030      02  PAGE-RPT                PICTURE ZZ9.                       C98970
32040      02  FILLER                  PICTURE X[34] VALUE SPACE.         C98970
32050      02  FILLER                  PICTURE X VALUE 1#1.               C98970
32100  01  COM-TITLE-2 SYNC.                                              C98970
32110      02  FILLER                  PICTURE X[19] VALUE                C98970
32120            :S        FREQ   WUC1.                                    C98970
32130      02  FILLER                  PICTURE X[50] VALUE SPACE.         C98970
32140      02  FILLER                  PICTURE X VALUE 1#1.               C98970
32200  01  TITLE-ISC SYNC.                                                C98970
32210      02  FILLER                  PICTURE X[24] VALUE                C98970
32220            :S    FOR ISOCHRONAL A/C 1.                             C98970
32230      02  FILLER                  PICTURE X[45] VALUE SPACE.         C98970
32240      02  FILLER                  PICTURE X VALUE 1#1.               C98970
50000  PROCEDURE DIVISION.                                                 C98970
50010  OPEN-FILES.                                                         C98970
50020      OPEN INPUT IN-FILE.                                             C98970
50040      OPEN OUTPUT OUT-FILE-1S.                                        C98970
50050      PERFORM TITLE-1S.                                               C98970
```

```
50100  READ-INPUT.                                                          C98970
50110      READ IN-FILE, AT END GO TO CLOSE-FILES.                          C98970
50120      IF WUC IS EQUAL TO '999999' GO TO READ-INPUT.                    C98970
50130      MOVE WUC TO WUC-OUT.                                             C98970
50140      IF FREQ-ISC IS EQUAL TO ZERO GO TO READ-INPUT.                   C98970
50150      MOVE FREQ-ISC TO OBS.                                            C98970
50160      WRITE OUT-DATA-IS FROM OUT-DATA.                                 C98970
50170      ADD 1 TO LINE-IS.                                                C98970
50180      IF LINE-IS IS GREATER THAN NO-LINE-PAGE PERFORM TITLE-IS.        C98970
50360      GO TO READ-INPUT.                                                C98970
50400  TITLE-IS.                                                            C98970
50410      ADD 1 TO PAGE-IS.                                                C98970
50420      MOVE PAGE-IS TO PAGE-RPT.                                        C98970
50430      WRITE OUT-DATA-IS FROM COM-TITLE-1.                              C98970
50440      WRITE OUT-DATA-IS FROM TITLE-ISC.                                C98970
50450      WRITE OUT-DATA-IS FROM COM-TITLE-2.                              C98970
50460      MOVE ZERO TO LINE-IS.                                            C98970
50600  CLOSE-FILES.                                                         C98970
50610      CLOSE IN-FILE, OUT-FILE-IS              WITH LOCK,               C98970
50620      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                              C98970
50630      GOBACK.                                                          C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.TF61N     DD   *,SPACE=(CYL,(1,1))                                   1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=*F1,UNIT=T*F1                 T12
//TPR.TU25      DD   DISP=(OLD,PASS)                                       D25-PASS
//TPR.TPR1N     DD   *,SPACE=(TRK,(1,1))
T/P  TU12    1010020Z030
T/P  TU25    1998070R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897R EXEC  C9603N,TIME=01,ACCT=D35323007
//CHG.TU25      DD   DSN=*P.9897431,DISP=(OLD,DELETE)                      D25-IN
//CHG.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU25    1998070R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.11.8 SORT REMOVAL INTERVALS

```
//T9897H JOB   01,' G. WANG     ',PRTY=02,TYPRUN=HOLD
//C9897G EXEC  P9622N,W=199,TIME=05,ACCT=D35323007                        5DS
//CHG.SORT1N    DD   DISP=(,KEEP),UNIT=(A*F5,2,DEFER),                    CT22/23 1
//               DSN=*E.9897435,                                          CT22    2
//               VOL=SER=(*F5,A*F5,B*F5,C*F5,D*F5,E*F5,F*F5,G*F5,H*F5,    CT22    3
//               1*F5,J*F5,K*F5,L*F5,M*F5,N*F5,O*F5,P*F5,Q*F5,R*F5,S*F5),CT22    4
//               DCB=(LRECL=0020,BLKSIZE=1800),LABEL=(,NSL,RETPD=099)
//CHG.SORTOUT   DD   DISP=(,KEEP),UNIT=(A*F1,2,DEFER),DSN=*A,9897436,     CT12/13 1
//               VOL=SER=(*F1,A*F1,B*F1,C*F1,D*F1,E*F1,F*F1,G*FI,H*F1,    CT12    2
//               1*F1,J*F1,K*F1,L*F1,M*F1,N*F1,O*F1,P*FI,Q*F1,R*F1,S*F1),CT12    3
//               DCB=(LRECL=0020,BLKSIZE=1800)
//CHG.SYSIN     DD   *,DCB=BLKSIZE=0080,SPACE=(TRK,(1,1))
 SORT  FIELDS=(017,001,CH,A,019,001,CH,A,001,008,CH,A),SIZE=E0800000
 MODS  E15=(E15,008,SORTLIB,N),E18=(E18,024,SORTLIB,N)
/*
```

6.11.9 CUMULATIVE DISTRIBUTION OF REMOVAL INTERVALS

```
//C9897H EXEC  P9655L,TIME=07,ACCT=D35323007                              5D
//CHG.TU12      DD   DISP=(,PASS),UNIT=(T*F1,1,DEFER),DSN=*A,9897436,     CT12    1
//               VOL=SER=(*F1,A*F1,B*F1,C*F1,D*F1,E*F1,F*F1,G*F1,H*F1,    CT12    2
//               1*F1,J*F1,K*FI,L*FI,M*F1,N*F1,O*F1,P*F1,Q*F1,R*F1,S*F1)  T12     3
//CHG.TU24      DD   DISP=(,PASS),UNIT=(T*F7,1,DEFER),DSN=*G,9897437,     CT24    1
//               VOL=SER=(*F7,A*F7,B*F7,C*F7,D*F7,E*F7,F*F7,G*F7,H*F7,    CT24    2
//               1*F7,J*F7,K*F7,L*F7,M*F7,N*F7,O*F7,P*F7,Q*F7,R*F7,S*F7)  T24     3
//CHG.1NPUT     DD   *,SPACE=(CYL,(1,1))                                  1440 CDS
00000          COMBINE     COMPILE                  G, WANG,              C98970
01040  DATE-WRITTEN.  7 APR 72.                                            C98970
01050  REMARKS.                                                            C98970
01060          TASK 5D  HIST OF WUC.                                       C98970
02000  ENVIRONMENT DIVISION.                                               C98970
02010  CONFIGURATION SECTION.                                              C98970
02020  SOURCE-COMPUTER. 18M-360.                                           C98970
02030  OBJECT-COMPUTER. 18M-360.                                           C98970
02100  INPUT-OUTPUT SECTION.                                               C98970
02110  FILE-CONTROL.                                                       C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                   C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU24             C98970
02150          RESERVE 1 ALTERNATE AREA.                                   C98970
09000      SELECT CUT-OFF-FILE           ASSIGN TO DA-S-DT03             C98970
09010          RESERVE 1 ALTERNATE AREA.                                   C98970
```

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10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE                                                       C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 90 RECORDS                                     C98970
11140      RECORD CONTAINS 20           CHARACTERS                       C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE IN-REC.                                      C98970
11170  01  IN-REC SYNC.                                                 C98970
11180      02  WUC                      PICTURE X(5).                   C98970
11182      02  FILLER                   PICTURE X(4).                   C98970
11183      02  OBS                      PICTURE S9(6).                  C98970
11184      02  OBS-1 REDEFINES OBS      PICTURE S99999V9.               C98970
11185      02  FILLER                   PICTURE X.                      C98970
11186      02  ISCHRONAL-NEW            PICTURE X.                      C98970
11187      02  FILLER                   PICTURE X.                      C98970
11188      02  DATA-TYPE-NEW            PICTURE X.                      C98970
11189      02  FILLER                   PICTURE X.                      C98970
12100  FD  HIST-FILE                                                     C98970
12120      RECORDING MODE IS F                                           C98970
12130      BLOCK CONTAINS 15 RECORDS                                     C98970
12140      RECORD CONTAINS 130          CHARACTERS                       C98970
12150      LABEL RECORDS ARE OMITTED                                     C98970
12160      DATA RECORDS ARE HIST-REC.                                    C98970
12170  01  HIST-REC SYNC.                                               C98970
12180      02  FILLER                   PICTURE X(130).                 C98970
29000  FD  CUT-OFF-FILE                                                  C98970
29010      RECORDING MODE IS F                                           C98970
29020      BLOCK CONTAINS 20 RECORDS                                     C98970
29030      RECORD CONTAINS 80           CHARACTERS                       C98970
29040      LABEL RECORDS ARE STANDARD                                    C98970
29050      DATA RECORDS ARE CUT-OFF-REC.                                 C98970
29060  01  CUT-OFF-REC SYNC.                                            C98970
29070      05  N1-CUT-OFF               PICTURE 9(5).                   C98970
29080      05  ISO-CUT-OFF              PICTURE 9(5).                   C98970
29090      05  FILLER                   PICTURE X(70).                  C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  77  KNT SYNC PICTURE S9(5).                                      C98970
30020  01  FILLER  SYNC.                                                C98970
30030      02  FREQ-HIST-VALUE OCCURS 1000 TIMES PICTURE S9(5)          C98970
30040          COMPUTATIONAL.                                            C98970
30050  01  A PICTURE S9(5) COMPUTATIONAL.                               C98970
30060  01  NO-OF-HISTS          SYNC    PICTURE 9999 VALUE ZERO.        C98970
30070  01  TWO SYNC                     PICTURE X VALUE '2'.            C98970
30080  01  ONE          SYNC            PICTURE X VALUE '1'.            C98970
30090  01  CNT SYNC                     PICTURE S9(5) COMPUTATIONAL.    C98970
30100  01  CUR-WUC-T SYNC.                                              C98970
30110      02  FILLER                   PICTURE X(5) VALUE ' WUC>'.     C98970
30120      02  CUR-WUC                  PICTURE X(5).                   C98970
30170  01  ISCHRONAL SYNC               PICTURE X.                      C98970
30180  01  DATA-TYPE    SYNC            PICTURE X.                      C98970
30190  01  MINUS-ONE COMPUTATIONAL      PICTURE S999 VALUE -1 SYNC.     C98970
32000  01  REPORT-1D SYNC.                                              C98970
32010      02  FILLER                   PICTURE X(50) VALUE             C98970
32020          '$)897C60  TF7919-02 142-A 1       1/2                  C98970
32030      02  FILLER                   PICTURE X(50) VALUE SPACE.      C98970
32040      02  FILLER                   PICTURE X(30) VALUE             C98970
32050          '                          '.                            C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9(7)V99.                C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9(7)V99.                 C98970
46020  01  TEMP-COMP                    PICTURE S9(7)V99.               C98970
46100  01  MEAN-VARIANCE-LINE SYNC.                                     C98970
46110      02  FILLER                   PICTURE X(50) VALUE             C98970
46120          'S                                                        C98970
46130      02  FILLER                   PICTURE X(19) VALUE             C98970
46140          '          MEAN >'.                                       C98970
46150      02  MEAN-RPT                 PICTURE ZZZ9.9.                 C98970
46160      02  FILLER                   PICTURE X(30) VALUE             C98970
46170          '          VARIANCE >'.                                   C98970
46180      02  VARIANCE-RPT             PICTURE ZZZZZZ9.9.              C98970
46190      02  FILLER                   PICTURE X(16) VALUE             C98970
46200          '          '.                                             C98970
47000  01  HIST-VALUE-MAX SYNC          PICTURE S9999V99 VALUE -9999.9. C98970
47010  01  HIST-VALUE-MIN SYNC          PICTURE S9999V99 VALUE +9999.9. C98970
47020  01  HIST-NO-OF-OBS SYNC          PICTURE S9(5)  VALUE ZERO.      C98970
47030  01  HIST-NO-OF-INTERVALS SYNC    PICTURE 999V99 VALUE 50.        C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC    PICTURE 9      VALUE ZERO.      C98970
47050  01  HIST-DIST SYNC               PICTURE X      VALUE '1'.       C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                C98970
47070                                   PICTURE S999   VALUE ZERO.      C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                              C98970
47090                                   PICTURE S999   VALUE ZERO.      C98970
47100  01  HIST-TEMP SYNC               PICTURE S99999V99 VALUE ZERO.   C98970
47110  01  HIST-INTERVAL-SIZE SYNC      PICTURE S999V99 VALUE ZERO      C98970
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47120                 COMPUTATIONAL.                                          C98970
47150  01  HIST-FLAG SYNC                PICTURE X      VALUE !0!.            C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                C98970
47170                                     PICTURE S999   VALUE <1.            C98970
47180  01  HIST-PERCENT SYNC             PICTURE S999V99 COMPUTATIONAL.       C98970
47190  01  HIST-CUM SYNC                 PICTURE S999V99 COMPUTATIONAL.       C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                       C98970
47210                                     PICTURE S999  VALUE ZERO.           C98970
47220  01  HIST-PAGE-FLAG SYNC           PICTURE S999 VALUE <75.             C98970
47230  01  HIST-LINE-CNT  SYNC           PICTURE S999.                       C98970
47300  01  HIST-ERR-1 SYNC               PICTURE X(10)  VALUE                C98970
47310                          !ERROR NO 01.                                  C98970
47320  01  HIST-ERR-3 SYNC.                                                   C98970
47330      02  FILLER                    PICTURE X(5)   VALUE !BS > !.       C98970
47340      02  HIST-ERR-2                PICTURE S9(5)  VALUE ZERO.          C98970
47350  01  HIST-ERR-4 SYNC               PICTURE X(10)  VALUE                C98970
47360                          !ERROR  MAX!.                                  C98970
47370  01  HIST-ERR-5 SYNC               PICTURE X(10)  VALUE                C98970
47380                          !-MIN BAD. !.                                  C90970
47390  01  HIST-OUT-RANGE-VALUE SYNC     PICTURE S999 COMPUTATIONAL.          C98970
47500  01  FILLER SYNC.                                                       C98970
47510      02  FILLER OCCURS 200 TIMES.                                       C98970
47530          03  HIST-TABLE            PICTURE S9(5) COMPUTATIONAL.         C98970
47540          03  HIST-UPPER-LIMIT      PICTURE S9999V99 COMPUTATIONAL.      C98970
47550          03  HIST-TABLE-SCALED     PICTURE S999     COMPUTATIONAL.      C98970
47560  01  HIST-NEW-PAGE SYNC.                                                C98970
47570      02  FILLER                    PICTURE X     VALUE !1!.            C98970
47580      02  FILLER                    PICTURE X(122) VALUE SPACE.         C98970
47582      02  FILLER                    PICTURE X(5) VALUE !PAGE !.         C98970
47584      02  HIST-PAGE-NO              PICTURE 9.                          C98970
47590      02  FILLER                    PICTURE X     VALUE !#!.            C98970
47600  01  HIST-TITLE SYNC.                                                   C98970
47610      02  FILLER                    PICTURE X(3) VALUE !S  !.           C98970
47620      02  HIST-TITLE-1.                                                  C98970
47621          03  FILLER                PICTURE X(10) VALUE SPACE.          C98970
47630      02  HIST-TITLE-2.                                                  C98970
47631          03  FILLER                PICTURE X(10) VALUE SPACE.          C98970
47640      02  HIST-TITLE-3              PICTURE X(10) VALUE SPACE.          C98970
47650      02  HIST-TITLE-4              PICTURE X(10) VALUE SPACE.          C98970
47660      02  FILLER                    PICTURE X(24) VALUE                 C98970
47670              !    NO OF OBSERVATIONS >!.                                C98970
47680      02  HIST-NO-OF-OBS-RPT        PICTURE ZZZZ9.                      C98970
47690      02  FILLER                    PICTURE X(13) VALUE                 C98970
47700                 . VALUE MAX > !.                                       C98970
47710      02  HIST-VALUE-MAX-RPT        PICTURE -----.9.                    C98970
47720      02  FILLER                    PICTURE X(13) VALUE                 C98970
47730                 ) VALUE MIN > !.                                       C98970
47740      02  HIST-VALUE-MIN-RPT        PICTURE -----.9.                    C98970
47750      02  FILLER                    PICTURE X(18) VALUE                 C98970
47760                 :                    #!.                              C98970
47900  01  HIST-UOF-LINE SYNC.                                                C98970
47910      02  FILLER                    PICTURE X(50)  VALUE                C98970
47920           !/-----------------------------------------------------!.     C98970
47922      02  FILLER                    PICTURE X(80) VALUE                 C98970
47930      !-------------------------------------------------------------     C98970
47940 -    !-----------------#!.                                              C98970
47950  01  HIST-LABEL SYNC.                                                   C98970
47960      02  FILLER                    PICTURE X(50)  VALUE                C98970
47970           !/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.!.        C98970
47974      02  FILLER                    PICTURE X(80) VALUE          !..    C98970
47980 -    !25...30...35...40...45...50...55...60...65...70...75...80...       C98970
47990 -    !85...90...95..100#!.                                              C98970
48000  01  HIST-LINE-OUT SYNC.                                                C98970
48010      02  FILLER                    PICTURE X VALUE !/!.                C98970
48020      02  HIST-LINE-RPT             PICTURE ZZ9.                        C98970
48030      02  FILLER                    PICTURE X VALUE SPACE.              C98970
48040      02  HIST-MID-POINT-RPT        PICTURE -----.9.                    C98970
48060      02  HIST-PERCENT-RPT          PICTURE ZZ9.9.                      C98970
48070      02  FILLER                    PICTURE X VALUE SPACE.              C98970
48080      02  HIST-CUM-RPT              PICTURE ZZ9.9.                      C98970
48100      02  HIST-FREQ-RPT             PICTURE ZZZZ9.                      C98970
48110      02  FILLER                    PICTURE X VALUE SPACE.              C98970
48120      02  HIST-POINT OCCURS 100 TIMES                                    C98970
48130                                     PICTURE X.                          C98970
48140      02  FILLER                    PICTURE X VALUE !#!.                C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                           C98970
48160      02  FILLER                    PICTURE X(35) VALUE                 C98970
48170           !/   NUMBER OF OUT OF RANGE VALUES >!.                       C98970
48180      02  HIST-OUT-RANGE-RPT        PICTURE ZZ9.                        C98970
48190      02  FILLER                    PICTURE X(91) VALUE SPACE.          C98970
48191      02  FILLER                    PICTURE X VALUE !#!.                C98970
48200  01  HIST-SCALE-LINE SYNC.                                              C98970
48210      02  FILLER                    PICTURE X(27) VALUE                 C98970
48220           !/         SCALING FACTOR > !.                               C98970
48230      02  HIST-SCALE-RPT            PICTURE ZZ9.                        C98970
48240      02  FILLER                    PICTURE X(099) VALUE SPACE.         C98970
48250      02  FILLER                    PICTURE X VALUE !#!.                C98970
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48300  01  FILLER SYNC.                                                    C98970
48310      02  HIST-VALUE OCCURS 1000 TIMES                                C98970
48320                                  PICTURE S9999V9 COMPUTATIONAL.       C98970
50000  PROCEDURE DIVISION.                                                 C98970
50001      OPEN INPUT CUT-OFF-FILE.                                        C98970
50002      READ CUT-OFF-FILE AT END GO TO CLOSE-FILES.                     C98970
50003      CLOSE CUT-OFF-FILE WITH LOCK.                                   C98970
50010      OPEN INPUT IN-FILE.                                             C98970
50020      OPEN OUTPUT HIST-FILE.                                          C98970
50030      MOVE 1000 TO KNT.                                               C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                         C98970
50050      READ IN-FILE, AT END GO TO CLOSE-FILES.                         C98970
50060      WRITE HIST-REC FROM REPORT-ID.                                  C98970
50100  PARA-1.                                                             C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                       C98970
50120      MOVE WUC TO CUR-WUC.                                            C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                                C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                                C98970
50160      IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO        C98970
50170                FLT-DATA.                                             C98970
50200  READ1.                                                              C98970
50210      READ IN-FILE, AT END GO TO CLOSE-FILES.                         C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO 191 GO TO CLOSE-FILES.             C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                    C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                        C98970
50260      IF DATA-TYPE IS EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO        C98970
50270                      FLT-DATA.                                       C98970
50300  PARA-2.                                                             C98970
50310      PERFORM SET-HISTOG THRU END-SH.                                 C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                         C98970
50330      GO TO PARA-1.                                                   C98970
50400  RESET-TABLE.                                                        C98970
50410      MOVE ZERO TO CNT.                                               C98970
50420  RST.                                                                C98970
50430      ADD 1 TO CNT.                                                   C98970
50440      MOVE MINUS-ONE TO HIST-VALUE (CNT).                             C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE (CNT).                             C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                              C98970
50455      MOVE ZERO TO KNT.                                               C98970
50460  END-RST-TABLE. EXIT.                                                C98970
50510  SET-HISTOG.                                                         C98970
50512      IF ISCHRONAL IS EQUAL TO ONE AND HIST-NO-OF-OBS IS NOT          C98970
50514        GREATER THAN ISO-CUT-OFF GO TO END-SH.                        C98970
50516      IF ISCHRONAL IS EQUAL TO TWO AND HIST-NO-OF-OBS IS NOT          C98970
50518        GREATER THAN  N1-CUT-OFF GO TO END-SH.                        C98970
50520      IF ISCHRONAL IS EQUAL TO ONE MOVE 1     ISO   1 TO            C98970
50530          HIST-TITLE-4, ELSE MOVE 1 NON-ISO  1 TO HIST-TITLE-4.      C98970
50540      IF DATA-TYPE IS EQUAL TO ONE MOVE 1  WEEKS   1 TO              C98970
50550          HIST-TITLE-3, ELSE MOVE 1 FLT-HOURS1 TO HIST-TITLE-3.      C98970
50560      MOVE CUR-WUC-T TO HIST-TITLE-1.                                 C98970
50590      PERFORM WRITE-HISTOGRAM THRU END-HIST.                          C98970
50600      IF HIST-FLAG IS     EQUAL TO :1: THEN GO TO CF1.                C98970
50610      ADD 1 TO NO-OF-HISTS.                                           C98970
50620  END-SH. EXIT.                                                       C98970
51000  WEEKS-DATA.                                                         C98970
51010      MOVE ZERO TO CNT.                                               C98970
51020  WEEK-A.                                                             C98970
51030      ADD 1 TO CNT.                                                   C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.            C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.         C98970
51060      IF CNT IS LESS THAN 1000 GO TO WEEK-A.                          C98970
51070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.   C98970
51080      GO TO CF1.                                                      C98970
51090  WEEK-B.                                                             C98970
51100      MOVE OBS   TO HIST-VALUE (CNT).                                 C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                C98970
51120  WEEK-C.                                                             C98970
51130      ADD 1 TO FREQ-HIST-VALUE (CNT).                                 C98970
51140      GO TO READ1.                                                    C98970
52000  FLT-DATA.                                                           C98970
52010      MOVE ZERO TO CNT.                                               C98970
52020  FLT-A.                                                              C98970
52030      ADD 1 TO CNT.                                                   C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE (CNT) GO TO FLT-C.             C98970
52050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO FLT-B.          C98970
52060      IF CNT IS LESS THAN 1000 GO TO FLT-A.                           C98970
52070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.   C98970
52080      GO TO CF1                                                       C98970
52090  FLT-B.                                                              C98970
52100      MOVE OBS-1 TO HIST-VALUE (CNT).                                 C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.                C98970
52120  FLT-C.                                                              C98970
52130      ADD 1 TO FREQ-HIST-VALUE (CNT).                                 C98970
52140      GO TO READ1.                                                    C98970
52200  CLOSE-FILES.                                                        C98970
52205      PERFORM SET-HISTOG THRU END-SH.                                 C98970
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52207 CF1.                                                              C98970
52210     CLOSE IN-FILE, HIST-FILE.                                     C98970
52211     IF HIST-FLAG IS EQUAL TO 11 DISPLAY ' HIST ERROR ' UPON       C98970
52212          CONSOLE.                                                 C98970
52215     DISPLAY ' NO OF HISTOGRAMS > ' NO-OF-HISTS UPON CONSOLE.      C98970
52220     DISPLAY ' EOJ C9897 ' UPON CONSOLE.                           C98970
52230     GOBACK.                                                       C98970
95000 COMPUTE-MEAN-VARIANCE.                                            C98970
95010     MOVE ZERO TO CNT.                                             C98970
95020     MOVE ZERO TO MEAN.                                            C98970
95030 CMV-1.                                                            C98970
95040     ADD 1 TO CNT.                                                 C98970
95050     COMPUTE TEMP-COMP > HIST-VALUE (CNT) * FREQ-HIST-VALUE (CNT). C98970
95060     ADD TEMP-COMP TO MEAN.                                        C98970
95070     IF CNT IS LESS THAN KNT GO TO CMV-1.                          C98970
95080     DIVIDE HIST-NO-OF-OBS INTO MEAN.                              C98970
95090     MOVE ZERO TO CNT.                                             C98970
95100     MOVE ZERO TO VARIANCE.                                        C98970
95105     IF HIST-NO-OF-OBS IS LESS THAN 2 GO TO END-CMV.               C98970
95110 CMV-2.                                                            C98970
95120     ADD 1 TO CNT.                                                 C98970
95130     COMPUTE TEMP-COMP > ((HIST-VALUE (CNT) - MEAN) ** 2) *        C98970
95140                                   FREQ-HIST-VALUE (CNT).          C98970
95150     ADD TEMP-COMP TO VARIANCE.                                    C98970
95160     IF CNT IS LESS THAN KNT GO TO CMV-2.                          C98970
95170     COMPUTE VARIANCE > VARIANCE / (HIST-NO-OF-OBS - 1).           C98970
95180     MOVE MEAN TO MEAN-RPT.                                        C98970
95190     MOVE VARIANCE TO VARIANCE-RPT.                                C98970
95200     WRITE HIST-REC FROM MEAN-VARIANCE-LINE.                       C98970
95290 END-CMV.  EXIT.                                                   C98970
97000 WRITE-HISTOGRAM.                                                  C98970
97080     MOVE 00 TO HIST-FLAG.                                         C98970
97090     MOVE ZERO TO HIST-OUT-RANGE-VALUE.                            C98970
97100     MOVE ZERO TO HIST-PAGE-NO.                                    C98970
97140     MOVE -9999.9 TO HIST-VALUE-MAX.                               C98970
97150     MOVE +9999.9 TO HIST-VALUE-MIN.                               C98970
97200     MOVE ZERO TO HIST-INDEX.                                      C98970
97210 HIST-FIND-VMAX-VMIN.                                              C98970
97220     ADD 1 TO HIST-INDEX.                                          C98970
97230     MOVE HIST-VALUE (HIST-INDEX) TO HIST-TEMP.                    C98970
97240     IF HIST-TEMP IS GREATER THAN HIST-VALUE-MAX THEN MOVE         C98970
97250                HIST-TEMP TO HIST-VALUE-MAX.                       C98970
97260     IF HIST-TEMP IS LESS    THAN HIST-VALUE-MIN THEN MOVE         C98970
97270                HIST-TEMP TO HIST-VALUE-MIN.                       C98970
97280     IF HIST-INDEX IS LESS THAN KNT            THEN GO TO          C98970
97290                          HIST-FIND-VMAX-VMIN.                     C98970
97292     IF DATA-TYPE IS EQUAL TO ONE COMPUTE HIST-NO-OF-INTERVALS >   C98970
97294         HIST-VALUE-MAX < 4.                                       C98970
97296     IF DATA-TYPE IS EQUAL TO TWO COMPUTE HIST-NO-OF-INTERVALS >   C98970
97298         HIST-VALUE-MAX / 8 < 4.                                   C98970
97300 HIST-PRINT-TITLE.                                                 C98970
97301     IF HIST-NO-OF-INTERVALS IS LESS THAN 50 MOVE 50 TO            C98970
97302        HIST-NO-OF-INTERVALS.                                      C98970
97304     ADD 1 TO HIST-PAGE-NO.                                        C98970
97306     MOVE 5 TO HIST-LINE-CNT.                                      C98970
97310     WRITE HIST-REC FROM HIST-NEW-PAGE.                            C98970
97320     MOVE HIST-NO-OF-OBS TO HIST-NO-OF-OBS-RPT.                    C98970
97330     MOVE HIST-VALUE-MAX TO HIST-VALUE-MAX-RPT.                    C98970
97340     MOVE HIST-VALUE-MIN TO HIST-VALUE-MIN-RPT.                    C98970
97350     WRITE HIST-REC FROM HIST-TITLE.                               C98970
97355     PERFORM COMPUTE-MEAN-VARIANCE THRU END-CMV.                   C98970
97360     WRITE HIST-REC FROM HIST-DOT-LINE.                            C98970
97370     WRITE HIST-REC FROM HIST-LABEL.                               C98970
97380     WRITE HIST-REC FROM HIST-DOT-LINE.                            C98970
97390 HIST-DUMMY.                                                       C98970
97410     IF HIST-VALUE-MAX IS LESS THAN HIST-VALUE-MIN THEN GO TO      C98970
97420                                HIST-ERROR-2.                      C98970
97430     IF HIST-NO-OF-INTERVALS IS GREATER THAN 200 THEN MOVE 200     C98970
97440                          TO HIST-NO-OF-INTERVALS.                 C98970
97441     MOVE ZERO TO HIST-INDEX.                                      C98970
97442 HIST-RST.                                                         C98970
97443     ADD 1 TO HIST-INDEX.                                          C98970
97444     MOVE ZERO TO HIST-TABLE (HIST-INDEX).                         C98970
97445     IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS               C98970
97446                       THEN GO TO HIST-RST.                        C98970
97450     IF DATA-TYPE IS EQUAL TO ONE MOVE 1.0 TO HIST-INTERVAL-SIZE,  C98970
97460                                ELSE MOVE 8.0 TO HIST-INTERVAL-SIZE. C98970
97500     NOTE COMPUTE UPPER LIMIT FOR EACH INTERVAL.                   C98970
97510     MOVE ZERO TO HIST-INDEX.                                      C98970
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97520      MOVE ZERO            TO HIST-TEMP.                                  C98970
97530  HIST-INC-INTERVAL.                                                      C98970
97540      ADD 1 TO HIST-INDEX.                                                C98970
97550      ADD HIST-INTERVAL-SIZE TO HIST-TEMP.                                C98970
97560      MOVE HIST-TEMP TO HIST-UPPER-LIMIT (HIST-INDEX).                    C98970
97570      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN                C98970
97580                    GO TO HIST-INC-INTERVAL.                              C98970
97600      NOTE PLACE OCCURANCE INTO APPROPRIATE CHANNEL.                      C98970
97610      MOVE ZERO TO HIST-INDEX-2.                                          C98970
97620  HIST-OCCURANCE.                                                         C98970
97630      ADD 1 TO HIST-INDEX-2.                                              C98970
97640      MOVE HIST-VALUE (HIST-INDEX-2) TO HIST-TEMP.                        C98970
97650      MOVE ZERO TO HIST-INDEX.                                            C98970
97660  HIST-INTERVAL.                                                          C98970
97670      ADD 1 TO HIST-INDEX.                                                C98970
97675      MOVE FREQ-HIST-VALUE (HIST-INDEX-2) TO A.                           C98970
97680      IF HIST-TEMP IS NOT GREATER THAN HIST-UPPER-LIMIT                   C98970
97690          (HIST-INDEX) THEN GO TO HIST-ADD-TABLE.                         C98970
97700      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO          C98970
97710                              HIST-INTERVAL.                              C98970
97720      ADD A TO HIST-OUT-RANGE-VALUE.                                      C98970
97730      GO TO HIST-NO-ADD.                                                  C98970
97740  HIST-ADD-TABLE.                                                         C98970
97750      ADD A TO HIST-TABLE (HIST-INDEX).                                   C98970
97751  HIST-NO-ADD.                                                            C98970
97760      IF HIST-INDEX-2 IS LESS KNT              GO TO HIST-OCCURANCE.      C98970
97800      NOTE COMPUTE SCALE VALUE.                                           C98970
97810      MOVE HIST-TABLE (1) TO HIST-TEMP.                                   C98970
97820      MOVE 1 TO HIST-INDEX.                                               C98970
97830  HIST-SCALE.                                                             C98970
97840      ADD 1 TO HIST-INDEX.                                                C98970
97850      IF HIST-TABLE (HIST-INDEX) IS GREATER THAN HIST-TEMP THEN           C98970
97860          MOVE HIST-TABLE (HIST-INDEX) TO HIST-TEMP.                      C98970
97870      IF HIST-INDEX IS LESS     THAN HIST-NO-OF-INTERVALS THEN GO TO      C98970
97880                                     HIST-SCALE.                          C98970
97890      COMPUTE HIST-SCALE-VALUE > (HIST-TEMP < 99) / 100.                  C98970
97895      IF HIST-SCALE-VALUE IS LESS THAN 1 MOVE 1 TO                        C98970
97896         HIST-SCALE-VALUE.                                                C98970
97900      MOVE ZERO TO HIST-INDEX.                                            C98970
97910  HIST-SCALED-VALUES.                                                     C98970
97920      ADD 1 TO HIST-INDEX.                                                C98970
97930      COMPUTE HIST-TABLE-SCALED (HIST-INDEX) >                            C98970
97940              HIST-TABLE (HIST-INDEX) / HIST-SCALE-VALUE.                 C98970
97950      IF HIST-INDEX IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO          C98970
97960                                  HIST-SCALED-VALUES.                     C98970
98000      NOTE PREPARE OUTPUT DATA.                                           C98970
98010      DIVIDE 2 INTO HIST-INTERVAL-SIZE.                                   C98970
98020      MOVE ZERO TO HIST-CUM.                                              C98970
98030      MOVE ZERO TO HIST-LINE.                                             C98970
98040  HIST-PREPARE.                                                           C98970
98050      ADD 1 TO HIST-LINE.                                                 C98970
98060      MOVE HIST-LINE TO HIST-LINE-RPT.                                    C98970
98070      COMPUTE HIST-TEMP > HIST-UPPER-LIMIT (HIST-LINE)                    C98970
98080                              - HIST-INTERVAL-SIZE.                       C98970
98090      MOVE HIST-TEMP TO HIST-MID-POINT-RPT.                               C98970
98100      COMPUTE HIST-PERCENT > HIST-TABLE (HIST-LINE) * 100                 C98970
98110                             / HIST-NO-OF-OBS.                            C98970
98120      MOVE HIST-PERCENT TO HIST-PERCENT-RPT.                              C98970
98130      ADD HIST-PERCENT TO HIST-CUM.                                       C98970
98140      MOVE HIST-CUM TO HIST-CUM-RPT.                                      C98970
98150      MOVE HIST-TABLE (HIST-LINE) TO HIST-FREQ-RPT.                       C98970
98160      MOVE ZERO TO HIST-INDEX.                                            C98970
98170      IF HIST-DIST IS NOT EQUAL TO 101  GO TO HIST-CUM-1.                 C98970
98180      COMPUTE HIST-INDEX-2 > HIST-TABLE-SCALED (HIST-LINE) < 0.5.         C98970
98190      IF HIST-INDEX-2 IS EQUAL TO ZERO GO TO HIST-PREP-SPACE.             C98970
98200  HIST-PREP-DIST.                                                         C98970
98210      ADD 1 TO HIST-INDEX.                                                C98970
98220      MOVE '*' TO HIST-POINT (HIST-INDEX).                                C98970
98230      IF HIST-INDEX IS LESS THAN HIST-INDEX-2 GO TO HIST-PREP-DIST.       C98970
98240      IF HIST-INDEX IS EQUAL TO 100 THEN GO TO HIST-WRITE.                C98970
98250  HIST-PREP-SPACE.                                                        C98970
98260      ADD 1 TO HIST-INDEX.                                                C98970
98270      MOVE SPACE TO HIST-POINT (HIST-INDEX).                              C98970
98280      IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-PREP-SPACE.          C98970
90290      GO TO HIST-WRITE.                                                   C98970
98300  HIST-CUM-1.                                                             C98970
98310      ADD 1 TO HIST-INDEX.                                                C98970
98320      MOVE SPACE TO HIST-POINT (HIST-INDEX).                              C98970
98330      IF HIST-INDEX IS LESS THAN 100 THEN GO TO HIST-CUM-1.               C98970
98338      COMPUTE HIST-INDEX > HIST-CUM < 0.5.                                C98970
98339      IF HIST-INDEX IS EQUAL TO ZERO GO TO HIST-WRITE.                    C98970
98340      MOVE '*' TO HIST-POINT (HIST-INDEX).                                C98970
98400  HIST-WRITE.                                                             C98970
98410      WRITE HIST-REC FROM HIST-LINE-OUT.                                  C98970
98412      ADD 1 TO HIST-LINE-CNT.                                             C98970
98414      IF HIST-PAGE-FLAG IS EQUAL TO ZERO GO TO HIST-NO-PAGING.            C98970
98415      IF HIST-LINE-CNT IS EQUAL TO HIST-PAGE-FLAG                         C98970
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98416                          THEN PERFORM HIST-PRINT-TITLE.                  C98970
98417  HIST-NO-PAGING.                                                        C98970
98420      IF HIST-LINE IS LESS THAN HIST-NO-OF-INTERVALS THEN GO TO           C98970
98430                                    HIST-PREPARE.                       C98970
98440      WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
98450      MOVE HIST-SCALE-VALUE TO HIST-SCALE-RPT.                            C98970
98460      WRITE HIST-REC FROM HIST-SCALE-LINE.                                C98970
98470      IF HIST-OUT-RANGE-VALUE IS EQUAL TO ZERO GO TO HIST-WRITE-B.        C98970
98480      MOVE HIST-OUT-RANGE-VALUE TO HIST-OUT-RANGE-RPT.                    C98970
98490      WRITE HIST-REC FROM HIST-OUT-RANGE-REC.                             C98970
98500  HIST-WRITE-B.                                                           C98970
98510      WRITE HIST-REC FROM HIST-DOT-LINE.                                  C98970
98520      GO TO END-HIST.                                                     C98970
99000  HIST-ERROR-1.                                                           C98970
99010      WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99020      MOVE HIST-ERR-1 TO HIST-TITLE-1.                                    C98970
99030      MOVE HIST-NO-OF-OBS TO HIST-ERR-2.                                  C98970
99040      WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99050      MOVE :1: TO HIST-FLAG.                                              C98970
99060      GO TO END-HIST.                                                     C98970
99100  HIST-ERROR-2.                                                           C98970
99110      MOVE HIST-ERR-4 TO HIST-TITLE-1.                                    C98970
99120      MOVE HIST-ERR-5 TO HIST-TITLE-2.                                    C98970
99130      WRITE HIST-REC FROM HIST-TITLE.                                     C98970
99140      MOVE :1: TO HIST-FLAG.                                              C98970
99150      GO TO END-HIST.                                                     C98970
99200  HIST-ERR-3.                                                             C98970
99210      MOVE :1: TO HIST-FLAG.                                              C98970
99990  END-HIST. EXIT.                                                         C98970
/*       PLACE COBOL SOURCE BEFORE
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                                       1440 CDS
TFG  DT03    11  020Z080
    5    5



*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP=(OLD,KEEP),VOL=SER=+F1,UNIT=T+F1                     T12
//TPR.TU24     DD   DISP=(OLD,KEEP),VOL=SER=+F7,UNIT=T+F7                     T24
//TPR.TPRIN    DD   *,SPACE=(TRK,(1,1))
T/P  TU12    10100202020
T/P  TU24    1100130R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
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6.12 AIRCRAFT INSPECTION HISTORIES

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//C9897E JOB   01,I @ WANG     1,PRTY>02,TYPRUN>HOLD
//C9897E EXEC  PY66BL,TIME>03,ACCT>D38323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>*A.9897418.   CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1.   CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU22     DD   DISP>(,PASS),UNIT>(T+F5,1,DEFER),DSN>*E.9897444.   CT22    1
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                1440 CDS
00000          COMBINE     COMPILE                6, WANG.                C98970
01000  IDENTIFICATION DIVISION.                                          C98970
01010  PROGRAM-ID. C9897                                                 C98970
01020  AUTHOR. A. J. BOWKER                                              C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                           C98970
01040  DATE-WRITTEN.  5 MAY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060          PLOT FOR SIX WUC V FLT-HRS.                               C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT DATA-FILE              ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT PLOT-FILE              ASSIGN TO UT-S-TU14             C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
02160      SELECT REPORT-FILE            ASSIGN TO UT-S-TU22             C98970
02170          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  DATA-FILE                                                     C98970
11110                                                                    C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 40 RECORDS                                     C98970
11140      RECORD CONTAINS 70            CHARACTERS                      C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE DATA-REC.                                    C98970
12000  01  DATA-REC SYNC.                                               C98970
12210      02  FILLER                    PICTURE X(5).                  C98970
12220      02  SERIAL-NO                 PICTURE X(8).                  C98970
12230      02  WEEK                      PICTURE 999.                   C98970
12240      02  WUC                       PICTURE X(5).                  C98970
12250      02      FILLER REDEFINES WUC.                                 C98970
12260          03  WUC-1                 PICTURE X.                     C98970
12270          03  FILLER                PICTURE X(4).                  C98970
12280      02  FILLER                    PICTURE X(27).                 C98970
12290      02  IDENT                     PICTURE X.                     C98970
12300      02  FILLER                    PICTURE X(4).                  C98970
12310      02  FLT-HRS                   PICTURE S99999V9.              C98970
12320      02  FILLER                    PICTURE X(11).                 C98970
21100  FD  PLOT-FILE                                                     C98970
21110                                                                    C98970
21120      RECORDING MODE IS F                                           C98970
21130      BLOCK CONTAINS 20 RECORDS                                     C98970
21140      RECORD CONTAINS 80            CHARACTERS                      C98970
21150      LABEL RECORDS ARE OMITTED                                     C98970
21160      DATA RECORDS ARE PLOT-FILE-REC.                               C98970
21170  01  PLOT-FILE-REC SYNC.                                          C98970
21180      02  FILLER                    PICTURE X(80).                 C98970
22100  FD  REPORT-FILE                                                   C98970
22120      RECORDING MODE IS F                                           C98970
22130      BLOCK CONTAINS 15 RECORDS                                     C98970
22140      RECORD CONTAINS 130           CHARACTERS                      C98970
22150      LABEL RECORDS ARE OMITTED                                     C98970
22160      DATA RECORDS ARE PLOT-REC.                                    C98970
22170  01  PLOT-REC SYNC.                                               C98970
22180      02  FILLER                    PICTURE X(130).                C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  77  LINE-CNT                 SYNC PICTURE 9(4) VALUE ZERO.       C98970
30020  77  TOTAL-LINE-CNT           SYNC PICTURE 9(7) VALUE ZERO.       C98970
30030  77  NO-OF-WEEKS    COMPUTATIONAL  PICTURE S999 VALUE ZERO SYNC.   C98970
30040  77  TABLE-POS      COMPUTATIONAL  PICTURE S999 VALUE ZERO SYNC.   C98970
30050  77  NO-LINE        COMPUTATIONAL  PICTURE S999 VALUE +78  SYNC.   C98970
30060  77  TEMP-LOC       COMPUTATIONAL  PICTURE S9999V99 SYNC.          C98970
30070  77  LINE-POS       COMPUTATIONAL  PICTURE S999 VALUE ZERO SYNC.   C98970
30080  77  TEMP-VALUE     COMPUTATIONAL  PICTURE S99999V9 SYNC.          C98970
30090  77  DEP-INTERVAL   COMPUTATIONAL  PICTURE S99V9 SYNC.             C98970
30100  77  MIN-DEP-VALUE  COMPUTATIONAL  PICTURE S99999V9 SYNC.         C98970
30110  77  PLOT-FLAG                     PICTURE X VALUE SPACE SYNC.    C98970
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30120  77  MONE          COMPUTATIONAL PICTURE S99  VALUE -1 SYNC.          C98970
30130  77  CNT           COMPUTATIONAL PICTURE S999 VALUE ZERO SYNC.        C98970
30140  77  PAGE-NO       COMPUTATIONAL PICTURE S999 VALUE ZERO SYNC.        C98970
30150  77  MAX-DEP-VALUE COMPUTATIONAL PICTURE S9[5]V9 SYNC.                C98970
30160  77  DEP-1         COMPUTATIONAL PICTURE S9[5]V9 SYNC.                C98970
30170  77  DEP-2         COMPUTATIONAL PICTURE S9[5]V9 SYNC.                C98970
30180  77  DEP-3         COMPUTATIONAL PICTURE S9[5]V9 SYNC.                C98970
30190  77  DEP-4         COMPUTATIONAL PICTURE S9[5]V9 SYNC.                C98970
30200  77  WUC-NO        COMPUTATIONAL PICTURE S999 SYNC.                   C98970
30210  77  CNTA          COMPUTATIONAL PICTURE S999 SYNC.                   C98970
30220  77  CUR-WEEK      COMPUTATIONAL PICTURE S999 SYNC.                   C98970
30230  77  NO-OF-COLS    COMPUTATIONAL PICTURE S999 SYNC.                   C98970
30240  77  TEMP      COMPUTATIONAL SYNC PICTURE S9[5].                      C98970
30250  77  IND-CNT  COMPUTATIONAL SYNC PICTURE S999 VALUE ZERO.             C98970
31000  01  DEP-TITLE SYNC.                                                  C98970
31010      02  FILLER                  PICTURE X[40] VALUE SPACE.           C98970
31020      02  DEPENDENT-TITLE         PICTURE X[80].                       C98970
31030      02  FILLER                  PICTURE X[10] VALUE ! #1.            C98970
31100  01      INDEPENDENT-TITLE SYNC.                                       C98970
31110      02  IND-BLOCK               PICTURE X[80].                       C98970
31120      02  FILLER REDEFINES IND-BLOCK.                                  C98970
31130          03  IND                 PICTURE X OCCURS 80 TIMES.           C98970
31200  01  WUC-LIST SYNC.                                                   C98970
31210      02  NO-OF-WUC               PICTURE 9.                           C98970
31220      02  FILLER                  PICTURE X[8].                        C98970
31230      02  WUC-LIST-1 OCCURS 6 TIMES.                                   C98970
31240          03  WUC-TAB             PICTURE X[5].                        C98970
31250          03  FILLER              PICTURE X[5].                        C98970
31260      02  WUC-LIST-2 OCCURS 6 TIMES.                                   C98970
31270          03  WUC-SYMBOL          PICTURE X.                           C98970
31280      02  FILLER                  PICTURE X[5].                        C98970
31300  01  FILLER SYNC.                                                     C98970
31310      02  FILLER-1 OCCURS 200 TIMES.                                   C98970
31320          03  TAB.  OCCURS 7 TIMES PICTURE S9[5]V9 COMPUTATIONAL.      C98970
31400  01  PLOT-TITLE SYNC.                                                 C98970
31410      02  FILLER                  PICTURE X[22]    VALUE              C98970
31420            !1     AIRCRAFT NUMBER !.                                 C98970
31430      02  CUR-S-N                 PICTURE X[8] VALUE SPACE.            C98970
31440      02  FILLER                  PICTURE X[93]  VALUE SPACE.          C98970
31450      02  FILLER                  PICTURE X[4] VALUE !PAGE!.           C98970
31460      02  PAGE-NO-RPT             PICTURE Z9.                          C98970
31470      02  FILLER                  PICTURE X VALUE !#!.                 C98970
31500  01  WUC-DATA SYNC.                                                   C98970
31510      02  FILLER                  PICTURE X[10] VALUE SPACE.           C98970
31520      02  FILLER                  PICTURE X[119] VALUE SPACE.          C98970
31590      02  FILLER                  PICTURE X VALUE !#!.                 C98970
31600  01  DEP-AXIS SYNC.                                                   C98970
31610      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31620      02  DEP-MIN-RPT             PICTURE ZZZZ9.                       C98970
31630      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31640      02  DEP-1-RPT               PICTURE ZZZZ9.                       C98970
31650      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31660      02  DEP-2-RPT               PICTURE ZZZZ9.                       C98970
31670      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31680      02  DEP-3-RPT               PICTURE ZZZZ9.                       C98970
31690      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31700      02  DEP-4-RPT               PICTURE ZZZZ9.                       C98970
31710      02  FILLER                  PICTURE X[15] VALUE SPACE.           C98970
31720      02  DEP-MAX-RPT             PICTURE ZZZZ9.                       C98970
31730      02  FILLER                 PICTURE X[10] VALUE                   C98970
31740            !        #1.                                               C98970
31800  01  DEP-LINE SYNC.                                                   C98970
31810      02  FILLER                  PICTURE X[50] VALUE                  C98970
31820            !                     !---------!---------!---------!1.    C98970
31830      02  FILLER                  PICTURE X[50] VALUE                  C98970
31840            !--------!---------!---------!---------!---------!1.      C98970
31850      02  FILLER                  PICTURE X[30] VALUE                  C98970
31860            !---------!---------!         #1.                         C98970
31900  01  PLOT-LINE SYNC.                                                  C98970
31910      02  FILLER                  PICTURE X[8] VALUE SPACE.            C98970
31920      02  IND-OUT                 PICTURE X.                           C98970
31930      02  FILLER                  PICTURE X[5] VALUE SPACE.            C98970
31940      02  WEEK-RPT                PICTURE ZZ9.                         C98970
31950      02  FILLER                  PICTURE XXX  VALUE !  !!.            C98970
31960      02  OUTPUT-LINE  OCCURS 100 TIMES                                C98970
31970                                   PICTURE X.                          C98970
31980      02  FILLER                  PICTURE X[10] VALUE                  C98970
31990            !        #1.                                               C98970
32000  01  WUC-TITLE-LINE SYNC.                                             C98970
32010      02  FILLER                  PICTURE X[10] VALUE SPACE.           C98970
32020      02  FILLER OCCURS 6 TIMES.                                       C98970
32030          03  SYMB                PICTURE X.                           C98970
32040          03  EQU                 PICTURE XXX.                         C98970
32050          03  WUCT                PICTURE X[5].                        C98970
32060          03  BLANK-SPACE         PICTURE X.                           C98970
32070      02  FILLER                  PICTURE X[89] VALUE SPACE.           C98970
32080      02  FILLER                  PICTURE X     VALUE !#!.             C98970
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33000  01  REPORT-ID SYNC.                                                  C98970
33010      02  FILLER                      PICTURE X(80) VALUE              C98970
33020            '$9897C60  TF7919-01 142-8 1       1/2                   C98970
33030      02  FILLER                      PICTURE X(50) VALUE SPACE.       C98970
33040      02  FILLER                      PICTURE X(30) VALUE              C98970
33050            '                                    $1.                  C98970
50000  PROCEDURE DIVISION.                                                 C98970
50010      OPEN INPUT DATA-FILE, PLOT-FILE,                                C98970
50020           OUTPUT                                 REPORT-FILE.        C98970
50040      MOVE 200 TO NO-OF-WEEKS.                                        C98970
50050      PERFORM READ-PLOT-DATA THRU END-PR.                             C98970
50060      ADD NO-OF-WUC, 1 GIVING NO-OF-COLS.                             C98970
50070      WRITE PLOT-REC FROM REPORT-ID.                                  C98970
50100  READ-DATA-FILE.                                                     C98970
50110      READ DATA-FILE.                                                 C98970
50120                   AT END GO TO CLOSE-FILES.                          C98970
50130      IF IDENT IS NOT EQUAL TO '3' GO TO READ-DATA-FILE.              C98970
50140      IF WUC-1 IS NOT EQUAL TO '0' GO TO READ-DATA-FILE.              C98970
50200      MOVE ZERO TO WUC-NO.                                            C98970
50210  VALIDATE-WUC.                                                       C98970
50220      ADD 1 TO WUC-NO                                                 C98970
50230      IF WUC IS EQUAL TO WUC-TAB (WUC-NO) GO TO CHECK-S-N.            C98970
50240      IF WUC-NO IS LESS THAN NO-OF-WUC, GO TO VALIDATE-WUC.           C98970
50250      GO TO READ-DATA-FILE.                                           C98970
50300  CHECK-S-N.                                                          C98970
50310      IF SERIAL-NO IS EQUAL TO CUR-S-N GO TO ADD-DATA.                C98970
50320      IF CUR-S-N IS EQUAL TO SPACE GO TO FIRST-S-N.                   C98970
50330      PERFORM PLOT-DATA THRU END-PD.                                  C98970
50340  FIRST-S-N.                                                          C98970
50350      MOVE SERIAL-NO TO CUR-S-N.                                      C98970
50360      MOVE ZERO TO CNT.                                               C98970
50370  ZERO-TABLE-1.                                                       C98970
50380      ADD 1 TO CNT.                                                   C98970
50390      MOVE ZERO TO CNTA.                                              C98970
50400  ZERO-TABLE-2.                                                       C98970
50410      ADD 1 TO CNTA.                                                  C98970
50420      MOVE NONE TO TABL (CNT, CNTA).                                  C98970
50430      IF CNTA IS LESS THAN 7           GO TO ZERO-TABLE-2.            C98970
50440      IF CNT  IS LESS THAN NO-OF-WEEKS, GO TO ZERO-TABLE-1.           C98970
50450      MOVE WEEK TO CUR-WEEK.                                          C98970
50460      MOVE  1   TO TABLE-POS.                                         C98970
50465      MOVE  1   TO NO-OF-WEEKS.                                       C98970
50470      MOVE WEEK TO TABL (1, 7).  GO TO ADD-LINE.                      C98970
50500  ADD-DATA.                                                           C98970
50510      IF WEEK IS EQUAL TO CUR-WEEK GO TO ADD-LINE.                    C98970
50520  ADD-DATA-1.                                                         C98970
50530      ADD 1 TO TABLE-POS.                                             C98970
50540      ADD 1 TO CUR-WEEK.                                              C98970
50545      ADD 1 TO NO-OF-WEEKS.                                           C98970
50550      MOVE CUR-WEEK TO TABL (TABLE-POS, 7).                           C98970
50560      GO TO ADD-DATA.                                                 C98970
50700  ADD-LINE.                                                           C98970
50710      MOVE FLT-HRS TO TABL (TABLE-POS, WUC-NO).                       C98970
50720      GO TO READ-DATA-FILE.                                           C98970
50800  READ-PLOT-DATA.                                                     C98970
50810      READ PLOT-FILE INTO DEPENDENT-TITLE, AT END GO TO END-PR.       C98970
50820      READ PLOT-FILE INTO INDEPEND-TITLE,  AT END GO TO END-PR.       C98970
50830      READ PLOT-FILE INTO WUC-LIST,        AT END GO TO END-PR.       C98970
50880      PERFORM PREP-TITLES THRU END-P7.                                C98970
50890  END-PR. EXIT.                                                       C98970
51000  PLOT-DATA.                                                          C98970
51010      MOVE ZERO TO PAGE-NO.                                           C98970
51020      MOVE <9999    TO MIN-DEP-VALUE.                                 C98970
51030      MOVE ZERO TO CNT.                                               C98970
51040  FIND-MIN.                                                           C98970
51050      ADD 1 TO CNT.                                                   C98970
51055      IF TABL (1, CNT) IS EQUAL TO NONE GO TO F-M-A.                  C98970
51060      IF TABL (1, CNT) IS LESS    THAN MIN-DEP-VALUE,  MOVE           C98970
51070         TABL (1, CNT) TO MIN-DEP-VALUE.                              C98970
51075  F-M-A.                                                              C98970
51080      IF CNT IS LESS THAN NO-OF-COLS GO TO FIND-MIN.                  C98970
51100      MOVE ZERO TO MAX-DEP-VALUE.                                     C98970
51110      MOVE ZERO TO CNT.                                               C98970
51120  FIND-MAX.                                                           C98970
51130      ADD 1 TO CNT.                                                   C98970
51140      IF TABL (NO-OF-WEEKS, CNT) IS GREATER THAN MAX-DEP-VALUE,       C98970
51150          MOVE TABL (NO-OF-WEEKS, CNT) TO MAX-DEP-VALUE.              C98970
51160      IF CNT IS LESS THAN NO-OF-COLS GO TO FIND-MAX.                  C98970
51200      MOVE MIN-DEP-VALUE TO TEMP.                                     C98970
51205      COMPUTE TEMP          > TEMP           / 100 * 100.             C98970
51206      MOVE TEMP TO MIN-DEP-VALUE.                                     C98970
51210      MOVE MAX-DEP-VALUE TO TEMP.                                     C98970
51215      COMPUTE TEMP          > (TEMP    < 100) / 100 * 100.            C98970
51216      MOVE TEMP TO MAX-DEP-VALUE.                                     C98970
51220      COMPUTE DEP-INTERVAL  > (MAX-DEP-VALUE - MIN-DEP-VALUE)         C98970
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51230                                                                  100.    C98970
51240      COMPUTE DEP-1 > MIN-DEP-VALUE < [DEP-INTERVAL * 20].                C98970
51250      COMPUTE DEP-2 > MIN-DEP-VALUE < [DEP-INTERVAL * 40].                C98970
51260      COMPUTE DEP-3 > MIN-DEP-VALUE < [DEP-INTERVAL * 60].                C98970
51270      COMPUTE DEP-4 > MIN-DEP-VALUE < [DEP-INTERVAL * 80].                C98970
51300      MOVE MIN-DEP-VALUE TO DEP-MIN-RPT.                                  C98970
51310      MOVE DEP-1 TO DEP-1-RPT.                                            C98970
51320      MOVE DEP-2 TO DEP-2-RPT.                                            C98970
51330      MOVE DEP-3 TO DEP-3-RPT.                                            C98970
51340      MOVE DEP-4 TO DEP-4-RPT.                                            C98970
51350      MOVE MAX-DEP-VALUE TO DEP-MAX-RPT.                                  C98970
51400 WRITE-PLOT-TITLE.                                                        C98970
51410      ADD 1 TO PAGE-NO.                                                   C98970
51420      MOVE PAGE-NO TO PAGE-NO-RPT.                                        C98970
51430      WRITE PLOT-REC FROM PLOT-TITLE.                                     C98970
51440      WRITE PLOT-REC FROM WUC-TITLE-LINE.                                 C98970
51450      WRITE PLOT-REC FROM DEP-TITLE.                                      C98970
51460      WRITE PLOT-REC FROM DEP-AXIS.                                       C98970
51470      WRITE PLOT-REC FROM DEP-LINE.                                       C98970
51472      MOVE 5 TO LINE-CNT.                                                 C98970
51474      ADD  5 TO TOTAL-LINE-CNT.                                           C98970
51476      MOVE ZERO TO IND-CNT.                                               C98970
51480 END-WPT.                                                                 C98970
51490      MOVE ZERO TO TABLE-POS.                                             C98970
51500 CLEAR-OUTPUT-BLOCK.                                                      C98970
51510      MOVE ZERO TO CNT.                                                   C98970
51520 COB.                                                                     C98970
51530      ADD 1 TO CNT.                                                       C98970
51540      MOVE SPACE TO OUTPUT-LINE [CNT].                                    C98970
51550      IF CNT IS LESS THAN 100 GO TO COB.                                  C98970
51600      ADD 1 TO TABLE-POS.                                                 C98970
51610      MOVE TABL  [TABLE-POS, 7] TO WEEK-RPT.                              C98970
51620      ADD 1 TO IND-CNT, MOVE IND [IND-CNT] TO IND-OUT.                    C98970
51622      IF IND-CNT IS GREATER THAN 79 MOVE ZERO TO IND-CNT.                 C98970
51630      MOVE ZERO TO CNT.                                                   C98970
51640 PREP-PLOT.                                                               C98970
51650      ADD 1 TO CNT.                                                       C98970
51660      MOVE TABL  [TABLE-POS, CNT] TO TEMP-LOC.                            C98970
51670      IF TEMP-LOC                  IS NOT EQUAL TO NONE GO TO FILL-LN.    C98970
51680      IF CNT IS LESS THAN NO-OF-WUC  GO TO PREP-PLOT.                     C98970
51690      GO TO WRITE-LINE.                                                   C98970
51700 FILL-LN.                                                                 C98970
51740      MOVE ZERO TO LINE-POS.                                              C98970
51750      MOVE MIN-DEP-VALUE TO TEMP-VALUE.                                   C98970
51800 FIND-LINE-POS.                                                           C98970
51810      ADD 1 TO LINE-POS.                                                  C98970
51820      ADD DEP-INTERVAL TO TEMP-VALUE.                                     C98970
51830      IF TEMP-LOC NOT GREATER THAN TEMP-VALUE GO TO FILL-SPACE.           C98970
51840      IF LINE-POS IS LESS THAN 100 GO TO FIND-LINE-POS.                   C98970
51850      NOTE THRU HERE IS AN ERROR.                                         C98970
51860      DISPLAY ' ERROR FIND-LINE-POS ' TEMP-LOC UPON CONSOLE.              C98970
51870      GO TO CFILES.                                                       C98970
51900 FILL-SPACE.                                                              C98970
51904      IF OUTPUT-LINE  [LINE-POS] IS NOT EQUAL TO SPACE MOVE '*' TO        C98970
51905      OUTPUT-LINE [LINE-POS], GO TO WRITE-LINE.                           C98970
51910      MOVE WUC-SYMBOL [CNT] TO OUTPUT-LINE [LINE-POS].                    C98970
51920      GO TO PREP-PLOT.                                                    C98970
52000 WRITE-LINE.                                                              C98970
52010      IF LINE-CNT IS GREATER THAN NO-LINE, WRITE PLOT-REC FROM            C98970
52015       DEP-LINE  ADD 1 TO TOTAL-LINE-CNT, PERFORM WRITE-PLOT-TITLE.       C98970
52030      WRITE PLOT-REC FROM PLOT-LINE.                                      C98970
52040      ADD 1 TO LINE-CNT.                                                  C98970
52050      ADD 1 TO TOTAL-LINE-CNT.                                            C98970
52060      IF TABLE-POS IS LESS THAN NO-OF-WEEKS GO TO                         C98970
52070                                        CLEAR-OUTPUT-BLOCK.               C98970
52090 END-PD, EXIT.                                                            C98970
60000 CLOSE-FILES.                                                             C98970
60010      PERFORM PLOT-DATA THRU END-PD.                                      C98970
60100 CFILES.                                                                  C98970
60110      DISPLAY ' TOTAL LINE COUNT > ' TOTAL-LINE-CNT UPON CONSOLE.         C98970
60170      CLOSE DATA-FILE, PLOT-FILE, REPORT-FILE WITH LOCK.                  C98970
60180      DISPLAY ' END OF JOB 9897 ' UPON CONSOLE.                           C98970
60190      GOBACK.                                                             C98970
61100 PREP-TITLES.                                                             C98970
61110      MOVE ZERO TO CNT.                                                   C98970
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61120  PTA.                                                              C98970
61130      ADD 1 TO CNT.                                                 C98970
61140      MOVE WUC-SYMBOL [CNT] TO SYMB [CNT].                          C98970
61150      MOVE WUC-TAB    [CNT] TO WUCT [CNT].                          C98970
61160      MOVE SPACE            TO EQU  [CNT].                          C98970
61170      MOVE SPACE TO BLANK-SPACE [CNT].                              C98970
61180      IF CNT IS LESS THAN 6          GO TO PTA.                     C98970
61200      MOVE ZERO TO CNT.                                             C98970
61210  PTB.                                                              C98970
61220      ADD 1 TO CNT.                                                 C98970
61230      MOVE ' > '  TO EQU [CNT].                                     C98970
61240      IF CNT IS LESS THAN NO-OF-WUC GO TO PTB.                      C98970
61290  END-PT.  EXIT.                                                    C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFG1N     DD   *,SPACE>[CYL,[1,1]]                                1440 CDS
TFG  TU14     11  020.080
                                                        FLIGHT HOURS.
                                                 WEEKS.
5        03300      03310      03320      03330      03400              12345
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   UISP>[OLD,KEEP],VOL>SER>=F1,UNIT>T+F1                T12
//TPR.TU22      DD   DISP>[OLD,KEEP],VOL>SER>=F5,UNIT>T+F5                T22
//TPR.TPR1N     DD   *,SPACE>[TRK,[1,1]]
T/P  TU12     10100702070
T/P  TU14     10100802080
T/P  TU22     19981309000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.13 EFFECTIVENESS MODEL

```
//T9897X JOB   01,' G. WANG,   ',PRTY=02                    X3408
//C9897X EXEC  P9645G,PARM.ASSY='EMAP,LIST,UCD',                    C
//             PARM.LKED='LIST,XREF',TIME=10,ACCT=U35323007
//ASSY.SYSIN   DD  DATA,SPACE=(CYL,(1,1))                          1440 CDS
C        EFFECTIVENESS MODEL-- 370
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C      210
C  THE FOLLOWING VARIABLES ARE REQUIRED INPUT                               220
C     HEAD           80 CHARACTER DESCRIPTOR                              230
C     DELI(I)        THE ITH VALUE OF THE BASIC INSPECTION INTERVAL LENGTH  240
C     NI             NUMBER OF VALUES OF DELI                             250
C     KI             SET EQUAL TO 1,2,3,4 FOR DELI IN WEEKS,FLIGHT HOURS,  260
C                    SORTIES,AND LANDINGS, RESPECTIVELY                    270
C     NSCI           THE NUMBER OF MAJOR SCHEDULED INSPECTION TYPES       280
C     NFOL(I)        THE NUMBER OF MAJOR SCHEDULED INSPECTION TYPES THAT  290
C                    CAN OCCUR AT THE END OF AN INTERVAL FOLLOWING AN      300
C                    INSPECTION OF TYPE I                                  310
C     NSCH(I,J)      THE NUMBER OF INTERVALS FOR WHICH INSPECTION TYPE J   320
C                    FOLLOWS INSPECTION TYPE I                             330
C     NSPI           THE NUMBER OF SPECIAL INSPECTION TYPES               340
C     DISP(I),SISP(I)        THE MEAN AND STANDARD DEVIATION OF THE       350
C                    INTERVAL LENGTH FOR SPECIAL INSPECTION TYPE I         360
C     K1S(I)         SET EQUAL TO 1 OR 2 FOR DISP IN WEEKS OR FLIGHT HOURS 370
C                    RESPECTIVELY                                          380
C     R              RATIO OF NUMBER OF PREFLIGHTS TO NUMBER OF BASIC      390
C                    POSTFLIGHTS                                           400
C     EMHI(I,J),SMHI(I,J)    MEAN AND STANDARD DEVIATION OF MANHOURS FOR   410
C                    INSPECTION TYPE J WHEN IT FOLLOWS TYPE I              420
C     AN(I,J),BN(I,J)        MEAN NORM FOR INSPECTION TYPE J WHEN IT FOL   430
C                    TYPE I EQUALS AN(I,J)+BN(I,J)*DELI                    440
C     SNI(I,J)       STD. DEV. OF NORM FOR INSPECTION TYPE J WHEN IT FOLLO 450
C                    TYPE I                                                460
C     EMHS(I),SMHS(I)        MEAN AND STD. DEV. OF MANHOURS FOR SPECIAL    470
C                    INSPECTION TYPE I                                     480
C     ENS(I),SNS(I)          MEAN AND STD. DEV. OF NORM FOR SPECIAL        490
C                    INSPECTION TYPE I                                     500
C     EMHP,SMHP      MEAN AND STANDARD DEVIATION OF PREFLIGHT MANHOURS     510
C     EMHB,SMHB      MEAN AND STD. DEV. OF BASIC POSTFLIGHT MANHOURS       520
C     KSET           NUMBER OF WORK UNIT CODE SETS                         530
C     ANU(I,K),BNU(I,K)      NUMBER OF UNSCHED. ACTIONS PER UNIT TIME ON   540
C                    K EQUALS ANU(I,K)+BNU(I,K)*(TIME AFTER INSPECTION     550
C                    TYPE I)                                               560
C     DIK(I,K)       SET EQUAL TO 1, WHEN ANU,BNU,ANAB,BNAB, REFER TO      570
C                    LATEST INSPECTION AND 3, WHEN THEY REFER TO THE       580
C                    PREVIOUS INSPECTION                                   590
C     UMAS(I,K)      STEADY-STATE UNSCHED. ACTION RATE FOR SET K           600
C     EMHU(K),SMHU(K)        MEAN AND STD. DEV. OF MANHOURS PER            610
C                    UNSCHEDULED ACTION ON SET K                           620
C     ENU(K),SNU(K)          MEAN AND STD. DEV. OF NORM PER UNSCHEDULED    630
C                    ACTION ON SET K                                       640
C     ANAB(I,K),BNAB(I,K)    NUMBER OF ABORT MAINTENANCE ACTIONS ON SET    650
C                    PER SORTIE EQUALS ANAB(I,K)+BNAB(I,K)*(TIME AFTER     660
C                    INSPECTION TYPE I)                                    670
C     ENWK(K)        MEAN HORS PER WEEK FOR SET K                          680
C     EFHW,SFHW      MEAN AND STD. DEV. OF FLIGHT HOURS PER WEEK           690
C     ESOW,SSOW      MEAN AND STD. DEV. OF SORTIES PER WEEK                700
C     ELDW,SLDW      MEAN AND STD. DEV. OF LANDINGS PER WEEK               710
C     AIES           NUMBER OF ACCIDENTS, INCIDENTS, EUMRS PER SORTIE      720
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C      730

      COMMON  I(NT,                                                         20
C        INPUT DATA                                                         30
     1DELI(10),KI,NSCI,NFOL(3),NSCH(3,3),NSPI,D1SP(60),S1SP(60),K1S(60),    40
     2R,EMHI(3,3),SMHI(3,3),AN(3,3),BN(3,3),SNI(3,3),EMHS(60),SMHS(60),     50
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,N1,KSET,ANU(3,60),BNU(3,60),      60
     4EMHU(60),SMHU(60),ENU(60),SNU(60),ANAB(3,60),BNAB(3,60),ENWK(60),     70
     5EFHW,SFHW,ESOW,SSOW,ELDW,SLDW,AIES,DIK(3,60),UMAS(3,60),              80
C        DATA GENERATED BY PEPF                                             90
     6WKD(150),PWKU(150),EWKD,SWKD,EWKM,SWKM,EPFH,SPFH,EBPH,SRPH,NINT,     100
     6X(61),FX(61),EFHD,VFHD,                                              110
C        DATA GENERATED BY SP1S                                            120
     7EMSD,SMSD,ENSD,SNSD,                                                 130
C        DATA GENERATED BY INVL                                            140
     8LMHD(3,3),SMHU(3,3),END(3,3),SND(3,3),EED(3,3),SED(3,3),DDI(3),      150
     8UMAC(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                        160
C        DATA GENERATED BY MPD                                             170
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP(10),SEMP(10),DMP(10)        180
     9,EMHF(10),SMHF(10)                                                   190
      DIMENSION HEAD(20)                                                   180
C     READ 9999 FOR FIRST AND LAST CARD END OF FILE TEST                    182
      READ (5,99) LOFQ                                                     184
```

```
C  READ INPUT DATA                                                        740
    1 READ(5,100) HEAD                                                   750
      IF (HEAD(1)-EOF9) 3,2,3                                            700
    2 CALL EOJMSG                                                        202
      CALL EXIT                                                          705
    3 READ(5,102) EFHW,SFHW,ESOW,SSOW,ELOW,SLOW,AIES                     780
      READ(5,102) R,EMHP,SMHP,EMHB,SMHB                                  790
      READ(5,101) NI,K1,NSCT,NSPT,KSET                                   800
      READ(5,102) (DELI(I),I=1,NI)                                       810
      READ(5,101) (NFOL(I),I=1,NSCT)                                     820
      DO 10 I=1,NSCT                                                     830
      N=NFOL(I)                                                          840
      READ(5,101) (NSCH(I,J),J=1,N)                                      850
      READ(5,104) (EMHI(I,J),SMHI(I,J),AN(I,J),BNII,J),SNI(I,J),J=1,N)   860
C  READ WOC SET DATA DEPENDENT ON TIME                                   870
      READ(5,103) (ANU(I,K),BNU(I,K),ANAB(I,K),BNAB(I,K),K=1,KSET)       880
      READ(5,102) (DIK(I,K),K=1,KSET)                                    890
      READ(5,102) (UMAS(I,K),K=1,KSET)                                   900
   10 CONTINUE                                                           910
C  READ WOC SET DATA INDEPENDENT OF TIME                                 920
      READ(5,104) (EMHD(K),SMHU(K),ENU(K),SNU(K),ENWK(K),K=1,KSET)       930
C  READ SPECIAL INSPECTION DATA                                          940
      READ(5,105) (EMHS(I),SMHS(I),ENS(I),SNS(I),DISP(I),SISP(I),KIS(I),  950
     1I=1,NSPT)                                                          960
      WRITE (6,300) HEAD                                                 970
      WRITE (6,301) EFHW,SFHW                                            980
      WRITE (6,302) ESOW,SSOW                                            990
      WRITE (6,303) ELOW,SLOW                                           1000
      WRITE (6,304) EMHP,SMHP                                           1010
      WRITE (6,305) EMHB,SMHB                                           1020
      WRITE (6,306) R                                                   1030
      WRITE (6,307) AIES                                                1040
      WRITE(6,308)                                                      1050
      DO 15 I=1,NSCT                                                    1060
      N=NFOL(I)                                                         1070
      WRITE(6,309) (I,J, EMHI(I,J),SMHI(I,J),AN(I,J),BN(I,J),SNI(I,J),  1080
     1NSCH(I,J),J=1,N)                                                  1090
   15 CONTINUE                                                          1100
      WRITE(6,310)                                                      1110
      WRITE(6,311)                                                      1120
      WRITE(6,311) ((I,K ,ANU(I,K),BNU(I,K),UMAS(I,K),ANAB(I,K),        1130
     1BNAB(I,K),K=1,KSET),I=1,NSCT)                                     1140
      WRITE(6,312)                                                      1150
      WRITE(6,313) (K,EMHD(K),SMHD(K),ENU(K),SNU(K),ENWK(K),K=1,KSET)   1160
      WRITE(6,314)                                                      1170
      WRITE(6,315) (J,EMHS(J),SMHS(J),ENS(J),SNS(J),DISP(J),SISP(J),    1180
     1 KIS(J),J=1,NSPT)                                                 1190
      WRITE(6,400)                                                      1200
C  PERFORM CALCULATIONS                                                 1210
      DO 16 IINT=1,NI                                                   1220
      CALL PEPF                                                         1230
      CALL SPIS                                                         1240
      CALL INVL                                                         1250
      CALL MPD                                                          1260
C  PRINT INTERVAL RESULTS                                               1270
      WRITE(6,401) DELI(IINT)                                           1280
      WRITE(6,402)                                                      1290
      WRITE(6,403) EWKD,SWKD                                            1300
      WRITE(6,404) EPFH,SPFH                                            1310
      WRITE(6,405) EBPH,SBPH                                            1320
      WRITE(6,406) EMSD,SMSD                                            1330
      WRITE(6,407) ENSD,SNSD                                            1340
      WRITE(6,413)                                                      1350
      WRITE(6,414) (I,UMAC(I),I=1,NSCT)                                 1360
      WRITE(6,415)                                                      1370
      WRITE(6,417) (I,EACM(I),SACM(I),I=1,NSCT)                         1380
      WRITE(6,416)                                                      1390
      WRITE(6,417) (I,EACN(I),SACN(I),I=1,NSCT)                         1400
      WRITE(6,408)                                                      1410
      DO 516 I=1,NSCT                                                   1420
      N=NFOL(I)                                                         1430
      DO 515 J=1,N                                                      1440
      WRITE(6,409) I,J,EMHD(I,J),SMHD(I,J)                              1450
  515 CONTINUE                                                          1460
  516 CONTINUE                                                          1470
      WRITE(6,410)                                                      1480
      DO 518 I=1,NSCT                                                   1490
      N=  NFOL(I)                                                       1500
      DO 517 J=1,N                                                      1510
      WRITE(6,409) I,J,END(I,J),SND(I,J)                                1520
  517 CONTINUE                                                          1530
  518 CONTINUE                                                          1540
      WRITE(6,411)                                                      1550
      DO 520 I=1,NSCT                                                   1560
      N=NFOL(I)                                                         1570
      DO 519 J=1,N                                                      1580
      WRITE(6,412) I,J,EED(I,J),SED(I,J)                                1590
  519 CONTINUE                                                          1600
  520 CONTINUE                                                          1610
      WRITE(6,418)                                                      1620
      WRITE(6,419) (I,DD(I),I=1,NSCT)                                   1630
   16 CONTINUE                                                          1640
```

```
C  PRINT MAINTENANCE PROGRAM RESULTS                                    1650
      WRITE(6,200)                                                      1660
      WRITE(6,201)                                                      1670
      IF(K1-2) 20,30,40                                                 1680
   20 WRITE(6,202)                                                      1690
      GO TO 70                                                          1700
   30 WRITE(6,203)                                                      1710
      GO TO 70                                                          1720
   40 IF(K1-4) 50,60,2                                                  1730
   50 WRITE(6,204)                                                      1740
      GO TO 70                                                          1750
   60 WRITE(6,205)                                                      1760
   70 WRITE(6,206) (DELI(I),EMHY(I),SMHY(I),EMHF(I),SMHF(I),ENHR(I),    1770
     1SNHR(I),EMP(I),SEMP(I),DMP(I),I=1,NI)                             1780
      GO TO 1                                                           1790
   99 FORMAT(A4)                                                        1712
  100 FORMAT(20A4)                                                      1720
  101 FORMAT(1615)                                                      1810
  102 FORMAT(8F10.5)                                                    1740
  103 FORMAT(4F10.5)                                                    1750
  104 FORMAT(5F10.5)                                                    1760
  105 FORMAT(6F10.5,I10)                                                1770
  200 FORMAT(1H0,2/,1HMAINTENANCE PROGRAM RESULTS)                      1860
  201 FORMAT(1H0,3X,8HINTERVAL,7X,13HMANHOURS/YEAR,4X,20HMANHOURS/FLIGHT 1870
     1 HOUR,4X,14HNOR HOURS/HOUR,6X,13HEFFECTIVENESS,7X,13HDEPENDABILITY 1880
     2)                                                                 1890
  202 FORMAT( 5X,8H(WEEKS) ,4(7X,14HMEAN   STD DEV)/)                   1900
  203 FORMAT(1X,14H(FLIGHT HOURS),4X,4(14HMEAN   STD DEV,7X)/)          1910
  204 FORMAT(4X, 9H(SORTIES),3(6X,14HMEAN   STD DEV)/)                  1920
  205 FORMAT(3X,10H(LANDINGS),3(6X,14HMEAN  STD  DEV)/)                 1930
  206 FORMAT( 6X,F4.0,8X,F5.0,4X,F5.0,7X,F5.0,4X,F5.0,6X,F6.4,3X,       1940
     1F6.4,6X,F6.4,3X,F6.4, 8X,F6.4)                                    1950
  300 FORMAT(1H1,20A4//22X,4HMEAN, 4X,7HSTD DEV/)                       1870
  301 FORMAT(7X,5HMH/WK, 5X,F9.4,2X,F9.4)                               1970
  302 FORMAT(7X,6HSOR/WK,4X,F9.4,2X,F9.4)                               1980
  303 FORMAT(7X,6HLOG/WK,4X,F9.4,2X,F9.4)                               1990
  304 FORMAT(1H0,6X,5HMH/PF,5X,F9.4,2X,F9.4)                            2000
  305 FORMAT(7X,6HMH/BPO,4X,F9.4,2X,F9.4)                               2010
  306 FORMAT(7X,1HR,9X,F9.4,2X,F9.4)                                    2020
  307 FORMAT(1H0,6X,8HA1ES/SOR,2X,F9.4,2X,F9.4)                         2030
  308 FORMAT(1H0,25HSCHEDULED INSPECTION DATA//24X,8HMANHOURS,21X,4HNORM 2040
     1/10X,1HI,3X,1HJ,7X,4HMEAN,4X,7HSTD DEV,13X,1HA,10X,1HB,8X,7HSTD DE 2050
     2V, 7X,8HNO. INSP//)                                               2060
  309 FORMAT(9X,I2,2X,I2,2X,F9.4,2X,F9.4,5X,F9.4,2X,F9.4,6X,F9.4,12X,   2070
     113)                                                               2080
  310 FORMAT(1H0,20X,3HUMA,32X,6HABORTS/10X,1HI,3X,1HK,10X,1HA,10X,1HB,  2090
     1 9X,2HSS,11X,1HA,10X,1HB//)                                       2100
  311 FORMAT(9X,I2,2X,I2,F11.5,F11.5,F11.5,F14.5,F11.5)                 2110
  312 FORMAT(1H0,24X,6HMH/UMA,19X,8HNORM/UMA/ 14X,1HK,7X,4HMEAN,4X,7HSTD 2120
     1 DEV,10X,4HMEAN,4X,7HSTD DEV,7X,7HNORS/WK//)                      2130
  313 FORMAT(13X,I2,2X,F9.4,2X,F9.4,5X,F9.4,2X,F9.4,5X,F9.4)            2140
  314 FORMAT(1H0,25HSPECIAL INSPECTION DATA//24X,8HMANHOURS,19X,4HNORM,  2150
     119X, 8HINTERVAL/ 14X,1HJ,7X,4HMEAN,4X,7HSTD DEV,10X,4HMEAN,4X,7HST 2160
     2D DEV,10X,4HMEAN,4X,7HSTD DEV,6X,3HKIS//)                         2170
  315 FORMAT(13X,I2,2X,F9.4,2X,F9.4,5X,F9.4,2X,F9.4,5X,F9.4,2X,F9.4,    2180
     16X,I3)                                                            2190
  316 FORMAT(1H0,23HWORK UNIT CODE SET DATA)                            2200
  400 FORMAT(1H0,16HINTERVAL RESULTS)                                   2210
  401 FORMAT(1H0,11HINTERVAL = ,F4.0)                                   2220
  402 FORMAT(1H0,41X,4HMEAN,4X,7HSTD DEV)                               2230
  403 FORMAT(7X,5HWEEKS,23X,2F11.2)                                     2240
  404 FORMAT(1H0,6X,18HPREFLIGHT MANHOURS,10X,2F11.2)                   2250
  405 FORMAT(7X,20HBASIC POSTFLIGHT MANHOURS,3X,2F11.2)                 2260
  406 FORMAT(1H0,6X,25HSPEC. INSPECTION MANHOURS,3X,2F11.2)             2270
  407 FORMAT(7X,21HSPEC. INSPECTION NORM,7X,2F11.2)                     2280
  408 FORMAT(1H0,6X,14HTOTAL MANHOURS/)                                 2290
  409 FORMAT(7X,4HI = ,I4,5X,4HJ = ,I4, 7X,2F11.2)                      2300
  410 FORMAT(1H0,6X,9HTOTAL NOR/)                                       2310
  411 FORMAT(1H0,6X,13HEFFECTIVENESS/)                                  2320
  412 FORMAT(7X,4HI = ,I4,5X,4HJ = ,I4, 7X,2F11.5)                      2330
  413 FORMAT(1H0,6X,23HNO. OF UNSCHED. ACTIONS/)                        2340
  414 FORMAT(7X,4HI = ,I4,20X,F11.2)                                    2350
  415 FORMAT(1H0,6X,17HUNSCHED. MANHOURS/)                              2360
  416 FORMAT(1H0,6X,13HUNSCHED. NORM/)                                  2370
  417 FORMAT(7X,4HI = ,I4,20X,2F11.2)                                   2380
  418 FORMAT(1H0,6X,13HDEPENDABILITY/)                                  2390
  419 FORMAT(7X,4HI = ,I4,20X,F11.5)                                    2400
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  2410
C  OUTPUT INCLUDES THE FOLLOWING FOR EACH INPUT VALUE OF DELI          2420
C     DELI ITSELF                                                       2430
C     EMHY(I),SMHY(I)          MEAN AND STD. DEV. OF MANHOURS PER YEAR  2440
C     ENHR(I),SNHR(I)          MEAN AND STD. DEV. OF NORM HOURS PER HOUR 2450
C     EMP(I),SEMP(I)           MEAN AND STD. DEV. OF EFFECTIVENESS      2460
C     DMP(I)                   DEPENDABILITY                            2470
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  2480
      END                                                               2490
```

```
      SUBROUTINE PEPF                                                   2500
C  THIS ROUTINE CALCULATES THE TOTAL NUMBER OF PREFLIGHT AND BASIC      2510
C  POSTFLIGHT MANHOURS FOR DELI.                                        2520
C  THE NUMBER OF WEEKS IN THE MAINTENANCE PROGRAM IS ALSO DETERMINED    2530
      COMMON  IINT,                                                     2540
C         INPUT DATA                                                    2550
     1DELI(10),KI,NSCT,NFOL(3),NSCH(3,3),NSPT,DISP(60),SISP(60),K1S(60),2560
     2R,EMHI(3,3),SMHI(3,3),AN(3,3),BN(3,3),SNI(3,3),EMHS(60),SMHS(60), 2570
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,N1,NSET,ANU(3,60),BNU(3,60),  2580
     4EMHU(60),SMHU(60),ENU(60),SNU(60),ANAB(3,60),BNAB(3,60),ENWK(60), 2590
     5SFHW,SFHW,ESOW,SSOW,ELOW,SLOW,AIES,DIK(3,60),UMAS(3,60),           2600
C         DATA GENERATED BY PEPF                                        2610
     6WKU(150),PWKU(150),EWKO,SWKO,EWKM,SWKM,EPFH,SPFH,EBPH,SBPH,NINT,  2620
     6X(61),FX(61),EFHO,VFHO,                                           2630
C         DATA GENERATED BY SPIS                                        2640
     7EMSO,SMSO,ENSO,SNSO,                                              2650
C         DATA GENERATED BY INVL                                        2660
     8EMHO(3,3),SMHO(3,3),ENO(3,3),SNO(3,3),EED(3,3),SED(3,3),OD(3),    2670
     8UMAC(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                     2680
C         DATA GENERATED BY MPD                                         2690
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP(10),SEMP(10),OMP(10)     2700
     9,EMHF(10),SMHF(10)                                                2710
      DIMENSION SOD(100),PSOD(100),KF(2),KS(2),PP(2,2)                  2720
C  STORE CUMULATIVE NORMAL DISTRIBUTION                                 2730
    1 X(1)=-3.0                                                         2740
      DO 10 I=2,61                                                      2750
      X(I)=X(I-1)+0.1                                                   2760
   10 CONTINUE                                                          2770
      FX(31)=0.5                                                        2780
      FX(32)=0.5398                                                     2790
      FX(33)=0.5793                                                     2800
      FX(34)=0.6179                                                     2810
      FX(35)=0.6554                                                     2820
      FX(36)=0.6915                                                     2830
      FX(37)=0.7257                                                     2840
      FX(38)=0.7580                                                     2850
      FX(39)=0.7881                                                     2860
      FX(40)=0.8159                                                     2870
      FX(41)=0.8413                                                     2880
      FX(42)=0.8643                                                     2890
      FX(43)=0.8849                                                     2900
      FX(44)=0.9032                                                     2910
      FX(45)=0.9192                                                     2920
      FX(46)=0.9332                                                     2930
      FX(47)=0.9452                                                     2940
      FX(48)=0.9554                                                     2950
      FX(49)=0.9641                                                     2960
      FX(50)=0.9713                                                     2970
      FX(51)=0.9772                                                     2980
      FX(52)=0.9821                                                     2990
      FX(53)=0.9861                                                     3000
      FX(54)=0.9893                                                     3010
      FX(55)=0.9918                                                     3020
      FX(56)=0.9938                                                     3030
      FX(57)=0.9953                                                     3040
      FX(58)=0.9965                                                     3050
      FX(59)=0.9974                                                     3060
      FX(60)=0.9981                                                     3070
      FX(61)=0.9987                                                     3080
      DO 20 I=1,30                                                      3090
      FX(I)=1.0-FX(62-I)                                                3100
   20 CONTINUE                                                          3110
      IF(K1-2) 100,200,30                                               3120
   30 IF(K1-4) 300,400,1000                                             3130
C  INTERVAL IS IN WEEKS                                                 3140
  100 ESOD=DELI(IINT)*ESOW                                              3150
      SSOD=DELI(IINT)*SSOW                                              3160
      EWKO=DELI(IINT)                                                   3170
      SWKO=0.0                                                          3180
      DO 110 I=1,149                                                    3190
      WKU(I)=I                                                          3200
      PWKU(I)=0.0                                                       3210
  110 CONTINUE                                                          3220
      WKU(150)=FWKO                                                     3230
      PWKU(150)=1.0                                                     3240
      GO TO 600                                                         3250
C  INTERVAL IS IN FLIGHT HOURS                                          3260
  200 IF(SFHW) 220,220,201                                              3270
  201 RL=EFHW/(SFH*SFHW)                                                3280
      RK=EFHW*RL                                                        3290
  205 RL=RK                                                             3300
      KM=RL+1                                                           3310
      C=DELI(IINT)                                                      3320
      DO 210 I=1,150                                                    3330
      WKU(I)=I                                                          3340
      UC= C/WKU(I)                                                      3350
      IF(KM) 208,208,206                                                3360
```

```
  206 PP(1,1)=RL*DC*EXP(-RL*DC)/WKD(I)                                  3370
      PL=PP(1,1)*(RL*DC)**(KL-1)                                        3380
      PH=PL*RL*DC                                                       3390
      KEND=KL-1                                                         3400
      DO 207 J=2,KEND                                                   3410
      PL=PL/J                                                           3420
      PH=PH/J                                                           3430
  207 CONTINUE                                                          3440
      PH=PH/KL                                                          3450
      PWKD(I)=PL+(PH-PL)*(RK-KL)                                        3460
      GO TO 210                                                         3470
  208 PWKD(I)=RL*DC*EXP(-RL*DC)/WKD(I)                                  3480
  210 CONTINUE                                                          3490
      GO TO 500                                                         3500
  220 PWKD(I)=-101.                                                     3510
      EWKD=DEL1(INT)/EFHW                                               3520
      SWKD=0.0                                                          3530
      GO TO 475                                                         3540
C  INTERVAL IS IN SORTIES                                               3550
  300 ESOD=DEL1(INT)                                                    3560
      SSOD=0.0                                                          3570
      IF(SSOW) 320,320,301                                              3580
  301 RL=ESOW/(SSOW*SSOW)                                               3590
      RK=ESOW*RL                                                        3600
      GO TO 205                                                         3610
  320 EWKD=DEL1(INT)/ESOW                                               3620
      SWKD=0.0                                                          3630
      PWKD(I)=-101.                                                     3640
      GO TO 600                                                         3650
C  INTERVAL IS IN LANDINGS                                              3660
  400 IF(SLDW) 420,420,401                                              3670
  401 RL=ELDW/(SLDW*SLDW)                                               3680
      RK=ELDW*RL                                                        3690
      GO TO 205                                                         3700
  420 EWKD=DEL1(INT)/ELDW                                               3710
      SWKD=0.0                                                          3720
      PWKD(I)=-101.                                                     3730
  475 IF(SSOW) 480,480,490                                              3740
  480 ESOD=ESOW*EWKD                                                    3750
      SSOD=0.0                                                          3760
      GO TO 600                                                         3770
  490 RL=ESOW/(SSOW*SSOW)                                               3780
      RK=ESOW*RL                                                        3790
      KL=RK                                                             3800
      KEND=KL-1                                                         3810
      FAC=RL/EWKD                                                       3820
      DO 498 I=1,100                                                    3830
      SOD(I)=I-.1                                                       3840
      FAC=FACT*SOD(I)                                                   3850
      IF(KEND) 496,496,491                                              3860
  491 SUM=1.0                                                           3870
      TERM=1.0                                                          3880
      DO 492 J=1,KEND                                                   3890
      TERM=TERM*FAC/J                                                   3900
      SUM=SUM+TERM                                                      3910
  492 CONTINUE                                                          3920
      PL=SUM                                                            3930
      PH=SUM+TERM*FAC/KL                                                3940
      TP=PL+(PH-PL)*(RK-KL)                                             3950
      PSOD(I)=1.-EXP(-FAC)*TP                                           3960
      GO TO 498                                                         3970
  496 PSOD(I)=1.-EXP(-FAC)                                              3980
  498 CONTINUE                                                          3990
      GO TO 555                                                         4000
  500 IF(SSOW) 532,532,511                                              4010
  511 RLSW=ESOW/(SSOW*SSOW)                                             4020
      RKSW=ESOW*RLSW                                                    4030
      KF(1)=RK                                                          4040
      KF(2)=KF(1)+1                                                     4050
      KS(1)=RKSW                                                        4060
      KS(2)=KS(1)+1                                                     4070
      IF(KF(1)) 440,440,442                                             4080
  440 KF(1)=1                                                           4090
      RK=1.                                                             4100
  442 IF(KS(1)) 444,444,446                                             4110
  444 KS(1)=1                                                           4120
      RKSW=1.                                                           4130
  446 DO 530 I=1,100                                                    4140
      SOD(I)=I-1.0                                                      4150
      TOP=RLSW*SOD(I)                                                   4160
      BOT=RL*DEL1(I)INT)+TOP                                            4170
      DEN=TOP/BOT                                                       4180
      DO 524 LS=1,2                                                     4190
      KEND=KS(LS)-1                                                     4200
      DO 522 LF=1,2                                                     4210
      KK=KF(LF)                                                         4220
      C=(DEL1(I)INT)*RL/BOT)**KK                                        4230
      SUM=C                                                             4240
      IF(KEND) 520,520,447                                              4250
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```
  447 DO 448 J=1,KEND                                                    4260
      C=C*DEN*(KK+J-1)/J                                                 4270
      SUM=SUM+C                                                          4280
  448 CONTINUE                                                           4290
  520 PP(LS,LF) =SUM                                                     4300
  522 CONTINUE                                                           4310
  524 CONTINUE                                                           4320
      DKF=KK-KF(1)                                                       4330
      PL=PP(1,1)+(PP(1,2)-PP(1,1))*DKF                                   4340
      PH=PP(2,1)+(PP(2,2)-PP(2,1))*DKF                                   4350
      P      =PL+(PH-PL)*(RKSW-KS(1))                                    4360
      PSOD(1)=1.-P                                                       4370
  530 CONTINUE                                                           4380
      GO TO 550                                                          4390
  532 DO 540 I=1,100                                                     4400
      TP=0.0                                                             4410
      CR1)=SOD(1)/ESOW                                                   4420
      DO 538 J=1,150                                                     4430
      IF(WKD(1)-CRIT) 534,534,538                                        4440
  534 TP=(P*PWKD(1)                                                      4450
  538 CONTINUE                                                           4460
      PSOD(I)=(P                                                         4470
  540 CONTINUE                                                           4480
      SOD(1)=4.*I                                                        4490
  550 NW=150                                                             4500
      CALL MNDV(WKD,PWKD,NW,EWKD,SWKD)                                   4510
  555 NS=100                                                             4520
      CALL MNDV(SOD,PSOD,NS,ESOD,SSOD)                                   4530
  600 EPPD=ESOD                                                          4540
      SPPD=SSOD                                                          4550
      EPFD=RR*EPPD                                                       4560
      SPFD=RR*SPPD                                                       4570
      NINT=0.0                                                           4580
      DO 610 I=1,NSCT                                                    4590
      NM=NFOL(I)                                                         4600
      DO 609 J=1,NM                                                      4610
      NINT=NINT+NSCH(I,J)                                                4620
  609 CONTINUE                                                           4630
  610 CONTINUE                                                           4640
C  CALCULATE WEEKS IN MAINTENANCE PROGRAM PERIOD                         4650
      EWKM=NINT*EWKD                                                     4660
      SWKM=SQRT(NINT*SWKD*SWKD)                                          4670
C  CALCULATE PREFLIGHT AND BASIC POSTFLIGHT MANHOURS IN INTERVAL         4680
      EPFH=EMHP*EPFD                                                     4690
      SPFH=SQRT(SMHP*SMHP*EPFD*SPFD*SPFD*EMHP*EMHP)                      4700
      EBPH=EMHB*EBPD                                                     4710
      SBPH=SQRT(SMHB*SMHB*EBPD*SBPD*SBPD*EMHB*EMHB)                      4720
C  CALCULATE FLIGHT HOURS IN INTERVAL                                    4730
      EFHW=EFH*EWKD                                                      4740
      VFHW=EWKD*SFHW*SFHW+SWKD*SWKD*EFHW*EFHW                            4750
      RETURN                                                             4760
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  4770
C  THE VARIABLES TO BE USED IN OTHER ROUTINES ARE                        4780
C      WKD(I),PWKD(I)          DENSITY FUNCTION FOR WEEKS PER INTERVAL   4790
C      EWKD,SWKD     MEAN AND STD DEV OF WEEKS PER INTERVAL              4800
C      EWKM,SWKM      MEAN AND STD DEV OF WEEKS PER MP                   4810
C      EPFH,SPFH      MEAN AND STD DEV OF PRLFLIGHT MANHOURS IN INTERVAL 4820
C      EBPH,SBPH      MEAN AND STD DEV OF BASIC POSTFLIGHT MANHOURS IN    4830
C                     INTERVAL                                           4840
C      NINT           NUMBER OF MAJOR INSPECTION INTERVALS               4850
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  4860
 1000 STOP                                                               4870
      END                                                                4880
      SUBROUTINE SPIS                                                    4890
      COMMON  IINT,                                                      4900
C         INPUT DATA                                                     4910
     1DEL(10),K(,NSCT,NFOL(3),NSCH(3,3),NSPT,DISP(60),S1SP(60),K1S(60),  4920
     2H,EMH((3,3),SMH((3,3),AN(3,3),BN(3,3),SN((3,3),EMHS(60),SMHS(60),  4930
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,N1,KSET,ANU(3,60),BNU(3,60),   4940
     4EMHU(60),SMHU(60),ENU(60),SNU(60),ANAR(3,60),BNAB(3,60),ENWK(60),  4950
     5EFH,,SFHW,ESOW,SSOW,ELOW,SLOW,AIES,DIK(3,60),UMAS(3,60),           4960
C         DATA GENERATED BY PROF                                         4970
     6WKD(150),PWKD(150),EWKD,SWKD,EWKM,SWKM,EPFH,SPFH,EBPH,SBPH,NINT,  4980
     6X(61),FX(61),EFHD,VFHD,                                           4990
C         DATA GENERATED BY SPIS                                         5000
     7EMSD,SMSD,ENSD,SNSD,                                              5010
C         DATA GENERATED BY INVL                                         5020
     8EMHD(3,3),SMHD(3,3),END(3,3),SND(3,3),EED(3,3),SED(3,3),DD(3),    5030
     8UMAL(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                     5040
C         DATA GENERATED BY MHD                                          5050
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP(10),SEMP(10),DMP(10)     5060
     9,EMHF(10),SMHF(10)                                                5070
      DIMENSION DISW(150),PISW(150),PNSP(100),SPMH(20),PSPM(20),        5080
     1SPN(20),PSPN(20),TMHS(150),PMHS(150),TNS(150),PNS(150)            5090
     2,AS(2),KF(2),PP(2,2)                                              5100
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      ENSU=0.0                                                          5110
      SMSU=0.0                                                          5120
      ENSU=0.0                                                          5130
      SNSU=0.0                                                          5140
      DO 100 I=1,NSP1                                                   5150
      IF(KIS(I)-2) 10,20,1000                                           5160
C ITH INTERVAL IN WEEKS                                                 5170
   10 ELWK=DISP(I)                                                      5180
      SIWK=SISP(I)                                                      5190
      GO TO 50                                                          5200
C  ITH INTERVAL IN FLIGHT HOURS                                         5210
   20 IF(SFHW) 400,400,21                                               5220
   21 IF(SISP(I)) 42,42,25                                              5230
   25 RLSP=DISP(I)/(SISP(I)*SISP(I))                                    5240
      RKSP=RLSP*DISP(I)                                                 5250
      RLFW=ELFHW/(SFHW*SFHW)                                            5260
      RKFW=ELFHW*RLFW                                                   5270
      KS(I)=RKSP                                                        5280
      KS(2)=KS(I)+1                                                     5290
      KF(I)=RKFW                                                        5300
      KF(2)=KF(I)+1                                                     5310
      IF(KF(I)) 26,26,27                                                5320
   26 KF(I)=1                                                           5330
      RKFW=1.                                                           5340
   27 IF(KS(I)) 28,28,29                                                5350
   28 KS(I)=1                                                           5360
      RKSP=1.                                                           5370
   29 DO 40 J=1,150                                                     5380
      DIS*(J)=J                                                         5390
      DO 35 JF=1,2                                                      5400
      KEND=KF(JF)-1                                                     5410
      DO 34 JS=1,2                                                      5420
      KK=KS(JS)                                                         5430
      DEN=RLFW*RLSP*J                                                   5440
      C=(RLSP*J/DEN)**KK                                                5450
      DEN=RLFW/DEN                                                      5460
      SUM=C                                                             5470
      IF(KEND) 32,32,30                                                 5480
   30 DO 31 JI=I,KEND                                                   5490
      C=C*DEN*(KK+JI-1)/JI                                              5500
      SUM=SUM+C                                                         5510
   31 CONTINUE                                                          5520
   32 PP(JF,JS)=SUM                                                     5530
   34 CONTINUE                                                          5540
   35 CONTINUE                                                          5550
      DKS=RKSP-KS(1)                                                    5560
      PL=PP(1,1)+(PP(1,2)-PP(1,1))*DKS                                  5570
      PH=PP(2,1)+(PP(2,2)-PP(2,1))*DKS                                  5580
      PIS*(J)=PL+(PH-PL)*(RKFW-KF(1))                                   5590
   40 CONTINUE                                                          5600
      GO TO 602                                                         5610
   42 RLFW=ELFHW/(SFHW*SFHW)                                            5620
      RKFW=ELFHW*RLFW                                                   5630
      KLFW=RKFW                                                         5640
      KHFW=KLFW+1                                                       5650
      KLND=KLFW-1                                                       5660
      DO 48 J=1,150                                                     5670
      DIS*(J)=J                                                         5680
      IF(RKFW-1.) 45,43,43                                              5690
   43 FAC=RLFW*DISP(I)/J                                                5700
      SUM=1.0                                                           5710
      TERM=1.0                                                          5720
      DO 44 K=1,KLND                                                    5730
      TERM=TERM*FAC/K                                                   5740
      SUM=SUM+TERM                                                      5750
   44 CONTINUE                                                          5760
      PL=EXP(-FAC)*SUM                                                  5770
      SUM=SUM+TERM*FAC/KLFW                                             5780
      PH=EXP(-FAC)*SUM                                                  5790
      PIS*(J)=PL+(PH-PL)*(RKFW-KLFW)                                    5800
      GO TO 48                                                          5810
   45 PIS*(J)=EXP(-RLFW*DISP(J)/J)                                      5820
   48 CONTINUE                                                          5830
      GO TO 602                                                         5840
  400 IF(SISP(I)) 410,410,415                                           5850
  410 ELWK=DISP(I)/EFHW                                                 5860
      SIWK=0.0                                                          5870
      GO TO 50                                                          5880
  415 RLSP=DISP(I)/(SISP(I)*SISP(I))                                    5890
      RKSP=DISP(I)*RLSP                                                 5900
      RLSP=RKSP                                                         5910
      RHSP=RLSP+1                                                       5920
      KEND=RLSP-1                                                       5930
      DO 420 J=1,150                                                    5940
      DIS*(J)=J                                                         5950
      IF(RKSP-1.) 419,416,416                                           5960
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  416 FAC=RLSP*EFHW/J                                                    5970
      SUM=1.0                                                            5980
      TERM=1.0                                                           5990
      DO 418 K=1,KENU                                                    6000
      TERM=TERM*FAC/K                                                    6010
      SUM=SUM+TERM                                                       6020
  418 CONTINUE                                                           6030
      PL=1.-EXP(-FAC)*SUM                                                6040
      SUM=SUM+(ERM*FAC/RLSP                                              6050
      PH=1.-EXP(-FAC)*SUM                                                6060
      P1SW(J)=PL+(PH-PL)*(RKSP-RLSP)                                     6070
      GO TO 420                                                          6080
  419 P1SW(J)=1.-EXP(-RLSP*EFHW/J)                                       6090
  420 CONTINUE                                                           6100
  602 NA=150                                                             6110
      CALL MNDV(D1SW,P1SW,NA,E1WK,S1WK)                                  6120
C  CALCULATE NUMBER OF SPECIAL INSPECTIONS PER INTERVAL                  6130
C  PNSP(K) IS THE PROBABILITY THAT THE NUMBER OF INSPECTIONS IS          6140
C  .LE. (K-1)                                                            6150
   50 IF(S1WK) 200,200,55                                                6160
   55 D1MN=E1WK-3.0*S1WK                                                 6170
      IF(D1MN-5.E-7) 51,52,52                                            6180
   51 D1MN=.001*E1WK                                                     6190
   52 NMX=(EWKD+3.*SWKD)/D1MN                                            6200
      IF(NMX) 100,100,601                                                6210
  601 IF(NMX-99) 54,54,53                                                6220
   53 NMX=99                                                             6230
   54 DO 61 J=1,NMX                                                      6240
      PP(1,1)=0.0                                                        6250
      E=J*E1WK                                                           6260
      E1=(J+1)*E1WK                                                      6270
      S=SQRT(FLOAT(J))*S1WK                                              6280
      S1=SQRT(FLOAT(J+1))*S1WK                                           6290
      IF(PWKD(1)+10.) 155,56,56                                          6300
  155 CALL NML(EWKD,E,S,P)                                               6310
      CALL NML(EWKD,E1,S1,P1)                                            6320
      PP(1,1)=PP(1,1)+(P-P1)                                             6330
      GO TO 160                                                          6340
   56 DO 60 K=1,150                                                      6350
      IF(PWKD(K)-1.E-6) 60,58,58                                         6360
   58 C=WKD(K)                                                           6370
      CALL NML(C,E,S,P)                                                  6380
      CALL NML(C,E1,S1,P1)                                               6390
      PP(1,1)=PP(1,1)+(P-P1)* PWKD(K)                                    6400
   60 CONTINUE                                                           6410
  160 PNSP(J+1)=PP(1,1)                                                  6420
   61 CONTINUE                                                           6430
      IF(PWKD(1)+10.) 170,165,165                                        6440
  165 PP(1,1)=0.0                                                        6450
      DO 63 K=1,150                                                      6460
      IF(PWKD(K)-1.E-6) 65,63,63                                         6470
   63 C=WKD(K)                                                           6480
      CALL NML(C,E1WK,S1WK,P)                                            6490
      PP(1,1)=PP(1,1)+(1.-P)* PWKD(K)                                    6500
   65 CONTINUE                                                           6510
      PNSP(1)=PP(1,1)                                                    6520
      GO TO 300                                                          6530
  170 CALL NML(EWKD,E1WK,S1WK,P)                                         6540
      PNSP(1)=1.-P                                                       6550
      GO TO 300                                                          6560
  200 IF(PWKD(1)+10.)  210,220,220                                       6570
  210 NMX=EWKD/E1WK                                                      6580
      PNSP(1)=-101.                                                      6590
      GO TO 300                                                          6600
  220 NMX=SWKD(150)/E1WK                                                 6610
      IF(NMX- 99) 222,222,221                                            6620
  221 NMX=99                                                             6630
  222 DO 250 J=1,NMX                                                     6640
      PNSP(J+1)=0.0                                                      6650
      DO 240 K=1,150                                                     6660
      IF(PWKD(K)-1.E-6) 240,226,226                                      6670
  226 C=WKD(K)                                                           6680
      IF(C-(J-1)*E1WK) 240,230,230                                       6690
  230 IF(C-J*E1WK) 235,240,240                                           6700
  235 PNSP(J+1) =PNSP(J+1)+PWKD(K)                                       6710
  240 CONTINUE                                                           6720
  250 CONTINUE                                                           6730
      PNSP(1)=0.0                                                        6740
      DO 260 K=1,150                                                     6750
      IF(PWKD(K)-1.E-6) 260,253,253                                      6760
  253 C=WKD(K)                                                           6770
      IF(C-E1WK) 255,260,260                                             6780
  255 PNSP(1)=PNSP(1)+PWKD(K)                                            6790
  260 CONTINUE                                                           6800
  300 IF(PNSP(1)+10.) 308,308,301                                        6810
  301 NN=NMX+2                                                           6820
      NM=NMX                                                             6830
      DO 304 K=1,NM                                                      6840
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      J=NN-K                                                            6850
      IF (PNSP(J)) 302,302,308                                          6860
  302 NMX=NMX-1                                                         6870
  304 CONTINUE                                                          6880
  308 ENN=0.0                                                           6890
      DO 310 J=1,100                                                    6900
      ENN=ENN+(J-1)*PNSP(J)                                             6910
  310 CONTINUE                                                          6920
      SNN=0.0                                                           6930
      DO 312 J=1,100                                                    6940
      ONE=J-1                                                           6950
      SNN=SNN+ONE*ONE*PNSP(J)                                           6960
  312 CONTINUE                                                          6970
      SNN=SQRT(SNN-ENN*ENN)                                             6980
C  CALCULATE SPECIAL INSPECTION MANHOURS AND NORM PER INTERVAL          6990
      EMSD=ENN*EMHS(1)+EMSD                                             7000
      SMSD=ENN*SMHS(1)*SMHS(1)+SNN*SNN*EMHS(I)*EMHS)I)+SMSD             7010
      ENSD=ENN*ENS(1)+ENSD                                              7020
      SNSD=ENN*SNS(1)*SNS(1)+SNN*SNN*ENS(1)*ENS(1)+SNSD                 7030
  100 CONTINUE                                                          7040
      SMSD=SQR((SMSD)                                                   7050
      SNSD=SQRT(SNSD)                                                   7060
      RETURN                                                            7070
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  7080
C  THE VARIABLES TO BE USED IN OTHER ROUTINES ARE                       7090
C     EMSD,SMSD     MEAN AND STD DEV FOR SPECIAL INSPECTION MANHOURS PER 7100
C                   INTERVAL                                            7110
C     ENSD,SNSD     MEAN AND STD DEV FOR SPECIAL INSPECTION NORM PER     7120
C                   INTERVAL                                            7130
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  7140
 1000 STOP                                                              7150
      END                                                               7160
      SUBROUTINE INVL                                                   7170
C  THIS ROUTINE DETERMINES MANHOURS, NOPM, NOR, AVAILABILITY, AND       7180
C  EFFECTIVENESS FOR EACH INTERVAL                                      7190
      COMMON  IINT,                                                     7200
C        INPUT DATA                                                     7210
     1DELI(10),K1,NSCT,NFOL(3),NSCH(3,3),NSPT,DISP(60),SISP(60),KIS(60),7220
     2K,EMHI(3,3),SMHI(3,3),AN(3,3),BN(3,3),SNI(3,3),EMHS(60),SMHS)60),7230
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,NI,KSET,ANU(3,60),BNU(3,60),  7240
     4LMHU(60),SMHU(60),END(60),SNU)60),ANAB(3,60),BNAB(3,60),ENWK)60), 7250
     5EFH,SFH,ESOW,SSOW,ELDW,SLDW,AIES,DIK(3,60),UMAS(3,60),            7260
C        DATA GENERATED BY PFPF                                         7270
     6WKD(150),PWKD(150),EWKD,SWKD,EWKM,SWKM,EPFH,SPFH,EBPH,SBPH,NINT,  7280
     6A(61),FX(61),EFHD,VFHD,                                           7290
C        DATA GENERATED BY SPIS                                         7300
     7ENSD,SMSD,ENSD,SNSD,                                              7310
C        DATA GENERATED BY INVL                                         7320
     8EMHU(3,3),SMHD(3,3),END(3,3),SND(3,3),EED)3,3),SED)3,3),DD)3),    7330
     8UMAC(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                     7340
C        DATA GENERATED BY MPD                                          7350
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP)10),SEMP)10),DMP)10)     7360
     9,EMHF(10),SMHF(10)                                                7370
      DOUBLE PRECISION TAV,DTAV                                         7375
      DIMENSION TAV(20),PAV)20),KN)2),KC)2),PP)2,2)                     7380
C  CALCULATE AIRCRAFT NORS PER WEEK                                     7390
      ACNS=0.0                                                          7400
      DO 10 K=1,KSET                                                    7410
      ACNS=ACNS+ENWK(K)                                                 7420
   10 CONTINUE                                                          7430
      DO 900 I=1,NSCT                                                   7440
      EACM(I)=0.0                                                       7450
      SACM(I)=0.0                                                       7460
      EACN(I)=0.0                                                       7470
      SACN(I)=0.0                                                       7480
      UMAC(I)=0.0                                                       7490
C  CALCULATE UNSCHEDULED MANHOURS AND NORM PER INTERVAL                 7500
      DO  20 K=1,KSET                                                   7510
      IF(UNU(I,K)) 111,120,120                                          7520
  111 TSS=-ANU(I,K)*0.5/BNU(I,K)                                        7530
      IF)DIK)I,K)-2.)/11.,11.,14                                        7540
   11 IF(DELI(IINT)-TSS) 12,12,13                                       7550
   12 UMA=DELI(IINT)*(ANU(I,K)+BNU)I,K)*DELI(IINT))                     7560
      GO )O 19                                                          7570
   13 UMA=TSS*(ANU(I,K)+BNU(I,K)*TSS)                                   7580
      UMA=UMA+UMAS(I,K)*(DELI(IINT)-TSS)                                7590
      GO )O 19                                                          7600
   14 IF(DELI(IINT)-TSS) 16,15,15                                       7610
   15 UMA=DLLI(IINT)*UMAS(I,K)                                          7620
      GO TO 19                                                          7630
   16 IF(2.*DELI(IINT)-TSS) 17,17,18                                    7640
   17 UMA=DLLI(IINT)*(ANU(I,K)+BNU)I,K)*DELI)IINT)*3.0)                 7650
      GO TO 19                                                          7660
   18 UMA=UMAS(),K)*(2.*DELI)IINT)-TSS)+TSS*ANU)I,K)/2.                  7670
      UMA=UMA-DEL)(IINT)*(ANU(I,K)+BNU(I,K)*DELI)IINT))                 7680
      GO TO 19                                                          7690
  120 UMA=DELI(IINT)*(ANU(I,K)+BNU(I,K)*DELI)IINT)*DIK(I,K))            7700
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   19 EMH=EMHU(K)*UMA                                                    7710
      SMH=SQRT(UMA*(SMHU(K)*SMHU(K)+EMHU(K)*EMHU(K)))                    7720
      ENE=ENU(K)*UMA                                                    7730
      SNE=SQRT(UMA*(SNU(K)*SNU(K)+ENU(K)*ENU(K)))                       7740
      EACM(I)=EACM(I)+EMH                                               7750
      SACM(I)=SACM(I)+SMH*SMH                                           7760
      EACN(I)=EACN(I)+EN                                                7770
      SACN(I)=SACN(I)+SN*SN                                             7780
      UMAC(I)=UMA+UMAC(I)                                               7790
   20 CONTINUE                                                          7800
      SACM(I)=SQRT(SACM(1))                                             7810
      SACN(I)=SQRT(SACN(I))                                             7820
      ABN=0.0                                                           7830
C  CALCULATE DEPENDABILITY PER INTERVAL                                 7840
      DO 30 K=1,KSET                                                    7850
      A=ANAB(I,K)                                                       7860
      IF(A) 22,22,23                                                    7870
   22 ABN=ABN+0.5*BNAB(I,K)*DELI(11NT)*D1K(1,K)                         7880
      GO TO 30                                                          7890
   23 AB2=A+BNAB(I,K)*DELI(11NT)*D1K(1,K)                               7900
      IF(AB2) 24,24,26                                                  7910
   24 ABN=ABN+A*0.5                                                     7920
      GO TO 30                                                          7930
   26 ABN=ABN+A+0.5*BNAB(1,K)*DELI(11NT)*D1K(I,K)                       7940
   30 CONTINUE                                                          7950
      ES=AIES+ABN                                                       7960
      UD(I)=EXP(-ES)                                                    7970
C  CALCULATE TOTAL MANHOURS AND NOR PER INTERVAL                        7980
      NM=NPOL(1)                                                        7990
      DO 890 J=1,NM                                                     8000
      EMHD(I,J)=EMH1(I,J)+EPFH+EBPH+EACM(1)+EMSD                        8010
      SMHD(I,J)=SQRT(SMH(I,J)*SMH(1,J)+SPFH*SPFH+SBPH*SBPH+SACM(1)*     8020
     1SACM(I)+SMSD*SMSD)                                                8030
      ENI=AN(I,J)+BN(I,J)*DELI(INT)                                     8040
      IF(ENI) 28,29,29                                                  8050
   28 ENI=0.0                                                           8060
   29 ENM=ENI+EACN(1)+ENSD                                              8070
      SNM=SQRT(I,J)*SN(I,J)+SACN(I)*SACN(1)+SNSD*SNSD                   8080
      END(I,J)=ENM+ACNS*(EWKD*EN1/168.)                                 8090
      SE=SNE*2+ACNS*ACNS*(SWKD*SWKD*SN1(I,J)*SN1(1,J)/28224.)           8100
      SND(I,J)=SQR((S2)                                                 8110
C  CALCULATE MEAN AND STD DEV OF TOTAL HOURS PER INTERVAL               8120
  168 ECT=168.*EWKD+ENI*(1.+ACNS/168.)                                  8130
      S=SN1(I,J)                                                        8140
      SCT=SQRT(28224.*SWKD*SWKD+S*S*(1.+ACNS*ACNS/28224.))              8150
C  CALCULATE AVAILABILITY DISTRIBUTION                                  8160
      DTAV=0.05263158                                                   7835
      NAV=20                                                            8170
      TAV(1)=0.0                                                        8180
      DO 170 L=2,NAV                                                    8190
      TAV(L)=TAV(L-1)+DTAV                                              7870
  170 CONTINUE                                                          8210
      IF(SND(I,J)) 500,500,526                                          8220
  500 IF(SCT) 501,501,510                                               8230
  501 DO 506 L=1,NAV                                                    8240
      IF(ECT*(1.-TAV(L))-END(I,J)) 503,504,504                          8250
  503 PAV(L)=1.0                                                        8260
      GO TO 506                                                         8270
  504 PAV(L)=0.0                                                        8280
  506 CONTINUE                                                          8290
      GO TO 600                                                         8300
  510 RLCD=ECT/(SCT*SCT)                                                8310
      RKCD=RLCD*ES(                                                     8320
      KLCD=RKCD                                                         8330
      FAC1=RLCD*END(I,J)                                                8340
      DO 520 L=1,NAV                                                    8350
      FAC=FAC1/(1.-TAV(L))                                              8360
      IF(RKCD-1.) 517,514,514                                           8370
  514 SUM=1.0                                                           8380
      TERM=1.0                                                          8390
      DO 512 L1=1,KLCD                                                  8400
      TERM=TERM*FAC/L1                                                  8410
      SUM=SUM+TERM                                                      8420
  512 CONTINUE                                                          8430
      PL=1.0-EXP(-FAC)*SUM                                              8440
      SUM=SUM+TERM*FAC/KLCD                                             8450
      PH=1.0-EXP(-FAC)*SUM                                              8460
      PAV(L)=PL+(PH-PL)*(RKCD-KLCD)                                     8470
      GO TO 520                                                         8480
  517 PAV(L)=1.-EXP(-FAC)                                               8490
  520 CONTINUE                                                          8500
      GO TO 600                                                         8510
  526 IF(SCT) 528,528,540                                               8520
  528 RLNO=END(I,J)/(SND(1,J)*SND(1,J))                                 8530
      RKNO=RLNO*END(1,J)                                                8540
      RLNO=RKNO                                                         8550
```

```
      KEND=KLND-1                                                       8560
      FAC1=RLND*EC)                                                     8570
      DO 536 L=1,NAV                                                    8580
      FAC=FACT*(1.-TAV(L))                                              8590
      IF(KEND) 534,530,530                                              8600
  530 SUM=1.0                                                           8610
      TERM=1.0                                                          8620
      DO 532 L1=1,KLND                                                  8630
      TERM=TERM*FAC/L1                                                  8640
      SUM=SUM+TERM                                                      8650
  532 CONTINUE                                                          8660
      PL=SUM*EXP(-FAC)                                                  8670
      SUM=SUM+TERM*FAC/KLND                                             8680
      PH=SUM*EXP(-FAC)                                                  8690
      PAV(L )=PL+(PH-PL)*(RKND-KLND)                                    8700
      GO TO 536                                                         8710
  534 PAV(L )=EXP(-FAC)                                                 8720
  536 CONTINUE                                                          8730
      GO TO 600                                                         8740
  540 RLCD=ECT/(SC)*SCT)                                                8750
      RKCD=ECT*PLCD                                                     8760
      RLND=END(I,J)/(SND(I,J)*SND(I,J))                                 8770
      RKND=END(I,J)*RLND                                                8780
      KN(1)=RKND                                                        8790
      KN(2)=KN(1)+1                                                     8800
      KC(1)=RKCD                                                        8810
      KC(2)=KC(1)+1                                                     8820
      IF(KN(1)) 541,541,542                                             8830
  541 KN(1)=1                                                           8840
      RKND=1.                                                           8850
  542 IF(KC(1)) 543,543,544                                             8860
  543 KC(1)=1                                                           8870
      RKCD=1.                                                           8880
  544 DO 560 L=1,NAV                                                    8890
      TOP=RLND*(1.-TAV(L))                                              8900
      DEN=TOP/(TOP+RLCD)                                                8910
      DO 553 LN=1,2                                                     8920
      KEND=KN(LN)-1                                                     8930
      DO 552 LC=1,2                                                     8940
      KK=KC(LC)                                                         8950
      C=(RLCD/(TOP+RLCD))**KK                                           8960
      SUM=C                                                             8970
      IF(KLND) 550,550,546                                              8980
  546 DO 548 LI=1,KEND                                                  8990
      C=C*DEN*(KK+LI-1)/LI                                              9000
      SUM=SUM+C                                                         9010
  548 CONTINUE                                                          9020
  550 PP(LN,LC)=SUM                                                     9030
  552 CONTINUE                                                          9040
  553 CONTINUE                                                          9050
      DKC=RKCD-KC(1)                                                    9060
      PL=PP(1,1)+(PP(1,2)-PP(1,1))*DKC                                  9070
      PH=PP(2,1)+(PP(2,2)-PP(2,1))*DKC                                  9080
      PAV(L)=PL+(PH-PL)*(RKND-KN(1))                                    9090
  560 CONTINUE                                                          9100
C  CALCULATE EFFECTIVENESS MEAN AND STD. DEV.                           9110
  600 DO 40 L=1,NAV                                                     9120
      TAV(L)=TAV(L)*DD(I)                                               9130
   40 CONTINUE                                                          9140
      CALL OMNDV(TAV,PAV,NAV,EED(I,J),SED(I,J))                         8240
  890 CONTINUE                                                          9160
  900 CONTINUE                                                          9170
      RETURN                                                            9180
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     9190
C  THE VARIABLES TO BE USED IN OTHER ROUTINES ARE                       9200
C     EMHD(I,J),SMHD(I,J)    MEAN AND STD DEV OF MANHOURS PER INTERVAL   9210
C     END(I,J),SND(I,J)      MEAN AND STD DEV OF NOR PER INTERVAL        9220
C     EED(I,J),SED(I,J)      MEAN AND STD DEV OF EFFECTIVENESS PER INTER 9230
C     DD(I)                  DEPENDABILITY PER INTERVAL                  9240
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     9250
      END                                                               9260
      SUBROUTINE MPD                                                    9270
C  CALCULATE MAINTENANCE PROGRAM MANHOURS, NOR, DEPENDABILITY, AND      9280
C  EFFECTIVENESS - THE OUTPUT OF THE MODEL                              9290
      COMMON  1INT,                                                     9300
C        INPUT DATA                                                     9310
     1DEL1(10),K1,NSCT,NFOL(3),NSCH(3,3),NSPT,DISP(60),SISP(60),KIS(60),9320
     2H,EMHI(3,3),SMHI(3,3),AN(3,3),BN(3,3),SNI(3,3),EMHS(60),SMHS(60), 9330
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,NI,KSET,ANU(3,60),BNU(3,60),  9340
     4EMHU(60),SMHU(60),ENU(60),SNU(60),ANAB(3,60),BNAB(3,60),ENWK(60), 9350
     5LFHW,SFHW,ESOW,SSOW,ELDW,SLDW,AIES,DIK(3,60),UMAS(3,60),           9360
C        DATA GENERATED BY PFPF                                         9370
     6WU(150),PWKU(150),EWKD,SWKD,EWKM,SWKM,EPFH,SPFH,EBPH,SBPH,NINT,   9380
     6X(61),FX(61),EFHD,VFHD,                                           9390
C        DATA GENERATED BY SPIS                                         9400
     7EMSD,SMSD,ENSD,SNSD,                                              9410
C        DATA GENERATED BY INVL                                         9420
```

```
     8EMHD(3,3),SMHD(3,3),END(3,3),SND(3,3),EED(3,3),SED(3,3),DD(3),      9430
     8UMAC(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                       9440
C        DATA GENERATED BY MPD                                            9450
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP(10),SEMP(10),DMP(10)       9460
     9,EMHF(10),SMHF(10)                                                  9470
      DIMENSION T(50),P(50)                                               9480
      A=0.0                                                               9490
      EMHM=0.0                                                            9500
      SMHM=0.0                                                            9510
      ENMP=0.0                                                            9520
      SNMP=0.0                                                            9530
      D   =0.0                                                            9540
      EE  =0.0                                                            9550
      SE  =0.0                                                            9560
      SUM1=0.0                                                            9570
      SUM2=0.0                                                            9580
      DO 10 I=1,NSCT                                                      9590
      NM=NFOL(I)                                                          9600
      DO  9 J=1,NM                                                        9610
      NN=NSCH(I,J)                                                        9620
      EMHM=EMHM+EMHD(I,J)*NN                                              9630
      SMHM=SMHM+SMHD(I,J)*SMHD(I,J)*NN*NN                                 9640
      SNMP=SNMP+SND(I,J)*SND(I,J)*NN*NN                                   9650
      ENMP=ENMP+END(I,J)*NN                                               9660
      EE  =EE  +EED(I,J)*NN                                               9670
      SE  =SE  +SED(I,J)*SED(I,J)*NN*NN                                   9680
      D=D+DD(I)*NN                                                        9690
      ENI=AN(I,J)+BN(I,J)*DEL1(IINT)                                      9700
      IF(ENI) 6,8,8                                                       9710
    6 ENI=0.0                                                             9720
    8 SUM1=SUM1+NSCH(I,J)*ENI*(1.+ACNS/168.)                              9730
      SUM2=SUM2+NSCH(I,J)*NSCH(I,J)*SNI(I,J)*SNI(I,J)*(1.+ACNS*ACNS/      9740
     128224.)                                                             9750
    9 CONTINUE                                                            9760
   10 CONTINUE                                                            9770
      SMHM=SQRT(SMHM)                                                     9780
      SNMP=SQRT(SNMP)                                                     9790
      SEMP(IINT)=SQRT(SE/(NINT*NINT))                                     9800
      EEMP(IINT)=EE/NINT                                                  9810
      DMP(IINT)=D/NINT                                                    9820
C  CALCULATE MANHOURS PER YEAR                                            9830
      NA=50                                                               9840
      DO 20 I=1,NA                                                        9850
      T(I)=1+400.0                                                        9860
      E=EMHM-T(I)*(EWKM/52.+SUM1/8736.)                                   9870
      S=SMHM*SMHM+T(I)*T(I)*(SWKM*SWKM/2704.+SUM2/76317696.)              9880
      S=SQRT(S)                                                           9890
      IF(S) 13,13,12                                                      9900
   12 CALL NML(A,E,S,PI)                                                  9910
      P(I)=PI                                                             9920
      GO TO 20                                                            9930
   13 IF(E)  16,16,15                                                     9940
   15 P(I)=0.0                                                            9950
      GO TO 20                                                            9960
   16 P(I)=1.0                                                            9970
   20 CONTINUE                                                            9980
      CALL MNDY(T,P,NA,EMH,SMH)                                           9990
      EMHY(IINT)=EMH                                                     10000
      SMHY(IINT)=SMH                                                     10010
C  CALCULATE MANHOURS PER MAINTENANCE PROGRAM                             10020
      EFHM=NINT*EFHD                                                     10030
      VFHM=NINT*VFHD                                                     10040
C  CALCULATE MANHOURS PER FLIGHT HOUR                                     10050
      DO 40 I=1,NA                                                       10060
      T(I)=2.*I                                                          10070
      E=EMHM-T(I)*EFHM                                                   10080
      S=SMHM*SMHM+T(I)*T(I)*VFHM                                         10090
      S=SQRT(S)                                                          10100
      IF(S) 33,33,32                                                     10110
   32 CALL NML(A,E,S,PI)                                                 10120
      P(I)=PI                                                            10130
      GO TO 40                                                           10140
   33 IF(E) 35,35,36                                                     10150
   35 P(I)=1.0                                                           10160
      GO TO 40                                                           10170
   36 P(I)=0.0                                                           10180
   40 CONTINUE                                                           10190
      CALL MNDY(T,P,NA,EMH,SMH)                                          10200
      EMHF(IINT)=EMH                                                     10210
      SMHF(IINT)=SMH                                                     10220
C  CALCULATE NON  HOURS PER HOUR                                         10230
      NA=20                                                              10240
      DO 30 I=1,NA                                                       10250
      T(I)=1+0.05                                                        10260
      E=ENMP-T(I)*(168.*EWKM+SUM1)                                       10270
      S=SNMP*SNMP+T(I)*T(I)*(28224.*SWKM*SWKM+SUM2)                      10280
      S=SQRT(S)                                                          10290
      IF(S) 23,23,22                                                     10300
```

```
   22 CALL NML(A,E,S,PI)                                                  10310
      P(I)=PI                                                             10320
      GO TO 30                                                            10330
   23 IF(E) 26,26,25                                                      10340
   25 P(I)=0.0                                                            10350
      GO TO 30                                                            10360
   26 P(I)=1.0                                                            10370
   30 CONTINUE                                                            10380
      CALL MNDV(T,P,NA,EN,SN)                                             10390
      ENHR(IIN)=EN                                                        10400
      SNHR(IIN)=SN                                                        10410
      RETURN                                                              10420
      END                                                                 10430
      SUBROUTINE NML(A,E,SD,P)                                            10440
      COMMON  IINF,                                                       10450
C        INPUT DATA                                                       10460
     1DEL1(10),KI,NSCT,NFOL(3),NSCH(3,3),NSPT,DISP(60),SISP(60),KIS(60),  10470
     2R,EMHI(3,3),SMHI(3,3),AN(3,3),BN(3,3),SNI(3,3),EMHS(60),SMHS(60),   10480
     3ENS(60),SNS(60),EMHP,SMHP,EMHB,SMHB,NI,KSET,ANU(3,60),BNU(3,60),    10490
     4EMHU(60),SMHU(60),ENU(60),SNU(60),ANAB(3,60),BNAB(3,60),ENWK(60),   10500
     5EFH,SFH,ESOW,SSOW,ELOW,SLOW,AIES,DIK(3,60),UMAS(3,60),              10510
C        DATA GENERATED BY PFPF                                           10520
     6WKD(150),PWKD(150),EWKD,SWKD,EWKM,SWKM,EPFH,SPFH,EBPH,SBPH,NINT,    10530
     6X(61),FX(61),EFHD,VFHD,                                            10540
C        DATA GENERATED BY SP1S                                           10550
     7LMSD,SMSD,ENSD,SNSD,                                               10560
C        DATA GENERATED BY INVL                                           10570
     8EMHD(3,3),SMHD(3,3),END(3,3),SND(3,3),EED(3,3),SED(3,3),DD(3),     10580
     8UMAC(3),EACM(3),SACM(3),EACN(3),SACN(3),ACNS,                      10590
C        DATA GENERATED BY MPD                                            10600
     9EMHY(10),SMHY(10),ENHR(10),SNHR(10),EEMP(10),SEMP(10),DMP(10)      10610
     9,EMHF(10),SMHF(10)                                                 10620
C  COMPUTE NORMAL(A,E,SD)                                                 10630
      T=(A-E)/SD                                                          10640
      IF(T-X(1)) 30,40,50                                                 10650
   30 P=0.0                                                               10660
      RETURN                                                              10670
   40 P=FX(1)                                                             10680
      RETURN                                                              10690
   50 DO 56 I=2,61                                                        10700
      IF(T-X(I))52,54,56                                                  10710
   52 P=FX(I-1)+(FX(I)-FX(I-1))*(T-X(I-1))/(X(I)-X(I-1))                  10720
      RETURN                                                              10730
   54 P=FX(I)                                                             10740
      RETURN                                                              10750
   56 CONTINUE                                                            10760
      P=1.0                                                               10770
      RETURN                                                              10780
      END                                                                 10790
      SUBROUTINE MNDV(T,P,N,BART,SDEV)                                    10800
C  THIS ROUTINE CALCULATES THE MEAN AND STANDARD DEVIATION OF T           10810
      DIMENSION T(150),P(150)                                             10820
      BART=T(1)*P(1)                                                      10830
      DO 10 I=2,N                                                         10840
      BART=BART+T(I)*(P(I)-P(I-1))                                        10850
   10 CONTINUE                                                            10860
      SDEV=P(1)*(T(1)-BART)**2                                            10870
      DO 20 I=2,N                                                         10880
      SDEV=SDEV+(P(I)-P(I-1))*(T(I)-BART)**2                              10890
   20 CONTINUE                                                            10900
      IF(ABS(SDEV-.5E-10)) 30,30,40                                       10910
   30 SDEV=0.0                                                            10920
      RETURN                                                              10930
   40 SDEV=SQRT(SDEV)                                                     10940
      RETURN                                                              10950
      END                                                                 10960
      SUBROUTINE MNDO(T,P,N,BART,SDEV)                                    10970
C  THIS ROUTINE CALCULATES THE MEAN AND STANDARD DEVIATION OF T           10980
C  USING THE PROBABILITY DENSITY FUNCTION                                 10990
      DIMENSION T(150),P(150)                                             11000
      BART=0.0                                                            11010
      SDEV=0.0                                                            11020
      DO 10 I=1,N                                                         11030
      BART=BART+T(I)*P(I)                                                 11040
      SDEV=SDEV+T(I)*T(I)*P(I)                                            11050
   10 CONTINUE                                                            11060
      SDEV=SDEV-BART*BART                                                 11070
      IF(ABS(SDEV-.5E-10)) 30,30,40                                       11080
   30 SDEV=0.0                                                            11090
      RETURN                                                              11100
   40 SDEV=SQRT(SDEV)                                                     11110
      RETURN                                                              11120
      END                                                                 11130
      SUBROUTINE DMNDV(T,P,N,BART,SDEV)                                   10060
C  THIS ROUTINE CALCULATES THE MEAN AND STANDARD DEVIATION OF T           10070
      DOUBLE PRECISION T                                                  10075
      DIMENSION T(150),P(150)                                             10080
```

```
      BART=T(1)*P(1)                                                    10090
      DO 10 I=2,N                                                       10100
      BART=BART+T(1)*(P(1)-P(I-1))                                      10110
   10 CONTINUE                                                          10120
      SDEV=P(1)*(T(1)-BART)**2                                          10130
      DO 20 I=2,N                                                       10140
      SDEV=SDEV+(P(I)-P(I-1))*(T(I)-BART)**2                            10150
   20 CONTINUE                                                          10160
      IF(ABS(SDEV-.5E-10)) 30,30,40                                     10170
   30 SDEV=0.0                                                          10180
      RETURN                                                            10190
   40 SDEV=SQRT(SDEV)                                                   10200
      RETURN                                                            10210
      END                                                               10220
/*       REQUIRED  PLACE FORTRAN BCD SOURCE BEFORE THIS CARD
//LKED.SYSPRINT  DD   SPACE=(CYL,(1,1))
//LKED.SYSIN  DD   DATA,SPACE=(TRK,(5,5))
/*
//GO.FT05F001  DD  DATA,SPACE=(CYL,(1,1))
9999
SAMPLE RUN - INPUT DATA BASED ON RESULTS FOR 11 NON-ISO AIRCRAFT SAMPLE
   4.86000   2.00000   3.02000   1.05200   3.03000   1.04600   0.00729
   0.79000   1.92000   0.00000   2.74000   0.00000
    6    2    3    4    4
  25.00000  30.00000  35.00000  40.00000  45.00000  50.00000
    1    1    2
    2
  43.20000  26.70000   0.00000   0.00000   0.00000
   0.00161   0.00002   0.00000   0.00000   0.00000
   0.00000   0.00000   0.00000   0.00000
   0.01488  -0.00002   0.00000   0.00000
   0.24418  -0.00336   0.00000   0.00000   0.00000
   1.00000   1.00000   1.00000   1.00000
    .00080    .00000    .00744    .12209
   10
  43.20000  26.70000   0.00000   0.00000   0.00000
   0.02032  -0.00030   0.00000   0.00000   0.00000
   0.01866  -0.00030   0.00000   0.00000   0.00000
   0.09396  -0.00159   0.00000   0.00000   0.00000
   0.10571  -0.00186   0.00000   0.00000   0.00000
   1.00000   1.00000   1.00000   1.00000
    .01016    .00933    .04698    .05285
   2   10
 433.90000 417.00000 219.70000   5.00000 261.30000
  30.90000  39.40000  21.90000   0.33000  38.70000
   0.02016  -0.00030
   0.01842  -0.00030
   0.01811  -0.00159
   0.29232  -0.01105   0.00000   0.00000   0.00000
   3.00000   3.00000   3.00000   1.00000
    .01008    .00921    .00906    .14616
   1.10000   0.84000   5.00000  14.50000   0.00190
   3.50000   3.97000  13.30000  19.70000   0.27100
   8.20000   7.74000   3.30000   5.40000   0.16000
   1.70000   1.64000   2.80000   6.80000   0.09800
   7.70000   6.65000   0.00000   0.00000  50.00000  25.80000          2
  11.30000  13.52000   0.00000   0.00000  13.90000  14.10000          2
   6.80000   7.23000   0.00000   0.00000  29.80000  63.80000          2
   3.50000   9.10000   0.00000   0.00000  25.70000  25.30000          2
9999
/*
```

AD-A045 625 GENERAL DYNAMICS SAN DIEGO CALIF CONVAIR AEROSPACE DIV F/G 1/5
F-106 SCHEDULED MAINTENANCE STUDY. USER'S MANUAL,(U)
SEP 72 G WANG, R S GROTE , J R COOPER F41608-71-D-1383
UNCLASSIFIED GDCA-AHD72-006 NL

6 OF 6
ADA045625

END
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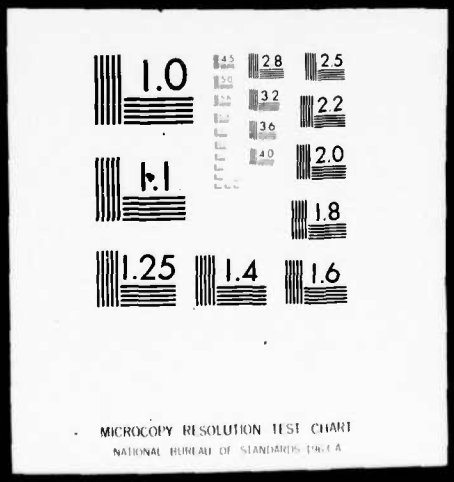
DDC

6 OF 6
ADA045625



6.14 NETWORK ANALYSIS MODEL

```
//T9897V JOB   01,: G. WANG,   :,PRTY>02                X3408
//C9897V EXEC  P96456,PARM.ASSY>(MAP,LIST,BCD),                    C
//             PARM.LKED>:LIST,XREF:,TIME>02,ACCT>D35323007
//ASSY.SYSIN   DD  DATA,SPACE>(CYL,(1,1))                  1440 CDS
C         NETWORK ANALYSIS MODEL-- 370
      COMMON TNEM(20),PNEM(20),NNEM,TMHE(20),PMHE(20),NMHE,NBR,TMH(150,
     120),PMH(150,20),NMH(150),TSP(150,20),PSP(150,20),NSP(150),
     2FHR(150),K(149),L(149),M(149),TNOR(20),PNOR(20),NNOR,BARN,DEV,TMHI
     3(20),PMHI(20),NMHI,FM,BARM,DEVM,BNE,DNE,BMHE,DMHE,LKFX(150)
      DIMENSION HEAD(20)
C     READ 9999 IN FIRST AND LAST CARD FOR END OF FILE TEST
      READ (5,99) EOF9
C  SET ORIGINAL VALUES
    1 DO 40 I=1,20
      TMHI(I)=0.0
      PMHI(I)=0.0
   40 CONTINUE
      NMHI=0
      FM=1.0
      BNE=0.0
      DNE=0.0
      BMHE=0.0
      DMHE=0.0
      READ(5,103) HEAD
      IF(HEAD(1)-EOF9) 3,2,3
    2 CALL EOJMSG
      CALL EXIT
    3 READ(5,100)NBR,NNEM,NMHE
      READ(5,101)(TNEM(I),I=1,NNEM)
      READ(5,101)(PNEM(I),I=1,NNEM)
      READ(5,101)(TMHE(I),I=1,NMHE)
      READ(5,101)(PMHE(I),I=1,NMHE)
      READ(5,102)(LKFX(I),I=1,NBR)
      READ(5,101)(FHR(I),I=1,NBR)
      READ(5,102)(KMH(I),I=1,NBR)
      DO 10 I=1,NBR
      NI=NMH(I)
      READ(5,101)((TMH(I,J),J=1,NI)
      READ(5,101)(PMH(I,J),J=1,NI)
   10 CONTINUE
      NI=NBR-1
      DO 20 I=1,NI
      READ(5,102) K(I),L(I),M(I)
   20 CONTINUE
      WRITE(6,300) HEAD
      WRITE(6,301)
      IF(NNEM) 60,60,50
   50 WRITE(6,302)
      WRITE(6,303) (TNEM(I),I=1,NNEM)
      WRITE(6,304) (PNEM(I),I=1,NNEM)
      WRITE(6,305)
      WRITE(6,303) (TMHE(I),I=1,NMHE)
      WRITE(6,304) (PMHE(I),I=1,NMHE)
   60 WRITE(6,307)
      WRITE(6,308) NBR
      WRITE(6,309)(LKFX(I),I=1,NBR)
      WRITE(6,310) (FHR(I),I=1,NBR)
      WRITE(6,311)
      DO 30 I=1,NBR
      NI=NMH(I)
      WRITE(6,312) I,(TMH(I,J),J=1,NI)
      WRITE(6,313) I,(PMH(I,J),J=1,NI)
   30 CONTINUE
      WRITE(6,314)
      NI=NBR-1
      WRITE(6,315) (I,K(I),L(I),M(I),I=1,NI)
      CALL NAMD
      WRITE(6,200)  /
      IF(NNEM) 64,64,62
   62 WRITE(6,302)
      WRITE(6,306) BNE,DNE
      WRITE(6,305)
      WRITE(6,306) BMHE,DMHE
   64 WRITE(6,201)
      WRITE(6,303) (TNOR(I),I=1,NNOR)
      WRITE(6,304) (PNOR(I),I=1,NNOR)
      WRITE(6,306) BARN,DEV
      WRITE(6,202)
      WRITE(6,303) (TMHI(I),I=1,NMHI)
      WRITE(6,304) (PMHI(I),I=1,NMHI)
      WRITE(6,306) BARM,DEVM
      IF(NNEM) 1,1,80
   80 WRITE(6,203)
      WRITE(6,204) FM
      WRITE(6,310) (FHR(I),I=1,NBR)
```

```
      WRITE(6,205)                                                      790
      DO 90 I=1,NBR                                                     800
      NI=NMH(I)                                                         810
      WRITE(6,312) I,(TMH(I,J),J=1,NI)                                  820
      WRITE(6,313) I,(PMH(I,J),J=1,NI)                                  830
   90 CONTINUE                                                          840
      GO TO 1                                                           850
  100 FORMAT(3I2)                                                       860
   99 FORMAT (A4)                                                       865
  101 FORMAT(8E10.0)                                                    870
  102 FORMAT(40I2)                                                      880
  103 FORMAT(20A4)                                                      890
  200 FORMAT(1H0,10X,11HOUTPUT DATA)                                    900
  201 FORMAT(1H0,10X,26HCALCULATED INSPECTION NORM)                     910
  202 FORMAT(1H0,10X,30HCALCULATED INSPECTION MANHOURS)                 920
  203 FORMAT(1H0,10X,20HADJUSTED BRANCH DATA/)                          930
  204 FORMAT(1H ,5HFM = ,F10.2)                                         940
  205 FORMAT(1H0,10X,24HADJUSTED BRANCH MANHOURS)                       950
  300 FORMAT(1H1,10X,20A4)                                              960
  301 FORMAT(1H0,10X,10HINPUT DATA)                                     970
  302 FORMAT(1H0,10X,25HEMPIRICAL INSPECTION NORM)                      980
  303 FORMAT(1H0,4HT = ,10F10.2/5X,10F10.2)                             990
  304 FORMAT(1H0,4HP = ,10F10.2/5X,10F10.2)                            1000
  305 FORMAT(1H0,10X, 29HEMPIRICAL INSPECTION MANHOURS)                1010
  306 FORMAT(1H0, 7HMEAN = ,F10.2,5X,21HSTANDARD DEVIATION = ,F10.2)   1020
  307 FORMAT(1H0,10X,11HBRANCH DATA/)                                  1030
  308 FORMAT(1H , 6HNBR = ,IX,I10)                                     1040
  309 FORMAT(1H , 7HLKFX = ,10I10/(8X,10I10))                          1050
  310 FORMAT(1H , 6HFHR = ,IX,10F10.2/(8X,10F10.2))                    1060
  311 FORMAT(1H0,10X,15HBRANCH MANHOURS)                               1070
  312 FORMAT(1H0,4HTMH(,I3,6H,J) = ,4X,9F10.2/(8X,10F10.2))            1080
  313 FORMAT(1H0,4HPMH(,I3,6H,J) = ,4X,9F10.2/(8X,10F10.2))            1090
  314 FORMAT(1H0,10HNETWORK DEFINITION/)                               1100
  315 FORMAT(1H ,4I10)                                                 1110
      END                                                              1120
      SUBROUTINE NAMO                                                  1130
C THIS ROUTINE IS A DRIVER FOR NAM, THE NETWORK ANALYSIS MODEL         1140
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C    1150
C  NAMO ASSUMES THAT THE FOLLOWING VARIABLES HAVE BEEN CALCULATED OR REA 1160
C  IN BY THE CALLING PROGRAM                                           1170
C      TNEM(I),PNEM(I)     VALUES OF TIME AND PROBABILITY DEFINING EMPIRIC 1180
C                          DISTRIBUTION OF NORM HOURS FOR THE INSPECTION 1190
C      NNEM     THE NUMBER OF VALUES IN THE TNEM-PNEM DISTRIBUTION      1200
C      TMHE(I),PMHE(I)     VALUES OF MANHOURS AND PROBABILITY DEFINING EMP 1210
C                          DISTRIBUTION OF MANHOURS FOR THE LOOK PHASE   1220
C      NMHE     THE NUMBER OF VALUES IN THE TMHE-PMHE DISTRIBUTION      1230
C      NBR      THE NUMBER OF BRANCHES IN THE NETWORK                   1240
C      TMH(I,J),PMH(I,J)   VALUES OF HOURS AND PROBABILITY DEFINING    1250
C                          DISTRIBUTION OF MANHOURS FOR BRANCH I         1260
C      NMH(I)   THE NUMBER OF VALUES IN THE TMH-PMH DISTRIBUTION FOR BRANC 1270
C      LKFX(I) AN INTEGER SET .LT. 1 IF I IS A LOOK BRANCH, AND SET .GT. 1280
C              1 IF A FIX BRANCH                                       1290
C      FHR(I)   THE ESTIMATED RATIO OF CLOCK HOURS TO MANHOURS FOR BRANCH 1300
C      K(I),L(I)      THE NUMBERS OF THE BRANCHES TO BE COMBINED IN STEP I 1310
C      M(I)     SET .EQ. 0 FOR PARALLEL BRANCHES, .GT. 0 FOR SERIES BRANCH 1320
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C    1330
      COMMON TNEM(20),PNEM(20),NNEM,TMHE(20),PMHE(20),NMHE,NBR,TMH(150, 1340
     1I20),PMH(150,20),NMH(150),TSP(150,20),PSP(150,20),NSP(150),      1350
     2FHR(150),K(149),L(149),M(149),TNOR(20),PNOR(20),NNOR,BARN,DEV,TMHI 1360
     3(20),PMH1(20),NMH1,FM,BARM,DEVM,BNE,DNE,BMHE,DMHE,LKFX(150)       1370
      DIMENSION T1(20),T2(20),T3(20),P1(20),P2(20),P3(20)               1380
C  CALCULATE SPAN TIME FOR EACH BRANCH                                 1390
      DO 10 I=1,NBR                                                    1400
      NI=NMH(I)                                                        1410
      NSP(I)=NMH(I)                                                    1420
      DO 8 J=1,NI                                                      1430
      TSP(I,J)=TMH(I,J)*FHR(I)                                         1440
      PSP(I,J)=PMH(I,J)                                                1450
    8 CONTINUE                                                         1460
   10 CONTINUE                                                         1470
C  TRANSFER TO 200 IF AN EMPIRICAL NORM DISTRIBUTION HAS BEEN INPUT    1480
C                                                                      1490
      IF(NNEM)  100,100,200                                            1500
C  CALCULATE INSPECTION NORM AND MANHOURS BASED ON INPUT TASK MANHOURS  1510
C  FIND INSPECTION MANHOURS                                            1520
  100 NI=NMH(I)                                                        1530
      DO 110 I=1,NI                                                    1540
      T1(I)=TMH(I,1)                                                   1550
      P1(I)=PMH(I,1)                                                   1560
  110 CONTINUE                                                         1570
      DO 120 I= 2,NBR                                                  1580
      N2=NMH(I)                                                        1590
      DO 114 J=1,N2                                                    1600
      T2(J)=TMH(I,J)                                                   1610
      P2(J)=PMH(I,J)                                                   1620
  114 CONTINUE                                                         1630
      CALL CONV(P1,P2,P3,T1,T2,T3,N1,N2,N3)                            1640
```

```
      IF  (NBR-1)  122,122,116                                          1650
  116 N1=N3                                                             1660
      DO 118 J=1,N1                                                     1670
      T1(J)=T3(J)                                                       1680
      P1(J)=P3(J)                                                       1690
  118 CONTINUE                                                          1700
  120 CONTINUE                                                          1710
  122 NMH1=N3                                                           1720
      DO 124 I=1,NMH1                                                   1730
      TMH1(I)=T3(I)                                                     1740
      PMH1(I)=P3(I)                                                     1750
  124 CONTINUE                                                          1760
      CALL MNDV(T1,P1,PMH1,NMH1,BARM,DEVM)                              1770
C  CALCULATE INSPECTION NORM                                          1780
      CALL NAM                                                          1790
      RETURN                                                            1800
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  1810
C  OUTPUT OF ABOVE CALCULATIONS CONSISTS OF THE FOLLOWING ITEMS         1820
C      INOR(I),PNOR(I),NNOR,BARN,DEV  -- ALL FROM NAM                  1830
C      TMH(I),PMH(I)     VALUES OF MANHOURS AND PROBABILITY DEFINING    1840
C                        CALCULATED DISTRIBUTION OF INSPECTION MANHOURS 1850
C      BARM,DEVM         MEAN AND STANDARD DEVIATION OF MANHOUR         1860
C                        DISTRIBUTION                                   1870
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  1880
C                                                                       1890
C  CALCULATE AN ESTIMATE OF INSPECTION NORM AND MANHOURS                1900
C  CALCULATE ESTIMATE OF LOOK PHASE MANHOURS BASED ON INPUT TASK MANHOUR 1910
  200 DO 202 I=1,NBR                                                    1920
      LK=1                                                              1930
      IF(LKFX(I)-1)  204,204,202                                        1940
  202 CONTINUE                                                          1950
      STOP                                                              1960
  204 N1=NMH(LK)                                                        1970
      DO 206 I=1,N1                                                     1980
      P1(I)=PMH(LK,I)                                                   1990
      T1(I)=TMH(LK,I)                                                   2000
  206 CONTINUE                                                          2010
      N1=LK+1                                                           2020
      DO 216 I=N1,NBR                                                   2030
      IF(LKFX(I)-1) 208,208,216                                         2040
  208 N2=NMH(I)                                                         2050
      DO 210 J=1,N2                                                     2060
      T2(J)=TMH( I,J)                                                   2070
      P2(J)=PMH( I,J)                                                   2080
  210 CONTINUE                                                          2090
      CALL CONV(P1,P2,P3,T1,T2,T3,N1,N2,N3)                             2100
      IF(NBR- 1) 222,222,212                                            2110
  212 N1=N3                                                             2120
      DO 214 J=1,N1                                                     2130
      T1(J)=T3(J)                                                       2140
      P1(J)=P3(J)                                                       2150
  214 CONTINUE                                                          2160
  216 CONTINUE                                                          2170
  222 NMH1=N3                                                           2180
      DO 224 I=1,NMH1                                                   2190
      TMH1(I)=T3(I)                                                     2200
      PMH1(I)=P3(I)                                                     2210
  224 CONTINUE                                                          2220
C  CALCULATE ESTIMATE OF INSPECTION NORM                              2230
      CALL NAM                                                          2240
C  CALCULATE MEAN VALUE OF CALCULATED LOOK MANHOUR DISTRIBUTION       2250
      CALL MNDV(T3,P3,N3,BARM,DEVM)                                     2260
C  CALCULATE MEAN VALUES OF EMPIRICAL NORM AND MANHOUR DISTRIBUTIONS   2270
      CALL MNDV(TNEM,PNEM,NNEM,BNE,DNE)                                 2280
      CALL MNDV(TMHE,PMHE,NMHE,BMHE,DMHE)                               2290
C  ADJUST SCALING FACTORS                                             2300
C  COMPARE MEAN VALUES OF MANHOURS                                    2310
      IF(ABS(BMHE-BARM)-0.1) 250,240,240                                2320
  240 FM=BMHE/BARM                                                      2330
      DO 246 I=1,NBR                                                    2340
      IF(LKFX(I)-1) 242,242,248                                         2350
  242 N1=NMH(1)                                                         2360
      DO 244 J=1,N1                                                     2370
      TMH(I,J)=TMH(I,J)*FM                                              2380
  244 CONTINUE                                                          2390
  248 CONTINUE                                                          2400
      GO TO 260                                                         2410
C  COMPARE MEAN VALUES OF NORM                                        2420
  250 IF(ABS(BARN-BNE)-0.1) 270,260,260                                 2430
  260 DO 268 I=1,NBR                                                    2440
      IF(LKFX(I)-1) 262,262,266                                         2450
  262 PHR(I)=(PHR(1)*BNE)/(FM*BARN)                                     2460
      GO TO 268                                                         2470
  266 PHR(I)=(PHR(1)*BNE)/BARN                                          2480
  268 CONTINUE                                                          2490
  270 RETURN                                                            2500
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  2510
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C  OUTPUT OF ABOVE CALCULATIONS CONSISTS OF THE FOLLOWING ITEMS                2520
C     TMH(I,J),PMH(I,J)  VALUES OF HOURS AND PROBABILITY DEFINING AN          2530
C                        ADJUSTED DISTRIBUTION OF MANHOURS OR SPAN TIME       2540
C                        FOR BRANCH I                                         2550
C     FM       RATIO OF ADJUSTED LOOK MANHOURS TO INPUT LOOK MANHOURS         2560
C     FHR(I)   THE ADJUSTED RATIO OF CLOCK HOURS TO MANHOURS FOR BRANCH I     2570
C     BARN,BNE    MEAN VALUES OF NORM FOR CALCULATED AND EMPIRICAL            2580
C                 DISTRIBUTIONS                                               2590
C     DEV,DNE     STANDARD DEVIATION OF NORM FOR CALCULATED AND EMPIRICAL     2600
C                 DISTRIBUTIONS                                               2610
C     BARM,BMHE   MEAN VALUES OF MANHOURS FOR CALCULATED AND EMPIRICAL        2620
C                 DISTRIBUTIONS                                               2630
C     DEVM,DMHE   STANDARD DEVIATION OF MANHOURS FOR CALCULATED AND EMPIR     2640
C                 DISTRIBUTIONS                                               2650
C     TMH(I),PMH(I)      VALUES OF MANHOURS AND PROBABILITY DEFINING          2660
C                        CALCULATED DISTRIBUTION OF INSPECTION MANHOURS       2670
C     TNOR(I),PNOR(I)    --FROM NAM                                           2680
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     2690
      END                                                                     2700
      SUBROUTINE NAM                                                          2710
C  NAM IS A NETWORK ANALYSIS MODEL                                            2720
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     2730
C  INPUT REQUIRED BY NAM CONSISTS OF THE FOLLOWING ITEMS                      2740
C     NBR      THE NUMBER OF BRANCHES IN THE NETWORK                         2750
C     TSP(I,J),PSP(I,J)  VALUES OF TIME AND PROBABILITY DEFINING             2760
C                        DISTRIBUTION OF SPAN TIME FOR BRANCH I               2770
C     NSP(I)   THE NUMBER OF VALUES IN THE TSP-PSP DISTRIBUTION FOR BRANC     2780
C     K(I,L(I)      THE NUMBERS OF THE BRANCHES TO BE COMBINED IN STEP I      2790
C     M(I)      SET .EQ. 0 FOR PARALLEL BRANCHES, .GT. 0 FOR SERIES BRANCH    2800
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     2810
      COMMON TNEM(20),PNEM(20),NNEM,TMHE(20),PMHE(20),NMHE,NBR,TMH(150,       2820
     1 20),PMH(150,20),NMH(150),TSP(150,20),PSP(150,20),NSP(150),             2830
     2FHR(150),K(149),L(149),M(149),TNOR(20),PNOR(20),NNOR,BARN,DEV,TMHI      2840
     3(20),PMHI(20),NMHI,FM,BARM,DEVM,BNE,DNE,BMHE,DMHE,LKFX(150)             2850
      DIMENSION TK(20),TL(20),TR(20),PL(20),PK(20),PR(20)                     2860
C COMBINE BRANCHES                                                            2870
      NCOM=NBR-1                                                              2880
      DO 50 II=1,NCOM                                                         2890
      KBR=K(II,1)                                                             2900
      LBR=L(II)                                                               2910
      NK=NSP(KBR)                                                             2920
      NL=NSP(LBR)                                                             2930
      DO 12 I=1,NK                                                            2940
      TK(I)=TSP(KBR,I)                                                        2950
      PK(I)=PSP(KBR,I)                                                        2960
   12 CONTINUE                                                                2970
      DO 14 I=1,NL                                                            2980
      TL(I)=TSP(LBR,I)                                                        2990
      PL(I)=PSP(LBR,I)                                                        3000
   14 CONTINUE                                                                3010
      IF(M(II)) 20,20,30                                                      3020
C  M .EQ. 0 FOR PARALLEL BRANCHES                                             3030
   20 CALL MULT(PK,PL,PR,TK,TL,TR,NK,NL,NR)                                   3040
      GO TO 32                                                                3050
C  M .GT. 0 FOR SERIES BRANCHES                                               3060
   30 CALL CONV(PK,PL,PR,TK,TL,TR,NK,NL,NR)                                   3070
   32 NSP(KBR)=NR                                                             3080
      DO 40 I=1,NR                                                            3090
      TSP(KBR,I)=TR(I)                                                        3100
      PSP(KBR,I)=PR(I)                                                        3110
   40 CONTINUE                                                                3120
   50 CONTINUE                                                                3130
C  STORE NORM DISTRIBUTION IN TNOR,PNOR                                       3140
      NNOR=NSP(KBR)                                                           3150
      DO 60 I=1,NNOR                                                          3160
      TNOR(I)=TSP(KBR,1)                                                      3170
      PNOR(I)=PSP(KBR,I)                                                      3180
   60 CONTINUE                                                                3190
C  CALCULATE NORM MEAN AND STANDARD DEVIATION                                 3200
      CALL MNDV(NNOR,PNOR,NNOR,BARN,DEV)                                      3210
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     3220
C  OUTPUT CONSISTS OF THE FOLLOWING ITEMS                                     3230
C     TNOR(I),PNOR(I)    VALUES OF TIME AND PROBABILITY DEFINING              3240
C                        DISTRIBUTION OF NORM TIME FOR THE INSPECTION         3250
C     NNOR     THE NUMBER OF VALUES IN THE TNOR-PNOR DISTRIBUTION            3260
C     BARN     THE MEAN VALUE OF TNOR                                        3270
C     DEV      THE STANDARD DEVIATION OF TNOR                                3280
C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C  C     3290
      RETURN                                                                  3300
      END                                                                     3310
      SUBROUTINE MULT(P1,P2,P3,T1,T2,T3,N1,N2,N3)                             3320
C  THIS ROUTINE DUPLICATES AS T3-P3 THE PRODUCT OF T1-P1 AND T2-P2            3330
      DIMENSION T1(20),T2(20),T3(20),P1(20),P2(20),P3(20),TH(40),PH(40)       3340
C  THE PRODUCT OF P1 AND P2 IS PLACED IN P3                                   3350
C  PLACE P1,T1,P2,T2 VALUES IN PH,TH                                          3360
      N3=N1*N2                                                                3370
      DO 10 I=1,N1                                                            3380
      TH(I)=T1(I)                                                             3390
```

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      PH(1)=P1(1)                                                       3400
   10 CONTINUE                                                          3410
      DO 12 I=1,N2                                                      3420
      TH(I+N1)=T2(I)                                                    3430
      PH(I+N1)=P2(I)                                                    3440
   12 CONTINUE                                                          3450
C  MULTIPLY P3 VALUES BY PROPER P1 AND P2 VALUES                        3460
      DO 20 I=1,N1                                                      3470
      DO 16 J=1,N2                                                      3480
      D1F=T2(J)-T1(I)                                                   3490
      IF(ABS(D1F)-5.E-7) 14,13,13                                       3500
   13 IF(D1F) 16,14,15                                                  3510
   14 PH(I)=PH(I)*P2(J)                                                 3520
      GO TO 20                                                          3530
   15 IF(J-1) 151,151,152                                               3540
  151 PH(I)=0.0                                                         3550
      GO TO 20                                                          3560
  152 PH(I)=PH(I)*P2(J-1)                                               3570
      GO TO 20                                                          3580
   16 CONTINUE                                                          3590
   20 CONTINUE                                                          3600
      DO 30 I=1,N2                                                      3610
      DO 26 J=1,N1                                                      3620
      D1F=T1(J)-T2(I)                                                   3630
      IF(ABS(D1F)-5.E-7) 24,23,23                                       3640
   23 IF(D1F) 26,24,25                                                  3650
   24 PH(I+N1)=PH(I+N1)*P1(J)                                           3660
      GO TO 30                                                          3670
   25 IF(J-1) 251,251,252                                               3680
  251 PH(I+N1)=0.0                                                      3690
      GO TO 30                                                          3700
  252 PH(I+N1)=PH(I+N1)*P1(J-1)                                         3710
      GO TO 30                                                          3720
   26 CONTINUE                                                          3730
   30 CONTINUE                                                          3740
C  ARRANGE TH,PH IN ORDER OF INCREASING TH                              3750
      CALL ORD(TH,PH,N3)                                                3760
C ELIMINATE DUPLICATE TH-PH PAIRS                                       3770
   32 DO 40 I=2,N3                                                      3780
      IF(ABS(TH(I)-TH(I-1))-5.E-7) 34,34,40                             3790
   34 K=I+1                                                             3800
      DO 36 J=K,N3                                                      3810
      TH(J-1)=TH(J)                                                     3820
      PH(J-1)=PH(J)                                                     3830
   36 CONTINUE                                                          3840
      N3=N3-1                                                           3850
      GO TO 32                                                          3860
   40 CONTINUE                                                          3870
C  ELIMINATE UNNECESSARY POINTS                                         3880
   42 DO 48 I=2,N3                                                      3890
      IF(ABS(PH(I)-PH(I-1))-5.E-7)  44,44,48                            3900
   44 K=I+1                                                             3910
      DO 46 J=K,N3                                                      3920
      TH(J-1)=TH(J)                                                     3930
      PH(J-1)=PH(J)                                                     3940
   46 CONTINUE                                                          3950
      N3=N3-1                                                           3960
      GO TO 42                                                          3970
   48 CONTINUE                                                          3980
C  REDUCE VECTOR SIZES                                                  3990
      CALL REDL(TH,PH,N3)                                               4000
C  PLACE PH VALUES IN P3, AND TH VALUES IN T3                           4010
      DO 50 I=1,N3                                                      4020
      P3(I)=PH(I)                                                       4030
      T3(I)=TH(I)                                                       4040
   50 CONTINUE                                                          4050
      RETURN                                                            4060
      END                                                               4070
      SUBROUTINE CONV(P1,P2,P3,T1,T2,T3,N1,N2,N3)                       4100
C  THIS ROUTINE OUTPUTS AS T3-P3 THE CONVOLUTION OF T1-P1 AND T2-P2     4110
      DIMENSION P1(20),P2(20),P3(20),T1(20),T2(20),T3(20),PD1(20),      4120
     1PD2(20),PROD(20,20),TT(20,20),TU(400),PROE(400)                   4130
      EQUIVALENCE (TU(1),TT(1,1))                                       4132
      EQUIVALENCE (PROE(1),PROD(1,1))                                   4135
C  CALCULATE DISCRETE PROBABILITY DENSITY FUNCTION                      4140
      PD1(1)=P1(1)                                                      4150
      PD2(1)=P2(1)                                                      4160
      DO 2 I=2,N1                                                       4170
      PD1(I)=P1(I)-P1(I-1)                                              4180
    2 CONTINUE                                                          4190
      DO 3 I=2,N2                                                       4200
      PD2(I)=P2(I)-P2(I-1)                                              4210
    3 CONTINUE                                                          4220
C  CALCULATE ELEMENTS OF MATRICES                                       4230
      DO 20 I=1,N1                                                      4240
      DO 10 J=1,N2                                                      4250
      TT(I,J)=T1(I)+T2(J)                                               4260
      PROD(I,J)=PD1(I)*PD2(J)                                           4270
   10 CONTINUE                                                          4280
   20 CONTINUE                                                          4290
      N3=N1*N2                                                          4300
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C  ARRANGE ELEMENTS IN ORDER OF INCREASING TT(I)                    4310
      DO 24 J=1,N2                                                  4320
      DO 23 I=1,N1                                                  4330
      K=I+N1*(J-1)                                                  4340
      TU(K)=TT(I,J)                                                 4350
      PROE(K)=PROD(I,J)                                             4360
   23 CONTINUE                                                      4370
   24 CONTINUE                                                      4380
      CALL ORD(TT,PROD,N3)                                          4390
C  ELIMINATE DUPLICATE VALUES IN TT                                 4400
   32 DO 40 I=2,N3                                                  4410
      IF(ABS(TU(I)-TU(I-1))-5.E-7)  34,34,40                        4420
   34 PROE(I-1)=PROE(I-1)+PROE(I)                                   4430
      GO TO 42                                                      4440
   40 CONTINUE                                                      4450
      GO TO 46                                                      4460
   42 K=I+1                                                         4470
      DO 44 J=K,N3                                                  4480
      TU(J-1)=TU(J)                                                 4490
      PROE(J-1)=PROE(J)                                             4500
   44 CONTINUE                                                      4510
      N3=N3-1                                                       4520
      GO TO 32                                                      4530
C  CALCULATE CUMULATIVE PROBABILITY                                 4540
   46 DO 50 I=2,N3                                                  4550
      PROE(I)=PROE(I)+PROE(I-1)                                     4560
   50 CONTINUE                                                      4570
C  ELIMINATE UNNECESSARY POINTS                                     4580
      N=2                                                           4590
   60 DO 62 I=N,N3                                                  4600
      K=1                                                           4610
      IF(ABS(PROE(I)-PROE(I-1))-5.E-7) 64,64,62                     4620
   62 CONTINUE                                                      4630
      GO TO 70                                                      4640
   64 N3=N3-1                                                       4650
      IF(I-N3) 66,66,70                                             4660
   66 DO 67 J=K,N3                                                  4670
      PROE(J)=PROE(J+1)                                             4680
      TU(J)=TU(J+1)                                                 4690
   67 CONTINUE                                                      4700
      N=K                                                           4710
      GO TO 60                                                      4720
C  REDUCE VECTOR SIZES IF NECESSARY                                 4730
   70 CALL REDC(TT,PROD,N3)                                         4740
   80 DO 85 I=1,N3                                                  4750
      P3(I)=PROE(I)                                                 4760
      T3(I)=TU(I)                                                   4770
   85 CONTINUE                                                      4780
      RETURN                                                        4790
      END                                                           4800
      SUBROUTINE ORD(TT,PROD,N3)                                    4790
C  THIS ROUTINE ARRANGES TT-PROD PAIRS  IN INCREASING ORDER OF TT   4800
      DIMENSION TT(40),PROD(40)                                     4810
      N=N3-1                                                        4820
      DO 27 I=1,N                                                   4830
      K=I+1                                                         4840
      DO 26 J=K,N3                                                  4850
      IF(TT(I)-TT(J)) 26,26,25                                      4860
   25 HOLD=TT(I)                                                    4870
      TT(I)=TT(J)                                                   4880
      TT(J)=HOLD                                                    4890
      HOLD=PROD(I)                                                  4900
      PROD(I)=PROD(J)                                               4910
      PROD(J)=HOLD                                                  4920
   26 CONTINUE                                                      4930
   27 CONTINUE                                                      4940
      RETURN                                                        4950
      END                                                           4960
      SUBROUTINE REDC(TT,PROD,N3)                                   4970
C  THIS ROUTINE REDUCES VECTORS TT,PROD TO ACCEPTABLE SIZES         4980
      DIMENSION TT(40),PROD(40)                                     4990
   70 IF(N3-20) 80,80,71                                            5000
   71 SUM=T(3)-T)(I)                                                5010
      IDRP=2                                                        5020
      DO 74 I=4,N3                                                  5030
      ISUM=T(I)-T)(I-2)                                             5040
      IF(ISUM-SUM) 72,74,74                                         5050
   72 SUM=ISUM                                                      5060
      IDRP=I-I                                                      5070
   74 CONTINUE                                                      5080
      K=N3-1                                                        5090
      DO 76 I=IDRP,K                                                5100
      )T(I)=TT(I+1)                                                 5110
      PROD(I)=PROD(I+1)                                             5120
   76 CONTINUE                                                      5130
      N3=K                                                          5140
      GO TO 70                                                      5150
   80 RETURN                                                        5160
      END                                                           5170
      SUBROUTINE MODV(T,P,N,BART,SDEV)                              5180
```

```
C  THIS ROUTINE CALCULATES THE MEAN AND STANDARD DEVIATION OF T                5190
      DIMENSION T(20),P(20)                                                    5200
      BART=T(1)*P(1)                                                           5210
      DO 10 I=2,N                                                              5220
      BART=BART+T(I)*(P(I)-P(I-1))                                             5230
   10 CONTINUE                                                                 5240
      SDEV=P(1)*(T(1)-BART)**2                                                 5250
      DO 20 I=2,N                                                              5260
      SDEV=SDEV+(P(I)-P(I-1))*(T(I)-BART)**2                                   5270
   20 CONTINUE                                                                 5280
      SDEV=SQRT(SDEV)                                                          5290
      RETURN                                                                   5300
      END                                                                      5310
/*      REQUIRED  PLACE FORTRAN BCD SOURCE BEFORE THIS CARD
//LKED.SYSPRINT  DD   SPACE=(CYL,(1,1))
//LKED.SYSIN  DD   DATA,SPACE=(TRK,(5,5))
/*
//GO.FT05F001  DD  DATA,SPACE=(CYL,(1,1))
9999
SAMPLE CASE 1
11 5 5
0.        3.        4.        4.2       6.
0.        .1        .5        .8        1.
0.        3.        4.        4.2       6.
0.        .1        .5        .8        1.
 0 2 0 2 0 2 0 2 0 2 0
1.        1.        1.        1.        .5        1.        .75       1.
.33       1.        1.
 2 6 2 6 2 4 2 4 2 4 2
0.        .5
0.        1.
0.        .2        .4        .6        .8        1.
0.        .2        .4        .6        .8        1.
0.        1.
0.        1.
0.        .2        .5        .9        1.4       2.0
0.        .2        .4        .6        .8        1.
0.        1.2
0.        1.
0.        .1        .2        .4
0.        .2        .8        1.
0.        .8
0.        1.
0.        .5        .7        .9
0.        .2        .6        1.
0.        1.5
0.        1.
0.        .3        .4        .5
0.        .4        .8        1.
0.        .8
0.        1.
 3 4 1
 7 8 1
 2 7 1
 2 3 0
 1 2 1
 5 6 1
 910 1
 5 9 0
 1 5 1
 111 1
SAMPLE CASE 2
 8
1.        1.        1.        1.        1.        1.        1.        1.
 2 2 2 2 2 2 2 2
0.        1.5
0.        1.
0.        3.
0.        1.
0.        4.
0.        1.
0.        5.
0.        1.
0.        6.
0.        1.
0.        3.5
0.        1.
0.        2.
0.        1.
0.        7.
0.        1.
 2 3 0
 4 5 0
 2 6 1
 2 7 0
 1 2 1
 1 6 1
 1 8 0
9999
/*
```

6.15 MANHOUR AND NORM DATA - TASK 7

6.15.1 SUM UNSCHEDULED MAINTENANCE ACTIONS

```
//C9897K JOB   01,: 6, WANG    :,PRTY>02,TYPRUN>HOLD
//C9897K EXEC  P9655L,TIME>02,ACCT>D35323007
//CHG.TU12     DD   DISP>[,PASS],UNIT>[A+F1,2,DEFER],DSN>+A.9897416,   CT12/13 1
//               VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]  T12    3
//CHG.TU22     DD   DISP>[,PASS],UNIT>[A+F5,2,DEFER],DSN>+E.9897460,   CT22/23 1
//               VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//               1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                 1440 CDS
00000          COMBINE     COMPILE                    G, WANG,                C98970
01040  DATE-WRITTEN. 27 JLY 72.                                               C98970
01050  REMARKS.                                                               C98970
02000  ENVIRONMENT DIVISION.                                                  C98970
02010  CONFIGURATION SECTION.                                                 C98970
02020  SOURCE-COMPUTER. IBM-360.                                              C98970
02030  OBJECT-COMPUTER. IBM-360.                                              C98970
02100  INPUT-OUTPUT SECTION.                                                  C98970
02110  FILE-CONTROL.                                                          C98970
02120      SELECT IN-FILE-DB              ASSIGN TO UT-S-TU12                 C98970
02130          RESERVE 1 ALTERNATE AREA.                                      C98970
02140      SELECT IN-FILE-ISC             ASSIGN TO DA-S-DT01                 C98970
02150          RESERVE 1 ALTERNATE AREA.                                      C98970
02160      SELECT OUT-DATA                ASSIGN TO UT-S-TU22                 C98970
02170          RESERVE 1 ALTERNATE AREA.                                      C98970
10000  DATA DIVISION.                                                         C98970
10010  FILE SECTION.                                                          C98970
10100  FD  IN-FILE-DB                                                         C98970
10130      BLOCK CONTAINS 40 RECORDS                                          C98970
10140      RECORD CONTAINS 70          CHARACTERS                             C98970
10150      LABEL RECORDS ARE OMITTED                                          C98970
10160      DATA RECORDS ARE IN-REC-D-B.                                       C98970
10200  01  IN-REC-D-B SYNC.                                                  C98970
10210      02  FILLER                 PICTURE X[70].                         C98970
11300  FD  IN-FILE-ISC                                                        C98970
11320      RECORDING MODE IS F                                                C98970
11330      BLOCK CONTAINS 20 RECORDS                                          C98970
11340      RECORD CONTAINS 80          CHARACTERS                             C98970
11350      LABEL RECORDS ARE STANDARD                                         C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                       C98970
11400  01  IN-REC-ISC SYNC.                                                  C98970
11410      02  FILLER                 PICTURE X[80].                         C98970
12100  FD  OUT-DATA                                                           C98970
12120      RECORDING MODE IS F                                                C98970
12130      BLOCK CONTAINS 60 RECORDS                                          C98970
12140      RECORD CONTAINS 50          CHARACTERS                             C98970
12150      LABEL RECORDS ARE OMITTED                                          C98970
12160      DATA RECORDS ARE TAPE-FILE.                                        C98970
12180  01  TAPE-FILE     SYNC         PICTURE X[50].                         C98970
30000  WORKING-STORAGE SECTION.                                               C98970
30010  77  ISCHRONAL SYNC             PICTURE X.                             C98970
30020  77  WDC-TEMP SYNC              PICTURE X.                             C98970
30040  77  WEEK-TEMP SYNC             PICTURE 999.                           C98970
30050  77  ANT SYNC COMPUTATIONAL     PICTURE S999.                          C98970
30060  77  CUR-SN                     PICTURE X[8] VALUE SPACE.              C98970
30070  77  P-WEEK                     PICTURE S999 COMPUTATIONAL.            C98970
30080  77  P-FLT-HRS                  PICTURE S9[6] COMPUTATIONAL.           C98970
30100  77  NO-WDC          SYNC       PICTURE 9999 VALUE ZERO.               C98970
30170  77  CNT SYNC COMPUTATIONAL     PICTURE S999.                          C98970
30400  77  ISC-TEMP        SYNC       PICTURE X[8] VALUE SPACE.              C98970
30410  77  PREV-TESTED-SN  SYNC       PICTURE X[8] VALUE SPACE.              C98970
30420  77  ISC-FLAG        SYNC       PICTURE X    VALUE SPACE.              C98970
30430  77  MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.        C98970
30500  77  TEMP-WDC        SYNC       PICTURE X[8].                          C98970
30510  77  TEMP-COL-NO     SYNC       PICTURE S99 COMPUTATIONAL.             C98970
30520  77  NO-WDC-COLS COMPUTATIONAL  PICTURE S999 SYNC VALUE <21.          C98970
30530  77  BF          COMPUTATIONAL  PICTURE S999 SYNC VALUE <23.          C98970
30540  77  ONE  SYNC                  PICTURE X VALUE !1.                    C98970
30550  77  TWO  SYNC                  PICTURE X VALUE !2.                    C98970
30560  77  POS-WDC     COMPUTATIONAL  PICTURE S999.                          C98970
30570  77  ISC-TITLE-FLAG  SYNC       PICTURE X.                             C98970
30580  77  NI-TITLE-FLAG   SYNC       PICTURE X.                             C98970
30590  77  NI-LINE-FLAG    SYNC       PICTURE X.                             C98970
30600  77  ISC-LINE-FLAG   SYNC       PICTURE X.                             C98970
30610  77  PAGE-NUMBER-ISC            PICTURE S99  SYNC VALUE ZERO.          C98970
30615  77  PAGE-NUMBER-NI             PICTURE S99  SYNC VALUE ZERO.          C98970
30620  77  NO-REC-PRINT-ISC           PICTURE  9[7] VALUE ZERO.              C98970
30630  77  NO-REC-PRINT-NI            PICTURE  9[7] VALUE ZERO.              C98970
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30640  77  NO-REC-TAPE                  PICTURE  9(7) VALUE ZERO.          C98970
30650  77  NO-REC-TAPE-TI               PICTURE  9(7) VALUE ZERO.          C98970
30660  77  LINE-CNT-ISC COMPUTATIONAL   PICTURE S999           SYNC.        C98970
30670  77  LINE-CNT-NI  COMPUTATIONAL   PICTURE S999           SYNC.        C98970
30680  77  LINE-PAGE    COMPUTATIONAL   PICTURE S999 VALUE +60 SYNC.        C98970
30682  77  SUM-INDEX  COMPUTATIONAL     PICTURE S999 VALUE ZERO SYNC.       C98970
30684  77  TEMP-INDEX COMPUTATIONAL     PICTURE S999 VALUE ZERO SYNC.       C98970
30686  77  NUMBER-SGWUC COMPUTATIONAL   PICTURE S999 VALUE ZERO SYNC.       C98970
30688  77  TWO-DIGIT-COL COMPUTATIONAL  PICTURE S999 VALUE ZERO SYNC.       C98970
31010  01  NO-ISC SYNC.                                                     C98970
31020      02  FILLER                   PICTURE XX.                        C98970
31030      02  NO-ISC-AC                PICTURE S999.                      C98970
31040      02  FILLER                   PICTURE X(75).                     C98970
31050  01  ISC-A-C SYNC.                                                    C98970
31060      02  FILLER                   PICTURE XX.                        C98970
31070      02  ISC-TN                   PICTURE X(8).                      C98970
31080      02  FILLER                   PICTURE XX.                        C98970
31090      02  ISC-WK                   PICTURE  999.                      C98970
31100      02  FILLER                   PICTURE X(65).                     C98970
31200  01  FILLER SYNC.                                                     C98970
31205      02  FILLER OCCURS 36 TIMES.                                      C98970
31210          03  ISC-AC-TN            PICTURE X(8).                      C98970
31220          03  ISC-AC-WK COMPUTATIONAL PICTURE S999.                   C98970
31300  01  INPUT-DB SYNC.                                                   C98970
31310      02  FILLER                   PICTURE X(5).                      C98970
31320      02  SERIAL-NO                PICTURE X(8).                      C98970
31330      02  WEEK                     PICTURE 999.                       C98970
31340      02  WUC                      PICTURE X(5).                      C98970
31350      02  FILLER REDEFINES WUC.                                        C98970
31360          03  WUC-2                PICTURE XX.                        C98970
31370          03  FILLER               PICTURE XXX.                       C98970
31380      02  WDC                      PICTURE X.                         C98970
31390      02  HMC                      PICTURE XXX.                       C98970
31400      02  MA                       PICTURE 999.                       C98970
31410      02  FILLER                   PICTURE X(20).                     C98970
31420      02  IDENT                    PICTURE X.                         C98970
31430          02  FILLER               PICTURE X(4).                      C98970
31432          02  FLT-HRS              PICTURE S9(6).                     C98970
31434          02  FILLER               PICTURE X(11).                     C98970
40000  01  REC-OUT SYNC.                                                    C98970
40010      05  ISOCHRONAL               PICTURE X.                         C98970
40020      05  FILLER                   PICTURE X(11) VALUE                C98970
40030              :          1 1.                                         C98970
40040      05  CUR-WUC                  PICTURE X(5).                      C98970
40050      05  FILLER                   PICTURE X VALUE SPACE.             C98970
40060      05  CUR-HMC                  PICTURE XXX.                       C98970
40070      05  FILLER                   PICTURE X VALUE SPACE.             C98970
40080      05  NUMA                     PICTURE 9(7)V9.                    C98970
40090      05  FILLER                   PICTURE X VALUE SPACE.             C98970
40100      05  MA-HPO                   PICTURE 9(7)V9.                    C98970
40110      05  FILLER                   PICTURE X VALUE SPACE.             C98970
40120      05  MA-PE                    PICTURE 9(7)V9.                    C98970
40130      05  FILLER                   PICTURE XX VALUE 1 $1.             C98970
40830  01  TABLE-OF-WUC-VALUES SYNC.                                        C98970
41092      02  SG-WUC OCCURS 14 TIMES   PICTURE X(5).                      C98970
41093      02  COL-NO OCCURS 14 TIMES   PICTURE S99 COMPUTATIONAL.         C98970
41200  01  TAPE-OUT-ISC SYNC.                                               C98970
41280      02  LIST-HMC-ISC.                                                C98970
41492          03  HMC-ISC OCCURS 21 TIMES PICTURE S9(5).                  C98970
41500      02  HMC-FREQ-TOTAL-ISC       PICTURE S9(6).                     C98970
41600  01  TAPE-OUT-NI SYNC.                                                C98970
41680      02  LIST-HMC-NI.                                                 C98970
41892          03  HMC-NI OCCURS 21 TIMES  PICTURE S9(5).                  C98970
41900      02  HMC-FREQ-TOTAL-NI        PICTURE S9(6).                     C98970
42600  01  NINE SYNC.                                                       C98970
42610      02  FILLER                   PICTURE X(50)  VALUE               C98970
42620              '99999999999999999999999999999999999999999999999999$1.  C98970
43000  01  TABLE-WDC-POS SYNC.                                              C98970
43260          03  WDC-LIST             PICTURE X OCCURS 21 TIMES.         C98970
45000  01          FILLER SYNC.                                           C98970
45010      05          WDC-INPUT.                                         C98970
45020          10  WDC-TITLE-INPUT      PICTURE X(5).                      C98970
45030          10  FILLER               PICTURE X(75).                     C98970
45040      05          FILLER REDEFINES WDC-INPUT.                        C98970
45050          10  FILLER               PICTURE X(4).                      C98970
45060          10  WDC-IN               PICTURE X.                         C98970
45070          10  FILLER               PICTURE X(75).                     C98970
45100  01          NUMBER-CARD SYNC.                                      C98970
45110      05          NUMBER-ITEMS      PICTURE 999.                       C98970
45120      05          FILLER            PICTURE XX.                        C98970
45130      05          INPUT-SG-CODE     PICTURE X(5).                      C98970
45140      05          FILLER            PICTURE X(70).                     C98970
45200  01          FILLER SYNC.                                           C98970
45210      05          SUM-WDC-COL       PICTURE S999 OCCURS 10 TIMES.      C98970
50000  PROCEDURE DIVISION.                                                C98970
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50010 OPEN-FILES.                                                       C98970
50020     OPEN INPUT IN-FILE-DB, IN-FILE-ISC, OUTPUT OUT-DATA.          C98970
50040     PERFORM READ-ISC-A-C THRU END-RIAC.                           C98970
50045     PERFORM READ-IN-TITLE-DATA THRU END-RITD.                     C98970
51000     PERFORM RESET-HMC-LINE-NI THRU END-RESET-NI.                  C98970
51005     PERFORM RESET-HMC-LINE-ISC THRU END-RESET-ISC.                C98970
51010 READ-NSG-WUC.                                                     C98970
51020     READ IN-FILE-DB INTO INPUT-DB,                                C98970
51030                     AT END GO TO CLOSE-TABLE.                     C98970
51040     IF IDENT IS NOT EQUAL TO '4' GO TO READ-NSG-WUC.              C98970
51050     PERFORM PROC-WDC THRU END-PROC-WDC.                           C98970
51060     IF POS-WDC IS EQUAL TO ZERO GO TO READ-NSG-WUC.               C98970
51100 NEXT-WUC.                                                         C98970
51110     MOVE WUC TO CUR-WUC.                                          C98970
51150     ADD 1 TO NO-WUC.                                              C98970
51200 NEXT-HMC.                                                         C98970
51210     MOVE HMC TO CUR-HMC.                                          C98970
51240     PERFORM CHECK-ISCHRONAL THRU END-CI.                          C98970
51250     IF ISCHRONAL IS EQUAL TO ONE PERFORM ADD-ISC,                 C98970
51260                            ELSE PERFORM ADD-NI.                   C98970
51300 READ-DATA.                                                        C98970
51310     READ IN-FILE-DB INTO INPUT-DB,                                C98970
51320                     AT END GO TO CLOSE-TABLE.                     C98970
51330     IF IDENT IS NOT EQUAL TO '4' GO TO READ-DATA.                 C98970
51340     PERFORM PROC-WDC THRU END-PROC-WDC.                           C98970
51350     IF POS-WDC IS EQUAL TO ZERO GO TO READ-DATA.                  C98970
51360     PERFORM CHECK-ISCHRONAL THRU END-CI.                          C98970
51370     IF WUC IS NOT EQUAL TO CUR-WUC GO TO OUTPUT-TABLE-END.        C98970
51380     IF HMC IS NOT EQUAL TO CUR-HMC GO TO OUTPUT-LINE.             C98970
51390     IF ISCHRONAL IS EQUAL TO ONE PERFORM ADD-ISC,                 C98970
51400                            ELSE PERFORM ADD-NI.                   C98970
51490     GO TO READ-DATA.                                              C98970
51500 RESET-HMC-LINE-NI.                                                C98970
51510     MOVE ZERO TO CNT.                                             C98970
51520 RESET-HMC-LINE-1.                                                 C98970
51530     ADD 1 TO CNT.                                                 C98970
51550     MOVE ZERO TO HMC-NI (CNT).                                    C98970
51560     IF CNT IS LESS THAN NO-WDC-COLS GO TO RESET-HMC-LINE-1.       C98970
51590 END-RESET-NI. EXIT.                                               C98970
52000 PROC-WDC.                                                         C98970
52010     MOVE ZERO TO POS-WDC.                                         C98970
52020     MOVE ZERO TO CNT.                                             C98970
52030 PROC-WDC-A.                                                       C98970
52040     ADD 1 TO CNT.                                                 C98970
52050     MOVE WDC-LIST (CNT) TO WDC-TEMP.                              C98970
52060     IF WDC IS LESS THAN WDC-TEMP GO TO END-PROC-WDC.              C98970
52070     IF WDC IS EQUAL TO WDC-TEMP GO TO PROC-WDC-C.                 C98970
52080     IF CNT IS LESS THAN NO-WDC-COLS GO TO PROC-WDC-A.             C98970
52100 PROC-WDC-C.                                                       C98970
52110     MOVE CNT TO POS-WDC.                                          C98970
52190 END-PROC-WDC. EXIT.                                               C98970
52200 OUTPUT-LINE-OF-NI-DATA.                                           C98970
52300     MOVE ZERO TO HMC-FREQ-TOTAL-NI.                               C98970
52310     MOVE ZERO TO CNT.                                             C98970
52320 SUM-NI-COL.                                                       C98970
52330     ADD 1 TO CNT.                                                 C98970
52340     MOVE SUM-WDC-COL (CNT) TO TEMP-INDEX.                         C98970
52350     ADD HMC-NI (TEMP-INDEX) TO HMC-FREQ-TOTAL-NI.                 C98970
52360     IF CNT IS LESS THAN SUM-INDEX GO TO SUM-NI-COL.               C98970
52370     MOVE TWO TO ISOCHRONAL.                                       C98970
52380     MOVE COL-NO (1) TO TEMP-INDEX.                                C98970
52390     MOVE HMC-NI  (TEMP-INDEX) TO MA-HPO.                          C98970
52400     MOVE COL-NO (2) TO TEMP-INDEX.                                C98970
52410     MOVE HMC-NI  (TEMP-INDEX) TO MA-PE.                           C98970
52420     MOVE HMC-FREQ-TOTAL-NI  TO NUMA.                              C98970
52430     IF MA-HPO IS EQUAL TO ZERO AND                                C98970
52440        MA-PE  IS EQUAL TO ZERO AND                                C98970
52450        NUMA   IS EQUAL TO ZERO GO TO END-OUTPUT-LINE-NI-DATA.     C98970
52520     WRITE TAPE-FILE    FROM REC-OUT.                              C98970
52530     ADD 1 TO NO-REC-TAPE.                                         C98970
52580     PERFORM RESET-HMC-LINE-NI THRU END-RESET-NI.                  C98970
52590 END-OUTPUT-LINE-NI-DATA.   EXIT.                                  C98970
52600 OUTPUT-LINE-OF-ISC-DATA.                                          C98970
52700     MOVE ZERO TO HMC-FREQ-TOTAL-ISC.                              C98970
52710     MOVE ZERO TO CNT.                                             C98970
52720 SUM-ISC-COL.                                                      C98970
52730     ADD 1 TO CNT.                                                 C98970
52740     MOVE SUM-WDC-COL (CNT) TO TEMP-INDEX.                         C98970
52750     ADD HMC-ISC (TEMP-INDEX) TO HMC-FREQ-TOTAL-ISC.               C98970
52760     IF CNT IS LESS THAN SUM-INDEX GO TO SUM-ISC-COL.              C98970
52770     MOVE ONE TO ISOCHRONAL.                                       C98970
52780     MOVE COL-NO (1) TO TEMP-INDEX.                                C98970
52790     MOVE HMC-ISC (TEMP-INDEX) TO MA-HPO.                          C98970
52800     MOVE COL-NO (2) TO TEMP-INDEX.                                C98970
52810     MOVE HMC-ISC (TEMP-INDEX) TO MA-PE.                           C98970
52820     MOVE HMC-FREQ-TOTAL-ISC TO NUMA.                              C98970
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52830      IF MA-HPO IS EQUAL TO ZERO AND                                    C98970
52840         MA-PE  IS EQUAL TO ZERO AND                                    C98970
52850         NUMA   IS EQUAL TO ZERO GO TO END-OUTPUT-LINE-ISC-DATA.        C98970
52920      WRITE TAPE-FILE    FROM REC-OUT.                                  C98970
52930      ADD 1 TO NO-REC-TAPE.                                             C98970
52980      PERFORM RESET-HMC-LINE-ISC THRU END-RESET-ISC.                    C98970
52990 END-OUTPUT-LINE-ISC-DATA.      EXIT.                                   C98970
53000 OUTPUT-TABLE-END.                                                      C98970
53040      PERFORM OUTPUT-LINE-OF-NI-DATA THRU END-OUTPUT-LINE-NI-DATA.      C98970
53300      PERFORM OUTPUT-LINE-OF-ISC-DATA THRU                              C98970
53310                                        END-OUTPUT-LINE-ISC-DATA.       C98970
53481 CHECK-ID.                                                              C98970
53485      IF IDENT IS EQUAL TO '91' GO TO CLOSE-FILES.                      C98970
53490      GO TO NEXT-WUC.                                                   C98970
53500 CLOSE-TABLE.                                                           C98970
53510      MOVE .99 TO IDENT.                                                C98970
53520      GO TO OUTPUT-TABLE-END.                                           C98970
53700 OUTPUT-LINE.                                                           C98970
53740      PERFORM OUTPUT-LINE-OF-NI-DATA THRU END-OUTPUT-LINE-NI-DATA.      C98970
53840      PERFORM OUTPUT-LINE-OF-ISC-DATA THRU                              C98970
53850                                      END-OUTPUT-LINE-ISC-DATA.         C98970
53890      GO TO NEXT-HMC.                                                   C98970
53900 RESET-HMC-LINE-ISC.                                                    C98970
53910      MOVE ZERO TO CNT.                                                 C98970
53920 RESET-HMC-LINE-2.                                                      C98970
53930      ADD 1 TO CNT.                                                     C98970
53940      MOVE ZERO TO HMC-ISC (CNT).                                       C98970
53950      IF CNT IS LESS THAN NO-WDC-COLS GO TO RESET-HMC-LINE-2.           C98970
53990 END-RESET-ISC. EXIT.                                                   C98970
54000 ADD-NI.                                                                C98970
54010      MOVE ONE TO NI-LINE-FLAG.                                         C98970
54020      ADD MA TO HMC-NI (POS-WDC).                                       C98970
54100 ADD-ISC.                                                               C98970
54110      MOVE ONE TO ISC-LINE-FLAG.                                        C98970
54120      ADD MA TO HMC-ISC (POS-WDC).                                      C98970
55000 CLOSE-FILES.                                                           C98970
55010      COMPUTE CNT > NO-REC-TAPE      = NO-REC-TAPE      / BF * BF.      C98970
55020      IF CNT IS EQUAL TO ZERO GO TO CF-3.                               C98970
55030 CF-2.                                                                  C98970
55040      WRITE TAPE-FILE FROM NINE.                                        C98970
55050      ADD 1 TO CNT.                                                     C98970
55060      IF CNT IS LESS THAN BF GO TO CF-2.                                C98970
55140 CF-3.                                                                  C98970
55160      DISPLAY ' NO      TAPE RECS ' NO-REC-TAPE     UPON CONSOLE.       C98970
55165      DISPLAY ' NO OF W.U.C. ' NO-WUC UPON CONSOLE.                     C98970
55190      DISPLAY ' END OF JOB C9897 ' UPON CONSOLE.                        C98970
55200      CLOSE IN-FILE-DB,                                                 C98970
55220            OUT-DATA,                                                   C98970
55235          IN-FILE-ISC WITH LOCK.                                        C98970
55290      GOBACK.                                                           C98970
70000 READ-ISC-A-C.                                                          C98970
70010      READ IN-FILE-ISC INTO NO-ISC A7 END GO TO END-RIAC.               C98970
70020      MOVE ZERO TO KNT.                                                 C98970
70030 RIAC.                                                                  C98970
70040      ADD 1 TO KNT.                                                     C98970
70050      READ IN-FILE-ISC INTO ISC-A-C A7 END GO TO END-RIAC.              C98970
70060      MOVE ISC-TN TO ISC-AC-TN (KNT).                                   C98970
70070      MOVE ISC-WK TO ISC-AC-WK (KNT).                                   C98970
70075      IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK                   C98970
70076                TO MIN-ISC-WEEK.                                        C98970
70080      IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                         C98970
70090 END-RIAC. EXIT.                                                        C98970
70200 CHECK-ISCHRONAL.                                                       C98970
70210      IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-I-2.      C98970
70220      IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                         C98970
70230      IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN            C98970
70232                       MIN-ISC-WEEK, THEN GO TO END-CI.                 C98970
70240 CHECK-I-2.                                                             C98970
70250      MOVE TWO TO ISCHRONAL.                                            C98970
70260      IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.                   C98970
70270      MOVE ZERO TO CNT.                                                 C98970
70280 CHECK-I-1.                                                             C98970
70290      ADD 1 TO CNT.                                                     C98970
70300      MOVE ISC-AC-TN (CNT) TO ISC-TEMP.                                 C98970
70310      IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-I-4.               C98970
70320      IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-I-1A.              C98970
70330      IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.                    C98970
70340 CHECK-I-4.                                                             C98970
70350      MOVE TWO TO ISC-FLAG.                                             C98970
70360      GO TO CHECK-I-3.                                                  C98970
70370 CHECK-I-1A.                                                            C98970
70380      MOVE ISC-AC-WK (CNT) TO WEEK-TEMP.                                C98970
70390      IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN             C98970
70400         WEEK-TEMP MOVE ONE TO ISCHRONAL.                               C98970
70410      MOVE ONE TO ISC-FLAG.                                             C98970
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70430  CHECK-1-3.                                                        C98970
70440      MOVE SERIAL-NO TO PREV-TESTED-SN.                             C98970
70450  END-CI. EXIT.                                                     C98970
80000  READ-IN-TITLE-DATA.                                               C98970
80010      MOVE ZERO TO CNT.                                             C98970
80020  READ-WDC-INPUT.                                                   C98970
80030      READ IN-FILE-1SC INTO WDC-INPUT,                              C98970
80040                       AT END GO TO END-RITD.                       C98970
80050      ADD 1 TO CNT.                                                 C98970
80060      MOVE WDC-IN TO WDC-LIST (CNT).                                C98970
80080      IF CNT IS LESS THAN 21 GO TO READ-WDC-INPUT.                  C98970
80100  READ-UNSCHED-MAINT-COLS.                                          C98970
80110      READ IN-FILE-1SC INTO NUMBER-CARD,                            C98970
80120                       AT END GO TO END-RITD.                       C98970
80130      MOVE NUMBER-ITEMS TO SUM-INDEX.                               C98970
80140      MOVE ZERO TO CNT.                                             C98970
80150  READ-UNSCHED-COLS.                                                C98970
80160      READ IN-FILE-1SC INTO NUMBER-CARD,                            C98970
80170                       AT END GO TO END-RITD.                       C98970
80180      ADD 1 TO CNT.                                                 C98970
80190      MOVE NUMBER-ITEMS TO SUM-WDC-COL (CNT).                       C98970
80200      IF CNT IS LESS THAN SUM-INDEX GO TO READ-UNSCHED-COLS.        C98970
80290      MOVE ZERO TO CNT                                              C98970
80300      READ IN-FILE-1SC INTO NUMBER-CARD,                            C98970
80310                       AT END GO TO END-RITD.                       C98970
80320      MOVE NUMBER-ITEMS TO NUMBER-SGWUC.                            C98970
80330  READ-SGWUC-DATA.                                                  C98970
80340      READ IN-FILE-1SC INTO NUMBER-CARD,                            C98970
80350                       AT END GO TO END-RITD.                       C98970
80360      ADD 1 TO CNT.                                                 C98970
80370      MOVE NUMBER-ITEMS TO COL-NO (CNT).                            C98970
80380      MOVE INPUT-SG-CODE TO SG-WUC (CNT).                           C98970
80390      IF CNT IS LESS THAN NUMBER-SGWUC GO TO READ-SGWUC-DATA.       C98970
80790  END-RITD. EXIT.                                                   C98970
/*      PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFG1N    DD   *,SPACE=(CYL,(1,1))                                1440 CDS
00000          GET TFG                          WANG                   C98970*T
010001 019999  REPLACE                                                    *T
TFG  DT01    11  020Z080
  34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324
  58000901  331
  59000002  331
  59000003  331
  59000005  331
  59000006  331
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  59000141  324
  59000143  324
  59000144  324
  59000145  324
  59000147  324
  59000151  324
```

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59000158 - 324
  A
  B
  C
  U
  E
  F
  G
H H
  J
  K
  N
P P
  Q
  R
  S
T T
  U
  V
  2
  4
 9
 1
 2
 3
 4
 5
 6
15
19
20
 2
10  03300
11  03400
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1                T12
//TPR.TU22      DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5                T22
//TPR.TPRIN     DD   *,SPACE>(TRK,(1,1))
T/P  DT01    10100802080
T/P  TU22    10100502050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.15.2 UNSCHEDULED MANHOUR AND NORM HOUR

```
//T9897N JOB   02,' G WANG      ',PRTY>02,TYPRUN>HOLD
//C9897B EXEC  P965SL,TIME>15,ACCT>D35323007
//CHG.TU14     DD   DISP>(,PASS),UNIT>(T+F3,1,DEFER),DSN>+C.9897B16,   CT14
//              VOL>SER>(+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              1+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3)  T14    3
//CHG.TU22     DD   DISP>(,PASS),UNIT>(T+F5,1,DEFER),DSN>+E.9897B32,   CT22    1
//              VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5)  T22    3
//CHG.TU24     DD   DISP>(,PASS),UNIT>(T+F7,1,DEFER),DSN>+G.9897B29,   CT24    1
//              VOL>SER>(+F7,A+F7,B+F7,C+F7,D+F7,E+F7,F+F7,G+F7,H+F7,   CT24    2
//              1+F7,J+F7,K+F7,L+F7,M+F7,N+F7,O+F7,P+F7,Q+F7,R+F7,S+F7)  T24    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
00000          COMBINE     COMPILE                 0, WANG,              C98970
01040  DATE-WRITTEN. 25 JLY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060          PHASE 1I PROGRAM                                          C98970
01070          TASK 7-2A    MANHOUR AND NORM DATA.                       C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
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02120      SELECT IN-FILE-D-B              ASSIGN TO UT-S-TU14              C98970
02130          RESERVE 1 ALTERNATE AREA.                                    C98970
02140      SELECT IN-FILE-ISC              ASSIGN TO DA-S-DT01              C98970
02150          RESERVE 1 ALTERNATE AREA.                                    C98970
02160      SELECT MSG-FILE                 ASSIGN TO DA-S-DT02              C98970
02170          RESERVE 1 ALTERNATE AREA.                                    C98970
02180      SELECT OUT-FILE-1               ASSIGN TO UT-S-TU24              C98970
02190          RESERVE 1 ALTERNATE AREA.                                    C98970
02200      SELECT OUT-FILE-2               ASSIGN TO UT-S-TU22              C98970
02210          RESERVE 1 ALTERNATE AREA.                                    C98970
10000  DATA DIVISION.                                                       C98970
10010  FILE SECTION.                                                        C98970
10100  FD  IN-FILE-D-R                                                      C98970
10120      RECORDING MODE IS F                                              C98970
10130      BLOCK CONTAINS 40 RECORDS                                        C98970
10140      RECORD CONTAINS 70              CHARACTERS                       C98970
10150      LABEL RECORDS ARE OMITTED                                        C98970
10160      DATA RECORDS ARE IN-REC-D-B.                                     C98970
10200  01  IN-REC-D-B SYNC.                                                C98970
10210      02  FILLER                     PICTURE X(70).                   C98970
10220                                                                       C98970
11300  FD  IN-FILE-ISC                                                      C98970
11320      RECORDING MODE IS F                                              C98970
11330      BLOCK CONTAINS 20 RECORDS                                        C98970
11340      RECORD CONTAINS 80              CHARACTERS                       C98970
11350      LABEL RECORDS ARE STANDARD                                       C98970
11360      DATA RECORDS ARE IN-REC-ISC.                                     C98970
11400  01  IN-REC-ISC SYNC.                                                C98970
11410      02  FILLER                     PICTURE X(80).                   C98970
12100  FD  OUT-FILE-1                                                       C98970
12120      RECORDING MODE IS F                                              C98970
12130      BLOCK CONTAINS 90 RECORDS                                        C98970
12140      RECORD CONTAINS 20              CHARACTERS                       C98970
12150      LABEL RECORDS ARE OMITTED                                        C98970
12160      DATA RECORDS ARE OUT-REC-1.                                      C98970
12200  01  OUT-REC-1 SYNC.                                                 C98970
12210      02  FILLER                     PICTURE X(20).                   C98970
13300  FD  MSG-FILE                                                         C98970
13320      RECORDING MODE IS F                                              C98970
13330      BLOCK CONTAINS 20 RECORDS                                        C98970
13340      RECORD CONTAINS 80              CHARACTERS                       C98970
13350      LABEL RECORDS ARE STANDARD                                       C98970
13360      DATA RECORDS ARE MSG-REC.                                        C98970
13400  01  MSG-REC SYNC.                                                   C98970
13410      02  FILLER                     PICTURE X(80).                   C98970
14100  FD  OUT-FILE-2                                                       C98970
14120      RECORDING MODE IS F                                              C98970
14130      BLOCK CONTAINS 90 RECORDS                                        C98970
14140      RECORD CONTAINS 20              CHARACTERS                       C98970
14150      LABEL RECORDS ARE OMITTED                                        C98970
14160      DATA RECORDS ARE OUT-REC-2.                                      C98970
14200  01  OUT-REC-2 SYNC.                                                 C98970
14210      02  FILLER                     PICTURE X(20).                   C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30012  77  WUC-FLAG  SYNC  PICTURE X  VALUE SPACE.                         C98970
30015  77  FLT-FLAG  SYNC  PICTURE X  VALUE SPACE.                         C98970
30016  77  CUR-65  SYNC  PICTURE X  VALUE SPACE.                           C98970
30017  77  DATA-65 SYNC  PICTURE X  VALUE SPACE.                           C98970
30020  77  CURWEEK SYNC                PICTURE 999.                        C98970
30030  77  CUR-SER-NO SYNC             PICTURE X(8).                       C98970
30040  77  CUR-ISC     SYNC            PICTURE X.                          C98970
30050  77  KNT SYNC COMPUTATIONAL      PICTURE S999.                       C98970
30060  77  WEEK-TEMP SYNC              PICTURE 999.                        C98970
30070  77  DELTA-WEEK SYNC             PICTURE S999.                       C98970
30080  77  DELTA-FLT-HRS SYNC          PICTURE S999999.                    C98970
30090  77  CUR-FLT-HRS SYNC            PICTURE S999999.                    C98970
30100  77  FLAG SYNC COMPUTATIONAL     PICTURE S999 VALUE ZERO.            C98970
30110  77  HMC-TEMP SYNC               PICTURE XXX.                        C98970
30120  77  NO-HMC SYNC COMPUTATIONAL   PICTURE S999 VALUE <100.            C98970
30130  77  NO-REC-1  SYNC              PICTURE S9(7) VALUE ZERO.           C98970
30140  77  NO-REC-2  SYNC              PICTURE S9(7) VALUE ZERO.           C98970
30150  77  MAX-NO-HMC SYNC COMPUTATIONAL                                   C98970
30160                                   PICTURE S999  VALUE ZERO.        C98970
30170  77  CNT SYNC COMPUTATIONAL      PICTURE S999.                       C98970
30380  77  ONE  SYNC                   PICTURE X VALUE '1'.                C98970
30390  77  TWO  SYNC                   PICTURE X VALUE '2'.                C98970
30391  77  THREE   SYNC                PICTURE X   VALUE '3'.              C98970
30392  77  FOUR    SYNC                PICTURE X   VALUE '4'.              C98970
30400  77  ISC-TEMP          SYNC      PICTURE X(8) VALUE SPACE.           C98970
30410  77  PREV-TESTED-SN    SYNC      PICTURE X(8) VALUE SPACE.           C98970
30420  77  ISC-FLAG          SYNC      PICTURE X    VALUE SPACE.           C98970
30430  77  MIN-ISC-WEEK SYNC COMPUTATIONAL   PICTURE S999 VALUE <999.      C98970
30500  77  CURWUC      SYNC     PICTURE X(5).                              C98970
30506  77  CUR-HMC  SYNC                PICTURE XXX.                       C98970
30510  77  ISCHRONAL   SYNC     PICTURE X.                                 C98970
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30520  77  SUM-NORM    SYNC    PICTURE S9(6) VALUE ZERO.                    C98970
30530  77  SUM-MAN-HR  SYNC    PICTURE S9(6) VALUE ZERO.                    C98970
30540  77  SUM-MA      SYNC    PICTURE S9(5) VALUE ZERO.                    C98970
30550  77  CUR-ID      SYNC    PICTURE 9.                                   C98970
31010  01  NO-ISC SYNC.                                                    C98970
31020      02  FILLER                  PICTURE XX.                         C98970
31030      02  NO-ISC-AC               PICTURE S999.                       C98970
31040      02  FILLER                  PICTURE X(75).                      C98970
31050  01  ISC-A-C SYNC.                                                   C98970
31060      02  FILLER                  PICTURE XX.                         C98970
31070      02  ISC-TN                  PICTURE X(8).                       C98970
31080      02  FILLER                  PICTURE XX.                         C98970
31090      02  ISC-WK                  PICTURE  999.                       C98970
31100      02  FILLER                  PICTURE X(65).                      C98970
31200  01  FILLER SYNC.                                                    C98970
31205      02  FILLER OCCURS 36 TIMES.                                     C98970
31210          03  ISC-AC-TN           PICTURE X(8).                       C98970
31220          03  ISC-AC-WK COMPUTATIONAL PICTURE S999.                   C98970
31300  01  DATA-BANK-INPUT SYNC.                                           C98970
31310      02  FILLER                  PICTURE X(5).                       C98970
31320      02  SERIAL-NO               PICTURE X(8).                       C98970
31330      02  WEEK                    PICTURE 999.                        C98970
31340      02  WUC                     PICTURE X(5).                       C98970
31350      02  WUC-B REDEFINES WUC.                                        C98970
31360          03  WUC-2               PICTURE XX.                         C98970
31370          03  FILLER              PICTURE XXX.                        C98970
31380      02  FILLER                  PICTURE X.                          C98970
31390      02  HMC                     PICTURE XXX.                        C98970
31400      02  UNITS                   PICTURE S999.                       C98970
31401      02  MAN-HR          PICTURE S9(4).                              C98970
31402      02  FILLER          PICTURE X(3).                               C98970
31403      02  NORM-HR         PICTURE S9(4).                              C98970
31404      02  NORS-HR         PICTURE S9(4).                              C98970
31405      02  FILLER          PICTURE X(5).                               C98970
31420      02  IDENT                   PICTURE 9.                          C98970
31450      02  FILLER  PICTURE X(4).                                       C98970
31460      02  FLT-HRS  PICTURE S9(6).                                     C98970
31470      02  FILLER  PICTURE X(11).                                      C98970
31500  01  OUT-DATA SYNC.                                                  C98970
31510      02  WUC-OUT         PICTURE X(5).                               C98970
31520      02  HMC-OUT                 PICTURE XXX.                        C98970
31530      02  FILLER                  PICTURE X VALUE  SPACE.             C98970
31540      02  OUS                     PICTURE S9(6).                      C98970
31550      02  FILLER                  PICTURE X VALUE  SPACE.             C98970
31560      02  ISC-OUT         PICTURE X.                                  C98970
31570      02  FILLER                  PICTURE X VALUE  SPACE.             C98970
31580      02  DATA-TYPE               PICTURE X.                          C98970
31590      02  FILLER                  PICTURE X   VALUE '1'.              C98970
31800  01  NINE SYNC.                                                      C98970
31810      02  FILLER                  PICTURE X(20) VALUE                 C98970
31820                          '99999999999999999999'.                     C98970
32000  01  SPEC-WUC  SYNC.                                                 C98970
32010      05  C1-HPF          PICTURE X(5).                               C98970
32020      05  C1-MA1-1        PICTURE X(5).                               C98970
32030      05  C1-MA1-2        PICTURE X(5).                               C98970
32040      05  C1-MA1-3        PICTURE X(5).                               C98970
32050      05  C1-PERI         PICTURE X(5).                               C98970
32060      05  C1-IRAN         PICTURE X(5).                               C98970
32070      05  C1-PREFLT       PICTURE X(5).                               C98970
32080      05  C1-BPOST        PICTURE X(8).                               C98970
32090      05  C1-SHPOST       PICTURE X(5).                               C98970
32100      05  GAP-WK-1        PICTURE 99.                                 C98970
32110      05  GAP-WK-2        PICTURE 99.                                 C98970
32120      05  FILLER          PICTURE X(31).                              C98970
50000  PROCEDURE DIVISION.                                                C98970
50010  OPEN-FILES.                                                        C98970
50020      OPEN INPUT IN-FILE-D-B, IN-FILE-ISC.                           C98970
50030      OPEN OUTPUT MSG-FILE.                                          C98970
50040      OPEN OUTPUT OUT-FILE-1, OUT-FILE-2.                            C98970
50050      PERFORM READ-ISC-A-C THRU END-RIAC.                            C98970
50060  READ-INITIAL.                                                      C98970
50070      READ IN-FILE-D-B INTO DATA-BANK-INPUT;                         C98970
50080                       AT END GO TO CLOSE-FILES.                     C98970
50100  CHECK-DATA.                                                        C98970
50120      IF IDENT IS EQUAL TO 3 AND WUC-2 IS EQUAL TO '03' GO TO        C98970
50130                               PROC-II-1.                            C98970
50140      IF IDENT IS EQUAL TO 3 AND WUC-2 IS EQUAL TO '04' GO TO        C98970
50150                               PROC-II-1.                            C98970
50160      IF IDENT IS EQUAL TO 3 AND WUC-2 IS GREATER THAN '09' GO TO    C98970
50170                               PROC-II-2A.                           C98970
50180      IF IDENT IS EQUAL TO 4 GO TO PROC-II-2B.                       C98970
50190      GO TO READ-INITIAL.                                            C98970
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S0200  PROC-11-1.                                                      C98970
S0210      PERFORM CHECK-ISCHRONAL THRU END-CI.                        C98970
S0220      MOVE ISCHRONAL TO CUR-ISC.                                  C98970
S0222      MOVE IDENT TO CUR-ID.                                       C98970
S0230      MOVE WUC TO CURWUC.                                         C98970
S0240      MOVE WEEK TO CURWEEK.                                       C98970
S0250      MOVE SERIAL-NO TO CUR-SER-NO.                               C98970
S0251      MOVE FLT-HRS TO CUR-FLT-HRS.                                C98970
S0252      MOVE TWO TO CUR-65.                                         C98970
S0253      IF NORM-HR LESS    THAN ZERO MOVE ONE TO CUR-65.            C98970
S0260  INIT-SET.                                                       C98970
S0270      MOVE ONE TO FLT-FLAG.                                       C98970
S0271      IF WUC EQUAL TO CI-PREFLT MOVE TWO TO FLT-FLAG.             C98970
S0272      IF WUC EQUAL TO CI-BPOST  MOVE TWO TO FLT-FLAG.             C98970
S0273      IF WUC EQUAL TO CI-SHPOST MOVE TWO TO FLT-FLAG.             C98970
S0274      COMPUTE SUM-NORM > 0.                                       C98970
S0275      IF FLT-FLAG EQUAL TO ONE AND NORM-HR GREATER THAN ZERO      C98970
S0276          MOVE NORM-HR TO SUM-NORM.                               C98970
S0280      MOVE MAN-HR TO SUM-MAN-HR.                                  C98970
S0290  ACC-SET.                                                        C98970
S0300      READ IN-FILE-D-B INTO DATA-BANK-INPUT                       C98970
S0310                      AT END GO TO CLOSE-FILES.                   C98970
S0315      PERFORM CHECK-ISCHRONAL THRU END-CI.                        C98970
S0320      IF ISCHRONAL IS NOT EQUAL TO CUR-ISC GO TO SET-BREAK.       C98970
S0322      IF IDENT NOT EQUAL TO CUR-ID GO TO SET-BREAK.               C98970
S0330      IF WUC NOT EQUAL TO CURWUC GO TO SET-BREAK.                 C98970
S0340      IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO SET-BREAK.       C98970
S0345      MOVE TWO TO DATA-65.                                        C98970
S0346      IF NORM-HR LESS    THAN ZERO MOVE ONE TO DATA-65.           C98970
S0347      GO TO CHECK-TYPE.                                           C98970
S0348  NOT-SP-TYPE.                                                    C98970
S0350      SUBTRACT CURWEEK FROM WEEK GIVING WEEK-TEMP.                C98970
S0360      IF WEEK-TEMP NOT EQUAL TO 1                                 C98970
S0370          GO TO INTERNAL-BREAK.                                   C98970
S0380      ADD MAN-HR TO SUM-MAN-HR.                                   C98970
S0385      MOVE ONE TO FLT-FLAG.                                       C98970
S0390      IF WUC EQUAL TO CI-PREFLT MOVE TWO TO FLT-FLAG.             C98970
S0400      IF WUC EQUAL TO CI-BPOST  MOVE TWO TO FLT-FLAG.             C98970
S0410      IF WUC EQUAL TO CI-SHPOST MOVE TWO TO FLT-FLAG.             C98970
S0420      IF FLT-FLAG EQUAL TO ONE AND NORM-HR GREATER THAN ZERO      C98970
S0421          ADD NORM-HR TO SUM-NORM.                                C98970
S0425      IF FLT-FLAG EQUAL TO TWO COMPUTE SUM-NORM > 0.              C98970
S0440      MOVE WEEK TO CURWEEK.                                       C98970
S0442      MOVE FLT-HRS TO CUR-FLT-HRS.                                C98970
S0443      IF CUR-65 EQUAL TO TWO OR DATA-65 EQUAL TO TWO              C98970
S0444          MOVE TWO TO CUR-65.                                     C98970
S0446      MOVE IDENT TO CUR-ID.                                       C98970
S0450      GO TO ACC-SET.                                              C98970
S0460  SET-BREAK.                                                      C98970
S0470      PERFORM WRITE-1 THRU END-WRITE-1.                           C98970
S0472      COMPUTE SUM-NORM > 0.                                       C98970
S0474      COMPUTE  SUM-MAN-HR > 0.                                    C98970
S0480      GO TO CHECK-DATA.                                           C98970
S0490  INTERNAL-BREAK.                                                 C98970
S0500      PERFORM WRITE-1 THRU END-WRITE-1.                           C98970
S0510      MOVE WEEK TO CURWEEK.                                       C98970
S0512      MOVE FLT-HRS TO CUR-FLT-HRS.                                C98970
S0515      MOVE DATA-65 TO CUR-65.                                     C98970
S0516      MOVE IDENT TO CUR-ID.                                       C98970
S0520      GO TO INIT-SET.                                             C98970
S0530      NOTE    WRITE NORM-HR AND MAN-HR TOTALS ON OUTPUT FILE.     C98970
S0540  WRITE-1.                                                        C98970
S0660  END-WRITE-1. EXIT.                                              C98970
S1000  CHECK-TYPE.                                                     C98970
S1010      MOVE ONE TO WUC-FLAG.                                       C98970
S1020      IF WUC EQUAL TO CI-HPF    MOVE TWO TO WUC-FLAG.             C98970
S1030      IF WUC EQUAL TO CI-MA1-1  MOVE TWO TO WUC-FLAG.             C98970
S1040      IF WUC EQUAL TO CI-MA1-2  MOVE TWO TO WUC-FLAG.             C98970
S1050      IF WUC EQUAL TO CI-MA1-3  MOVE TWO TO WUC-FLAG.             C98970
S1060      IF WUC EQUAL TO CI-PER1   MOVE TWO TO WUC-FLAG.             C98970
S1070      IF WUC EQUAL TO CI-1RAN   MOVE TWO TO WUC-FLAG.             C98970
S1080      IF WUC-FLAG EQUAL TO ONE GO TO NOT-SP-TYPE.                 C98970
S1090      SUBTRACT CURWEEK FROM WEEK GIVING WEEK-TEMP.                C98970
S1100  SP-TYPE.                                                        C98970
S1110      IF WUC LESS THAN CI-PER1 AND WEEK-TEMP GREATER THAN GAP-WK-1 C98970
S1111          GO TO INTERNAL-BREAK.                                   C98970
S1120      IF WUC GREATER THAN CI-MA1-3 AND WEEK-TEMP GREATER THAN     C98970
S1121          GAP-WK-2  GO TO INTERNAL-BREAK.                         C98970
S1132      ADD MAN-HR TO SUM-MAN-HR.                                   C98970
S1134      IF NORM-HR GREATER THAN ZERO ADD NORM-HR TO SUM-NORM.       C98970
S1140      MOVE WEEK TO CURWEEK.                                       C98970
S1150      MOVE FLT-HRS TO CUR-FLT-HRS.                                C98970
S1152      IF DATA-65 EQUAL TO TWO OR CUR-65 EQUAL TO TWO              C98970
S1153          MOVE TWO TO CUR-65.                                     C98970
S1154      MOVE IDENT TO CUR-ID.                                       C98970
S1160      GO TO ACC-SET.                                              C98970
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55000  PROC-II-2A.                                                    C98970
55010      PERFORM CHECK-ISCHRONAL THRU END-CI.                       C98970
55020      MOVE ISCHRONAL TO CUR-ISC.                                 C98970
55030      MOVE WUC TO CURWUC.                                        C98970
55050      MOVE SERIAL-NO TO CUR-SER-NO.                              C98970
55060      MOVE IDENT TO CUR-ID.                                      C98970
55070      PERFORM WRITE-2 THRU END-WRITE-2.                          C98970
55072      MOVE TWO TO CUR-65.                                        C98970
55073      IF NORM-HR LESS    THAN ZERO MOVE ONE TO CUR-65.           C98970
55075  SET-NEW.                                                       C98970
55080      COMPUTE SUM-NORM > 0.                                      C98970
55081      IF NORM-HR GREATER THAN ZERO MOVE NORM-HR TO SUM-NORM.     C98970
55090      MOVE UNITS TO SUM-MA.                                      C98970
55092      IF UNITS EQUAL TO ZERO GO TO SET-FLAG.                     C98970
55093      MOVE CURWUC TO WUC-OUT.                                    C98970
55094      MOVE CUR-ISC TO ISC-OUT.                                   C98970
55095      PERFORM WRITE-3 THRU END-WRITE-3.                          C98970
55096      READ IN-FILE-D-B INTO DATA-BANK-INPUT AT END GO TO EOF-BRK.C98970
55097      GO TO BREAK-1.                                             C98970
55100  SET-FLAG.                                                      C98970
55130      READ IN-FILE-D-B INTO DATA-BANK-INPUT                      C98970
55140                       AT END GO TO EOF-BRK.                     C98970
55150      PERFORM CHECK-ISCHRONAL THRU END-CI.                       C98970
55160      IF IDENT EQUAL TO CUR-ID                                   C98970
55170                  PERFORM WRITE-2 THRU END-WRITE-2.              C98970
55180      IF ISCHRONAL NOT EQUAL TO CUR-ISC GO TO BREAK-1.           C98970
55190      IF WUC NOT EQUAL TO CURWUC GO TO BREAK-1.                  C98970
55200      IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO BREAK-1.        C98970
55210      IF IDENT NOT EQUAL TO CUR-ID GO TO BREAK-1.                C98970
55212      MOVE TWO TO DATA-65.                                       C98970
55213      IF NORM-HR LESS    THAN ZERO MOVE ONE TO DATA-65.          C98970
55215      IF CUR-65 EQUAL TO TWO OR DATA-65 EQUAL TO TWO             C98970
55216                    MOVE TWO TO CUR-65.                          C98970
55220      IF NORM-HR GREATER THAN ZERO ADD NORM-HR TO SUM-NORM.      C98970
55230      ADD UNITS TO SUM-MA.                                       C98970
55231      IF UNITS NOT EQUAL TO ZERO GO TO INT-BREAK.                C98970
55232      GO TO SET-FLAG.                                            C98970
55240  INT-BREAK.                                                     C98970
55250      MOVE CURWUC TO WUC-OUT.                                    C98970
55260      MOVE CUR-ISC TO ISC-OUT.                                   C98970
55270      PERFORM WRITE-3 THRU END-WRITE-3.                          C98970
55280      COMPUTE SUM-NORM > 0.                                      C98970
55282      COMPUTE SUM-MA > 0.                                        C98970
55284      GO TO SET-FLAG.                                            C98970
55290  BREAK-1.                                                       C98970
55322      COMPUTE SUM-NORM > 0.                                      C98970
55324      COMPUTE SUM-MA > 0.                                        C98970
55330      GO TO CHECK-DATA.                                          C98970
55390  WRITE-2.                                                       C98970
55470  END-WRITE-2. EXIT.                                             C98970
55480  WRITE-3.                                                       C98970
55482      IF CUR-65 EQUAL TO ONE GO TO END-WRITE-3.                  C98970
55500      MOVE SPACE TO HMC-OUT.                                     C98970
55510      DIVIDE SUM-MA INTO SUM-NORM GIVING OBS.                    C98970
55520      MOVE THREE TO DATA-TYPE.                                   C98970
55530      WRITE OUT-REC-2 FROM OUT-DATA.                             C98970
55540      ADD 1 TO NO-REC-2.                                         C98970
55550  END-WRITE-3. EXIT.                                             C98970
55551  EOF-BRK.                                                       C98970
55552      IF SUM-NORM EQUAL TO ZERO GO TO CLOSE-FILES.               C98970
55553      MOVE CURWUC TO WUC-OUT.                                    C98970
55554      MOVE CUR-ISC TO ISC-OUT.                                   C98970
55555      PERFORM WRITE-3 THRU END-WRITE-3.                          C98970
55556      GO TO CLOSE-FILES.                                         C98970
55560  REMARK-2.                                                      C98970
55570      NOTE    COMPUTE  RATIO OF MM TOTAL OVER MA TOTAL           C98970
55580              DATA BANK RECORD TYPE 4.                           C98970
60000  PROC-II-2B.                                                    C98970
60010      PERFORM CHECK-ISCHRONAL THRU END-CI.                       C98970
60020      MOVE ISCHRONAL TO CUR-ISC.                                 C98970
60030      MOVE WUC TO CURWUC.                                        C98970
60050      MOVE SERIAL-NO TO CUR-SER-NO.                              C98970
60060      MOVE IDENT TO CUR-ID.                                      C98970
60070      MOVE HMC TO CUR-HMC.                                       C98970
60080  SET-NEW-2.                                                     C98970
60090      MOVE MAN-HR TO SUM-MAN-HR.                                 C98970
60100      MOVE UNITS TO SUM-MA.                                      C98970
60102      IF UNITS EQUAL TO ZERO GO TO SET-FLAG-2.                   C98970
60103      PERFORM WRITE-4 THRU END-WRITE-4.                          C98970
60104      READ IN-FILE-D-B INTO DATA-BANK-INPUT AT END GO TO EOF-BRK-2.C98970
60105      GO TO BREAK-2.                                             C98970
60110  SET-FLAG-2.                                                    C98970
60140      READ IN-FILE-D-B INTO DATA-BANK-INPUT                      C98970
60150                       AT END GO TO EOF-BRK-2.                   C98970
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60160      PERFORM CHECK-ISCHRONAL THRU END-CI.                          C98970
60170      IF ISCHRONAL NOT EQUAL TO CUR-ISC GO TO BREAK-2.              C98970
60180      IF WUC NOT EQUAL TO CURWUC GO TO BREAK-2.                     C98970
60190      IF SERIAL-NO NOT EQUAL TO CUR-SER-NO GO TO BREAK-2.           C98970
60200      IF IDENT NOT EQUAL TO CUR-ID GO TO BREAK-2.                   C98970
60210      IF HMC NOT EQUAL TO CUR-HMC GO TO BREAK-2.                    C98970
60220      ADD MAN-HR TO SUM-MAN-HR.                                     C98970
60230      ADD UNITS TO SUM-MA.                                          C98970
60231      IF UNITS NOT EQUAL TO ZERO GO TO INT-BREAK-2.                 C98970
60232      GO TO SET-FLAG-2.                                             C98970
60240 INT-BREAK-2.                                                       C98970
60250      PERFORM WRITE-4 THRU END-WRITE-4.                             C98970
60260      COMPUTE SUM-MAN-HR > 0.                                       C98970
60262      COMPUTE SUM-MA > 0.                                           C98970
60264      GO TO SET-FLAG-2.                                             C98970
60270 BREAK-2.                                                           C98970
60282      COMPUTE SUM-MAN-HR > 0.                                       C98970
60284      COMPUTE SUM-MA > 0.                                           C98970
60290      GO TO CHECK-DATA.                                             C98970
60330 WRITE-4.                                                           C98970
60340      MOVE CURWUC TO WUC-OUT.                                       C98970
60350      MOVE CUR-ISC TO ISC-OUT.                                      C98970
60360      MOVE CUR-HMC TO HMC-OUT.                                      C98970
60370      IF SUM-MA EQUAL TO ZERO ADD  1 TO SUM-MA.                     C98970
60380      DIVIDE SUM-MA INTO SUM-MAN-HR                                 C98970
60390                        GIVING OBS.                                 C98970
60400      MOVE ONE TO DATA-TYPE.                                        C98970
60410      WRITE OUT-REC-1 FROM OUT-DATA.                                C98970
60420      ADD 1 TO NO-REC-1.                                            C98970
60430 END-WRITE-4. EXIT.                                                 C98970
60440 EOF-BRK-2.                                                         C98970
60450      IF SUM-MAN-HR EQUAL TO ZERO GO TO CLOSE-FILES.                C98970
60460      PERFORM WRITE-4 THRU END-WRITE-4.                             C98970
60470      GO TO CLOSE-FILES.                                            C98970
70000 READ-ISC-A-C.                                                      C98970
70005      READ IN-FILE-ISC INTO SPEC-WUC AT END GO TO END-RIAC.         C98970
70010      READ IN-FILE-ISC INTO NO-ISC AT END GO TO END-RIAC.           C98970
70020      MOVE ZERO TO KNT.                                             C98970
70030 RIAC.                                                              C98970
70040      ADD 1 TO KNT.                                                 C98970
70050      READ IN-FILE-ISC INTO ISC-A-C AT END GO TO END-RIAC.          C98970
70060      MOVE ISC-TN TO ISC-AC-TN [KNT].                               C98970
70070      MOVE ISC-WK TO ISC-AC-WK [KNT].                               C98970
70075      IF ISC-WK IS LESS THAN MIN-ISC-WEEK MOVE ISC-WK               C98970
70076               TO MIN-ISC-WEEK.                                     C98970
70080      IF KNT IS LESS THAN NO-ISC-AC GO TO RIAC.                     C98970
70085      CLOSE IN-FILE-ISC WITH LOCK.                                  C98970
70090 END-RIAC. EXIT.                                                    C98970
70200 CHECK-ISCHRONAL.                                                   C98970
70210      IF SERIAL-NO IS NOT EQUAL TO PREV-TESTED-SN GO TO CHECK-I-2.  C98970
70220      IF ISC-FLAG IS EQUAL TO TWO GO TO END-CI.                     C98970
70230      IF ISCHRONAL IS EQUAL TO ONE AND WEEK IS NOT LESS THAN        C98970
70232                        MIN-ISC-WEEK, THEN GO TO END-CI.            C98970
70240 CHECK-I-2.                                                         C98970
70250      MOVE TWO TO ISCHRONAL.                                        C98970
70260      IF WEEK IS LESS THAN MIN-ISC-WEEK GO TO END-CI.               C98970
70270      MOVE ZERO TO CNT.                                             C98970
70280 CHECK-I-1.                                                         C98970
70290      ADD 1 TO CNT.                                                 C98970
70300      MOVE ISC-AC-TN [CNT] TO ISC-TEMP.                             C98970
70310      IF SERIAL-NO IS LESS THAN ISC-TEMP GO TO CHECK-I-4.           C98970
70320      IF SERIAL-NO IS EQUAL TO  ISC-TEMP GO TO CHECK-I-1A.          C98970
70330      IF CNT IS LESS THAN NO-ISC-AC GO TO CHECK-I-1.                C98970
70340 CHECK-I-4.                                                         C98970
70350      MOVE TWO TO ISC-FLAG.                                         C98970
70360      GO TO CHECK-I-3.                                              C98970
70370 CHECK-I-1A.                                                        C98970
70380      MOVE ISC-AC-WK [CNT] TO WEEK-TEMP.                            C98970
70390      IF WEEK-TEMP IS EQUAL TO WEEK OR WEEK IS GREATER THAN         C98970
70400         WEEK-TEMP MOVE ONE TO ISCHRONAL.                           C98970
70410      MOVE ONE TO ISC-FLAG.                                         C98970
70430 CHECK-I-3.                                                         C98970
70440      MOVE SERIAL-NO TO PREV-TESTED-SN.                             C98970
70450 END-CI. EXIT.                                                      C98970
70510 NINE-FILL-2.                                                       C98970
70520      WRITE OUT-REC-2  FROM NINE.                                   C98970
70530      ADD 1 TO KNT.                                                 C98970
70540      IF KNT IS LESS THAN 90 GO TO NINE-FILL-2.                     C98970
70550 N-F-2. EXIT.                                                       C98970
70600 NINE-FILL-1.                                                       C98970
70610      WRITE OUT-REC-1  FROM NINE.                                   C98970
70620      ADD 1 TO KNT.                                                 C98970
70630      IF KNT IS LESS THAN 90 GO TO NINE-FILL-1.                     C98970
70640 N-F-1. EXIT.                                                       C98970
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71800  CLOSE-FILES.                                                    C98970
71810      COMPUTE KNT > NO-REC-1 - NO-REC-1 / 90 * 90.                C98970
71820      IF KNT IS ZERO GO TO CF-2.                                  C98970
71830      PERFORM NINE-FILL-1 THRU N-F-1.                             C98970
71840  CF-2.                                                           C98970
71850      COMPUTE KNT > NO-REC-2 - NO-REC-2 / 90 * 90.                C98970
71860      IF KNT IS ZERO GO TO CF-3.                                  C98970
71870      PERFORM NINE-FILL-2 THRU N-F-2.                             C98970
71900  CF-3.                                                           C98970
71910      DISPLAY ' NUMBER RECORDS-1 ' NO-REC-1 UPON CONSOLE.         C98970
71920      DISPLAY ' NUMBER RECORDS-2 ' NO-REC-2 UPON CONSOLE.         C98970
71940      DISPLAY ' END OF JOB C98971 UPON CONSOLE.                   C98970
71950      CLOSE IN-FILE-D-B, MSG-FILE, OUT-FILE-1,                    C98970
71960                         OUT-FILE-2 WITH LOCK.                    C98970
71990      GOBACK.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN    DD   *,SPACE>(CYL,(1,1))                               1440 CDS
00000           GET TFG                              WANG              C98970'T
010001 019999  REPLACE                                                    'T
TFG  DT01    11  020Z080

033000331003320033300340003600031000320003210020 4
  34
  57000236  331
  57000237  331
  57000243  324
  57000244  331
  57002545  331
  58000776  324
  58000901  331
  59000002  331
  59000003  331
  59000005  331
  59000006  331
  59000010  331
  59000012  331
  59000015  331
  59000018  331
  59000019  331
  59000026  331
  59000030  331
  59000054  324
  59000057  324
  59000058  324
  59000059  324
  59000104  331
  59000105  331
  59000108  324
  59000110  324
  59000119  324
  59000141  324
  59000143  324
  59000144  324
  59000145  324
  59000147  324
  59000151  324
  59000152  324
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU14     DD   DISP>(OLD,KEEP),VOL>SER>+F3,UNIT>T+F3             T14
//TPR.TU22     DD   DISP>(OLD,KEEP),VOL>SER>+F5,UNIT>T+F5             T22
//TPR.TU24     DD   DISP>(OLD,KEEP),VOL>SER>+F7,UNIT>T+F7             T24
//TPR.TPR1N    DD   *,SPACE>(TRK,(1,1))
T/P  DT01    10100802080
T/P  DT02    10100802080
T/P  TU14    10100702070
T/P  TU22    10100202020
T/P  TU24    10100202020
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.15.3 SORT UNSCHEDULED NORM HOUR

```
//T9897W JOB   01,' G WANG      ',PRTY>02,TYPRUN>HOLD
//C9897F EXEC  P962ZN,W>060,TIME>04,ACCT>D35323007
//CHG.SORT1N   DD   DISP>[,KEEP],UNIT>[A+F5,2,DEFER],                    CT22/23 1
//             DSN>+E.9897432,                                           CT22    2
//             VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5],CT22    4
//             DCB>[LRECL>0020,BLKSIZE>1800],LABEL>[,NSL,RETPD>099]
//CHG.SORTOUT  DD   DISP>[,KEEP],UNIT>[A+F1,2,DEFER],DSN>+A.9897430,     CT12/13 1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1],CT12    3
//             DCB>[LRECL>0020,BLKSIZE>1800]
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>[TRK,[1,1]]
 SORT  FIELDS>[017,001,CH,A,019,001,CH,A,001,005,CH,A],SIZE>E0350000
 MODS  E15>[E15,000,SORTLIB,N],E18>[E18,024,SORTLIB,N]
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6.15.4 MEAN AND VARIANCE NORM HOUR

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//C9897C EXEC  P965SL,TIME>30,ACCT>D35323007
//CHG.TU12     DD   DISP>[,PASS],UNIT>[T+F1,1,DEFER],DSN>+A.9897430,     CT12    1
//             VOL>SER>[+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1]   T12    3
//CHG.TU25     DD   DISP>[,PASS],UNIT>[T+F8,1,DEFER],DSN>+H.9897431,     CT25    1
//             VOL>SER>[+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,     CT25    2
//             I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8]   T25    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                  1440 CDS
00000          COMBINE     COMPILE                  0, WANG,              C98970
01040  DATE-WRITTEN. 25 JLY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060          TASK7-2B  MEAN, VARIANCE OF NORM/MA.                      C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12           C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25           C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE                                                       C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 90 RECORDS                                     C98970
11140      RECORD CONTAINS 20            CHARACTERS                    C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE IN-REC.                                      C98970
11170  01  IN-REC SYNC.                                                 C98970
11180      02  WUC                     PICTURE X[5].                    C98970
11182      02  FILLER                  PICTURE X[4].                    C98970
11183      02  OBS                     PICTURE S9[6].                   C98970
11184      02  OBS-1 REDEFINES OBS     PICTURE S99999V9.                C98970
11185      02  FILLER                  PICTURE X.                       C98970
11186      02  ISCHRONAL-NEW           PICTURE X.                       C98970
11187      02  FILLER                  PICTURE X.                       C98970
11188      02  DATA-TYPE-NEW           PICTURE X.                       C98970
11189      02  FILLER                  PICTURE X.                       C98970
12100  FD  HIST-FILE                                                     C98970
12120      RECORDING MODE IS F                                           C98970
12130      BLOCK CONTAINS 60 RECORDS                                     C98970
12140      RECORD CONTAINS 80            CHARACTERS                    C98970
12150      LABEL RECORDS ARE OMITTED                                     C98970
12160      DATA RECORDS ARE HIST-REC.                                    C98970
12170  01  HIST-REC SYNC.                                               C98970
12180      02  FILLER                  PICTURE X[50].                   C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  77  KNT SYNC PICTURE S9[5].                                      C98970
30012  77  OBS-ISO  SYNC  PICTURE S9[5]V99999.                          C98970
30014  77  OBS-NI   SYNC  PICTURE S9[5]V99999.                          C98970
30020  01  FILLER  SYNC.                                                C98970
30030      02  FREQ-HIST-VALUE OCCURS 2000 TIMES PICTURE S9[5]          C98970
30040          COMPUTATIONAL.                                            C98970
30050  01  A PICTURE S9[5] COMPUTATIONAL.                               C98970
30060  01  NO-OF-HISTS          SYNC   PICTURE 99999 VALUE ZERO.        C98970
30080  01  ONE          SYNC           PICTURE X VALUE 1'.             C98970
30081  01  TWO      SYNC     PICTURE X  VALUE 2',                       C98970
30082  01  THREE    SYNC     PICTURE X  VALUE 3',                       C98970
30083  01  FOUR     SYNC     PICTURE X  VALUE 4',                       C98970
30084  01  FIVE     SYNC     PICTURE X  VALUE 5',                       C98970
30090  01  CNT SYNC                     PICTURE S9[5] COMPUTATIONAL.     C98970
30100  01  CUR-WUC-T SYNC.                                              C98970
30110      02  FILLER                  PICTURE X[5] VALUE ' WUC>',      C98970
30120      02  CUR-WUC                 PICTURE X[5].                    C98970
```

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30170  01  ISCHRONAL SYNC                PICTURE X.                              C98970
30180  01  DATA-TYPE   SYNC              PICTURE X.                              C98970
30190  01  MINUS-ONE COMPUTATIONAL       PICTURE S999 VALUE -1 SYNC.             C98970
32000  01  REPORT-2D SYNC.                                                       C98970
32010      02  FILLER                    PICTURE X(50) VALUE                     C98970
32020            :$9897860  TF7919-01 142-8 1       1/2                        C98970
32030      02  FILLER                    PICTURE X(50) VALUE SPACE.              C98970
32040      02  FILLER                    PICTURE X(30) VALUE                     C98970
32050            :                          #:.                                 C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9(7)V99.                         C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9(7)V99.                         C98970
46020  01  TEMP-COMP                  PICTURE S9(7)V99.                          C98970
46300  01  MEAN-B  COMPUTATIONAL  SYNC  PICTURE S9(8)V99999 VALUE ZERO.          C98970
46310  01  VARIANCE-B  COMPUTATIONAL SYNC PICTURE S9(5)V99999                    C98970
46315          VALUE ZERO.                                                      C98970
46320  01  TEMP-COMP-B                SYNC PICTURE S9(5)V99999                   C98970
46325          VALUE ZERO.                                                      C98970
46330  01  HIST-NO-OF-OBS-B           SYNC PICTURE S9(5)V99999                   C98970
46335          VALUE ZERO.                                                      C98970
46400  01  MEAN-VARIANCE-LINE-B    SYNC.                                         C98970
46410      02  FILLER          PICTURE X(50)  VALUE                            C98970
46420            :S                                                           C98970
46430      02  FILLER       PICTURE X(16)  VALUE                               C98970
46440            :              MEAN)#:.                                        C98970
46450      02  MEAN-RPT-B       PICTURE   ZZ9.99999.                           C98970
46460      02  FILLER           PICTURE  X(28)   VALUE                         C98970
46470            :                          VARIANCE )#:.                     C98970
46480      02   VARIANCE-RPT-B      PICTURE  ZZZZ9.99999.                      C98970
46490      02  FILLER        PICTURE X(16)   VALUE                             C98970
46500            :                        #:.                                 C98970
47000  01  HIST-VALUE-MAX SYNC          PICTURE S9999V99 VALUE -9999.9.          C98970
47010  01  HIST-VALUE-MIN SYNC          PICTURE S9999V99 VALUE +9999.9.          C98970
47015  01  HIST-VALUE-MI  SYNC          PICTURE S9999V99 VALUE +9999.9.          C98970
47020  01  HIST-NO-OF-OBS SYNC          PICTURE S9(5)  VALUE ZERO.               C98970
47030  01  HIST-NO-OF-INTERVALS SYNC    PICTURE 999V99 VALUE 50.                 C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC    PICTURE 9      VALUE ZERO.               C98970
47050  01  HIST-DIST SYNC               PICTURE X      VALUE #1#.                C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                         C98970
47070                                   PICTURE S999   VALUE ZERO.               C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                       C98970
47090                                   PICTURE S999   VALUE ZERO.               C98970
47100  01  HIST-TEMP SYNC               PICTURE S99999V99 VALUE ZERO.            C98970
47110  01  HIST-INTERVAL-SIZE SYNC      PICTURE S999V99 VALUE ZERO               C98970
47120          COMPUTATIONAL.                                                   C98970
47150  01  HIST-FLAG SYNC               PICTURE X      VALUE #0#.                C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                                   C98970
47170                                   PICTURE S999   VALUE <1.                 C98970
47180  01  HIST-PERCENT SYNC            PICTURE S999V99 COMPUTATIONAL.           C98970
47190  01  HIST-CUM SYNC                PICTURE S999V99 COMPUTATIONAL.           C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                          C98970
47210                                   PICTURE S999  VALUE ZERO.                C98970
47220  01  HIST-PAGE-FLAG SYNC          PICTURE S999 VALUE <75.                  C98970
47230  01  HIST-LINE-CNT  SYNC          PICTURE S999.                            C98970
47300  01  HIST-ERR-1 SYNC              PICTURE X(10)  VALUE                     C98970
47310                          #ERROR NO 0#.                                    C98970
47320  01  HIST-ERR-3 SYNC.                                                      C98970
47330      02  FILLER                   PICTURE X(5)   VALUE #BS > #.            C98970
47340      02  HIST-ERR-2               PICTURE S9(5)  VALUE ZERO.               C98970
47350  01  HIST-ERR-4 SYNC              PICTURE X(10)  VALUE                     C98970
47360                          #ERROR  MAX#.                                    C98970
47370  01  HIST-ERR-5 SYNC              PICTURE X(10)  VALUE                     C98970
47380                          #-MIN BAD. #.                                    C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC    PICTURE S999 COMPUTATIONAL.              C98970
47500  01  FILLER SYNC.                                                          C98970
47510      02  FILLER OCCURS 200 TIMES.                                          C98970
47530          03  HIST-TABLE           PICTURE S9(5) COMPUTATIONAL.             C98970
47540          03  HIST-UPPER-LIMIT     PICTURE S9999V99 COMPUTATIONAL.          C98970
47550          03  HIST-TABLE-SCALED    PICTURE S999V99 COMPUTATIONAL.           C98970
47560  01  HIST-NEW-PAGE SYNC.                                                   C98970
47570      02  FILLER                   PICTURE X     VALUE #1#.                 C98970
47580      02  FILLER                   PICTURE X(122) VALUE SPACE.              C98970
47582      02  FILLER                   PICTURE X(5) VALUE #PAGE #.              C98970
47584      02  HIST-PAGE-NO             PICTURE 9.                               C98970
47590      02  FILLER                   PICTURE X     VALUE #$#.                 C98970
47600  01  HIST-TITLE SYNC.                                                      C98970
47610      02  FILLER                   PICTURE X(3) VALUE #S  #.                C98970
47620      02  HIST-TITLE-1.                                                     C98970
47621          03  FILLER               PICTURE X(10) VALUE SPACE.               C98970
47630      02  HIST-TITLE-2.                                                     C98970
47631          03  FILLER               PICTURE X(10) VALUE SPACE.               C98970
47640      02  HIST-TITLE-3             PICTURE X(10) VALUE SPACE.               C98970
47650      02  HIST-TITLE-4             PICTURE X(10) VALUE SPACE.               C98970
47660      02  FILLER                   PICTURE X(24) VALUE                      C98970
47670            #    NO OF OBSERVATIONS )#.                                    C98970
47680      02  HIST-NO-OF-OBS-RPT       PICTURE ZZZZ9.                           C98970
47690      02  FILLER                   PICTURE X(13) VALUE                      C98970
47700            # VALUE MAX > #.                                               C98970
47710      02  HIST-VALUE-MAX-RPT       PICTURE -----.9.                         C98970
47720      02  FILLER                   PICTURE X(13) VALUE                      C98970
47730            # VALUE MIN > #.                                               C98970
47740      02  HIST-VALUE-MIN-RPT       PICTURE -----.9.                         C98970
47750      02  FILLER                   PICTURE X(18) VALUE                      C98970
47760                                     #$#.                                   C98970
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47900  01  HIST-OUT-LINE SYNC.                                                  C98970
47910      02  FILLER                      PICTURE X(50)  VALUE                C98970
47920          '/----------+----------+----------+----------+----------+'.     C98970
47922      02  FILLER                      PICTURE X(80) VALUE                  C98970
47930      '+----------+----------+----------+----------+----------+----------C98970
47940 -    '----------+'.                                                       C98970
47950  01  HIST-LABEL SYNC.                                                    C98970
47960      02  FILLER                      PICTURE X(50)  VALUE                C98970
47970          '/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.'.           C98970
47974      02  FILLER                      PICTURE X(80) VALUE                  C98970
47980 -    '25...30...35...40...45...50...55...60...65...70...75...80...'.     C98970
47990 -    '85...90...95..100'.                                                C98970
48000  01  HIST-LINE-OUT SYNC.                                                 C98970
48010      02  FILLER                      PICTURE X VALUE '/'.                C98970
48020      02  HIST-LINE-RPT               PICTURE ZZ9.                        C98970
48030      02  FILLER                      PICTURE X VALUE SPACE.              C98970
48040      02  HIST-MID-POINT-RPT          PICTURE -----.9.                    C98970
48060      02  HIST-PERCENT-RPT            PICTURE ZZ9.9.                      C98970
48070      02  FILLER                      PICTURE X VALUE SPACE.              C98970
48080      02  HIST-CUM-RPT                PICTURE ZZ9.9.                      C98970
48100      02  HIST-FREQ-RPT               PICTURE ZZZZ9.                      C98970
48110      02  FILLER                      PICTURE X VALUE SPACE.              C98970
48120      02  HIST-POINT OCCURS 100 TIMES                                     C98970
48130                                      PICTURE X.                          C98970
48140      02  FILLER                      PICTURE X VALUE '*'.                C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                            C98970
48160      02  FILLER                      PICTURE X(35) VALUE                 C98970
48170          '/   NUMBER OF OUT OF RANGE VALUES >'.                          C98970
48180      02  HIST-OUT-RANGE-RPT          PICTURE ZZ9.                        C98970
48190      02  FILLER                      PICTURE X(91) VALUE SPACE.          C98970
48191      02  FILLER                      PICTURE X VALUE '*'.                C98970
48200  01  HIST-SCALE-LINE SYNC.                                               C98970
48210      02  FILLER                      PICTURE X(27) VALUE                 C98970
48220          '/          SCALING FACTOR > '.                                 C98970
48230      02  HIST-SCALE-RPT              PICTURE ZZ9.                        C98970
48240      02  FILLER                      PICTURE X(099) VALUE SPACE.         C98970
48250      02  FILLER                      PICTURE X VALUE '*'.                C98970
48300  01  FILLER SYNC.                                                        C98970
48310      02  HIST-VALUE OCCURS 2000 TIMES                                    C98970
48320                                      PICTURE S9999V9 COMPUTATIONAL.      C98970
48400  01  TASK7-REC  SYNC.                                                    C98970
48410      05  TASK7-ISO       PICTURE X.                                      C98970
48411      05  FILLER          PICTURE X(9).                                   C98970
48420      05  TASK7-ID        PICTURE X(1)   VALUE '3'.                       C98970
48430      05  FILLER          PICTURE X(1).                                   C98970
48440      05  TASK7-WUC       PICTURE X(5).                                   C98970
48450      05  FILLER          PICTURE X(5).                                   C98970
48460      05  MEAN-RPT        PICTURE S9(7)V9.                                C98970
48470      05  FILLER          PICTURE X.                                      C98970
48480      05  VARIANCE-RPT    PICTURE S9(7)V9.                                C98970
48490      05  FILLER          PICTURE X(10).                                  C98970
48500      05  FILLER          PICTURE X  VALUE '*'.                           C98970
50000  PROCEDURE DIVISION.                                                    C98970
50010      OPEN INPUT IN-FILE.                                                C98970
50020      OPEN OUTPUT HIST-FILE.                                             C98970
50030      MOVE 2000 TO KNT.                                                  C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                            C98970
50050      READ IN-FILE. AT END GO TO CLOSE-FILES.                            C98970
50100  PARA-1.                                                                C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                          C98970
50120      MOVE WUC TO CUR-WUC.                                               C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                                   C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                                   C98970
50160      IF DATA-TYPE IS EQUAL TO  FIVE GO TO WEEKS-DATA ELSE GO TO         C98970
50170                FLT-DATA.                                                C98970
50200  READ1.                                                                 C98970
50210      READ IN-FILE. AT END GO TO CLOSE-FILES.                            C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO '9' GO TO CLOSE-FILES.                C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                       C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                           C98970
50260      IF DATA-TYPE IS EQUAL TO FIVE GO TO WEEKS-DATA ELSE GO TO          C98970
50270                     FLT-DATA.                                           C98970
50300  PARA-2.                                                                C98970
50310      PERFORM GET-HISTOG THRU END-SH.                                    C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                            C98970
50330      GO TO PARA-1.                                                      C98970
50400  RESET-TABLE.                                                           C98970
50410      MOVE ZERO TO CNT.                                                  C98970
50420  RST.                                                                   C98970
50430      ADD 1 TO CNT.                                                      C98970
50440      MOVE MINUS-ONE TO HIST-VALUE (CNT).                                C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE (CNT).                                C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                                 C98970
50455      MOVE ZERO TO KNT.                                                  C98970
50460  END-RST-TABLE. EXIT.                                                   C98970
```

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50510  SET-HISTOG.                                                      C98970
50590      PERFORM WRITE-HISTOGRAM THRU END-HIST.                       C98970
50600      IF HIST-FLAG IS     EQUAL TO '1' THEN GO TO CF1.             C98970
50610      ADD 1 TO NO-OF-HISTS.                                        C98970
50620  END-SH. EXIT.                                                    C98970
51000  WEEKS-DATA.                                                      C98970
51010      MOVE ZERO TO CNT.                                            C98970
51020  WEEK-A.                                                          C98970
51030      ADD 1 TO CNT.                                                C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.         C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.      C98970
51060      IF CNT IS LESS THAN 2000 GO TO WEEK-A.                       C98970
51070      DISPLAY ' MORE THAN 2000 FREQUENCY OCCURENCES ' UPON CONSOLE. C98970
51080      GO TO CF1.                                                   C98970
51090  WEEK-B.                                                          C98970
51100      MOVE OBS   TO HIST-VALUE (CNT).                              C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.             C98970
51120  WEEK-C.                                                          C98970
51130      ADD 1 TO FREQ-HIST-VALUE (CNT).                              C98970
51140      GO TO READ1.                                                 C98970
52000  FLT-DATA.                                                        C98970
52010      MOVE ZERO TO CNT.                                            C98970
52020  FLT-A.                                                           C98970
52030      ADD 1 TO CNT.                                                C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE (CNT) GO TO FLT-C.          C98970
52050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO FLT-B.       C98970
52060      IF CNT IS LESS THAN 2000 GO TO FLT-A.                        C98970
52070      DISPLAY ' MORE THAN 2000 FREQUENCY OCCURENCES ' UPON CONSOLE. C98970
52080      GO TO CF1.                                                   C98970
52090  FLT-B.                                                           C98970
52100      MOVE OBS-1 TO HIST-VALUE (CNT).                              C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.             C98970
52120  FLT-C.                                                           C98970
52130      ADD 1 TO FREQ-HIST-VALUE (CNT).                              C98970
52140      GO TO READ1.                                                 C98970
52200  CLOSE-FILES.                                                     C98970
52205      PERFORM SET-HISTOG THRU END-SH.                              C98970
52207  CF1.                                                             C98970
52210      CLOSE IN-FILE. HIST-FILE.                                    C98970
52211      IF HIST-FLAG IS EQUAL TO '1' DISPLAY ' HIST ERROR ' UPON     C98970
52212          CONSOLE.                                                 C98970
52215      DISPLAY ' NO OF HISTOGRAMS > ' NO-OF-HISTS UPON CONSOLE.     C98970
52220      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                          C98970
52230      GOBACK.                                                      C98970
95000  COMPUTE-MEAN-VARIANCE.                                           C98970
95005      IF HIST-NO-OF-OBS EQUAL TO 1 GO TO CMV-3.                    C98970
95010      MOVE ZERO TO CNT.                                            C98970
95020      MOVE ZERO TO MEAN.                                           C98970
95030  CMV-1.                                                           C98970
95040      ADD 1 TO CNT.                                                C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE (CNT) * FREQ-HIST-VALUE (CNT). C98970
95060      ADD TEMP-COMP TO MEAN.                                       C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                         C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                             C98970
95090      MOVE ZERO TO CNT.                                            C98970
95100      MOVE ZERO TO VARIANCE.                                       C98970
95110  CMV-2.                                                           C98970
95120      ADD 1 TO CNT.                                                C98970
95130      COMPUTE TEMP-COMP > ((HIST-VALUE (CNT) - MEAN) ** 2) *       C98970
95140                                    FREQ-HIST-VALUE (CNT).         C98970
95150      ADD TEMP-COMP TO VARIANCE.                                   C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                         C98970
95170      COMPUTE VARIANCE > VARIANCE / (HIST-NO-OF-OBS - 1).          C98970
95180      MOVE MEAN TO MEAN-RPT.                                       C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                               C98970
95191      GO TO CMV-4.                                                 C98970
95192  CMV-3.                                                           C98970
95193      MOVE ZERO TO VARIANCE-RPT.                                   C98970
95194      MOVE HIST-VALUE (1) TO MEAN-RPT.                             C98970
95195  CMV-4.                                                           C98970
95290  END-CMV.      EXIT.                                              C98970
97000  WRITE-HISTOGRAM.                                                 C98970
97351                                  PERFORM COMPUTE-MEAN-VARIANCE    C98970
97352          THRU END-CMV.                                            C98970
97356      MOVE CUR-WUC TO TASK7-WUC.                                   C98970
97358      MOVE ISOCHRONAL TO TASK7-ISO.                                C98970
97360      WRITE HIST-REC FROM TASK7-REC.                               C98970
99990  END-HIST. EXIT.                                                  C98970
/*       PLACE COBOL SOURCE BEFORE
//CM8.TFGIN     DD   *,SPACE=(CYL,(1,1))                                1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=&F1,UNIT=T&F1              T12
//TPR.TU25      DD   DISP=(OLD,KEEP),VOL=SER=&F8,UNIT=T&F8              T25
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU12    1010020Z020
T/P  TU25    1010050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD

//T9897N JOB   01,' G WANG      ',PRTY=02,TYPRUN=HOLD
```

6.15.5 SORT UNSCHEDULED MANHOUR

```
//C9897F EXEC  P96,2N,W>060,TIME>04,ACCT>D35323007
//CHG.SORTIN   DD   DISP>(,KEEP),UNIT>(A+F5,2,DEFER),                    CT22/23 1
//             DSN>+E.9897429,                                           CT22    2
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F8,     CT22    3
//             I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F8),CT22    4
//             DCB>(LRECL>0020,BLKSIZE>1800),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(A+F1,2,DEFER),DSN>+A.9897430,     CT12/13 1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0020,BLKSIZE>1800)
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(017,001,CH,A,019,001,CH,A,001,005,CH,A,006,003,CH,A),   C
       SIZE>E0250000
 MODS  E15>(E15,006,SORTLIB,N),E18>(E18,024,SORTLIB,N)
```

6.15.6 MEAN AND VARIANCE OF UNSCHEDULED MANHOUR

```
//C9897N EXEC  P96,5L,TIME>16,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A.9897430,    CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12
//CHG.TU25     DD   DISP>(,PASS),UNIT>(T+F8,1,DEFER),DSN>+H.9897431,    CT25    1
//             VOL>SER>(+F8,A+F8,B+F8,C+F8,D+F8,E+F8,F+F8,G+F8,H+F8,     CT25    2
//             I+F8,J+F8,K+F8,L+F8,M+F8,N+F8,O+F8,P+F8,Q+F8,R+F8,S+F8)  T25    3
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
00000        COMBINE     COMPILE                  0, WANG.                C98970
01040  DATE-WRITTEN. 26 JLY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060          TASK 7-2C  MEAN VARIANCE OF MANHOURS/MA.                  C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT IN-FILE                ASSIGN TO UT-S-TU12           C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT HIST-FILE              ASSIGN TO UT-S-TU25           C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE                                                       C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 90 RECORDS                                     C98970
11140      RECORD CONTAINS 20            CHARACTERS                    C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE IN-REC.                                      C98970
11170  01  IN-REC SYNC.                                                 C98970
11180      02  WUC                       PICTURE X(5).                 C98970
11181      02 WMC                        PICTURE X(3).                 C98970
11182      02  FILLER                    PICTURE X.                    C98970
11183      02  OBS                       PICTURE S9(6).                C98970
11184      02  OBS-1 REDEFINES OBS       PICTURE S99999V9.             C98970
11185      02  FILLER                    PICTURE X.                    C98970
11186      02  ISCHRONAL-NEW             PICTURE X.                    C98970
11187      02  FILLER                    PICTURE X.                    C98970
11188      02  DATA-TYPE-NEW             PICTURE X.                    C98970
11189      02  FILLER                    PICTURE X.                    C98970
12100  FD  HIST-FILE                                                     C98970
12120      RECORDING MODE IS F                                           C98970
12130      BLOCK CONTAINS 60 RECORDS                                     C98970
12140      RECORD CONTAINS 50            CHARACTERS                    C98970
12150      LABEL RECORDS ARE OMITTED                                     C98970
12160      DATA RECORDS ARE HIST-REC.                                    C98970
12170  01  HIST-REC SYNC.                                               C98970
12180      02  FILLER                    PICTURE X(50).                C98970
30000  WORKING-STORAGE SECTION.                                          C98970
30010  77  KNT SYNC PICTURE S9(5).                                      C98970
30020  01  FILLER  SYNC.                                                C98970
30030      02  FREQ-HIST-VALUE OCCURS 1000 TIMES PICTURE S9(5)          C98970
30040          COMPUTATIONAL.                                            C98970
30050  01  A PICTURE S9(5) COMPUTATIONAL.                               C98970
30060  01  NO-OF-HISTS          SYNC    PICTURE 9999 VALUE ZERO.        C98970
30080  01  ONE          SYNC            PICTURE X VALUE 1I.           C98970
30082  01  TWO          SYNC            PICTURE X VALUE 2I.           C98970
30090  01  CNT SYNC                     PICTURE S9(5) COMPUTATIONAL.    C98970
30100  01  CUR-WUC-T SYNC.                                              C98970
30110      02  FILLER                    PICTURE X(5) VALUE 1 WUC>1.   C98970
30120      02  CUR-WUC                   PICTURE X(5).                 C98970
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30130  01  CUR-HMC-T SYNC.                                                    C98970
30140      02  FILLER                  PICTURE X(5) VALUE ' HMC>'.           C98970
30150      02  CUR-HMC                 PICTURE X(3).                         C98970
30160      02  FILLER                  PICTURE XX VALUE SPACE.               C98970
30170  01  ISCHRONAL SYNC              PICTURE X.                            C98970
30180  01  DATA-TYPE   SYNC            PICTURE X.                            C98970
30190  01  MINUS-ONE COMPUTATIONAL     PICTURE S999 VALUE -1 SYNC.           C98970
32000  01  REPORT-ID SYNC.                                                   C98970
32010      02  FILLER                  PICTURE X(50) VALUE                   C98970
32020            '$9897860  TF7919-01 142-8 I       1/2              '.     C98970
32030      02  FILLER                  PICTURE X(50) VALUE SPACE.            C98970
32040      02  FILLER                  PICTURE X(30) VALUE                   C98970
32050            '                              '.                           C98970
46000  01  MEAN     COMPUTATIONAL SYNC PICTURE S9(7)V99.                     C98970
46010  01  VARIANCE COMPUTATIONAL SYNC PICTURE S9(7)V99.                     C98970
46020  01  TEMP-COMP                   PICTURE S9(7)V99.                     C98970
47000  01  HIST-VALUE-MAX SYNC         PICTURE S9999V99 VALUE -9999.9.       C98970
47010  01  HIST-VALUE-MIN SYNC         PICTURE S9999V99 VALUE +9999.9.       C98970
47015  01  HIST-VALUE-MI  SYNC         PICTURE S9999V99 VALUE +9999.9.       C98970
47020  01  HIST-NO-OF-OBS SYNC         PICTURE S9(5)  VALUE ZERO.            C98970
47030  01  HIST-NO-OF-INTERVALS SYNC   PICTURE 999V99 VALUE 50.              C98970
47040  01  HIST-INPUT-VMAX-VMIN SYNC   PICTURE 9       VALUE ZERO.           C98970
47050  01  HIST-DIST SYNC              PICTURE X       VALUE '1'.            C98970
47060  01  HIST-INDEX SYNC COMPUTATIONAL                                     C98970
47070                                  PICTURE S999    VALUE ZERO.           C98970
47080  01  HIST-INDEX-2 SYNC COMPUTATIONAL                                   C98970
47090                                  PICTURE S999    VALUE ZERO.           C98970
47100  01  HIST-TEMP SYNC              PICTURE S99999V99 VALUE ZERO.         C98970
47110  01  HIST-INTERVAL-SIZE SYNC     PICTURE S999V99 VALUE ZERO            C98970
47120            COMPUTATIONAL.                                             C98970
47150  01  HIST-FLAG SYNC              PICTURE X       VALUE '0'.            C98970
47160  01  HIST-SCALE-VALUE SYNC COMPUTATIONAL                               C98970
47170                                  PICTURE S999    VALUE <1.             C98970
47180  01  HIST-PERCENT SYNC           PICTURE S999V99 COMPUTATIONAL.        C98970
47190  01  HIST-CUM SYNC               PICTURE S999V99 COMPUTATIONAL.        C98970
47200  01  HIST-LINE SYNC COMPUTATIONAL                                      C98970
47210                                  PICTURE S999  VALUE ZERO.             C98970
47220  01  HIST-PAGE-FLAG SYNC         PICTURE S999 VALUE <75.               C98970
47230  01  HIST-LINE-CNT  SYNC         PICTURE S999.                         C98970
47300  01  HIST-ERR-1 SYNC             PICTURE X(10)  VALUE                  C98970
47310                        'ERROR NO 0'.                                  C98970
47320  01  HIST-ERR-3 SYNC.                                                  C98970
47330      02  FILLER                  PICTURE X(5)   VALUE 'BS > '.         C98970
47340      02  HIST-ERR-2              PICTURE S9(5)  VALUE ZERO.            C98970
47350  01  HIST-ERR-4 SYNC             PICTURE X(10)  VALUE                  C98970
47360                        'ERROR  MAX'.                                  C98970
47370  01  HIST-ERR-5 SYNC             PICTURE X(10)  VALUE                  C98970
47380                        'I-MIN BAD. '.                                 C98970
47390  01  HIST-OUT-RANGE-VALUE SYNC    PICTURE S999 COMPUTATIONAL.          C98970
47500  01  FILLER SYNC.                                                      C98970
47510      02  FILLER OCCURS 200 TIMES.                                      C98970
47530          03  HIST-TABLE          PICTURE S9(5) COMPUTATIONAL.          C98970
47540          03  HIST-UPPER-LIMIT    PICTURE S9999V99 COMPUTATIONAL.       C98970
47550          03  HIST-TABLE-SCALED   PICTURE S999V99 COMPUTATIONAL.        C98970
47560  01  HIST-NEW-PAGE SYNC.                                               C98970
47570      02  FILLER                  PICTURE X     VALUE '1'.              C98970
47580      02  FILLER                  PICTURE X(122) VALUE SPACE.           C98970
47582      02  FILLER                  PICTURE X(5) VALUE 'PAGE '.           C98970
47584      02  HIST-PAGE-NO            PICTURE 9.                            C98970
47590      02  FILLER                  PICTURE X     VALUE '0'.              C98970
47600  01  HIST-TITLE SYNC.                                                  C98970
47610      02  FILLER                  PICTURE X(3) VALUE 'S  1'.            C98970
47620      02  HIST-TITLE-1.                                                 C98970
47621          03  FILLER              PICTURE X(10) VALUE SPACE.            C98970
47630      02  HIST-TITLE-2.                                                 C98970
47631          03  FILLER              PICTURE X(10) VALUE SPACE.            C98970
47640      02  HIST-TITLE-3            PICTURE X(10) VALUE SPACE.            C98970
47650      02  HIST-TITLE-4            PICTURE X(10) VALUE SPACE.            C98970
47660      02  FILLER                  PICTURE X(24) VALUE                   C98970
47670            '  ,  NO OF OBSERVATIONS '.                                C98970
47680      02  HIST-NO-OF-OBS-RPT      PICTURE ZZZZ9.                        C98970
47690      02  FILLER                  PICTURE X(13) VALUE                   C98970
47700            ' VALUE MAX > '.                                           C98970
47710      02  HIST-VALUE-MAX-RPT      PICTURE -----.9.                      C98970
47720      02  FILLER                  PICTURE X(13) VALUE                   C98970
47730            ' VALUE MIN > '.                                           C98970
47740      02  HIST-VALUE-MIN-RPT      PICTURE -----.9.                      C98970
47750      02  FILLER                  PICTURE X(18) VALUE                   C98970
47760                    '1'.                                               C98970
47900  01  HIST-OUT-LINE SYNC.                                               C98970
47910      02  FILLER                  PICTURE X(50)  VALUE                  C98970
47920            '/----------------------------------------'.               C98970
47922      02  FILLER                  PICTURE X(80) VALUE                   C98970
47930      '----------------------------------------                         C98970
47940 -    '----------'.                                                     C98970
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47950  01  HIST-LABEL SYNC.                                                    C98970
47960      02  FILLER                      PICTURE X(50)  VALUE               C98970
47970              '/     MIDPNT PCNT  CUM  FREQ 1...5...10...15...20.1.      C98970
47974      02  FILLER                      PICTURE X(80) VALUE           1..   C98970
47980 -    125...30...35...40...45...50...55...60...65...70...75...80...     C98970
47990 -    '85...90...95..100'1.                                             C98970
48000  01  HIST-LINE-OUT SYNC.                                                C98970
48010      02  FILLER                      PICTURE X VALUE '/1.               C98970
48020      02  HIST-LINE-RPT               PICTURE ZZ9.                       C98970
48030      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48040      02  HIST-MID-POINT-RPT          PICTURE -----.9.                   C98970
48060      02  HIST-PERCENT-RPT            PICTURE ZZ9.9.                     C98970
48070      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48080      02  HIST-CUM-RPT                PICTURE ZZ9.9.                     C98970
48100      02  HIST-FREQ-RPT               PICTURE ZZZZ9.                     C98970
48110      02  FILLER                      PICTURE X VALUE SPACE.             C98970
48120      02  HIST-POINT OCCURS 100 TIMES                                    C98970
48130                                      PICTURE X.                         C98970
48140      02  FILLER                      PICTURE X VALUE I'I.               C98970
48150  01  HIST-OUT-RANGE-REC SYNC.                                           C98970
48160      02  FILLER                      PICTURE X(35) VALUE                C98970
48170              '/   NUMBER OF OUT OF RANGE VALUES >'1.                    C98970
48180      02  HIST-OUT-RANGE-RPT          PICTURE ZZ9.                       C98970
48190      02  FILLER                      PICTURE X(91) VALUE SPACE.         C98970
48191      02  FILLER                      PICTURE X VALUE '1'I.              C98970
48200  01  HIST-SCALE-LINE SYNC.                                              C98970
48210      02  FILLER                      PICTURE X(27) VALUE                C98970
48220              '/            SCALING FACTOR > 1.                          C98970
48230      02  HIST-SCALE-RPT              PICTURE ZZ9.                       C98970
48240      02  FILLER                      PICTURE X(099) VALUE SPACE.        C98970
48250      02  FILLER                      PICTURE X VALUE '1'I.              C98970
48300  01  FILLER SYNC.                                                       C98970
48310      02  HIST-VALUE OCCURS 1000 TIMES                                   C98970
48320                                      PICTURE S9999V9 COMPUTATIONAL.     C98970
48400  01  TASK7-REC  SYNC.                                                   C98970
48410      05  TASK7-ISO       PICTURE X.                                     C98970
48411      05  FILLER          PICTURE X(9).                                  C98970
48420      05  TASK7-ID        PICTURE X(1)   VALUE  I2I.                     C98970
48430      05  FILLER          PICTURE X(1).                                  C98970
48440      05  TASK7-WUC       PICTURE X(5).                                  C98970
48450      05  FILLER          PICTURE X.                                     C98970
48451      05  TASK7-HMC       PICTURE X(3).                                  C98970
48452      05  FILLER          PICTURE X.                                     C98970
48460      05  MEAN-RPT        PICTURE S9(7)V9.                               C98970
48470      05  FILLER          PICTURE X.                                     C98970
48480      05  VARIANCE-RPT    PICTURE S9(7)V9.                               C98970
48490      05  FILLER          PICTURE X(10).                                 C98970
48500      05  FILLER          PICTURE X  VALUE '1'I.                         C98970
50000  PROCEDURE DIVISION.                                                   C98970
50010      OPEN INPUT IN-FILE.                                               C98970
50020      OPEN OUTPUT HIST-FILE.                                            C98970
50030      MOVE 1000 TO KNT.                                                 C98970
50040      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50050      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50100  PARA-1.                                                               C98970
50110      MOVE 1 TO HIST-NO-OF-OBS.                                         C98970
50120      MOVE WUC TO CUR-WUC.                                              C98970
50130      MOVE HMC TO CUR-HMC.                                              C98970
50140      MOVE DATA-TYPE-NEW TO DATA-TYPE.                                  C98970
50150      MOVE ISCHRONAL-NEW TO ISCHRONAL.                                  C98970
50160      IF DATA-TYPE NOT EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO         C98970
50170              FLT-DATA.                                                 C98970
50200  READ1.                                                                C98970
50210      READ IN-FILE, AT END GO TO CLOSE-FILES.                           C98970
50220      IF DATA-TYPE-NEW IS EQUAL TO 191 GO TO CLOSE-FILES.               C98970
50230      IF WUC IS NOT EQUAL TO CUR-WUC GO TO PARA-2.                      C98970
50240      IF HMC IS NOT EQUAL TO CUR-HMC GO TO PARA-2.                      C98970
50250      ADD 1 TO HIST-NO-OF-OBS.                                          C98970
50260      IF DATA-TYPE NOT EQUAL TO ONE GO TO WEEKS-DATA ELSE GO TO         C98970
50270              FLT-DATA.                                                 C98970
50300  PARA-2.                                                               C98970
50310      PERFORM SET-HISTOG THRU END-SH.                                   C98970
50320      PERFORM RESET-TABLE THRU END-RST-TABLE.                           C98970
50330      GO TO PARA-1.                                                     C98970
50400  RESET-TABLE.                                                          C98970
50410      MOVE ZERO TO CNT.                                                 C98970
50420  RST.                                                                  C98970
50430      ADD 1 TO CNT.                                                     C98970
50440      MOVE MINUS-ONE TO HIST-VALUE (CNT).                               C98970
50445      MOVE ZERO TO FREQ-HIST-VALUE (CNT).                               C98970
50450      IF CNT IS LESS THAN KNT GO TO RST.                                C98970
50455      MOVE ZERO TO KNT.                                                 C98970
50460  END-RST-TABLE. EXIT.                                                  C98970
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50510  SET-HISTOG.                                                    C98970
50590      PERFORM WRITE-HISTOGRAM THRU END-HIST.                     C98970
50600      IF HIST-FLAG IS     EQUAL TO ':' THEN GO TO CF1.           C98970
50610      ADD 1 TO NO-OF-HISTS.                                      C98970
50620  END-SH. EXIT.                                                  C98970
51000  WEEKS-DATA.                                                    C98970
51010      MOVE ZERO TO CNT.                                          C98970
51020  WEEK-A.                                                        C98970
51030      ADD 1 TO CNT.                                              C98970
51040      IF OBS    IS EQUAL TO HIST-VALUE (CNT) GO TO WEEK-C.       C98970
51050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO WEEK-B.    C98970
51060      IF CNT IS LESS THAN 1000 GO TO WEEK-A.                     C98970
51070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.  C98970
51080      GO TO CF1.                                                 C98970
51090  WEEK-B.                                                        C98970
51100      MOVE OBS   TO HIST-VALUE (CNT).                            C98970
51110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.           C98970
51120  WEEK-C.                                                        C98970
51130      ADD 1 TO FREQ-HIST-VALUE (CNT).                            C98970
51140      GO TO READ1.                                               C98970
52000  FLT-DATA.                                                      C98970
52010      MOVE ZERO TO CNT.                                          C98970
52020  FLT-A.                                                         C98970
52030      ADD 1 TO CNT.                                              C98970
52040      IF OBS-1  IS EQUAL TO HIST-VALUE (CNT) GO TO FLT-C.        C98970
52050      IF FREQ-HIST-VALUE (CNT) IS EQUAL TO ZERO GO TO FLT-B.     C98970
52060      IF CNT IS LESS THAN 1000 GO TO FLT-A.                      C98970
52070      DISPLAY ' MORE THAN 1000 FREQUENCY OCCURENCES ' UPON CONSOLE.  C98970
52080      GO TO CF1.                                                 C98970
52090  FLT-B.                                                         C98970
52100      MOVE OBS-1 TO HIST-VALUE (CNT).                            C98970
52110      IF CNT IS GREATER THAN KNT THEN MOVE CNT TO KNT.           C98970
52120  FLT-C.                                                         C98970
52130      ADD 1 TO FREQ-HIST-VALUE (CNT).                            C98970
52140      GO TO READ1.                                               C98970
52200  CLOSE-FILES.                                                   C98970
52205      PERFORM SET-HISTOG THRU END-SH.                            C98970
52207  CF1.                                                           C98970
52210      CLOSE IN-FILE, HIST-FILE.                                  C98970
52211      IF HIST-FLAG IS EQUAL TO ':' DISPLAY ' HIST ERROR ' UPON   C98970
52212           CONSOLE.                                              C98970
52215      DISPLAY ' NO OF HISTOGRAMS > ' NO-OF-HISTS UPON CONSOLE.   C98970
52220      DISPLAY ' EOJ C9897P ' UPON CONSOLE.                       C98970
52230      GOBACK.                                                    C98970
95000  COMPUTE-MEAN-VARIANCE.                                         C98970
95005      IF HIST-NO-OF-OBS EQUAL TO 1 GO TO CMV-3.                  C98970
95010      MOVE ZERO TO CNT.                                          C98970
95020      MOVE ZERO TO MEAN.                                         C98970
95030  CMV-1.                                                         C98970
95040      ADD 1 TO CNT.                                              C98970
95050      COMPUTE TEMP-COMP > HIST-VALUE (CNT) * FREQ-HIST-VALUE (CNT).  C98970
95060      ADD TEMP-COMP TO MEAN.                                     C98970
95070      IF CNT IS LESS THAN KNT GO TO CMV-1.                       C98970
95080      DIVIDE HIST-NO-OF-OBS INTO MEAN.                           C98970
95090      MOVE ZERO TO CNT.                                          C98970
95100      MOVE ZERO TO VARIANCE.                                     C98970
95110  CMV-2.                                                         C98970
95120      ADD 1 TO CNT.                                              C98970
95130      COMPUTE TEMP-COMP > ((HIST-VALUE (CNT) - MEAN) ** 2) *     C98970
95140                                    FREQ-HIST-VALUE (CNT).       C98970
95150      ADD TEMP-COMP TO VARIANCE.                                 C98970
95160      IF CNT IS LESS THAN KNT GO TO CMV-2.                       C98970
95170      COMPUTE VARIANCE > VARIANCE / (HIST-NO-OF-OBS - 1).        C98970
95180      MOVE MEAN TO MEAN-RPT.                                     C98970
95190      MOVE VARIANCE TO VARIANCE-RPT.                             C98970
95191      GO TO CMV-4.                                               C98970
95192  CMV-3.                                                         C98970
95193      MOVE ZERO TO VARIANCE-RPT.                                 C98970
95194      MOVE HIST-VALUE (1) TO MEAN-RPT.                           C98970
95195  CMV-4.                                                         C98970
95290  END-CMV.                                                       C98970
97000  WRITE-HISTOGRAM.                                               C98970
97355      PERFORM COMPUTE-MEAN-VARIANCE THRU END-CMV.                C98970
97356      MOVE CUR-WUC TO TASK7-WUC.                                 C98970
97357      MOVE CUR-HMC TO TASK7-HMC.                                 C98970
97358      MOVE ISCHRONAL TO TASK7-ISO.                               C98970
97360      WRITE HIST-REC FROM TASK7-REC.                             C98970
99990  END-HIST. EXIT.                                                C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                             1440 COS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=&F1,UNIT=T&F1           T12
//TPR.TU25      DD   DISP=(OLD,KEEP),VOL=SER=&F8,UNIT=T&F8           T25
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU12    1010020Z020
T/P  TU25    1010050Z050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
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6.15.7 MERGE AND ADD WUC GROUP IDENTIFICATION

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//T9897A JOB   01,': WANG       ',PRTY>02,TYPRUN>HOLD
//C9897A EXEC  P965L,TIME>03,ACCT>D35323007
//CHG.TU13     DD   DISP>[,PASS],UNIT>[T+F2,1,DEFER],DSN>+B.9897460,   CT13    1
//              VOL>SER>[+F2,A+F2,B+F2,C+F2,D+F2,E+F2,F+F2,G+F2,H+F2,   CT13    2
//              I+F2,J+F2,K+F2,L+F2,M+F2,N+F2,O+F2,P+F2,Q+F2,R+F2,S+F2]  T13    3
//CHG.TU14     DD   DISP>[,PASS],UNIT>[T+F3,1,DEFER],DSN>+C.9897431,   CT14    1
//              VOL>SER>[+F3,A+F3,B+F3,C+F3,D+F3,E+F3,F+F3,G+F3,H+F3,   CT14    2
//              I+F3,J+F3,K+F3,L+F3,M+F3,N+F3,O+F3,P+F3,Q+F3,R+F3,S+F3]  T14    3
//CHG.TU15     DD   DISP>[,PASS],UNIT>[T+F4,1,DEFER],DSN>+D.9897431,   CT15    1
//              VOL>SER>[+F4,A+F4,B+F4,C+F4,D+F4,E+F4,F+F4,G+F4,H+F4,   CT15    2
//              I+F4,J+F4,K+F4,L+F4,M+F4,N+F4,O+F4,P+F4,Q+F4,R+F4,S+F4]  T15    3
//CHG.TU22     DD   DISP>[,KEEP],UNIT>[T+F5,1,DEFER],DSN>+E.9897463,   CT22    1
//              VOL>SER>[+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,   CT22    2
//              I+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5]  T22    3
//CHG.INPUT    DD   *,SPACE>[CYL,[1,1]]                                1440 CDS
00000          COMBINE     COMPILE                  G. WANG.            C98970
01000  IDENTIFICATION DIVISION.                                         C98970
01010  PROGRAM-ID. C9897                                                C98970
01020  AUTHOR. A. J. BOWKER                                             C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                          C98970
01040  DATE-WRITTEN. 25 JLY 72.                                         C98970
01050  REMARKS.  PROGRAM V11                                            C98970
01060              ADD GROUP IDENTIFICATION                             C98970
01070                AND MERGE DATA.                                    C98970
02000  ENVIRONMENT DIVISION.                                            C98970
02010  CONFIGURATION SECTION.                                           C98970
02020  SOURCE-COMPUTER. IBM-360.                                        C98970
02030  OBJECT-COMPUTER. IBM-360.                                        C98970
02100  INPUT-OUTPUT SECTION.                                            C98970
02110  FILE-CONTROL.                                                    C98970
02120      SELECT IN-FILE-1              ASSIGN TO UT-S-TU13            C98970
02130          RESERVE 1 ALTERNATE AREA.                                C98970
02140      SELECT IN-FILE-2              ASSIGN TO UT-S-TU14            C98970
02150          RESERVE 1 ALTERNATE AREA.                                C98970
02160      SELECT IN-FILE-3              ASSIGN TO UT-S-TU15            C98970
02170          RESERVE 1 ALTERNATE AREA.                                C98970
02180      SELECT CARD-FILE              ASSIGN TO DA-S-DT01            C98970
02190          RESERVE 1 ALTERNATE AREA.                                C98970
02200      SELECT OUTFILE                ASSIGN TO UT-S-TU22            C98970
02210          RESERVE 1 ALTERNATE AREA.                                C98970
10000  DATA DIVISION.                                                   C98970
10010  FILE SECTION.                                                    C98970
11100  FD  IN-FILE-1                                                    C98970
11120      RECORDING MODE IS F                                          C98970
11130      BLOCK CONTAINS 60 RECORDS                                    C98970
11140      RECORD CONTAINS 50             CHARACTERS                    C98970
11150      LABEL RECORDS ARE OMITTED                                    C98970
11160      DATA RECORDS ARE IN-REC-1.                                   C98970
11170  01  IN-REC-1                      PICTURE X(50).                 C98970
12100  FD  IN-FILE-2                                                    C98970
12120      RECORDING MODE IS F                                          C98970
12130      BLOCK CONTAINS 60 RECORDS                                    C98970
12140      RECORD CONTAINS 50             CHARACTERS                    C98970
12150      LABEL RECORDS ARE OMITTED                                    C98970
12160      DATA RECORDS ARE IN-REC-2.                                   C98970
12170  01  IN-REC-2                      PICTURE X(50).                 C98970
13100  FD  IN-FILE-3                                                    C98970
13120      RECORDING MODE IS F                                          C98970
13130      BLOCK CONTAINS 60 RECORDS                                    C98970
13140      RECORD CONTAINS 50             CHARACTERS                    C98970
13150      LABEL RECORDS ARE OMITTED                                    C98970
13160      DATA RECORDS ARE IN-REC-3.                                   C98970
13170  01  IN-REC-3                      PICTURE X(50).                 C98970
14100  FD  CARD-FILE                                                    C98970
14120      RECORDING MODE IS F                                          C98970
14130      BLOCK CONTAINS 20 RECORDS                                    C98970
14140      RECORD CONTAINS 80             CHARACTERS                    C98970
14150      LABEL RECORDS ARE STANDARD                                   C98970
14160      DATA RECORDS ARE CARD-REC.                                   C98970
14170  01  CARD-REC                      PICTURE X(80).                 C98970
15100  FD  OUTFILE                                                      C98970
15120      RECORDING MODE IS F                                          C98970
15130      BLOCK CONTAINS 60 RECORDS                                    C98970
15140      RECORD CONTAINS 50             CHARACTERS                    C98970
15150      LABEL RECORDS ARE OMITTED                                    C98970
15160      DATA RECORDS ARE OUT-REC.                                    C98970
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15170  01  OUT-REC                          PICTURE X(50).                          C98970
30000  WORKING-STORAGE SECTION.                                                    C98970
30010  77  LAST-WUC-IN                      PICTURE X(5) VALUE SPACE.               C98970
30020  77  INDEX-1    COMPUTATIONAL         PICTURE S999 VALUE ZERO.                C98970
30030  77  INDEX-2    COMPUTATIONAL         PICTURE S999 VALUE ZERO.                C98970
30040  77  MAX-NUM-WUC  COMPUTATIONAL       PICTURE S999.                           C98970
30050  77  MAX-SPEC-WUC COMPUTATIONAL       PICTURE S999.                           C98970
30060  77  NUM-REC-1    COMPUTATIONAL       PICTURE S9(6) VALUE ZERO.               C98970
30070  77  NUM-REC-2    COMPUTATIONAL       PICTURE S9(6) VALUE ZERO.               C98970
30080  77  NUM-REC-3    COMPUTATIONAL       PICTURE S9(6) VALUE ZERO.               C98970
30090  77  NUM-OUT-REC  COMPUTATIONAL       PICTURE S9(6) VALUE ZERO.               C98970
30100  77  CUR-GRP-ID                       PICTURE S999.                           C98970
30110  77  CUR-WUC                          PICTURE X(5).                           C98970
30120  77  TEMP-NUM                         PICTURE 9(6).                           C98970
30130  77  NINE                             PICTURE X(50) VALUE                     C98970
30140          '99999999999999999999999999999999999999999999999999'.              C98970
40000  01  WUC-TABLE SYNC.                                                        C98970
40020      05  WUC-TABLE-5 OCCURS 50 TIMES PICTURE XXXXX.                         C98970
40100  01  SPEC-WUC-TAB   SYNC.                                                   C98970
40120      05  SPEC-WUC-TABLE OCCURS 20 TIMES PICTURE XXXXX.                      C98970
40200  01  DATA-IN-REC SYNC.                                                      C98970
40210      05  ISOCHRONAL                   PICTURE X.                            C98970
40220      05  GROUP-ID                     PICTURE 99.                           C98970
40230      05  FILLER                       PICTURE X.                            C98970
40240      05  GROUP-WUC                    PICTURE X(5).                         C98970
40250      05  FILLER                       PICTURE X.                            C98970
40260      05  REC-ID                       PICTURE X.                            C98970
40270      05  FILLER                       PICTURE X.                            C98970
40280      05  WUC-IN                       PICTURE X(5).                         C98970
40290      05      FILLER REDEFINES WUC-IN.                                        C98970
40300          10  WUC-IN-2                 PICTURE XX.                           C98970
40310          10  FILLER                   PICTURE XXX.                          C98970
40320      05      FILLER REDEFINES WUC-IN.                                        C98970
40330          10  WUC-IN-3                 PICTURE XXX.                          C98970
40340          10  FILLER                   PICTURE XX.                           C98970
40350      05  FILLER                       PICTURE X.                            C98970
40360      05  HMC                          PICTURE XXX.                          C98970
40370      05  FILLER                       PICTURE X.                            C98970
40380      05  FILLER                       PICTURE 9(7)V9.                       C98970
40390      05  FILLER                       PICTURE X.                            C98970
40400      05  FILLER                       PICTURE 9(7)V9.                       C98970
40410      05  FILLER                       PICTURE X.                            C98970
40420      05  FILLER                       PICTURE 9(7)V9.                       C98970
40430      05  FILLER                       PICTURE XX.                           C98970
40700  01  NUM-WUC-REC SYNC.                                                      C98970
40710      05  NUM-WUC                      PICTURE 99.                           C98970
40720      05  FILLER                       PICTURE X(78).                        C98970
40730  01  WUC-IN-REC  SYNC.                                                      C98970
40740      05  WUC                          PICTURE X(5).                         C98970
40750      05  FILLER                       PICTURE X(75).                        C98970
40800  01  WUC-TEMP SYNC                    PICTURE XXXXX.                        C98970
40810  01  FILLER REDEFINES WUC-TEMP.                                             C98970
40820      05  WUC-TEMP-2                   PICTURE XX.                           C98970
40830      05  FILLER                       PICTURE XXX.                          C98970
40840  01  FILLER REDEFINES WUC-TEMP.                                             C98970
40850      05  WUC-TEMP-3                   PICTURE XXX.                          C98970
40860      05  FILLER                       PICTURE XX.                           C98970
40870  01  FILLER REDEFINES WUC-TEMP.                                             C98970
40880      05  FILLER                       PICTURE XX.                           C98970
40890      05  WUC-TEMP-3D1G                PICTURE X.                            C98970
40900      05  FILLER                       PICTURE XX.                           C98970
50000  PROCEDURE DIVISION.                                                       C98970
50010      OPEN INPUT       IN-FILE-1,                                          C98970
50020                       IN-FILE-2,                                          C98970
50030                       IN-FILE-3,                                          C98970
50040                       CARD-FILE.                                          C98970
50050      OPEN OUTPUT      OUTFILE.                                            C98970
50100      READ CARD-FILE INTO NUM-WUC-REC, AT END GO TO CLOSE-FILES.           C98970
50110      MOVE ZERO TO INDEX-1.                                                C98970
50115      MOVE NUM-WUC TO MAX-NUM-WUC.                                         C98970
50120  INPUT-WUC-LIST.                                                          C98970
50130      ADD 1 TO INDEX-1.                                                    C98970
50140      READ CARD-FILE INTO WUC-IN-REC, AT END GO TO CLOSE-FILES.            C98970
50150      MOVE WUC TO WUC-TABLE-5 (INDEX-1).                                   C98970
50170      IF INDEX-1 IS LESS THAN NUM-WUC GO TO INPUT-WUC-LIST.                C98970
50200      READ CARD-FILE INTO NUM-WUC-REC, AT END GO TO CLOSE-FILES.           C98970
50210      MOVE ZERO TO INDEX-1.                                                C98970
50215      MOVE NUM-WUC TO MAX-SPEC-WUC.                                        C98970
50220  INPUT-SPEC-WUC-LIST.                                                     C98970
50230      ADD 1 TO INDEX-1.                                                    C98970
50240      READ CARD-FILE INTO WUC-IN-REC, AT END GO TO CLOSE-FILES.            C98970
50250      MOVE WUC TO SPEC-WUC-TABLE (INDEX-1).                                C98970
50270      IF INDEX-1 IS LESS THAN NUM-WUC GO TO INPUT-SPEC-WUC-LIST.           C98970
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51000  READ-FILE-1.                                                    C98970
51010      READ IN-FILE-1 INTO DATA-IN-REC; AT END GO TO READ-FILE-2.  C98970
51015      ADD 1 TO NUM-REC-1.                                         C98970
51020      PERFORM PROCESS-WUC THRU END-P-W.                           C98970
51030      GO TO READ-FILE-1.                                          C98970
51100  READ-FILE-2.                                                    C98970
51110      READ IN-FILE-2 INTO DATA-IN-REC; AT END GO TO READ-FILE-3.  C98970
51115      ADD 1 TO NUM-REC-2.                                         C98970
51120      PERFORM PROCESS-WUC THRU END-P-W.                           C98970
51130      GO TO READ-FILE-2.                                          C98970
51200  READ-FILE-3.                                                    C98970
51210      READ IN-FILE-3 INTO DATA-IN-REC; AT END GO TO CLOSE-FILES.  C98970
51215      ADD 1 TO NUM-REC-3.                                         C98970
51220      PERFORM PROCESS-WUC THRU END-P-W.                           C98970
51230      GO TO READ-FILE-3.                                          C98970
52000  PROCESS-WUC.                                                    C98970
52010      IF WUC-IN IS EQUAL TO LAST-WUC-IN GO TO WRITE-OUTREC.       C98970
52015      MOVE SPEC-WUC-TABLE [1] TO WUC-TEMP.                        C98970
52020      IF WUC-IN-2 IS EQUAL TO WUC-TEMP-2;                         C98970
52030                      GO TO PROCESS-SPECIAL-WUC.                  C98970
52040      MOVE ZERO TO INDEX-1.                                       C98970
52050  TEST-WUC.                                                       C98970
52060      ADD 1 TO INDEX-1.                                           C98970
52065      MOVE WUC-TABLE-5 [INDEX-1] TO WUC-TEMP.                     C98970
52070      IF WUC-IN-2 IS EQUAL TO WUC-TEMP-2;                         C98970
52080                      GO TO SAME-WUC-2.                           C98970
52090      IF INDEX-1 IS LESS THAN MAX-NUM-WUC GO TO TEST-WUC.         C98970
52100      MOVE SPACE TO LAST-WUC-IN.                                  C98970
52110      GO TO END-P-W.                                              C98970
52200  SAME-WUC-2.                                                     C98970
52205      MOVE WUC-TABLE-5 [INDEX-1] TO WUC-TEMP.                     C98970
52210      IF WUC-TEMP-3DIG                IS EQUAL TO SPACE           C98970
52220                      GO TO WRITE-OUTREC-1.                       C98970
52230      IF WUC-IN-3 IS EQUAL TO WUC-TEMP-3          GO TO           C98970
52240                                  WRITE-OUTREC-1.                 C98970
52250      ADD 1 TO INDEX-1.                                           C98970
52260      IF INDEX-1 IS GREATER THAN MAX-NUM-WUC                      C98970
52270              DISPLAY ' PROBLEM IN SAME-WUC-2 ' UPON CONSOLE      C98970
52280              GO TO CLOSE-FILES.                                  C98970
52290      GO TO SAME-WUC-2.                                           C98970
52400  WRITE-OUTREC.                                                   C98970
52410      MOVE CUR-GRP-ID TO GROUP-ID.                                C98970
52420      MOVE CUR-WUC TO GROUP-WUC.                                  C98970
52430      WRITE OUT-REC FROM DATA-IN-REC.                             C98970
52440      ADD 1 TO NUM-OUT-REC.                                       C98970
52450      MOVE WUC-IN TO LAST-WUC-IN.                                 C98970
52460      GO TO END-P-W.                                              C98970
52500  PROCESS-SPECIAL-WUC.                                            C98970
52510      MOVE 1 TO INDEX-2.                                          C98970
52520      IF WUC-IN IS EQUAL SPEC-WUC-TABLE [INDEX-2] GO TO SPEC-WUC-1. C98970
52600  PROCESS-SPEC-WUC-3.                                             C98970
52610      ADD 1 TO INDEX-2.                                           C98970
52615      MOVE SPEC-WUC-TABLE [INDEX-2] TO WUC-TEMP.                  C98970
52620      IF WUC-IN-3 IS EQUAL TO WUC-TEMP-3                          C98970
52630                      GO TO SPEC-WUC-1.                           C98970
52640      IF INDEX-2 IS LESS THAN MAX-SPEC-WUC GO TO                  C98970
52650                          PROCESS-SPEC-WUC-3.                     C98970
52660      MOVE SPACE TO LAST-WUC-IN.                                  C98970
52670      GO TO END-P-W.                                              C98970
52700  SPEC-WUC-1.                                                     C98970
52710      COMPUTE CUR-GRP-ID > INDEX-2 < MAX-NUM-WUC.                 C98970
52720      MOVE SPEC-WUC-TABLE [INDEX-2] TO CUR-WUC.                   C98970
52730      GO TO WRITE-OUTREC.                                         C98970
52800  WRITE-OUTREC-1.                                                 C98970
52810      MOVE INDEX-1 TO CUR-GRP-ID.                                 C98970
52820      MOVE WUC-TABLE-5 [INDEX-1] TO CUR-WUC.                      C98970
52830      GO TO WRITE-OUTREC.                                         C98970
52990  END-P-W. EXIT.                                                  C98970
55000  CLOSE-FILES.                                                    C98970
55010      MOVE NUM-REC-1 TO TEMP-NUM.                                 C98970
55020      DISPLAY ' NO. RECS FILE 1 ' TEMP-NUM UPON CONSOLE.          C98970
55030      MOVE NUM-REC-2 TO TEMP-NUM.                                 C98970
55040      DISPLAY ' NO. RECS FILE 2 ' TEMP-NUM UPON CONSOLE.          C98970
55050      MOVE NUM-REC-3 TO TEMP-NUM.                                 C98970
55060      DISPLAY ' NO. RECS FILE 3 ' TEMP-NUM UPON CONSOLE.          C98970
55070      MOVE NUM-OUT-REC TO TEMP-NUM.                               C98970
55080      DISPLAY ' NO. OUTRECS     ' TEMP-NUM UPON CONSOLE.          C98970
55100      COMPUTE INDEX-1 > NUM-OUT-REC - NUM-OUT-REC / 60 * 60.      C98970
55110      IF INDEX-1 IS EQUAL TO ZERO GO TO CF-1.                     C98970
```

```
55120  CF-2.                                                          C98970
55130      WRITE OUT-REC FROM NINE.                                   C98970
55140      ADD 1 TO INDEX-1.                                          C98970
55150      IF INDEX-1 IS LESS THAN 60 GO TO CF-2.                     C98970
55200  CF-1.                                                          C98970
55210      CLOSE IN-FILE-1,                                           C98970
55220            IN-FILE-2,                                           C98970
55230            IN-FILE-3,                                           C98970
55240            CARD-FILE,                                           C98970
55250            OUTFILE WITH LOCK.                                   C98970
55260      DISPLAY ' EOJ C9897 ' UPON CONSOLE.                        C98970
55270      GOBACK.                                                    C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN    DD   *,SPACE=(CYL,(1,1))                              1440 CDS
00000            GET TFG                          WANG                C98970'T
010001 019999  REPLACE                                                    'T
TFG  DT01    11  0202080
43
11J
11K
11
12B
12
13C
13J
13
14
23K
23M
23N
23U
23S
23
41F
41
42E
42F
42G
42
44
45L
45J
45
46A
46C
46G
46M
46J
46
47
49A
49
51
52
55
63
65
71
75
93
97
11
74000
74A
74B
74C
74D
74F
74H
74K
74L
74P
74Q
*END
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU13     DD   DISP=(OLD,KEEP),VOL=SER=+F2,UNIT=T+F2            T13
//TPR.TU14     DD   DISP=(OLD,KEEP),VOL=SER=+F3,UNIT=T+F3            T14
//TPR.TU15     DD   DISP=(OLD,KEEP),VOL=SER=+F4,UNIT=T+F4            T15
//TPR.TU22     DD   DISP=(OLD,KEEP),VOL=SER=+F5,UNIT=T+F5            T22
//TPR.TPRIN    DD   *,SPACE=(TRK,(1,1))
T/P  TU13    10100502050
T/P  TU14    10100502050
T/P  TU15    10100502050
T/P  TU22    10100502050
T/P  DT01    10100602080
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.15.8 SORT MANHOUR AND NORM DATA

```
//C9897S EXEC  P96<2N,W>199,TIME>02,ACCT>035323007
//CHG.SORT1N   DD   DISP>(,KEEP),UNIT>(T+F5,1,DEFER),                    CT22    1
//             DSN>+E.9897463,                                           CT22    2
//             VOL>SER>(+F5,A+F5,B+F5,C+F5,D+F5,E+F5,F+F5,G+F5,H+F5,     CT22    3
//             1+F5,J+F5,K+F5,L+F5,M+F5,N+F5,O+F5,P+F5,Q+F5,R+F5,S+F5),CT22    4
//             DCB>(LRECL>0050,BLKSIZE>3000),LABEL>(,NSL,RETPD>099)
//CHG.SORTOUT  DD   DISP>(,KEEP),UNIT>(T+F1,1,DEFER),DSN>+A.9897464,    CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1),CT12    3
//             DCB>(LRECL>0050,BLKSIZE>3000)
//CHG.SYSIN    DD   *,DCB>BLKSIZE>0080,SPACE>(TRK,(1,1))
 SORT  FIELDS>(001,001,CH,A,002,002,CH,A,013,005,CH,A,019,003,CH,D,    C
               011,001,CH,A),SIZE>E0050000
 MODS  E15>(E15,008,SORTLIB,N),E18>(E18,024,SORTLIB,N)
```

6.15.9 MEANS OF WUC SET

```
//T9897H JOB   01,:  WANG      :,PRTY>02,TYPRUN>HOLD
//C9897H EXEC  P9655L.TIME>05,ACCT>035323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A.9897464,    CT12    1
//             VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,     CT12    2
//             1+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)   T12    3
//CHG.TU23     DD   DSN>+P.9897465,SPACE>(CYL,(009,001))                 D23-OUT
//CHG.TU24     DD   DSN>+P.9897466,SPACE>(CYL,(009,001))                 D24-OUT
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                  1440 CDS
00000        COMBINE     COMPILE                  0, WANG               C98970
01000  IDENTIFICATION DIVISION.                                          C98970
01010  PROGRAM-ID. C9897                                                 C98970
01020  AUTHOR. A. J. BOWKER.                                             C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                           C98970
01040  DATE-WRITTEN. 27 JLY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060           TASK V11-5                                               C98970
01070             COMPUTE  PASS NO  1.                                   C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT IN-FILE-1              ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT FILE-2                 ASSIGN TO UT-S-TU23             C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
02160      SELECT FILE-3                 ASSIGN TO UT-S-TU24             C98970
02170          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE-1                                                     C98970
11110                                                                    C98970
11120      RECORDING MODE IS F                                           C98970
11130      BLOCK CONTAINS 60 RECORDS                                     C98970
11140      RECORD CONTAINS 50            CHARACTERS                      C98970
11150      LABEL RECORDS ARE OMITTED                                     C98970
11160      DATA RECORDS ARE IN-REC-1.                                    C98970
11170  01  IN-REC-1 SYNC.                                               C98970
11180      05  ISO                       PICTURE X.                     C98970
11184      05  GRP-ID                    PICTURE XX.                    C98970
11186      05  FILLER                    PICTURE X(7).                  C98970
11190      05  JD                        PICTURE X.                     C98970
11200      05  FILLER                    PICTURE X.                     C98970
11210      05  WUC                       PICTURE X(8).                  C98970
11220      05  FILLER                    PICTURE X.                     C98970
11230      05      DATA-IN.                                              C98970
11240          10  FILLER                PICTURE X(4).                  C98970
11250          10  NORM-MA               PICTURE 9(7)V9.                C98970
11260          10  FILLER                PICTURE X.                     C98970
11270          10  VAR-NORM-MA           PICTURE 9(7)V9.                C98970
11280          10  FILLER                PICTURE X(9).                  C98970
11290      05  FILLER                    PICTURE XX.                    C98970
12100  FD  FILE-2                                                        C98970
12110                                                                    C98970
12120      RECORDING MODE IS F                                           C98970
12130      BLOCK CONTAINS 60 RECORDS                                     C98970
12140      RECORD CONTAINS 50            CHARACTERS                      C98970
```

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12150      LABEL RECORDS ARE OMITTED                                        C98970
12160      DATA RECORDS ARE REC-2.                                          C98970
12170  01  REC-2 SYNC                    PICTURE X(50).                    C98970
13100  FD  FILE-3                                                          C98970
13110                                                                       C98970
13120      RECORDING MODE IS F                                              C98970
13130      BLOCK CONTAINS 60 RECORDS                                        C98970
13140      RECORD CONTAINS 50              CHARACTERS                       C98970
13150      LABEL RECORDS ARE OMITTED                                        C98970
13160      DATA RECORDS ARE REC-3.                                          C98970
13170  01  REC-3 SYNC                    PICTURE X(50).                    C98970
30000  WORKING-STORAGE SECTION.                                             C98970
30010  77  NORM-UMA-NUM   COMPUTATIONAL  PICTURE S9(8)V9.                  C98970
30020  77  MH-REP-PE-N    COMPUTATIONAL  PICTURE S9(8)V9.                  C98970
30030  77  MH-REP-MP-N    COMPUTATIONAL  PICTURE S9(8)V9.                  C98970
30040  77  NREP-PE-D      COMPUTATIONAL  PICTURE S9(8)V9.                  C98970
30050  77  NREP-MP-D      COMPUTATIONAL  PICTURE S9(8)V9.                  C98970
30060  77  NUM-REC-1      COMPUTATIONAL  PICTURE S9(8) VALUE ZERO.         C98970
30070  77  NUM-REC-2      COMPUTATIONAL  PICTURE S9(8) VALUE ZERO.         C98970
30080  77  NUM-REC-3      COMPUTATIONAL  PICTURE S9(8) VALUE ZERO.         C98970
30090  77  CNT            COMPUTATIONAL  PICTURE S9(8).                    C98970
30100  77  MH-MA-NUMA COMPUTATIONAL      PICTURE S9(8)V9.                  C98970
30110  77  EF             COMPUTATIONAL  PICTURE S999  VALUE <60.          C98970
30120  77  CURISO                        PICTURE X VALUE SPACE.            C98970
30130  77  CURID                         PICTURE XX VALUE SPACE.           C98970
30140  77  CURWUC                        PICTURE X(5) VALUE SPACE.         C98970
30150  77  ONE                           PICTURE X VALUE 11I.              C98970
30160  77  TWO                           PICTURE X VALUE 12I.              C98970
30170  77  THRLE                         PICTURE X VALUE 13I.              C98970
30180  77  TEMP-NUM                      PICTURE 9(8).                     C98970
30200  01  DATA-1 SYNC.                                                    C98970
30210      05  HMC-1                     PICTURE XXX.                      C98970
30220      05  FILLER                    PICTURE X.                        C98970
30230      05  NUMA                      PICTURE 9(7)V9.                   C98970
30240      05  FILLER                    PICTURE X.                        C98970
30250      05  NREP-MP                   PICTURE 9(7)V9.                   C98970
30260      05  FILLER                    PICTURE X.                        C98970
30270      05  NREP-PE                   PICTURE 9(7)V9.                   C98970
30300  01  DATA-2 SYNC.                                                    C98970
30310      05  HMC-2                     PICTURE XXX.                      C98970
30320      05  FILLER                    PICTURE X.                        C98970
30330      05  MH-MA                     PICTURE 9(7)V9.                   C98970
30340      05  FILLER                    PICTURE X.                        C98970
30350      05  VAR-MH-MA                 PICTURE 9(7)V9.                   C98970
30360      05  FILLER                    PICTURE X(9).                     C98970
30400  01  NINE                          PICTURE X(50) VALUE               C98970
30410          .99999999999999999999999999999999999999999999$1.            C98970
32170  01  WS-REC-2.                                                       C98970
32180      05  ISO-2                     PICTURE X.                        C98970
32190      05  GRP-ID-2                  PICTURE XX.                       C98970
32200      05  FILLER                    PICTURE X(9) VALUE SPACE.         C98970
32210      05  WUC-REC-2                 PICTURE X(5).                     C98970
32220      05  FILLER                    PICTURE X(5) VALUE SPACE.         C98970
32230      05  N2                        PICTURE 9(7)V9.                   C98970
32240      05  FILLER                    PICTURE X    VALUE SPACE.         C98970
32250      05  C                         PICTURE 9(7)V9.                   C98970
32260      05  FILLER                    PICTURE X(11) VALUE               C98970
32270              :          $1.                                          C98970
33170  01  WS-REC-3.                                                       C98970
33180      05  ISO-3                     PICTURE X.                        C98970
33190      05  GRP-ID-3                  PICTURE XX.                       C98970
33200      05  FILLER                    PICTURE X VALUE SPACE.            C98970
33210      05  MH-UMA                    PICTURE 9(7)V9.                   C98970
33220      05  FILLER                    PICTURE X VALUE SPACE.            C98970
33230      05  N1                        PICTURE 9(7)V9.                   C98970
33240      05  FILLER                    PICTURE X VALUE SPACE.            C98970
33250      05  NORM-UMA                  PICTURE 9(7)V9.                   C98970
33260      05  FILLER                    PICTURE X VALUE SPACE.            C98970
33270      05  MH-REP-PE                 PICTURE 9(7)V9.                   C98970
33280      05  FILLER                    PICTURE X VALUE SPACE.            C98970
33290      05  MH-REP-MP                 PICTURE 9(7)V9.                   C98970
33300      05  FILLER                    PICTURE XX VALUE I $1.            C98970
50000  PROCEDURE DIVISION.                                                 C98970
50010      OPEN INPUT IN-FILE-1.                                            C98970
50020           OUTPUT FILE-2.                                              C98970
50030                  FILE-3.                                              C98970
50050      PERFORM RESET-1.                                                 C98970
50060      PERFORM RESET-2.                                                 C98970
50100  READ-DATA-IN.                                                       C98970
50110      READ IN-FILE-1. AT END GO TO CLOSE-DATA.                         C98970
50111      IF ISO IS EQUAL TO 191 GO TO CLOSE-DATA.                         C98970
50115      ADD 1 TO NUM-REC-1.                                              C98970
50120      IF ISO IS EQUAL TO CURISO GO TO TEST-GRP-ID.                     C98970
50130      IF CURISO IS EQUAL TO SPACE                                      C98970
50140              MOVE ISO TO CURISO                                       C98970
50150              GO TO TEST-GRP-ID.                                       C98970
50160      GO TO NEW-GROUP.
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                                                                        C98970
50200  TEST-GRP-ID.                                                     C98970
50210      IF GRP-ID IS EQUAL TO CURID  GO TO TEST-WUC.                 C98970
50220      IF CURID  IS EQUAL TO SPACE                                  C98970
50230              MOVE GRP-ID TO CURID                                 C98970
50240              GO TO TEST-WUC.                                      C98970
50250      GO TO NEW-GROUP.                                             C98970
50300  TEST-WUC.                                                        C98970
50310      IF WUC IS EQUAL TO CURWUC GO TO TEST-ID.                     C98970
50320      IF CURWUC IS EQUAL TO SPACE                                  C98970
50330              MOVE WUC TO CURWUC                                   C98970
50340              GO TO TEST-ID.                                       C98970
50350      GO TO NEW-WUC.                                               C98970
50400  TEST-ID.                                                         C98970
50410      IF JD IS EQUAL TO ONE MOVE DATA-IN TO DATA-1                 C98970
50420                      GO TO READ-DATA-IN.                          C98970
50430      IF JD IS EQUAL TO TWO MOVE DATA-IN TO DATA-2                 C98970
50440                      GO TO TEST-HMC.                              C98970
50450      IF JD IS EQUAL TO THREE                                      C98970
50460          COMPUTE NORM-UMA-NUM > NORM-UMA-NUM < N2 * NORM-MA       C98970
50470          GO TO READ-DATA-IN.                                      C98970
50480      DISPLAY ' BAD ID 1 JD UPON CONSOLE                           C98970
50490              GO TO CLOSE-FILES.                                   C98970
50500  TEST-HMC.                                                        C98970
50510      IF HMC-1 IS NOT EQUAL TO HMC-2 GO TO READ-DATA-IN.           C98970
50520      COMPUTE MH-MA-NUMA > MH-MA-NUMA < MH-MA * NUMA.              C98970
50530      ADD NUMA TO N1.                                              C98970
50540      ADD NUMA TO N2.                                              C98970
50550      COMPUTE C > C < MH-MA * NUMA.                                C98970
50560      COMPUTE MH-REP-PE-N > MH-REP-PE-N < MH-MA * NREP-PE.         C98970
50570      COMPUTE MH-REP-HP-N > MH-REP-HP-N < MH-MA * NREP-HP.         C98970
50580      ADD NREP-PE TO NREP-PE-D.                                    C98970
50590      ADD NREP-HP TO NREP-HP-D.                                    C98970
50600                                                                   C98970
50690      GO TO READ-DATA-IN.                                          C98970
51000  NEW-WUC.                                                         C98970
51010      MOVE CURISO TO ISO-2.                                        C98970
51020      MOVE CURID  TO GRP-ID-2.                                     C98970
51025      MOVE CURWUC TO WUC-REC-2.                                    C98970
51030      WRITE REC-2 FROM WS-REC-2.                                   C98970
51040      ADD 1 TO NUM-REC-2.                                          C98970
51050      PERFORM RESET-1.                                             C98970
51060      MOVE WUC TO CURWUC.                                          C98970
51090      GO TO TEST-ID.                                               C98970
51100  NEW-GROUP.                                                       C98970
51110      IF N1 IS EQUAL TO ZERO DISPLAY ' N1 IS ZERO ' CURWUC CURID   C98970
51120                  UPON CONSOLE GO TO CLOSE-FILES.                  C98970
51130      COMPUTE MH-UMA > MH-MA-NUMA / N1.                            C98970
51140      COMPUTE NORM-UMA > NORM-UMA-NUM / N1.                        C98970
51150      IF NREP-PE-D IS EQUAL TO ZERO MOVE ZERO TO MH-REP-PE         C98970
51160          GO TO NG-1.                                              C98970
51170      COMPUTE MH-REP-PE > MH-REP-PE-N /   NREP-PE-D.               C98970
51175  NG-1.                                                            C98970
51180      IF NREP-HP-D IS EQUAL TO ZERO MOVE ZERO TO MH-REP-HP         C98970
51190              GO TO NG-2.                                          C98970
51200      COMPUTE MH-REP-HP > MH-REP-HP-N /   NREP-HP-D.               C98970
51205  NG-2.                                                            C98970
51210      MOVE CURISO TO ISO-3.                                        C98970
51220      MOVE CURID  TO GRP-ID-3.                                     C98970
51230      WRITE REC-3 FROM WS-REC-3.                                   C98970
51240      ADD 1 TO NUM-REC-3.                                          C98970
51250      PERFORM RESET-2.                                             C98970
51260      MOVE CURISO TO ISO-2.                                        C98970
51270      MOVE CURID  TO GRP-ID-2.                                     C98970
51275      MOVE CURWUC TO WUC-REC-2.                                    C98970
51280      WRITE REC-2 FROM WS-REC-2.                                   C98970
51285      PERFORM RESET-1.                                             C98970
51290      ADD 1 TO NUM-REC-2.                                          C98970
51360  NEW-GROUP-END.  EXIT.                                            C98970
51365  NEW-GROUP-CONTINUE.                                              C98970
51370      MOVE WUC TO CURWUC. MOVE GRP-ID TO CURID.                    C98970
51380      MOVE ISO TO CURISO.                                          C98970
51390      GO TO TEST-ID.                                               C98970
52000  CLOSE-DATA.                                                      C98970
52010      PERFORM NEW-GROUP THRU NEW-GROUP-END.                        C98970
52100      MOVE NUM-REC-1 TO TEMP-NUM.                                  C98970
52110      DISPLAY ' NO. RECS FILE 1   TEMP-NUM UPON CONSOLE.           C98970
52120      MOVE NUM-REC-2 TO TEMP-NUM.                                  C98970
52130      DISPLAY ' NO. RECS FILE 2 ' TEMP-NUM UPON CONSOLE.           C98970
52140      MOVE NUM-REC-3 TO TEMP-NUM.                                  C98970
52150      DISPLAY ' NO. RECS FILE 3 ' TEMP-NUM UPON CONSOLE.           C98970
52200  CLOSE-FILES.                                                     C98970
52210      PERFORM NINE-FILL THRU END-NF.                               C98970
52220      CLOSE IN-FILE-1,                                             C98970
52230            FILE-2,                                                C98970
52240            FILE-3 WITH LOCK.                                      C98970
52250      DISPLAY ' EOJ 9897 ' UPON CONSOLE.                           C98970
52290      GOBACK.                                                      C98970
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53000  RESET-1.                                                          C98970
53010      MOVE ZERO TO N2.                                              C98970
53020      MOVE ZERO TO C.                                               C98970
53100  RESET-2.                                                          C98970
53110      MOVE ZERO TO N1.                                              C98970
53120      MOVE ZERO TO NORM-UMA-NUM.                                    C98970
53130      MOVE ZERO TO MH-MA-NUMA.                                      C98970
53140      MOVE ZERO TO MH-REP-PE-N.                                     C98970
53150      MOVE ZERO TO MH-REP-HP-N.                                     C98970
53160      MOVE ZERO TO NREP-PE-D.                                       C98970
53170      MOVE ZERO TO NREP-HP-D.                                       C98970
53200  NINE-FILL.                                                        C98970
53300  NF-2.                                                             C98970
53310      COMPUTE CNT > NUM-REC-2 - NUM-REC-2 / BF * BF.                C98970
53320      IF CNT IS EQUAL TO ZERO GO TO NF-3.                           C98970
53330  NF-4.                                                             C98970
53340      WRITE REC-2 FROM NINE.                                        C98970
53350      ADD 1 TO CNT.                                                 C98970
53360      IF CNT IS LESS THAN BF GO TO NF-4.                            C98970
53400  NF-3.                                                             C98970
53410      COMPUTE CNT > NUM-REC-3 - NUM-REC-3 / BF * BF.                C98970
53420      IF CNT IS EQUAL TO ZERO GO TO END-NF.                         C98970
53430  NF-5.                                                             C98970
53440      WRITE REC-3 FROM NINE.                                        C98970
53450      ADD 1 TO CNT.                                                 C98970
53460      IF CNT IS LESS THAN BF GO TO NF-5.                            C98970
53490  END-NF. EXIT.                                                     C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12     DD   DISP>(OLD,KEEP),VOL>SER>+F1,UNIT>T+F1               T12
//TPR.TU23     DD   DISP>(OLD,PASS)
//TPR.TU24     DD   DISP>(OLD,PASS)
//TPR.TPNIN    DD   *,SPACE>(TRK,(1,1))
T/P  TU12    10100502050
T/P  TU23    10100502050
T/P  TU24    10100502050
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
```

6.15.10 VARIANCE OF WUC SET

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//C9897G EXEC  P9655L,TIME>05,ACCT>D35323007
//CHG.TU12     DD   DISP>(,PASS),UNIT>(T+F1,1,DEFER),DSN>+A.9897464,   CT12    1
//               VOL>SER>(+F1,A+F1,B+F1,C+F1,D+F1,E+F1,F+F1,G+F1,H+F1,   CT12    2
//               I+F1,J+F1,K+F1,L+F1,M+F1,N+F1,O+F1,P+F1,Q+F1,R+F1,S+F1)  T12    3
//CHG.TU23     DD   DSN>+P.9897465,DISP>(OLD,PASS)                      D23-IN
//CHG.TU24     DD   DSN>+P.9897466,DISP>(OLD,PASS)                      D24-IN
//CHG.TU25     DD   DSN>+P.9897467,SPACE>(CYL,(009,001))                D25-OUT
//CHG.INPUT    DD   *,SPACE>(CYL,(1,1))                                 1440 CDS
00000          COMBINE     COMPILE                  0. WANG             C98970
01000  IDENTIFICATION DIVISION.                                          C98970
01010  PROGRAM-ID. C9897                                                 C98970
01020  AUTHOR. A. J. BOWKER.                                             C98970
01030  INSTALLATION. GENERAL DYNAMICS/CONVAIR.                           C98970
01040  DATE-WRITTEN. 27 JLY 72.                                          C98970
01050  REMARKS.                                                          C98970
01060            TASK V11-6                                              C98970
01070              COMPUTE  PASS NO  2.                                  C98970
02000  ENVIRONMENT DIVISION.                                             C98970
02010  CONFIGURATION SECTION.                                            C98970
02020  SOURCE-COMPUTER. IBM-360.                                         C98970
02030  OBJECT-COMPUTER. IBM-360.                                         C98970
02100  INPUT-OUTPUT SECTION.                                             C98970
02110  FILE-CONTROL.                                                     C98970
02120      SELECT IN-FILE-1              ASSIGN TO UT-S-TU12             C98970
02130          RESERVE 1 ALTERNATE AREA.                                 C98970
02140      SELECT FILE-2                 ASSIGN TO UT-S-TU23             C98970
02150          RESERVE 1 ALTERNATE AREA.                                 C98970
02160      SELECT FILE-3                 ASSIGN TO UT-S-TU24             C98970
02170          RESERVE 1 ALTERNATE AREA.                                 C98970
02180      SELECT OUT-DATA-FILE          ASSIGN TO UT-S-TU25             C98970
02190          RESERVE 1 ALTERNATE AREA.                                 C98970
10000  DATA DIVISION.                                                    C98970
10010  FILE SECTION.                                                     C98970
11100  FD  IN-FILE-1                                                     C98970
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11110                                                                   C98970
11120          RECORDING MODE IS F                                      C98970
11130          BLOCK CONTAINS 60 RECORDS                                C98970
11140          RECORD CONTAINS 50              CHARACTERS               C98970
11150          LABEL RECORDS ARE OMITTED                                C98970
11160          DATA RECORDS ARE IN-REC-1.                               C98970
11170    01    IN-REC-1 SYNC.                                           C98970
11180          05  ISO                        PICTURE X.               C98970
11184          05  GRP-ID                     PICTURE XX.              C98970
11185          05  FILLER                     PICTURE X.               C98970
11186          05  WUC-IN                     PICTURE X(5).            C98970
11187          05  FILLER                     PICTURE X.               C98970
11190          05  JD                         PICTURE X.               C98970
11200          05  FILLER                     PICTURE X.               C98970
11210          05  WUC                        PICTURE X(5).            C98970
11220          05  FILLER                     PICTURE X.               C98970
11230          05      DATA-IN.                                         C98970
11240              10  FILLER                 PICTURE X(6).            C98970
11250              10  NORM-MA                PICTURE 9(7)V9.          C98970
11260              10  FILLER                 PICTURE X.               C98970
11270              10  VAR-NORM-MA            PICTURE 9(7)V9.          C98970
11280              10  FILLER                 PICTURE X(9).            C98970
11290          05  FILLER                     PICTURE XX.              C98970
12100    FD    FILE-2                                                   C98970
12110                                                                   C98970
12120          RECORDING MODE IS F                                      C98970
12130          BLOCK CONTAINS 60 RECORDS                                C98970
12140          RECORD CONTAINS 50              CHARACTERS               C98970
12150          LABEL RECORDS ARE OMITTED                                C98970
12160          DATA RECORDS ARE REC-2.                                  C98970
12170    01    REC-2 SYNC                      PICTURE X(50).           C98970
13100    FD    FILE-3                                                   C98970
13110                                                                   C98970
13120          RECORDING MODE IS F                                      C98970
13130          BLOCK CONTAINS 60 RECORDS                                C98970
13140          RECORD CONTAINS 50              CHARACTERS               C98970
13150          LABEL RECORDS ARE OMITTED                                C98970
13160          DATA RECORDS ARE REC-3.                                  C98970
13170    01    REC-3 SYNC                      PICTURE X(50).           C98970
14000    FD    OUT-DATA-FILE                                            C98970
14010          RECORDING MODE IS F                                      C98970
14020          BLOCK CONTAINS 20 RECORDS                                C98970
14030          RECORD CONTAINS 100             CHARACTERS               C98970
14040          LABEL RECORDS ARE OMITTED                                C98970
14050          DATA RECORDS ARE OUT-DATA-REC.                           C98970
14060    01    OUT-DATA-REC SYNC               PICTURE X(100).          C98970
30000    WORKING-STORAGE SECTION.                                       C98970
30010    77    NORM-UMA-NUM  COMPUTATIONAL     PICTURE S9(8)V9.         C98970
30020    77    MH-REP-PE-N   COMPUTATIONAL     PICTURE S9(8)V9.         C98970
30030    77    MH-REP-HP-N   COMPUTATIONAL     PICTURE S9(8)V9.         C98970
30040    77    NREP-PE-D     COMPUTATIONAL     PICTURE S9(8)V9.         C98970
30050    77    NREP-HP-D     COMPUTATIONAL     PICTURE S9(8)V9.         C98970
30060    77    NUM-REC-1     COMPUTATIONAL     PICTURE S9(8) VALUE ZERO. C98970
30070    77    NUM-REC-2     COMPUTATIONAL     PICTURE S9(8) VALUE ZERO. C98970
30080    77    NUM-REC-3     COMPUTATIONAL     PICTURE S9(8) VALUE ZERO. C98970
30090    77    CNT           COMPUTATIONAL     PICTURE S9(8).           C98970
30100    77    MH-MA-NUMA COMPUTATIONAL        PICTURE S9(8)V9.         C98970
30110    77    BF            COMPUTATIONAL     PICTURE S999  VALUE <60.  C98970
30120    77    CUR1SO                          PICTURE X VALUE SPACE.   C98970
30130    77    CUR1D                           PICTURE XX VALUE SPACE.  C98970
30140    77    CURWUC                          PICTURE X(5) VALUE SPACE. C98970
30150    77    ONE                             PICTURE X VALUE 111.     C98970
30160    77    TWO                             PICTURE X VALUE 121.     C98970
30170    77    THREE                           PICTURE X VALUE 131.     C98970
30180    77    TEMP-NUM                        PICTURE 9(8).            C98970
30200    01    DATA-1 SYNC.                                             C98970
30210          05  HMC-1                       PICTURE XXX.             C98970
30220          05  FILLER                     PICTURE X.               C98970
30230          05  NUMA                       PICTURE 9(7)V9.          C98970
30240          05  FILLER                     PICTURE X.               C98970
30250          05  NREP-HP                    PICTURE 9(7)V9.          C98970
30260          05  FILLER                     PICTURE X.               C98970
30270          05  NREP-PE                    PICTURE 9(7)V9.          C98970
30300    01    DATA-2 SYNC.                                             C98970
30310          05  HMC-2                      PICTURE XXX.             C98970
30320          05  FILLER                     PICTURE X.               C98970
30330          05  MH-MA                      PICTURE 9(7)V9.          C98970
30340          05  FILLER                     PICTURE X.               C98970
30350          05  VAR-MH-MA                  PICTURE 9(7)V9.          C98970
30360          05  FILLER                     PICTURE X(9).            C98970
32170    01    WS-REC-..                                                C98970
32180          05  FILLER                     PICTURE X.               C98970
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32190      05  GRP-ID-2                  PICTURE XX.                          C98970
32200      05  FILLER                    PICTURE X(9) VALUE SPACE.            C98970
32210      05  WUC-REC-2                 PICTURE X(5).                        C98970
32220      05  FILLER                    PICTURE X(5) VALUE SPACE.            C98970
32230      05  N2                        PICTURE 9(7)V9.                      C98970
32240      05  FILLER                    PICTURE X    VALUE SPACE.            C98970
32250      05  C                         PICTURE 9(7)V9.                      C98970
32260      05  FILLER                    PICTURE X(11) VALUE                  C98970
32270                          #1.                                            C98970
33170  01  WS-REC-3.                                                          C98970
33180      05  ISO-3                     PICTURE X.                           C98970
33190      05  GRP-ID-3                  PICTURE XX.                          C98970
33200      05  FILLER                    PICTURE X VALUE SPACE.               C98970
33210      05  MH-UMA                    PICTURE 9(7)V9.                      C98970
33220      05  FILLER                    PICTURE X VALUE SPACE.               C98970
33230      05  NI                        PICTURE 9(7)V9.                      C98970
33240      05  FILLER                    PICTURE X VALUE SPACE.               C98970
33250      05  NORM-UMA                  PICTURE 9(7)V9.                      C98970
33260      05  FILLER                    PICTURE X VALUE SPACE.               C98970
33270      05  MH-REP-PE                 PICTURE 9(7)V9.                      C98970
33280      05  FILLER                    PICTURE X VALUE SPACE.               C98970
33290      05  MH-REP-HP                 PICTURE 9(7)V9.                      C98970
33300      05  FILLER                    PICTURE XX VALUE I #1.               C98970
33400  01  PAGE-NUM      COMPUTATIONAL   PICTURE 999  VALUE ZERO.             C98970
33410  01  LINES-PRINT   COMPUTATIONAL   PICTURE 59(4) VALUE ZERO.            C98970
33420  01  X1            COMPUTATIONAL   PICTURE S9(8)V9.                     C98970
33430  01  VAR-MH-UMA-D  COMPUTATIONAL   PICTURE S9(8)V9.                     C98970
33440  01  VAR-MH-UMA    COMPUTATIONAL   PICTURE S9(8)V9.                     C98970
33450  01  PAGE-CNT      COMPUTATIONAL   PICTURE S999 VALUE <100.             C98970
33460  01  A COMPUTATIONAL               PICTURE S9(8)V9.                     C98970
33470  01  B COMPUTATIONAL               PICTURE S9(8)V9.                     C98970
33480  01  VAR-NORM-UMA-D COMPUTATIONAL  PICTURE S9(8)V9.                     C98970
33500  01  VAR-NORM-UMA COMPUTATIONAL    PICTURE S9(8)V9.                     C98970
40000  01  NEW-PAGE-REC SYNC.                                                 C98970
40010      05  FILLER                    PICTURE X(50) VALUE                  C98970
40020              #1                          RESULTS OF PROCESSING MAINT.   C98970
40030      05  FILLER                    PICTURE X(40) VALUE                  C98970
40040              'TENANCE MANHOUR AND NORM DATA      PAGE #.                C98970
40050      05  PAGE-NO-RPT               PICTURE Z9.                          C98970
40060      05  FILLER                    PICTURE X(8)  VALUE                  C98970
40070                          I       #1.                                    C98970
40100  01  TITLE-1 SYNC.                                                      C98970
40110      05  FILLER                    PICTURE X(50) VALUE                  C98970
40120              #0  WUC   AIRCRAFT        MEAN        VARIANCE       #.    C98970
40130      05  FILLER                    PICTURE X(50) VALUE                  C98970
40140              #MEAN        VARIANCE        MEAN         MEAN       #I.   C98970
40200  01  TITLE-2 SYNC.                                                      C98970
40210      05  FILLER                    PICTURE X(50) VALUE                  C98970
40220              #  GROUP   SUBSET       MH/UMA       MH/UMA       NI.     C98970
40230      05  FILLER                    PICTURE X(50) VALUE                  C98970
40240              #ORM/UMA    NORM/UMA    (MH/REP)PE  (MH/REP)HPO   #I.    C98970
40300  01  DATA-OUT SYNC.                                                     C98970
40310      05  FILLER                    PICTURE XX VALUE SPACE.              C98970
40320      05  WUC-OUT                   PICTURE X(5).                        C98970
40330      05  FILLER                    PICTURE XXX VALUE SPACE.             C98970
40340      05  A-C-SUB-SET               PICTURE X(7).                        C98970
40350      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40360      05  MH-UMA-RPT                PICTURE Z(8).9.                      C98970
40370      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40380      05  VAR-MH-UMA-RPT            PICTURE Z(8).9.                      C98970
40390      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40400      05  NORM-UMA-RPT              PICTURE Z(8).9.                      C98970
40410      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40420      05  VAR-NORM-UMA-RPT          PICTURE Z(8).9.                      C98970
40430      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40440      05  MH-REP-PE-RPT             PICTURE Z(8).9.                      C98970
40450      05  FILLER                    PICTURE X(3) VALUE SPACE.            C98970
40460      05  MH-REP-HP-RPT             PICTURE Z(8).9.                      C98970
40470      05  FILLER                    PICTURE X(5)  VALUE                  C98970
40480                          :    #1.                                       C98970
50000  PROCEDURE DIVISION.                                                  C98970
50010      OPEN INPUT IN-FILE-1,                                            C98970
50020          FILE-2,                                                      C98970
50030          FILE-3, OUTPUT OUT-DATA-FILE.                                C98970
50050      PERFORM RESET-1.                                                 C98970
50060      PERFORM RESET-2.                                                 C98970
50100  READ-DATA-IN.                                                        C98970
50110      READ IN-FILE-1, AT END GO TO CLOSE-DATA.                         C98970
50111      IF ISO IS EQUAL TO #91 GO TO CLOSE-DATA.                         C98970
50116      ADD 1 TO NUM-REC-1.                                              C98970
50120      IF ISO IS EQUAL TO CURISO GO TO TEST-GRP-ID.                     C98970
50130      IF CURISO IS EQUAL TO SPACE                                      C98970
50140              MOVE ISO TO CURISO                                       C98970
50150              GO TO TEST-GRP-ID.                                       C98970
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50160      GO TO NEW-GROUP.                                                  C98970
50200  TEST-GRP-ID.                                                          C98970
50210      IF GRP-ID IS EQUAL TO CURID  GO TO TEST-WUC.                      C98970
50220      IF CURID  IS EQUAL TO SPACE                                       C98970
50230              MOVE GRP-ID TO CURID                                      C98970
50240              GO TO TEST-WUC.                                           C98970
50250      GO TO NEW-GROUP.                                                  C98970
50300  TEST-WUC.                                                             C98970
50310      IF WUC IS EQUAL TO CURWUC GO TO TEST-ID.                          C98970
50320      IF CURWUC IS EQUAL TO SPACE                                       C98970
50330              MOVE WUC TO CURWUC                                        C98970
50340              GO TO TEST-ID.                                            C98970
50350      GO TO NEW-WUC.                                                    C98970
50400  TEST-ID.                                                              C98970
50405      MOVE WUC-IN TO WUC-OUT.                                           C98970
50410      IF JD IS EQUAL TO ONE MOVE DATA-IN TO DATA-1                      C98970
50420                      GO TO READ-DATA-IN.                               C98970
50430      IF JD IS EQUAL TO TWO MOVE DATA-IN TO DATA-2                      C98970
50440                      GO TO TEST-HMC.                                   C98970
50450      IF N2 IS EQUAL TO ZERO GO TO READ-DATA-IN.                        C98970
50455      COMPUTE A > C / N2 - MH-UMA.                                      C98970
50460      COMPUTE VAR-MH-UMA-D > VAR-MH-UMA-D < [N2 * A * A < X1].          C98970
50465      COMPUTE VAR-NORM-UMA-D > VAR-NORM-UMA-D <                         C98970
50466                  N2 * [VAR-NORM-MA < [NORM-MA - NORM-UMA] *            C98970
50467                                  [NORM-MA - NORM-UMA]].                C98970
50470          GO TO READ-DATA-IN.                                           C98970
50500  TEST-HMC.                                                             C98970
50510      IF HMC-1 IS NOT EQUAL TO HMC-2 GO TO READ-DATA-IN.                C98970
50515      IF N2 IS EQUAL TO ZERO GO TO READ-DATA-IN.                        C98970
50520      COMPUTE B > MH-MA - C / N2.                                       C98970
50530      COMPUTE X1 > X1 < NUMA * [VAR-MH-MA < B * B].                     C98970
50690      GO TO READ-DATA-IN.                                               C98970
51000  NEW-WUC.                                                              C98970
51050      PERFORM RESET-1.                                                  C98970
51060      MOVE WUC TO CURWUC.                                               C98970
51090      GO TO TEST-ID.                                                    C98970
51100  NEW-GROUP.                                                            C98970
51110      COMPUTE VAR-MH-UMA > VAR-MH-UMA-D / N1.                           C98970
51120      COMPUTE VAR-NORM-UMA > VAR-NORM-UMA-D / N1.                       C98970
51140      IF CURISO IS EQUAL TO ONE MOVE I  ISO  : TO A-C-SUB-SET           C98970
51150                          ELSE MOVE :NON-ISO: TO A-C-SUB-SET.           C98970
51160      MOVE MH-UMA TO MH-UMA-RPT.                                        C98970
51170      MOVE VAR-MH-UMA TO VAR-MH-UMA-RPT.                                C98970
51180      MOVE NORM-UMA TO NORM-UMA-RPT.                                    C98970
51190      MOVE VAR-NORM-UMA TO VAR-NORM-UMA-RPT.                            C98970
51200      MOVE MH-REP-PE TO MH-REP-PE-RPT.                                  C98970
51210      MOVE MH-REP-HP  TO MH-REP-HP-RPT.                                 C98970
51220      IF PAGE-CNT IS GREATER THAN 60 PERFORM NEW-PAGE.                  C98970
51230      WRITE OUT-DATA-REC FROM DATA-OUT.                                 C98970
51240      ADD I TO PAGE-CNT.                                                C98970
51250      ADD I TO LINES-PRINT.                                             C98970
51255  NEW-GROUP-END.                                                        C98970
51260      PERFORM RESET-1.                                                  C98970
51270      PERFORM RESET-2.                                                  C98970
51370      MOVE WUC TO CURWUC. MOVE GRP-ID TO CURID.                         C98970
51380      MOVE ISO TO CURISO.                                               C98970
51390      GO TO TEST-ID.                                                    C98970
52000  CLOSE-DATA.                                                           C98970
52010      PERFORM NEW-GROUP.                                                C98970
52100      MOVE NUM-REC-1 TO TEMP-NUM.                                       C98970
52110      DISPLAY : NO. RECS FILE :   TEMP-NUM UPON CONSOLE.                C98970
52120      MOVE NUM-REC-2 TO TEMP-NUM.                                       C98970
52130      DISPLAY ' NO. RECS FILE 2 I TEMP-NUM UPON CONSOLE.                C98970
52140      MOVE NUM-REC-3 TO TEMP-NUM.                                       C98970
52150      DISPLAY : NO. RECS FILE 3 I TEMP-NUM UPON CONSOLE.                C98970
52160      MOVE LINES-PRINT TO TEMP-NUM.                                     C98970
52170      DISPLAY ' TOTAL LINES PRINTED > : TEMP-NUM UPON CONSOLE.          C98970
52180      MOVE PAGE-NUM TO TEMP-NUM.                                        C98970
52190      DISPLAY . TOTAL PAGES PRINTED > I TEMP-NUM UPON CONSOLE.          C98970
52200  CLOSE-FILES.                                                          C98970
52220      CLOSE IN-FILE-1.                                                  C98970
52230            FILE-2.                                                     C98970
52235               OUT-DATA-FILE.                                           C98970
52240            FILE-3 WITH LOCK.                                          C98970
52250      DISPLAY : EOJ 9897 : UPON CONSOLE.                                C98970
52290      GOBACK.                                                           C98970
53000  RESET-1.                                                              C98970
53010      MOVE ZERO TO X1.                                                  C98970
53020      READ FILE-2 INTO WS-REC-2, AT END GO TO CLOSE-DATA.               C98970
53040      IF ISO-2 IS EQUAL TO I9: GO TO CLOSE-DATA.                        C98970
53050      ADD 1  TO NUM-REC-2.                                              C98970
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53100  RESET-2.                                                          C98970
53110      MOVE ZERO TO VAR-MH-UMA-D.                                    C98970
53120      MOVE ZERO TO VAR-NORM-UMA-D.                                  C98970
53130      READ FILE-3 INTO WS-REC-3, AT END GO TO CLOSE-DATA.           C98970
53150      IF ISO-3 IS EQUAL TO 191 GO TO CLOSE-DATA.                    C98970
53160      ADD 1  TO NUM-REC-3.                                          C98970
55000  NEW-PAGE.                                                         C98970
55010      ADD 1 TO PAGE-NUM.                                            C98970
55020      MOVE ZERO TO PAGE-CNT.                                        C98970
55030      MOVE PAGE-NUM TO PAGE-NO-RPT.                                 C98970
55040      ADD 3 TO LINES-PRINT.                                         C98970
55050      WRITE OUT-DATA-REC FROM NEW-PAGE-REC.                         C98970
55060      WRITE OUT-DATA-REC FROM TITLE-1.                              C98970
55070      WRITE OUT-DATA-REC FROM TITLE-2.                              C98970
/*       PLACE COBOL SOURCE BEFORE THIS CARD
//CHG.TFGIN     DD   *,SPACE=(CYL,(1,1))                                1440 CDS
/*       PLACE TFG DATA BEFORE THIS CARD
//TPR.TU12      DD   DISP=(OLD,KEEP),VOL=SER=+F1,UNIT=T+F1              T12
//TPR.TU25      DD   DISP=(OLD,PASS)                                    D25-PASS
//TPR.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU25    1998100R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
//C9897P EXEC  C9603N,TIME=02,ACCT=036323007
//CHG.TU25      DD   DSN=+P.9897467,DISP=(OLD,DELETE)                   D25-IN
//CHG.TPRIN     DD   *,SPACE=(TRK,(1,1))
T/P  TU25    1998100R000
/*       PLACE T/P CONTROL CARDS BEFORE THIS CARD
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