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RMS COST MODEL USER'S MANUAL

James E. Kirchmer

Technology, Incorporated

Prepared for:

Army Aviation Systems Command

September 1975

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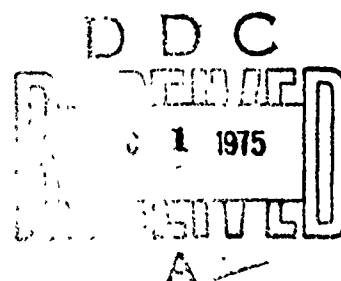
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FOREWORD

This user's manual for the modified RMS (Reliability and Maintainability Simulator) computer program was prepared by Technology Incorporated and submitted per Item No. A002 of Contract DAAJ01-74-C-0839(P1G) to the R&M Division of the AVSCOM Product Assurance Directorate. Mr. Lewis Neri, R&M Division Chief, and Mr. Lindell Whaley were the AVSCOM Contracting Officer representatives. At Technology Incorporated, Mr. Raymond B. Johnson, Systems Analysis Department Manager, supervised the program, and Mr. Larry E. Clay served as Program Manager.

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1. INTRODUCTION

1.1 Background

As part of its reliability and maintainability program for Army helicopters, the U.S. Army Aviation Systems Command (AVSCOM) has employed the Reliability and Maintainability Simulator (RMS) computer program. Written several years ago in GPSS V, this program has been modified several times to more closely simulate current Army helicopter operation and maintenance. The latest modification adapted the program to the new three-level maintenance concept (AVUM, AVIM, and Depot) to replace the older four-level system (Unit, Direct Support, General Support, and Depot). Among the latest program documents available through AVSCOM are "Army Simulation Model Software Package," "Description of Model Internal Operations," and "ARMS Input Forms."

The RMS program simulates the operation of a company of up to 24 helicopters flying a prescribed mission type. The program simulates the mission call, preflight inspection, flight, post-flight and daily inspections, periodic inspections, unscheduled maintenance, component replacement and repair at the field or depot level, test hops as required, and return of aircraft to the ready pool. Unscheduled maintenance and component failure are simulated on a probabilistic basis; such failures (perhaps causing an abort) can be detected in flight or during any of the inspections. Manpower limitations are included so that aircraft can be held NORM to await available maintenance manpower.

To support the extensive input requirement of the basic RMS program, AVSCOM recently developed a Fortran program to generate a large portion of the input data. This program was used to develop the input data for the seven OH-58 test alternatives presented in the final report for the current contractual development.

1.2 RMS Cost Modification

Since the basic RMS model did not include cost information, it could not project the economic consequences of changes in the system reliability or in the maintenance procedures, nor could it provide the savings associated with an increase in MTBF. Consequently, the R&M Division could not evaluate the cost effectiveness of contemplated reliability improvements.

Accordingly, Technology Incorporated was awarded a contract to modify the RMS model by adding a cost computation to determine total operating and maintenance costs during the simulation period. To execute the RMS program when some or all of the cost input data is unavailable, the modified program was designed to bypass the cost computation on command of an input switch. The revised model is called the RMS COST model.

This user's manual for the RMS COST model contains the operating instructions, the cost input requirements, a description of the Fortran cost subroutines, a detailed listing of the modifications to the basic RMS code, and a sample of the RMS COST output. This manual does not contain instructions or input data requirements for the basic RMS model.

2. RMS COST MODEL INITIALIZATION AND OPERATING INSTRUCTIONS

The RMS COST model program and the Fortran cost subroutines SHFTHR and MCOST must be incorporated in program libraries before the model may be executed. Each program is initialized by combining the program source decks with the Job Control Language (JCL) statements shown in Figures 1 to 3. The subroutines are compiled and loaded as object modules in the appropriate program library by using the JCL statements in Figures 1 and 2. The JCL in Figure 3 is designed to load the RMS COST model onto the disk source program library. Each of the initialization steps requires less than 110K bytes of core storage. The programs need be re-executed only when a source program is changed, and then only the changed program need be rerun.

The cost logic was added to the GPSS RMS model to permit executing the program with or without the cost computations. If the cost tables are to be output, then the JCL in Figure 4 is used in conjunction with the cost input data cards. To execute the 6-month OH-58 demonstration model with cost computations required 300K bytes of core storage and a run time of the central processing unit of about 3.5 minutes. The JCL in Figure 5 should be used when executing the model without the cost data.

To execute the RMS COST model with the cost computations, the SAVEVALUE 1630 must be initialized at zero. The cost card data must be in the sequence called for in Section 3.3, Input Data Card Sequence, and be added to the JCL in Figure 4. To execute the model without the cost computations, SAVEVALUE 1630 must be initialized at one.

```
//FW5BNB      JOB  (2T04,F093,7,110),'RMS-SHFTHR',REGION=110K
//STEP1      EXFC LMSTESTS,PARM='FORTGPCL(FW5BNH02)'
//SYSLIN      DD
              ALIAS  SHFTHR
//SYSIN      DD  *

              SHFTHR SUBROUTINE SOURCE DECK

/*
//
```

Figure 1. Job Control Language for Adding the SHFTHR Subroutine to Disk

```

//FW5BNR      JOB  (2T04,F093,7,110),'RMS=MCOST',REGION=110K
//STEP1       EXEC LMSTESTS,PARM='FORTGPCL(FW5BNH01)'
//SYSLIN      DD
//SYSIN       DD  *

```

MCOST SUBROUTINE SOURCE DECK

```

/*
//

```

Figure 2. Job Control Language for Adding the MCOST Subroutine to Disk

```

//FW5BNB      JOB  (2T04,F093,7,110),'RMS=SOURCE',REGION=110K
//STEP1       EXEC LMSTESTS,PARM='PU(FW5BNB03)'
//SYSIN      DD  *
//           ADD NAME=FW5BNB03
//           NUMRER NEW1=100,INCR=100

```

RMS=COST PROGRAM SOURCE DECK

```

/*
//

```

Figure 3. Job Control Language for Adding the RMS-COST Source Deck to Disk

```

//FW5BNR      JOB  (2T04,F093,7,300),'RMS=COST',REGION=300K
//CHG         EXEC LMSTESTS,PARM='PU(FW5BNH03)'
//SYSIN      DD  *
//           CHANGE NAME=FW5BNR03,LIST=ALL
//           INITIAL X1630,0
//STEP01      EXEC  PROC=LMSTESTS,PARM=PU(
//SYSPUNCH    DD  DSN=RR&TIGHTY&0,UNIT=2314,SPACE=(CYL,(5,1)),
//           DISP=(,PASS)
//DCSOUTDD    DD  UNIT=DISK,DSN=RR&SOURCE,SPACE=(CYL,(5,2,1)),
//           DCR=(RECFM=F,LRECL=80,RLXSIZE=80)
//SYSIN      DD  *
//           FW5BNH03
//STEP02      EXEC  PROC=LMSPRODS,PARM='G(LMSDUMMY,FW5BNR*)'
//STEP03      EXEC  PGM=DAG01V,PARM=C,TIME=15
//STEPLIR     DD  DSN=*,STFP02.LMS,SYSLVOD,UNIT=2314,
//           VOL=REF=*,STFP02.LMS,SYSLVOD,DISP=(OLD,PASS)
//DOUTPUT     DD  SYSOUT=A
//DINTERO     DD  UNIT=SYSDA,SPACE=(CYL,(5,1))
//DSYMTAB     DD  UNIT=SYSDA,SPACE=(CYL,(5,1))
//DREPTGEN     DD  UNIT=SYSDA,SPACE=(CYL,(5,1))
//DINTWORK     DD  UNIT=SYSDA,SPACE=(CYL,(5,1)),SEF=DINTERO
//DJTAP1      DD  DUMMY
//DJTAP2      DD  DUMMY
//DJTAP3      DD  DUMMY
//DDNWMAS1    DD  DUMMY
//DRDSAVE     DD  DUMMY
//DDPUNCH     DD  SYSOUT=B
//DINPUT1     DD  DSN=RR&TIGHTY&0,DISP=(OLD,DELETE)
//SYSUDUMP     DD  SYSOUT=A
//FT06F001    DD  SYSOUT=A
//FT05F001    DD  *

```

COST DATA

```

/*
//

```

Figure 4. Job Control Language for Executing RMS with COST Logic

```

//FW5BNB      JOB (2T04,F093,7,300),'RMS',REGION=300'
//CHG         EXEC LMSTESTS,PARM='PU(FW5BNB03)'
//SYSIN       DD *
              INITIAL      X1630,1
//STEP01      EXEC        PROC=LMSTESTS,PARM=PUNCH
//SYSPUNCH    DD DSN=88EIGHTY80,UNIT=2314,SPACE=(CYL,(5,1)),
//              DISP=(,PASS)
//DCSOUTDD    DD UNIT=DISK,DSN=88SOURCE,SPACE=(CYL,(5,2,17)),
//              DCB=(RECFM=F,LRFL=80,BLKSIZE=80)
//SYSIN       DD *
              FW5BNB03
//STEP02      EXEC        PROC=LMSPRODS,PARM='G(LMSDUMMY,FW5BNB*)'
//STEP03      EXEC        PGM=DAG01V,PARM=C,TIME=15
//STEPLIB     DD DSN=*,STEP02.LM',SYSLMOD,UNIT=2314,
//              VOL=REF=*,STEP02.LMS,SYSLMOD,DISP=(OLD,PASS)
//DOUTPUT     DD SYSOUT=A
//DINTERO     DD UNIT=SYSDA,SPACE=(CYL,(5,1))
//DSYMTAB     DD UNIT=SYSDA,SPACE=(CYL,(5,1))
//DREPTGEN    DD UNIT=SYSDA,SPACE=(CYL,(5,1))
//DINTWORK    DD UNIT=SYSDA,SPACE=(CYL,(5,1)),SEP=DINTERO
//DJTAP1      DD DUMMY
//DJTAP2      DD DUMMY
//DJTAP3      DD DUMMY
//DDNWMAST    DD DUMMY
//DRDSAVE     DD DUMMY
//DDPUNCH     DD SYSOUT=8
//DINPUT1     DD DSN=88EIGHTY80,DISP=(OLD,DELETE)
//SYSUDUMP    DD SYSOUT=A
/*
//

```

00036350

Figure 5. Job Control Language for Executing RMS Without COST Logic

3. RMS COST INPUT REQUIREMENTS

3.1 Introduction

The number of input cards required to execute the RMS COST model is determined by the number of MOS levels, subsystems, and components in the simulation.

One card must be provided for each MOS, subsystem, and component, and the card format must meet the specifications described in Section 3.2, the Input Data Card Parameters. An additional input data card, the flight cost card, must always be provided as the last card of the input deck. A card with 999 in columns 1 to 3 must be provided for each set of input cards (AVUM, AVIM, DEPOT, SUBSYSTEM and COMPONENT). The 999 card follows the last cost data card for each set. If no cost data is input for a given set, the 999 must still be used. The minimum number of cost input cards to execute the RMS COST model is six, five cards with 999 and the flight cost card.

No cost input cards are required to execute the RMS COST model without the cost computations.

3.2 Input Data Card Parameters

(1) AVUM MOS INPUT CARD (Figure 6)

Columns 1-3 - MOS Number: The number is right justified; column 1 is zero or blank. The value must be greater than zero and less than or equal to 15. The RMS logic currently limits the number of MOS levels to 11.

Columns 4-15 - MOS Title: Expressed in alpha or numeric characters, this title is left justified. The titles appear in the Inspection Cost and Inspection and Unscheduled Maintenance Personnel Cost tables.

Columns 16-22 - Average Hourly Wage: The wage value is right justified with a decimal point in column 20. Zero is an acceptable value.

Columns 23-29 - Average Hourly Overhead Rate: The rate value is right justified with a decimal point in column 27. Zero is an acceptable value.

Columns 30-36 - Consumable Cost per Event: This cost is right justified with a decimal point in column 34. Zero is an acceptable value. This cost covers the tools, rags, and miscellaneous items associated with the MOS level. The program adds this cost everytime the MOS level is called for.

Columns 37-39 - Overtime Factor: 0.0 to 9.9.
Overtime Rate = Ave. Hourly Wage * Overtime Factor

- (2) AVIM MOS INPUT CARD (Figure 7). This card is the same as the AVUM MOS INPUT card but does not include the overtime factor. The AVIM MOS TITLE is not required for program operation.
- (3) DEPOT MOS INPUT CARD (Figure 8). This card is the same as the AVUM MOS INPUT card but does not include the overtime factor. The Depot MOS title is not required for program operation.
- (4) SUBSYSTEM INPUT CARD (Figure 9).

Columns 1-3 - Subsystem Number: This number is right justified and must be greater than 0 and less than or equal to 25. Column 1 must be zero or blank. The assigned subsystem number must agree with the number in the basic RMS input (FUNCTION 46 'ELEMENTS TABLE CODE').

Columns 4-15 - Subsystem Title: Expressed in alpha or numeric characters, this title is left justified. The titles appear in the Subsystem Maintenance Action table.

Columns 16-18 - Number of Components in Subsystem: As any number from 1 to 299, this number is right justified.

- (5) COMPONENT INPUT CARD (Figure 10)

Columns 1-3 - Component Number: Right justified, the numbers must be 1 to n in sequential order (where n is less than or equal to 299). The assigned subsystem number and subsystem component number must agree with the number in the basic RMS input (FUNCTION 46 'ELEMENTS TABLE CODE').

Columns 4-5 - Subsystem Number: As any number from 1 to 25, this number is right justified.

Columns 6-13 - Component Cost: The cost value is right justified with a decimal point in column 11. Zero is an acceptable value.

SUBSYSTEM NUMBER	SUBSYSTEM TITLE	NUMBER OF COMPONENTS
1		1
2		2
3		3
4		4
5		5
6		6
7		7
8		8
9		9
10		10
11		11
12		12
13		13
14		14
15		15
16		16
17		17
18		18
19		19
20		20
21		21
22		22
23		23
24		24
25		25
26		26
27		27
28		28
29		29
30		30
31		31
32		32
33		33
34		34
35		35
36		36
37		37
38		38
39		39
40		40
41		41
42		42
43		43
44		44
45		45
46		46
47		47
48		48
49		49
50		50
51		51
52		52
53		53
54		54
55		55
56		56
57		57
58		58
59		59

COMPONENT NUMBER	SUBSYSTEM NUMBER	COMPONENT COST	SALVAGE VALUE	TRANS COST AVUM TO AVIM	TRANS COST AVIM TO DEPOT	CONSUMPTION COST	AVUM CYCLE TIME	AVIM CYCLE TIME	DEPOT CYCLE TIME
1	5	6	15	22	32	36	45	48	53
2	4	7	16	23	33	37	46	49	54
3	1	8	17	24	34	38	47	50	55
4	5	9	18	25	35	39	48	51	56
5	4	10	19	26	36	40	49	52	57
6	1	11	20	27	37	41	50	53	58
7	5	12	21	28	38	42	51	54	59
8	4	13	22	29	39	43	52	55	60
9	1	14	23	30	40	44	53	56	61
10	5	15	24	31	41	45	54	57	62
11	4	16	25	32	42	46	55	58	63
12	1	17	26	33	43	47	56	59	64
13	5	18	27	34	44	48	57	60	65
14	4	19	28	35	45	49	58	61	66
15	1	20	29	36	46	50	59	62	67
16	5	21	30	37	47	51	60	63	68
17	4	22	31	38	48	52	61	64	69
18	1	23	32	39	49	53	62	65	70
19	5	24	33	40	50	54	63	66	71
20	4	25	34	41	51	55	64	67	72
21	1	26	35	42	52	56	65	68	73
22	5	27	36	43	53	57	66	69	74
23	4	28	37	44	54	58	67	70	75
24	1	29	38	45	55	59	68	71	76
25	5	30	39	46	56	60	69	72	77
26	4	31	40	47	57	61	70	73	78
27	1	32	41	48	58	62	71	74	79
28	5	33	42	49	59	63	72	75	80
29	4	34	43	50	60	64	73	76	81
30	1	35	44	51	61	65	74	77	82
31	5	36	45	52	62	66	75	78	83
32	4	37	46	53	63	67	76	79	84
33	1	38	47	54	64	68	77	80	85
34	5	39	48	55	65	69	78	81	86
35	4	40	49	56	66	70	79	82	87
36	1	41	50	57	67	71	80	83	88
37	5	42	51	58	68	72	81	84	89
38	4	43	52	59	69	73	82	85	90
39	1	44	53	60	70	74	83	86	91
40	5	45	54	61	71	75	84	87	92
41	4	46	55	62	72	76	85	88	93
42	1	47	56	63	73	77	86	89	94
43	5	48	57	64	74	78	87	90	95
44	4	49	58	65	75	79	88	91	96
45	1	50	59	66	76	80	89	92	97
46	5	51	60	67	77	81	90	93	98
47	4	52	61	68	78	82	91	94	99
48	1	53	62	69	79	83	92	95	
49	5	54	63	70	80	84	93	96	
50	4	55	64	71	81	85	94	97	
51	1	56	65	72	82	86	95	98	
52	5	57	66	73	83	87	96	99	
53	4	58	67	74	84	88	97		
54	1	59	68	75	85	89	98		
55	5	60	69	76	86	90	99		
56	4	61	70	77	87	91			
57	1	62	71	78	88	92			
58	5	63	72	79	89	93			
59	4	64	73	80	90	94			
60	1	65	74	81	91	95			
61	5	66	75	82	92	96			
62	4	67	76	83	93	97			
63	1	68	77	84	94	98			
64	5	69	78	85	95	99			
65	4	70	79	86	96				
66	1	71	80	87	97				
67	5	72	81	88	98				
68	4	73	82	89	99				
69	1	74	83	90					
70	5	75	84	91					
71	4	76	85	92					
72	1	77	86	93					
73	5	78	87	94					
74	4	79	88	95					
75	1	80	89	96					
76	5	81	90	97					
77	4	82	91	98					
78	1	83	92	99					
79	5	84	93						
80	4	85	94						
81	1	86	95						
82	5	87	96						
83	4	88	97						
84	1	89	98						
85	5	90	99						
86	4	91							
87	1	92							
88	5	93							
89	4	94							
90	1	95							
91	5	96							
92	4	97							
93	1	98							
94	5	99							
95	4								
96	1								
97	5								
98	4								
99	1								
100	5								

Figure 10. Component Input Card Format

Columns 14-21 - Salvage Value: This value is right justified with a decimal point in column 19. Zero is an acceptable value.

Columns 22-28 - Transportation Cost AVUM to AVIM: This value is right justified with a decimal point in column 26. Zero is an acceptable value.

Columns 29-35 - Transportation Cost AVIM to DEPOT: This value is right justified with a decimal point in column 33. Zero is an acceptable value.

Columns 36-42 - Consumption Cost: This value is right justified with a decimal point in column 40. Zero is an acceptable value. This cost covers the associated component materials (hardware and POL) consumed during an AVIM or depot repair.

Columns 43-47 - AVUM Cycle Time: Elapsed time (hours) from removal of component to completion of repair at AVUM and return to inventory. The time value is right justified. Zero is an acceptable value.

Columns 48-52 - AVIM Cycle Time: Elapsed time (hours) from removal of component to completion of repair at AVIM and return to inventory. The time value is right justified. Zero is an acceptable value.

Columns 53-57 - DEPOT Cycle Time: Elapsed time (hours) from removal of component to completion of repair at depot and return to inventory. The time value is right justified. Zero is an acceptable value.

(6) FLIGHT COST INPUT CARD (Figure 11)

Columns 1-7 - Depreciation Rate per Flight Hour: This rate is right justified with a decimal point in column 5. Zero is an acceptable value.

Columns 8-12 - Flight Cost Per Hour: Flight costs exclude depreciation and POL. This cost is right justified with a decimal point in column 10. Zero is an acceptable value.

Columns 13-17 - Consumable Cost per Flight Hour: POL costs. This cost is right justified with a decimal point in column 15. Zero is an acceptable value.

DEPRECIATION					
RATE PER		FLIGHT HOUR		FLIGHT COST/HOUR	
CONSUMABLE COST/		FLIGHT HOUR			
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	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300
301	302	303	304	305	306
307	308	309	310	311	312
313	314	315	316	317	318
319	320	321	322	323	324
325	326	327	328	329	330
331	332	333	334	335	336
337	338	339	340	341	342
343	344	345	346	347	348
349	350	351	352	353	354
355	356	357	358	359	360
361	362	363	364	365	366
367	368	369	370	371	372
373	374	375	376	377	378
379	380	381	382	383	384
385	386	387	388	389	390
391	392	393	394	395	396
397	398	399	400	401	402
403	404	405	406	407	408
409	410	411	412	413	414
415	416	417	418	419	420
421	422	423	424	425	426
427	428	429	430	431	432
433	434	435	436	437	438
439	440	441	442	443	444
445	446	447	448	449	450
451	452	453	454	455	456
457	458	459	460	461	462
463	464	465	466	467	468
469	470	471	472	473	474
475	476	477	478	479	480
481	482	483	484	485	486
487	488	489	490	491	492
493	494	495	496	497	498
499	500	501	502	503	504
505	506	507	508	509	510
511	512	513	514	515	516
517	518	519	520	521	522
523	524	525	526	527	528
529	530	531	532	533	534
535	536	537	538	539	540
541	542	543	544	545	546
547	548	549	550	551	552
553	554	555	556	557	558
559	560	561	562	563	564
565	566	567	568	569	570
571	572	573	574	575	576
577	578	579	580	581	582
583	584	585	586	587	588
589	590	591	592	593	594
595	596	597	598	599	600
601	602	603	604	605	606
607	608	609	610	611	612
613	614	615	616	617	618
619	620	621	622	623	624
625	626	627	628	629	630
631	632	633	634	635	636
637	638	639	640	641	642
643	644	645	646	647	648
649	650	651	652	653	654
655	656	657	658	659	660
661	662	663	664	665	666
667	668	669	670	671	672
673	674	675	676	677	678
679	680	681	682	683	684
685	686	687	688	689	690
691	692	693	694	695	696
697	698	699	700	701	702
703	704	705	706	707	708
709	710	711	712	713	714
715	716	717	718	719	720
721	722	723	724	725	726
727	728	729	730	731	732
733	734	735	736	737	738
739	740	741	742	743	744
745	746	747	748	749	750
751	752	753	754	755	756
757	758	759	760	761	762
763	764	765	766	767	768
769	770	771	772	773	774
775	776	777	778	779	780
781	782	783	784	785	786
787	788	789	790	791	792
793	794	795	796	797	798
799	800	801	802	803	804
805	806	807	808	809	810
811	812	813	814	815	816
817	818	819	820	821	822
823	824	825	826	827	828
829	830	831	832	833	834
835	836	837	838	839	840
841	842	843	844	845	846
847	848	849	850	851	852
853	854	855	856	857	858
859	860	861	862	863	864
865	866	867	868	869	870
871	872	873	874	875	876
877	878	879	880	881	882
883	884	885	886	887	888
889	890	891	892	893	894
895	896	897	898	899	900
901	902	903	904	905	906
907	908	909	910	911	912
913	914	915	916	917	918
919	920	921	922	923	924
925	926	927	928	929	930
931	932	933	934	935	936
937	938	939	940	941	942
943	944	945	946	947	948
949	950	951	952	953	954
955	956	957	958	959	960
961	962	963	964	965	966
967	968	969	970	971	972
973	974	975	976	977	978
979	980	981	982	983	984
985	986	987	988	989	990
991	992	993	994	995	996
997	998	999	1000	1001	1002
1003	1004	1005	1006	1007	1008
1009	1010	1011	1012	1013	1014
1015	1016	1017	1018	1019	1020
1021	1022	1023	1024	1025	1026
1027	1028	1029	1030	1031	1032
1033	1034	1035	1036	1037	1038
1039	1040	1041	1042	1043	1044
1045	1046	1047	1048	1049	1050
1051	1052	1053	1054	1055	1056
1057	1058	1059	1060	1061	1062
1063	1064	1065	1066	1067	1068
1069	1070	1071	1072	1073	1074
1075	1076	1077	1078	1079	1080
1081	1082	1083	1084	1085	1086
1087	1088	1089	1090	1091	1092
1093	1094	1095	1096	1097	1098
1099	1100	1101	1102	1103	1104
1105	1106	1107	1108	1109	1110
1111	1112	1113	1114	1115	1116
1117	1118	1119	1120	1121	1122
1123	1124	1125	1126	1127	1128
1129	1130	1131	1132	1133	1134
1135	1136	1137	1138	1139	1140
1141	1142	1143	1144	1145	1146
1147	1148	1149	1150	1151	1152
1153	1154	1155	1156	1157	1158
1159	1160	1161	1162	1163	1164
1165	1166	1167	1168	1169	1170
1171	1172	1173	1174	1175	1176
1177	1178	1179	1180	1181	1182
1183	1184	1185	1186	1187	1188
1189	1190	1191	1192	1193	1194
1195	1196	1197	1198	1199	1200
1201	1202	1203	1204	1205	1206
1207	1208	1209	1210	1211	1212
1213	1214	1215	1216	1217	1218
1219	1220	1221	1222	1223	1224
1225	1226	1227	1228	1229	1230
1231	1232	1233	1234	1235	1236
1237	1238	1239	1240	1241	1242
1243	1244	1245	1246	1247	1248
1249	1250	1251	1252	1253	1254
1255	1256	1257	1258	1259	1260
1261	1262	1263	1264	1265	1266
1267	1268	1269	1270	1271	1272
1273	1274	1275	1276	1277	1278
1279	1280	1281	1282	1283	1284
1285	1286	1287	1288	1289	1290
1291	1292	1293	1294	1295	1296
1297	1298	1299	1300	1301	1302
1303	1304	1305	1306	1307	1308
1309	1310	1311	1312	1313	1314
1315	1316	1317	1318	1319	1320
1321	1322	1323	1324	1325	1326
1327	1328	1329	1330	1331	1332
1333	1334	1335	1336	1337	1338
1339	1340	1341	1342	1343	1344
1345	1346	1347	1348	1349	1350
1351	1352	1353	1354	1355	1356
1357	1358	1359	1360	1361	1362
1363	1364	1365	1366	1367	1368
1369	1370	1371	1372	1373	1374
1375	1376	1377	1378	1379	1380
1381	1382	1383	1384	1385	1386

Figure 11. Flight Cost Input Card Format

3.3 Input Data Card Sequence

- (1) AVUM MOS INPUT: The maximum number of input cards is 15. There is no minimum number of cards.
- (2) 999 in columns 1-3. This card is always required.
- (3) AVIM MOS INPUT: The maximum number of input cards is 15. There is no minimum number of cards.
- (4) 999 in columns 1-3. This card is always required.
- (5) DEPOT MOS INPUT: The maximum number of input cards is 15. There is no minimum number of cards.
- (6) 999 in columns 1-3. This card is always required.
- (7) SUBSYSTEM INPUT: The maximum number of input cards is 25. There is no minimum number of cards.
- (8) 999 in columns 1-3. This card is always required.
- (9) COMPONENT INPUT: The maximum number of input cards is 299. There is no minimum number of cards.
- (10) 999 in columns 1-3. This card is always required.
- (11) FLIGHT COST INPUT: This card is always required and is the last input data card.

Table I lists the complete set of input data cards for the RMS COST model demonstration.

3.4 Error Codes

Error messages are printed when the maximum number of input cards for a given type is exceeded.

<u>Error Code</u>	<u>Type Input</u>	<u>Maximum</u>
01	AVUM MOS	15
02	AVIM MOS	15
03	DEPOT MOS	15
04	SUBSYSTEM	25
05	COMPONENT	299

When the maximum is exceeded, the data cards will continue to be read for the card type input; but the values will not be stored in the array. After a card containing 999 is encountered, the routine to store the next card type input is entered.

TABLE I. RMS COST MODEL CARD INPUT

0010N A/C MOS	11.63	000.00	000.00	1.5				
0020FF A/C MOS	11.63	000.00	000.00	1.5				
003PERIODIC MOS	11.63	000.00	000.00	1.5				
004PREFLIGHT	11.63	000.00	000.00	1.5				
005DAILY MOS	11.63	000.00	000.00	1.5				
0060N A/C MOS	11.63	000.00	000.00	1.5				
007AVUM MOS 7	11.63	000.00	000.00	1.5				
008AVUM MOS 8	11.63	000.00	000.00	1.5				
009AVUM MOS 9	11.63	000.00	000.00	1.5				
010AVUM MOS 10	11.63	000.00	000.00	1.5				
011AVUM MOS 11	11.63	000.00	000.00	1.5				
012AVUM MOS 12	11.63	000.00	000.00	1.5				
013AVUM MOS 13	11.63	000.00	000.00	1.5				
014AVUM MOS 14	11.63	000.00	000.00	1.5				
999								
001AVIM MOS 1	11.63	000.00	000.00					
002AVIM MOS 2	11.63	000.00	000.00					
003AVIM MOS 3	11.63	000.00	000.00					
004AVIM MOS 4	11.63	000.00	000.00					
005AVIM MOS 5	11.63	000.00	000.00					
006AVIM MOS 6	11.63	000.00	000.00					
007AVIM MOS 7	11.63	000.00	000.00					
008AVIM MOS 8	11.63	000.00	000.00					
009AVIM MOS 9	11.63	000.00	000.00					
010AVIM MOS 10	11.63	000.00	000.00					
011AVIM MOS 11	11.63	000.00	000.00					
012AVIM MOS 12	11.63	000.00	000.00					
999								
001DEPOT MOS 1	11.63	000.00	000.00					
002DEPOT MOS 2	11.63	000.00	000.00					
003DEPOT MOS 3	11.63	000.00	000.00					
004DEPOT MOS 4	11.63	000.00	000.00					
005DEPOT MOS 5	11.63	000.00	000.00					
006DEPOT MOS 6	11.63	000.00	000.00					
007DEPOT MOS 7	11.63	000.00	000.00					
008DEPOT MOS 8	11.63	000.00	000.00					
009DEPOT MOS 9	11.63	000.00	000.00					
999								
001STRUCTURE 011								
002LANDING GEAR003								
003ENGINE ASSY 015								
004ROTAT.COMPON031								
005HYDRAUL SYS 004								
006INSTRUMENTS 010								
007ELECTRICAL 009								
008FUEL 004								
009FLT CONTROLS007								
010NAV/COM COMP012								
999								
00101 664.00 199.20 0.00 0.00 0.00 71 71 71								
00201 140.00 42.00 0.00 0.00 0.00 111 111 111								
003011A000.00 5400.00 0.00 0.00 0.00 63 63 63								
00401 313.00 93.90 0.00 0.00 0.00 91 91 91								
00501 562.00 168.60 0.00 0.00 0.00 59 59 59								
00601 658.00 197.40 0.00 0.00 0.00 59 59 59								
00701 75.00 22.50 0.00 0.00 0.00 61 61 61								
00801 389.00 116.70 0.00 0.00 0.00 65 65 65								
00901 410.00 123.00 0.00 0.00 0.00 63 63 63								
01001 809.00 242.70 0.00 0.00 0.00 85 85 85								
01101 1007.00 302.10 0.00 0.00 0.00 62 62 62								
01202 202.00 60.60 0.00 0.00 0.00 78 78 78								
01302 475.00 142.50 0.00 0.00 0.00 66 66 66								
01402 6.00 1.80 0.00 0.00 0.00 92 92 92								

TABLE I. - Continued

01503	95.00	28.50	0.00	0.00	0.00	128	128	128
01603	1210.00	363.00	0.00	0.00	0.00	104	104	104
01703	17562.00	5268.60	0.00	0.00	0.00	63	63	63
01803	7427.00	2228.10	0.00	0.00	0.00	62	62	62
01903	450.00	135.00	0.00	0.00	0.00	62	62	62
02003	3850.00	1155.00	0.00	0.00	0.00	103	103	103
02103	4.50	1.35	0.00	0.00	0.00	90	90	90
02203	50.00	15.00	0.00	0.00	0.00	66	66	66
02303	770.00	231.00	0.00	0.00	0.00	81	81	81
02403	440.00	132.00	0.00	0.00	0.00	66	66	66
02503	1010.00	303.00	0.00	0.00	0.00	68	68	68
02603	684.00	205.20	0.00	0.00	0.00	69	69	69
02703	10.00	3.00	0.00	0.00	0.00	61	61	61
02803	215.00	64.50	0.00	0.00	0.00	76	76	76
02903	115.00	34.50	0.00	0.00	0.00	71	71	71
03004	260.00	78.00	0.00	0.00	0.00	92	92	92
03104	46.00	13.80	0.00	0.00	0.00	83	83	83
03204	1310.00	393.00	0.00	0.00	0.00	88	88	88
03304	45.00	13.50	0.00	0.00	0.00	58	58	58
03404	78.00	23.40	0.00	0.00	0.00	65	65	65
03504	120.00	36.00	0.00	0.00	0.00	58	58	58
03604	2020.00	606.00	0.00	0.00	0.00	81	81	81
03704	2550.00	765.00	0.00	0.00	0.00	69	69	69
03804	20.00	6.00	0.00	0.00	0.00	83	83	83
03904	50.00	15.00	0.00	0.00	0.00	86	86	86
04004	7850.00	2355.00	0.00	0.00	0.00	138	138	138
04104	11.00	3.30	0.00	0.00	0.00	69	69	69
04204	366.00	109.00	0.00	0.00	0.00	133	133	133
04304	20.00	6.00	0.00	0.00	0.00	71	71	71
04404	1035.00	310.50	0.00	0.00	0.00	98	98	98
04504	482.00	144.60	0.00	0.00	0.00	62	62	62
04604	16.00	4.80	0.00	0.00	0.00	64	64	64
04704	13.00	3.90	0.00	0.00	0.00	73	73	73
04804	9.00	2.70	0.00	0.00	0.00	91	91	91
04904	100.00	30.00	0.00	0.00	0.00	74	74	74
05004	1350.00	405.00	0.00	0.00	0.00	138	138	138
05104	20.00	6.00	0.00	0.00	0.00	128	128	128
05204	230.00	69.00	0.00	0.00	0.00	58	58	58
05304	195.00	58.50	0.00	0.00	0.00	98	98	98
05404	1.00	0.30	0.00	0.00	0.00	65	65	65
05504	110.00	33.00	0.00	0.00	0.00	108	108	108
05604	55.00	16.50	0.00	0.00	0.00	94	94	94
05704	25.00	7.50	0.00	0.00	0.00	76	76	76
05804	280.00	84.00	0.00	0.00	0.00	73	73	73
05904	130.00	39.00	0.00	0.00	0.00	61	61	61
06004	50.00	15.00	0.00	0.00	0.00	108	108	108
06105	230.00	69.00	0.00	0.00	0.00	63	63	63
06205	15.00	4.50	0.00	0.00	0.00	63	63	63
06305	863.00	258.90	0.00	0.00	0.00	63	63	63
06405	150.00	45.00	0.00	0.00	0.00	66	66	66
06506	155.00	46.50	0.00	0.00	0.00	138	138	138
06606	134.00	40.20	0.00	0.00	0.00	108	108	108
06706	119.00	35.70	0.00	0.00	0.00	99	99	99
06806	140.00	42.00	0.00	0.00	0.00	100	100	100
06906	486.00	145.80	0.00	0.00	0.00	138	138	138
07006	67.00	20.10	0.00	0.00	0.00	59	59	59
07106	195.00	58.50	0.00	0.00	0.00	68	68	68
07206	110.00	33.00	0.00	0.00	0.00	59	59	59
07306	280.00	84.00	0.00	0.00	0.00	61	61	61
07406	27.00	8.10	0.00	0.00	0.00	58	58	58
07507	18.00	5.40	0.00	0.00	0.00	58	58	58
07607	253.00	75.90	0.00	0.00	0.00	103	103	103
07707	46.00	13.80	0.00	0.00	0.00	98	98	98

TABLE I. - Concluded

07807	42.00	12.60	0.00	0.00	0.00	58	58	58
07907	376.00	112.80	0.00	0.00	0.00	76	76	76
08007	300.00	90.00	0.00	0.00	0.00	68	68	68
08107	3.00	0.90	0.00	0.00	0.00	71	71	71
08207	1.50	0.45	0.00	0.00	0.00	58	58	58
08307	4.00	1.20	0.00	0.00	0.00	108	108	108
08408	3.00	0.90	0.00	0.00	0.00	67	67	67
08508	23.00	6.90	0.00	0.00	0.00	69	69	69
08608	595.00	178.50	0.00	0.00	0.00	67	67	67
08708	115.00	34.50	0.00	0.00	0.00	73	73	73
08809	530.00	159.00	0.00	0.00	0.00	58	58	58
08909	33.00	9.90	0.00	0.00	0.00	61	61	61
09009	95.00	28.50	0.00	0.00	0.00	81	81	81
09109	110.00	33.00	0.00	0.00	0.00	65	65	65
09209	116.00	34.80	0.00	0.00	0.00	70	70	70
09309	120.00	36.00	0.00	0.00	0.00	71	71	71
09409	834.00	250.20	0.00	0.00	0.00	73	73	73
09510	263.00	78.90	0.00	0.00	0.00	68	68	68
09610	2625.00	787.50	0.00	0.00	0.00	88	88	88
09710	200.00	60.00	0.00	0.00	0.00	88	88	88
09810	550.00	165.00	0.00	0.00	0.00	60	60	60
09910	2080.00	624.00	0.00	0.00	0.00	88	88	88
10010	3150.00	945.00	0.00	0.00	0.00	60	60	60
10110	3413.00	102.39	0.00	0.00	0.00	73	73	73
10210	2783.00	834.90	0.00	0.00	0.00	68	68	68
10310	4200.00	126.00	0.00	0.00	0.00	77	77	77
10410	4250.00	127.50	0.00	0.00	0.00	73	73	73
10510	800.00	24.00	0.00	0.00	0.00	108	108	108
10610	7800.00	2340.00	0.00	0.00	0.00	60	60	60
999								
0015,7820,0010,00								

4. FORTTRAN COST SUBROUTINES

4.1 MCOST Subroutine

4.1.1 MCOST Subroutine Description

When the RMS model is executed with cost alternatives (SAVEVALUE 1630 = 0), the MCOST subroutine module is loaded into core for the duration of the simulation, and the GPSS HELPA block serves as the interface between the RMS model and the Fortran subroutine.

The MCOST subroutine consists of six separate routines: Initialization, Maintenance Action, Inspection Cost, Maintenance Report, Subsystem Report, and Flight Hour Report.

The GPSS program interfaces with MCOST before any transactions are generated. This action causes the Fortran arrays to be initialized and the cost input data cards to be read. Upon completion of this step, control is returned to the main program to begin the simulation. The subroutine is not called for again until a maintenance action occurs or the simulation interval is completed.

During the simulation period the subroutine is called for to tally the subsystem maintenance actions and to compute maintenance costs. Each maintenance action is given an action code number (see Table II) which directs the transaction to the appropriate accounting computation in the Maintenance Action routine.

TABLE II. MAINTENANCE ACTION CODE DEFINITIONS

<u>Code</u>	<u>Description</u>
01	AVUM on aircraft repair
02	AVUM remove and replace
03	AVUM off aircraft repair
04	AVIM off aircraft repair
05	Depot maintenance
06	Condemned component
09	Overtime for AVUM action

The Maintenance Action routine assembles the information essential to the Subsystem Maintenance Action table. The number of occurrences of each maintenance event are counted in array KNTRAY. Each part used at the AVUM, AVIM, or depot is tabulated in array PIPRAY and later used to determine the cost of maintaining the pipeline.

The man-hours, MOS, subsystem, and component of the overtime transactions (IACT=09) are passed to the Maintenance routine and, when combined with the man-hour rate and overtime factor from the AVUM input card, are used to compute overtime

costs for inclusion in the appropriate subsystem maintenance cost.

When a transaction representing an AVUM secondary work center or a multiple-shift action enters the subroutine from the RMS Unscheduled Maintenance routine, the parameter IVALUE (5) is set to 999. This parameter indicates that the event counters had previously been incremented for the transaction by the primary work center or first shift of the multiple-shift action and need not be recounted by the secondary work center or the next shift.

The transaction parameters for the Maintenance Action routine include subsystem number; component number; MOS number; action code; number to indicate time change component, secondary work center, or multiple-shift action; and maintenance man-hours.

When the simulation interval is completed, the MCOST subroutine is called from the Data Compilation routine with the first parameter of the transaction having a value set to the MOS level plus 100. This value indicates that control is to be passed to the Inspection Cost routine.

To compute the values for the Inspection Cost table, the RMS COST model passes to MCOST two separate sets of transaction parameters for each MOS: first, the values for the MOS consumable cost computation, namely, the number of preflight, postflight, daily, intermediate (PMI), and periodic (PMP) inspections, and second, the number of man-hours for each of the same inspection events. After the computations for the MOS are completed, control is returned to the RMS and the cycle is continued until the values for the last MOS have been passed. After the Inspection table is printed, a switch (ISWT) is set which causes the next transaction passed from RMS to branch to the Maintenance Report routine.

The Maintenance Report routine, which prints the Inspection and Unscheduled Maintenance Personnel Cost table, receives the following data from the calling program: AVUM MOS number, available man-hours, man-hours expended, and overtime hours. The direct labor costs are determined from the expended maintenance hours (time directly spent maintaining a component), the hours spent on inspection (array PTOTP), and the AVUM man-hour rates. The indirect labor costs are obtained from the total cost of available manpower less the direct labor cost. The overtime cost is determined from the number of overtime hours, the AVUM man-hour rates, and the overtime factor from the AVUM input card. Control is returned to the RMS COST model which continues passing data until the last MOS has been accounted for. When the MOS level reaches 15, the table is printed and the routine control switch is set so that the next transaction will enter the Subsystem Report routine.

The RMS COST model passes the number of simulation hours to the Subsystem Report routine. This action initiates the cost computations for the Subsystem Maintenance Action table. The

values which were accumulated in the Maintenance Action routine are used to determine the pipeline and maintenance level costs by subsystem. After the table is printed and before returning control to the RMS COST model, the logic control switch is set to branch to the Flight Hour Report routine at the next call.

The parameters passed to the Flight Hour Report routine for the RMS COST Summary table are as follows: flight hours, missions completed, simulation interval, percentage of uptime/total time, percentage of missions flown/missions called, and percentage of missions computed/missions flown. The values from the Flight Cost input card, which are read by the Flight Hour Report routine, are used with the above parameters to produce the RMS COST summary table.

4.1.2 MCOST Subroutine Arrays

AVIM (15,6): The AVIM MOS input cards are stored in this matrix where rows 1 to 15 represent MOS numbers; columns 1 to 3 contain the MOS title; and columns 4, 5, and 6 contain the average hourly wage, the average hourly overhead rate, and the average consumable cost per event, respectively.

AVUM (15,7): This array has the same format as that for the AVIM array except for an additional column 7 which contains the overtime factor.

CARDIN (8): The input card data are read into this array before they are stored in their appropriate locations.

CSTRAY (25,4): In this matrix, rows 1 to 15 represent subsystem ID numbers, and columns 1 to 4 contain various types of costs as follows:

<u>Column</u>	<u>Description</u>
1	AVUM Subsystem Maintenance Action Costs
2	AVIM Subsystem Maintenance Action Costs
3	Depot Subsystem Maintenance Action Costs
4	Condemned component and Time Change Costs

DEPOT (15,6): This array has the same format as that for the AVIM array.

EVENT (15,6): In this matrix, rows 1 to 15 represent MOS levels, and columns 1 to 6 contain various inspection costs as follows:

<u>Column</u>	<u>Description</u>
1	Pre-flight inspection cost
2	Post-flight inspection cost
3	Daily inspection cost
4	PMI inspection cost
5	PMP inspection cost
6	Total inspection cost

IVALUE (6): This array contains parameter values passed from RMS.

KNTRAY (25,6): In this matrix, rows 1 to 25 represent subsystem ID numbers, and columns 1 to 6 tally types of maintenance as follows:

<u>Column</u>	<u>Description</u>
01	AVUM on aircraft repair
02	AVUM remove/replace
03	AVUM off aircraft repairs
04	AVIM off aircraft repairs
05	Depot repairs
06	Condemned component and time change component

PART (299,9): In this matrix, rows 1 to 299 represent component ID numbers, and columns 1 to 9 contain the component input card data as follows:

<u>Column</u>	<u>Description</u>
01	Subsystem number
02	Component replacement cost
03	Salvage value
04	Transportation cost from AVUM to AVIM
05	Transportation cost from AVIM to Depot
06	Consumption cost of associated parts and materials
07	AVUM cycle time
08	AVIM cycle time
09	Depot cycle time

PCNT (5): This array is an output matrix which contains the percentages for the Subsystem Maintenance Action table.

PIPE (25): In this array, the matrix cells contain values for the subsystem pipeline costs.

PIPRAY (299,3): In this matrix, components having off aircraft repairs are tallied by component number and repair location. Rows 1 to 299 represent component ID numbers, and columns 1 to 3 represent AVUM, AVIM, and Depot maintenance, respectively. These values are used to determine pipeline inventory costs.

PTOT (6): This array contains the total inspection costs by inspection level as follows:

<u>Row</u>	<u>Description</u>
1	Pre-flight inspection cost
2	Post-flight inspection cost
3	Daily inspection cost
4	PMI inspection cost
5	PMP inspection cost
6	Total inspection cost

PTOTP (16): In this array, the matrix cells contain the numbers of inspection man-hours by AVUM MOS.

RVALU (4): In this array, the rows are set to the parameter values of IVALUE for use as floating-point numbers.

RVALUE (5): In this array, the rows are set to the parameter values of IVALUE for use as floating-point numbers.

SUBSYS (25,4): Subsystem input cards are stored in this array. Rows 1 to 25 represent subsystem ID numbers. Columns 1 to 3 contain the subsystem title, and column 4 contains the number of components per subsystem.

SUMRY (6,3): In this array, the matrix cells contain the values for the RMS Cost Summary table.

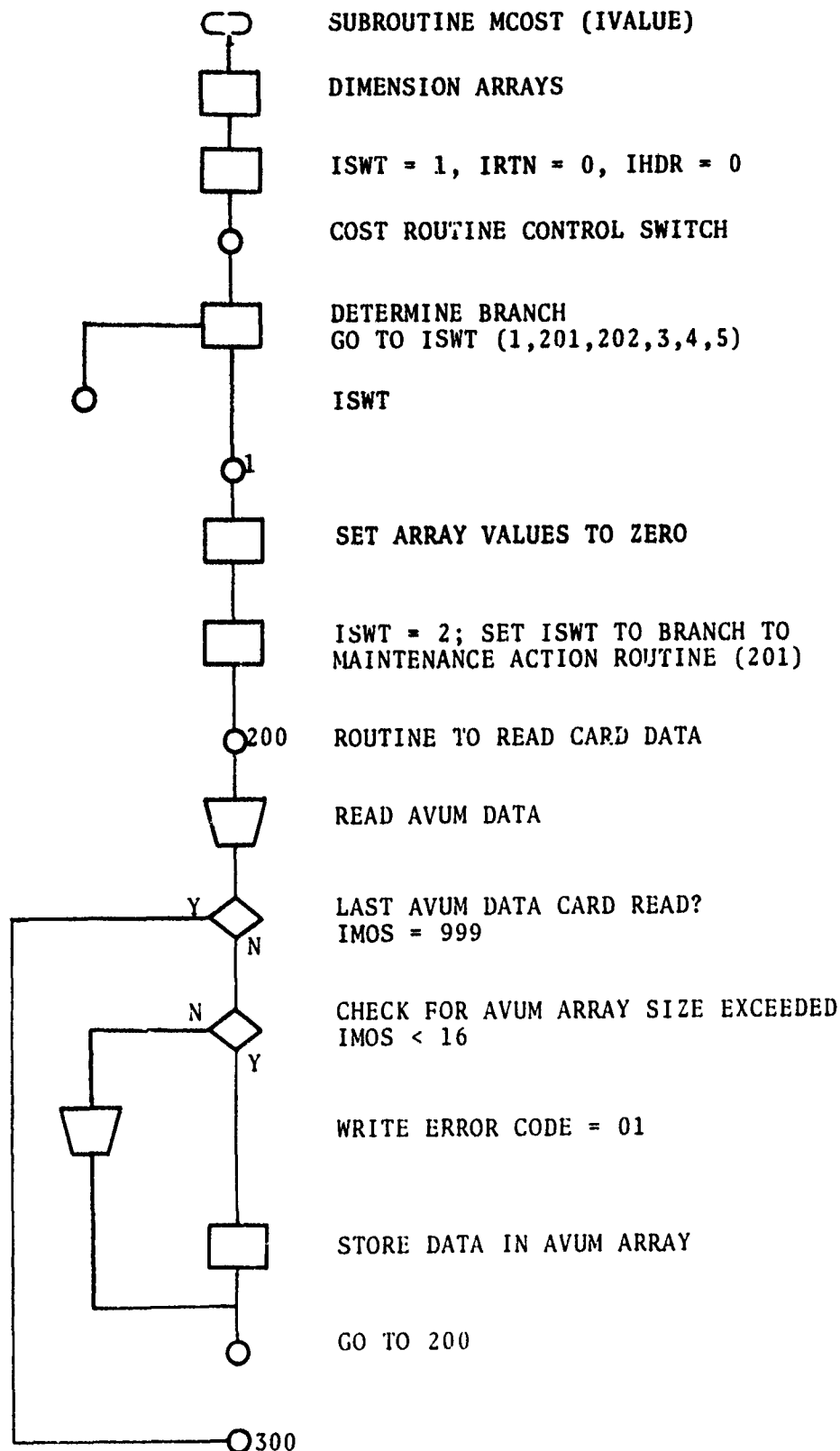
SVALUE (6): In this array, the rows are set to parameter values of IVALUE for use as floating-point numbers.

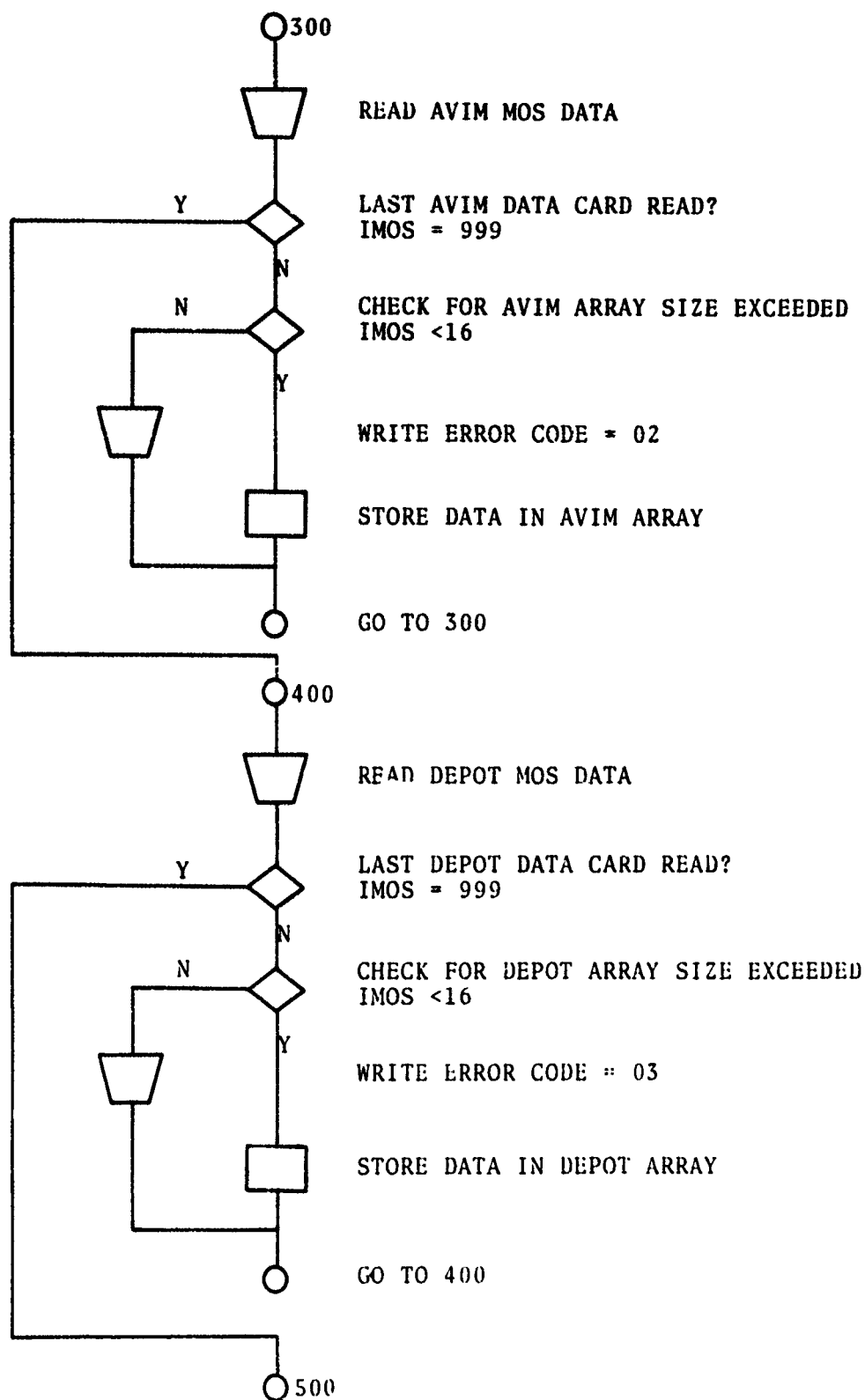
TITLE (5,6): This matrix contains the row names used in the RMS Cost Summary table.

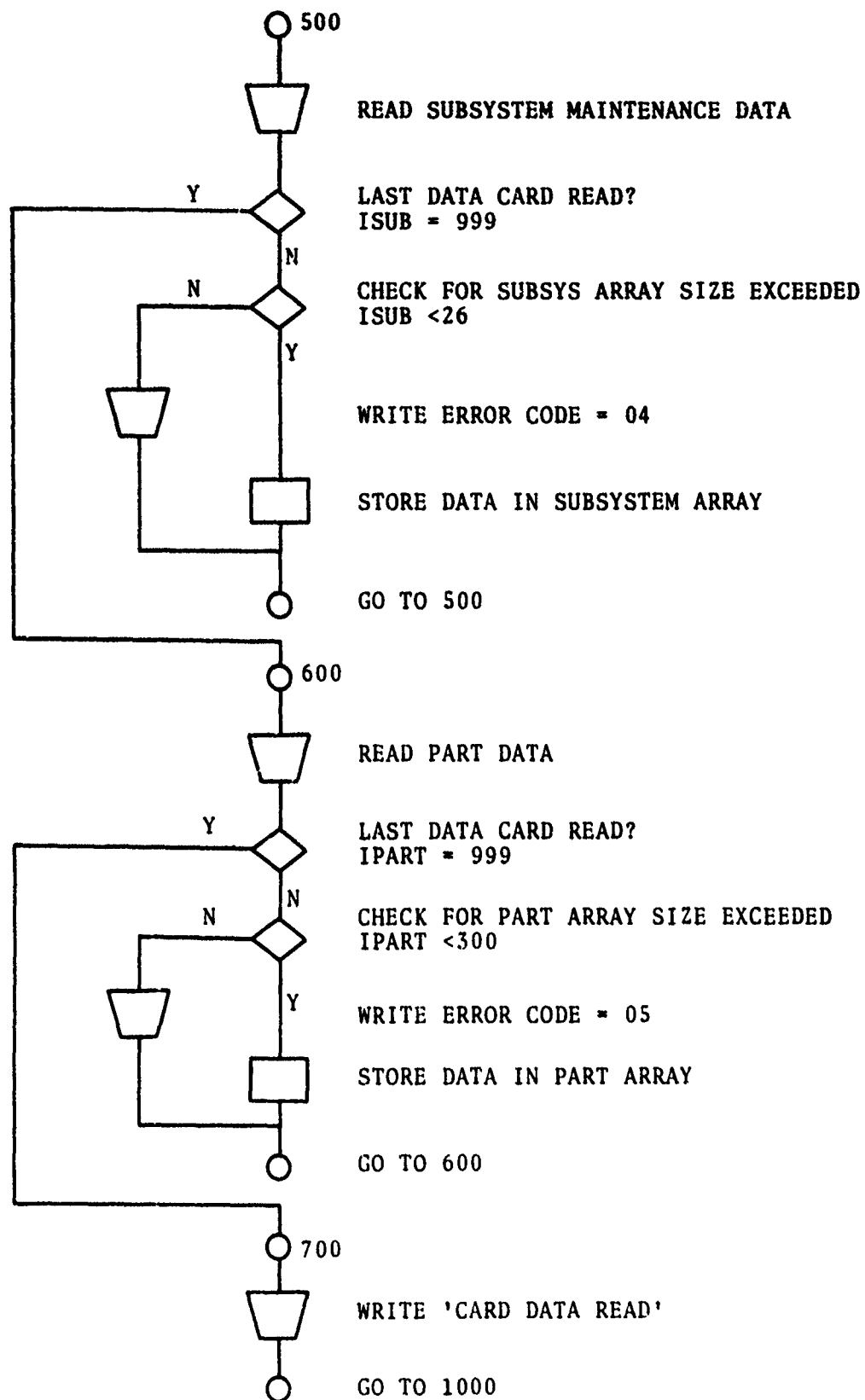
TOT (4): This array is used to accumulate the total unscheduled maintenance and inspection personnel costs.

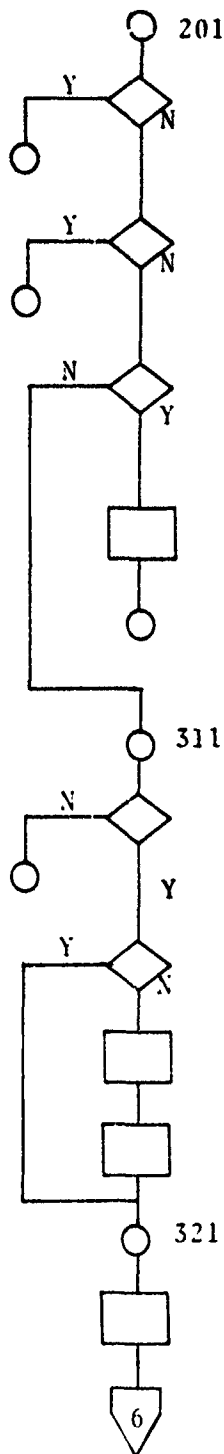
4.1.3 MCOST Logic Flow Chart

This section presents the flow chart for the MCOST logic.









MAINTENANCE ACTION ROUTINE

SWITCH SET FOR INSPECTION ROUTINE?
IVALUE(1) > 25

GO TO 2; INSPECTION ROUTINE

MAINTENANCE ACTION = CONDEMN?
IACT=6

GO TO 501; PART COST BY SUBSYSTEM

OVERTIME TRANSACTION? IACT=9

ADD THE ADDITIONAL OVERTIME COST TO AVUM
SUBSYSTEM TOTAL

GO TO 1000

AVUM MAINTENANCE ACTION?
IACT < 3

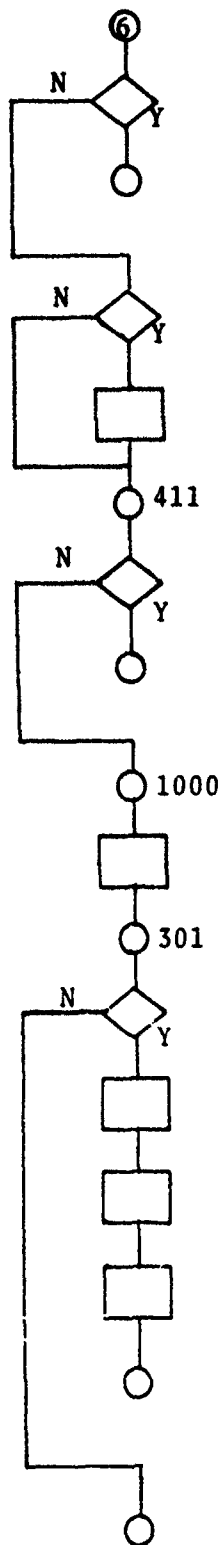
GO TO 301

CONSUMABLE COST PREVIOUSLY ACCOUNTED?
IVALUE(5)=999

COUNT MAINTENANCE ACTION BY SUBSYSTEM
KNTRAY(ISYS, IACT)=KNTRAY(ISYS, IACT) + 1

CONSUMABLE COST; CSTRAY(ISYS, 1)+AVUM(MOS, 6)

AVUM MANPOWER COST
CSTRAY(ISYS, 1) + (AVUM(MOS, 4)+AVUM(MOS, 5))*RMMH



COMPONENT PREVIOUSLY ACCOUNTED?

GO TO 1000

MAINTENANCE ACTION = AVUM OFF A/C REPAIR?
IACT=3

SUM OFF A/C MAINTENANCE ACTION BY
COMPONENT AND ACTION; PIPRAY(IPRT,1)

TIME CHANGE COMPONENT?
IVALUE(5)=19

GO TO 501; COMPONENT COST BY SUBSYSTEM

RETURN TO RMS

AVIM MAINTENANCE ACTION?
IACT=4

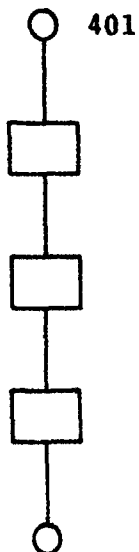
GO TO 401

COUNT AVIM MAINTENANCE EVENT BY
SUBSYSTEM; KNTRAY(ISYS,4)

AVIM SUBSYSTEM COST

SUM OFF A/C MAINTENANCE ACTION BY COMPONENT
AND ACTION; PIPRAY(IPRT,2)

GO TO 1000



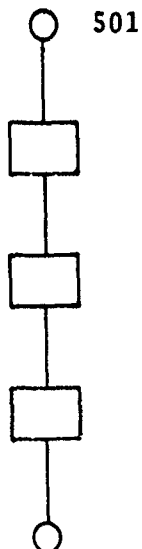
401

DEPOT SUBSYSTEM COST

SUM OFF A/C MAINTENANCE EVENT BY COMPONENT
AND ACTION; PIPRAY(IPRT,2)

COUNT AVIM MAINTENANCE EVENT BY
SUBSYSTEM; KNTRAY(ISYS,5)

GO TO 1000



501

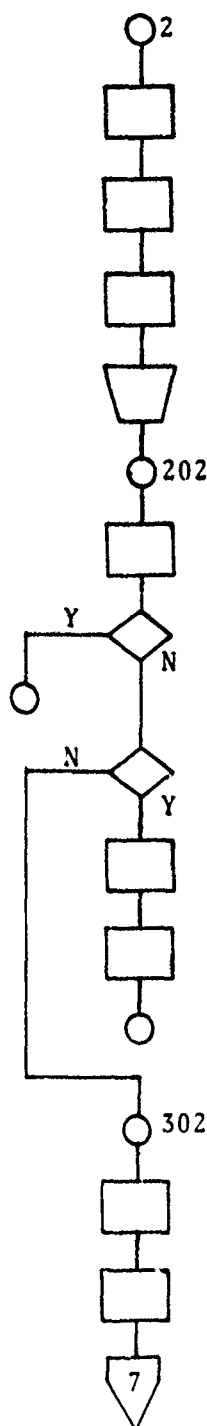
COMPONENT COST BY SUBSYSTEM
MAINTENANCE ACTION=CONDEMN OR TIME CHANGE

SUM SALVAGE VALUE BY SUBSYSTEM
CSTRAY(ISYS,4)=CSTRAY(ISYS,4)-PART(IPRT,3)

ADD NEW PART COST TO SUBSYSTEM PIPELINE COST
PIPE(ISYS)=PIPE(ISYS)+PART(IPRT,2)

COUNT MAINTENANCE ACTION BY SUBSYSTEM
KNTRAY(ISYS,6)=KNTRAY(ISYS,6)+1

GO TO 1000



INSPECTION COST ROUTINE

ISWT=3; SET BRANCH TO WRITE INSPECTION
COST (202)

IRTN=1; SWITCH FOR CONSUMABLE COST
CALCULATION

SET ARRAY VALUES TO ZERO

WRITE INSPECTION HEADERS

K=IVALUE(1)-100

PRINT TOTALS? K=15

GO TO 402; PRINT TOTALS

PARAMETERS PASSED FROM RMS ARE NUMBER OF
EVENTS/INSPECTION? IRTN=1

COMPUTE CONSUMABLE COST/INSPECTION

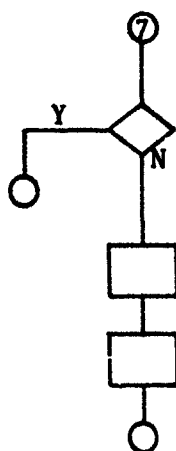
IRTN=2

GO TO 1000

COMPUTE MOS MMH COST AND ADD CONSUMABLE COST

IRTN=1

SUM THE NUMBER OF INSPECTION MAN-HOURS FOR
MOS LEVEL; PTOTP(K)=PTOTP(K)+RVALUE(I)



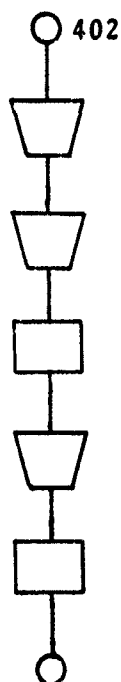
MAN-HOURS = 0; PTOTP(K)=0.0

GO TO 1000

CALCULATE THE INSPECTION COST FOR MOS LEVEL

MAXK=K

GO TO 1000



WRITE INSPECTION COSTS FOR EACH ACTIVE MOS

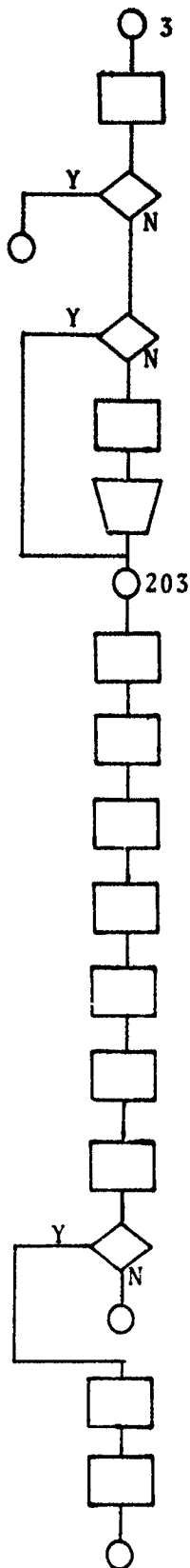
WRITE INSPECTION TOTALS

COMPUTE PERCENT OF COST FOR INSPECTION LEVEL

WRITE PERCENTAGES

ISWT=4; SET BRANCH TO MAINTENANCE REPORT (3)

GO TO 1000



MAINTENANCE REPORT

K = AVUM MOS NO.

PRINT TOTALS? K = 15

GO TO 303; PRINT TOTALS

AVUM PERSONNEL COST HEADINGS PRINTED?
KHDR ≠ 0

KHDR = 1

WRITE AVUM PERSONNEL COST HEADINGS

PARAMETERS PASSED FROM RMS IN ARRAY IVALUE

RVALU (1) = AVAILABLE MAN-HOURS; IVALUE (2)/10

RVALU (2) = NO. OF MAN-HOURS EXPENDED:
IVALUE (3)/100

RVALU (3) = OVERTIME: IVALUE (4)/100

COMPUTE THE REGULAR-DIRECT COST

COMPUTE THE COST FOR OVERTIME LABOR

COMPUTE INDIRECT COST
TOTAL MAN-HOURS AVAILABLE LESS REGULAR-DIRECT
COST

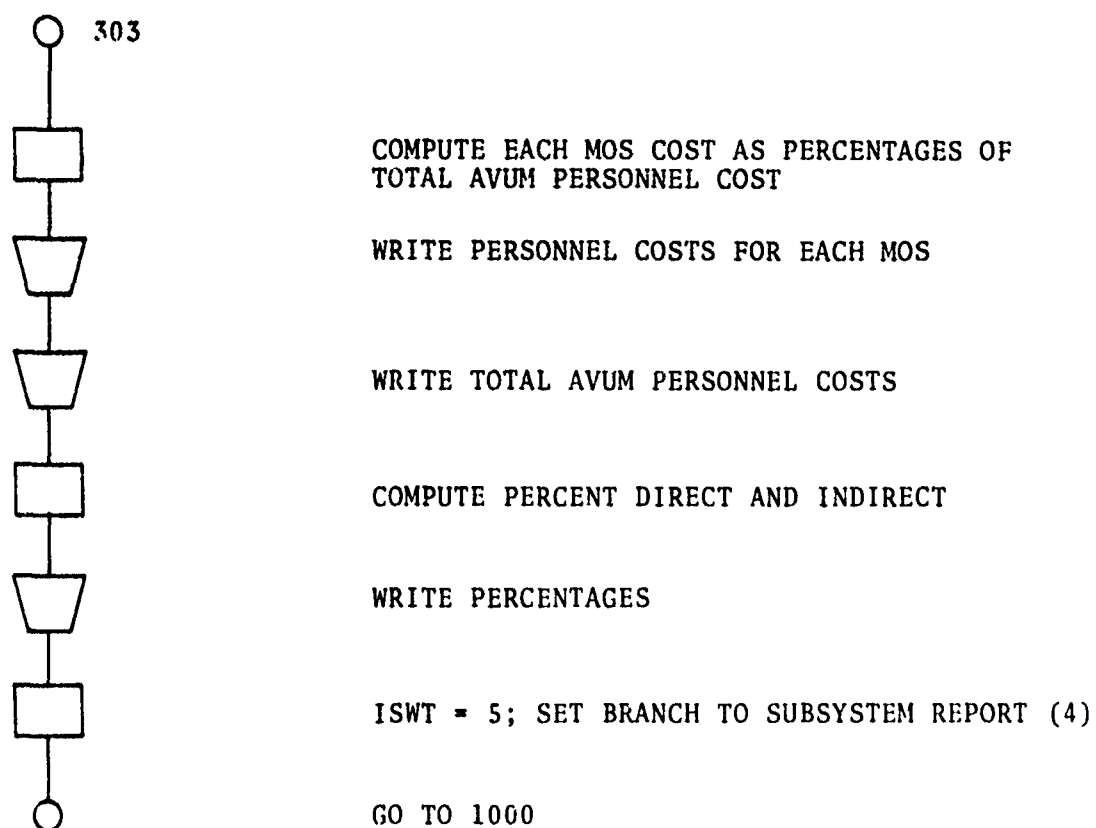
COMPUTE TOTAL COST FOR MANPOWER FOR THE
MOS LEVEL
TOTAL COST > 0

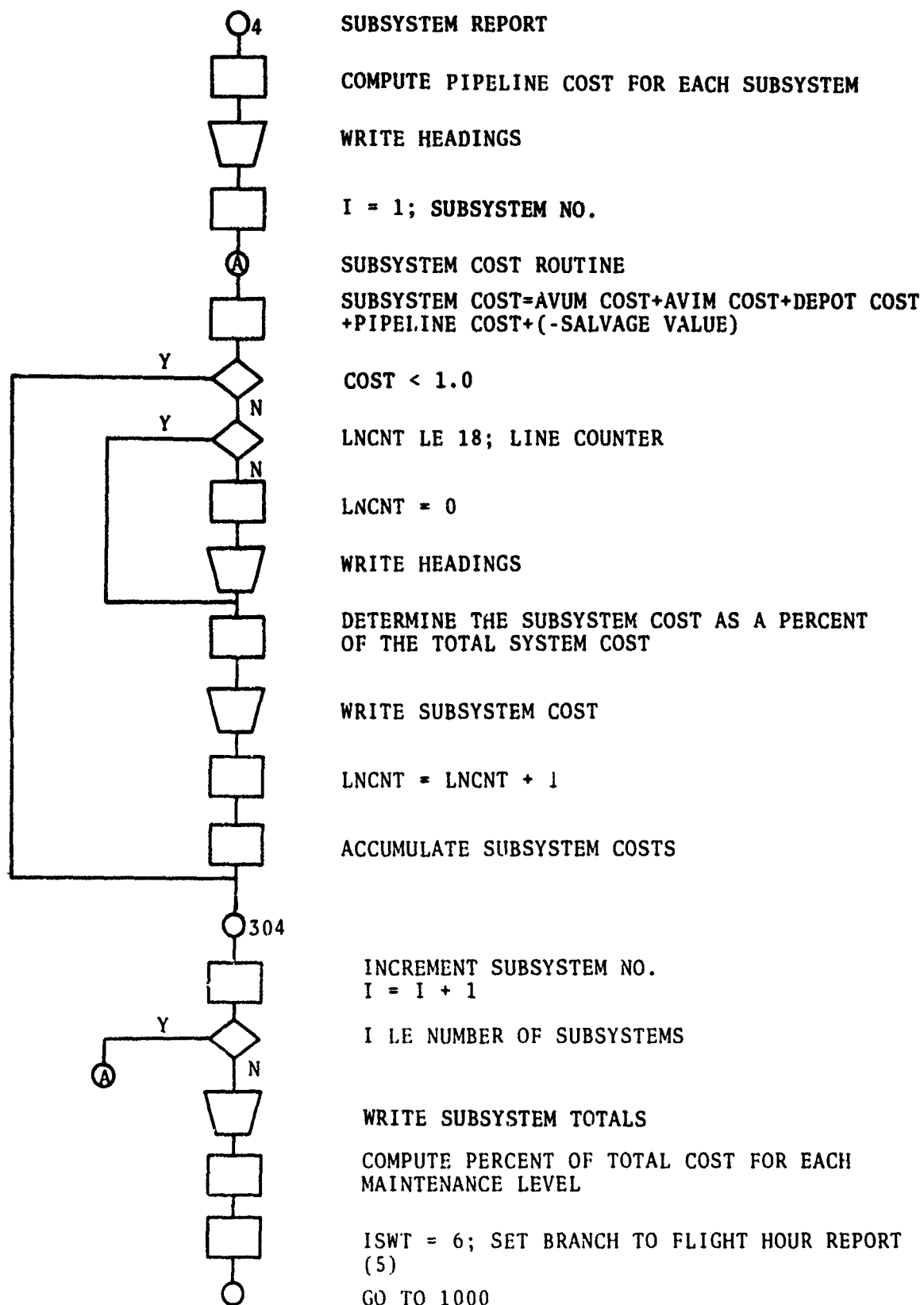
GO TO 1000

ROUND THE REGULAR, OVERTIME, AND
INDIRECT COSTS

ACCUMULATE COST IN EVENT(K,4) AND TOT(N)

GO TO 1000







COST PER FLIGHT HOUR

WRITE HEADINGS

SET ARRAY TO ZERO; SUMRY (I,J) = 0

PARAMETERS PASSED FROM RMS IN ARRAY SVALUE;
FLIGHT HOURS, NO. OF FLIGHTS, % UPTIME,
% MISSIONS FLOWN, % MISSIONS COMPLETED

READ DEPRECIATION COST/HR, FLIGHT COST/HR,
CONSUMABLE COST/HR

DEPRECIATION COST = FLIGHT HRS*DEPRECIATION
COST/HR

FLIGHT COST = (FLIGHT COST/HR. + CONSUMABLE
COST/HR.)* FLIGHT HRS.

FLIGHT COST/HR = FLIGHT COST/FLIGHT HOURS

INSPECTION COST/HR = TOTAL INSPECTION
COST/FLIGHT HOURS

INDIRECT COST/HR = TOTAL INDIRECT COST/
FLIGHT HOURS

MAINTENANCE COST/HR = TOTAL MAINTENANCE
COST/FLIGHT HOURS

SUM COSTS FOR SUBSYSTEMS

COMPUTE PERCENTAGES

WRITE COSTS

GO TO 1000

4.1.4 MCOST Source Listing

This section presents the computer printout of the MCOST subroutine instructions.

```

SUBROUTINE MCOST(IVALUF)
  DIMENSION IVALUF(6),KNTRAY(25,6),RVALUE(5)
  DIMENSION CARDIN(8)
  DIMENSION RVALU(4),TOT(4)
  DIMENSION AVUM(15,7),AVIM(15,6),DEPOT(15,6),PIPRAY(299,3)
  DIMENSION SUBSYS(25,4),PART(299,9)
  DIMENSION PCNT(5)
  DIMENSION SVALUE(6),SUMRY(6,3)
  DIMENSION TITL(5,6)
  DOUBLE PRECISION EVENT(15,6),PTOT(6),PTOTL
  DOUBLE PRECISION CSTRAY(25,4),PTOTP(16)
  DOUBLE PRECISION ACCUM,TOTALX,TOTCST,PIPE(25)
  EQUIVALENCE (SVALUE(1),RVALUE(5),RVALU(4))
  DATA IRTN,KHDR,ISWT/0,0,1/
  DATA TITL/120HDEPRECIATION      FLIGHT      DIRECT INSPE
  1CTION      INDIRECT PERSONNEL  MAINTENANCE      SYSTEM
  2 /

C
C*****
C COST ROUTINE CONTROL SWITCH
C*****
C
C   ISWT = 1   INITIALIZATION AND CARD INPUT ROUTINE
C   ISWT = 201 MAINTENACE COST ROUTINE
C   ISWT = 202 INSPECTION COST ROUTINE
C   ISWT = 3   INSPECTION AND MAINTENANCE PERSONNEL COSTS (AVUM)
C   ISWT = 4   SUBSYSTEM MAINTENANCE COST ROUTINE
C   ISWT = 5   FLIGHT HOUR COSTS AND STATISTICS ROUTINE
C
C   GO TO (1,201,202,3,4,5), ISWT
C
C INITIALIZE INPUT ARRAYS
C
  1 DO110I=1,15
    AVUM(I,7)=0
    DO100J=1,6
      AVIM(I,J)=0
      DEPOT(I,J)=0
  100 AVUM(I,J) = 0
  110 CONTINUE
    DO150I=1,25
      PIPE(I)=0.D0
      DO140J=1,4
  140 SUBSYS(I,J) = 0
  150 CONTINUE
    DO170I=1,299
      DO160J=1,9
  160 PART(I,J)=0
      DO151J=1,3
  151 PIPRAY(I,J)=0
  170 CONTINUE
    DO131J=1,25
      DO111K=1,6
      KNTRAY(J,K)=0
  111 CONTINUE
    DO121K=1,4
  121 CSTRAY(J,K)=0.D0
  131 CONTINUE
    ISWT=2

```

```

C
C READ AVUM MOS DATA
C
200 READ(5,5300)IMOS,(CARDIN(K),K=1,7)
    IF(IMOS.EQ.999)GO TO 300
    IF(IMOS.LT.16)GO TO 205
    IERR=01
    WRITE(6,3000)IERR
    GO TO 210
205 DO210J=1,7
    AVUM(IMOS,J) = CARDIN(J)
210 CONTINUE
    GO TO 200

C
C READ AVIM MOS DATA
C
300 READ(5,5000)IMOS,(CARDIN(K),K=1,6)
    IF(IMOS.EQ.999)GO TO 400
    IF(IMOS.LT.16)GO TO 305
    IERR=02
    WRITE(6,3000)IERR
    GO TO 310
305 DO310J=1,6
    AVIM(IMOS,J) = CARDIN(J)
310 CONTINUE
    GO TO 300

C
C READ DEPOT DATA
C
400 READ(5,5000)IMOS,(CARDIN(K),K=1,6)
    IF(IMOS.EQ.999)GO TO 500
    IF(IMOS.LT.16)GO TO 405
    IERR=03
    WRITE(6,3000)IERR
    GO TO 410
405 DO410J=1,6
    DEPOT(IMOS,J)=CARDIN(J)
410 CONTINUE
    GO TO 400

C
C READ SUBSYSTEM MAINTENANCE CARD
C
500 READ(5,5100)ISUB,(CARDIN(K),K=1,3),KLELM
    IF(ISUB.EQ.999)GO TO 600
    IF(ISUB.LT.26)GO TO 505
    IERR=04
    WRITE(6,3000)IERR
    GO TO 510
505 DO510J=1,3
    SUBSYS(ISUB,J)=CARDIN(J)
510 CONTINUE
    SUBSYS(ISUB,4)=KLELM
    N SUBS=ISUB
    GO TO 500

```

```

C
C READ PART DATA
C
600 READ(5,5200)IPART,ISYS,(CARDIN(K),K=1,8)
    IF(IPART.EQ.999)GO TO 700
    IF(IPART.LT.300)GO TO 605
    IERR=05
    WRITE(6,3000)IERR
    GO TO 610
605 K=2
    DO610J=1,8
    PART(IPART,K)=CARDIN(J)
    K=K+1
610 CONTINUE
    PART(IPART,1)=ISYS
    GO TO 600
700 WRITE(6,2000)
C
C FORMAT STATEMENTS FOR INITIALIZATION ROUTINE
C
5000 FORMAT(13,3A4,3F7.2)
5100 FORMAT(13,3A4,13)
5200 FORMAT(13,12,2F8.2,3F7.2,3F5.0)
5300 FORMAT(13,3A4,3F7.2,F3.1)
2000 FORMAT(1H0,14HCARD DATA READ)
3000 FORMAT(1H0,'ERROR CODE ',12)
    GO TO 1000
C
C CHECK FOR MAINTENANCE ACTION OR INSPECTION ROUTINE CALL
C
201 IF(IVALUE(1).GT.25)GO TO 2
C
C*****
C MAINTENANCE ACTION ROUTINE
C*****
C
C KNTRAY(X,Y) ACCUMULATES UNSCHEDULED MAINTENANCE ACTION BY SYSTEM
C PJPRAY(X,Y) ACCUMULATES OFF A/C MAINTENANCE ACTION BY PART
C
    ISYS=IVALUE(1)
    IPRT=IVALUE(2)
    IACT=IVALUE(4)
    IF(IACT.EQ.6)GO TO 501
    MOS=IVALUE(3)
    RMMH=IVALUE(6)
    RMMH=RMMH/100
    IF(IACT.NE.9)GO TO 311
    CSTRAY(ISYS,1)=CSTRAY(ISYS,1)+RMMH*((AVUM(MOS,7)-1.0)*AVUM(MOS,4))
    GO TO 1000
311 IF(IACT.GT.3)GO TO 301
C
C AVUM COST BY SUBSYSTEM
C
C CHECK FOR SECONDARY MOS OR SPLIT SHIFT
    IF(IVALUE(5).EQ.999)GO TO 321
    KNTRAY(ISYS,IACT)=KNTRAY(ISYS,IACT)+1
    CSTRAY(ISYS,1)=CSTRAY(ISYS,1)+AVUM(MOS,6)

```

```

321 CSTRAY(ISYS,1)=CSTRAY(ISYS,1)+(AVUM(MOS,4)+AVUM(MOS,5))*RMMH
    IF(IVALUE(5).EQ.999)GO TO 1000
    IF(IACT.NE.3)GO TO 411
    PIPRAY(IPRT,1)=PIPRAY(IPRT,1)+1
C   TIME CHANGE COMPONENTS GO TO CONDEMN ACCOUNTING
411 IF(IVALUE(5).EQ.19)GO TO 501
1000 RETURN
C
C   AVIM COST BY SUBSYSTEM
C
301 IF(IACT.GT.4)GO TO 401
    KNTRAY(ISYS,4)=KNTRAY(ISYS,4)+1
    CSTRAY(ISYS,2)=CSTRAY(ISYS,2)+(AVIM(MOS,4)+AVIM(MOS,5))*RMMH+AVIM(
2MOS,6)+PART(IPRT,4)+PART(IPRT,6)
    PIPRAY(IPRT,2)=PIPRAY(IPRT,2)+1
    GO TO 1000
C
C   DEPOT COST BY SUBSYSTEM
C
401 CSTRAY(ISYS,3)=CSTRAY(ISYS,3)+(DEPOT(MOS,4)+DEPOT(MOS,5))*RMMH+DEP
30T(MOS,6)+PART(IPRT,5)+PART(IPRT,6)
    PIPRAY(IPRT,3)=PIPRAY(IPRT,3)+1
    KNTRAY(ISYS,5)=KNTRAY(ISYS,5)+1
    GO TO 1000
C
C   PART COST BY SUBSYSTEM
C
C   SALVAGE VALUE
501 CSTRAY(ISYS,4)=CSTRAY(ISYS,4)+PART(IPRT,3)
C   NEW PART COST == PIPELINE REPLACEMENT PART COST
    PIPE(ISYS)=PIPE(ISYS)+PART(IPRT,2)
    KNTRAY(ISYS,6)=KNTRAY(ISYS,6)+1
    GO TO 1000
C*****
C   INSPECTION COST ROUTINE
C*****
C
C   PTOTP(X)      ACCUMULATES THE NO. OF INSPECTION HOURS BY MOS LEVEL
C
C   CHECK FOR INITIALIZATION AND HEADER PRINT
C
2   CONTINUE
    IRTN=1
    ISWT=3
    DO102I=1,16
102 PTOTP(I)=0.00
    DO132J=1,6
    PTOT(J)=0.00
    DO122K=1,15
122 EVENT(K,J)=0.00
132 CONTINUE
    MAXK=0

```

```

C
C WRITE INSPECTION HEADERS
C
    WRITE(6,1100)
    WRITE(6,1110)
    WRITE(6,1200)
    WRITE(6,1205)
C
C MOS 15 IS CURRENTLY USED FOR TOTAL NO. OF EVENTS PER INSPECTION LEVEL
C
202 K=IVALUF(1)-100
    IF(K.EQ.15)GO TO 402
    IF(IRTN.EQ.2)GO TO 302
C
C CONSUMABLE COSTS DURING INSPECTION
C     IVALUE(1) = AVUM MOS LEVEL      ** IVALUE(4) = NO. OF PMD
C     IVALUE(2) = NO. OF PREFLIGHTS   ** IVALUE(5) = NO. OF PMI
C     IVALUE(3) = NO. OF POST FLIGHTS ** IVALUE(6) = NO. OF PMP
C
    IRTN=2
    M=2
    DO222J=1,5
        EVENT(K,J)=AVUM(K,6)*IVALUE(M)
        M=M+1
222 CONTINUE
    GO TO 1000
C
C COMPUTE MMH COST AND ADD CONSUMABLE COST
C     IVALUE(1) = AVUM MOS LEVEL      ** IVALUE(4) = PMD HOURS
C     IVALUE(2) = PREFLIGHT HOURS     ** IVALUE(5) = PMI HOURS
C     IVALUE(3) = POST FLIGHT HOURS   ** IVALUE(6) = PMP HOURS
C
302 M=1
    IRTN=1
    DO322I=2,6
        RVALUE(M)=IVALUF(I)
        RVALUE(M)=RVALUE(M)/100.0
        M=M+1
322 CONTINUE
C
C SUM NO. OF INSPC MANHOURS BY MOS LEVEL
C
    DO332I=1,5
        PTOTP(K)=PTOTP(K)+RVALUE(I)
332 CONTINUE
    IF(PTOTP(K).EQ.0)GO TO 1000
    DO342J=1,5
        FVENT(K,J)=RVALUE(J)*(AVUM(K,4)+AVUM(K,5))+EVENT(K,J)
        IROUND=EVENT(K,J)+0.5
        EVENT(K,J)=IROUND
        EVENT(K,6)=EVENT(K,6)+FVENT(K,J)

```

```

C
C  SUM INSPECTION COST BY INSPECTION LEVEL
C
    PTOT(J)=PTOT(J)+EVENT(K,J)
342 CONTINUE
    PTOT(6)=PTOT(6)+EVENT(K,6)
    MAXK=K
    GO TO 1000
402 DO412K=1,MAXK
    IF(EVENT(K,6).EQ.0,D0)GO TO 412
    PERCNT=(EVENT(K,6)/PTOT(6))*100.
    WRITE(6,1300)(AVUM(K,J),J=1,3),(EVENT(K,M),M=1,6),PERCNT
412 CONTINUE
    WRITE(6,2450)
    WRITE(6,1205)
    WRITE(6,1400)(PTOT(I),I=1,6)
    PTOTL=0.D0
    DO422I=1,5
    PTOT(I)=(PTOT(I)/PTOT(6))*100
    PTOTL=PTOT(I)+PTOTL
422 CONTINUE
C
    WRITE(6,2450)
    WRITE(6,1205)
    WRITE(6,1500)(PTOT(I),I=1,5),PTOTL
    TOTINS=PTOT(6)
    ISWT=4
    DO432K=1,15
432 EVENT(K,4)=0.D0
    MAXK=0
    GO TO 1000
C
C  FORMATS FOR INSPECTION COST ROUTINE
C
1105 FORMAT(1H1)
1100 FORMAT(1H1,56X,19HRMS INSPECTION COST)
1110 FORMAT(49X,35H-----)
1200 FORMAT(1H0,14X,9HMOS LEVEL,7X,22HPREFLIGHT POST FLIGHT,8X,19HDAIL
2Y INTERMEDIATE,5X,4HPERIODIC,8X,5HTOTAL,10H PERCENT)
1205 FORMAT(15X,101H-----)
9-----)
1300 FORMAT(1H0,14X,3A4,3(2X,F11.0),3X,3(F11.0,2X),2X,F6.2)
1400 FORMAT(1H0,14X,5HTOTAL,7X,3(2X,F11.0),3X,3(F11.0,2X),100.00)
1500 FORMAT(1H0,10X,16HPERCENT OF TOTAL,3(7X,F6.2),6X,F6.2,7X,F6.2,7X,F
36.2)
2450 FORMAT(1H0)
C
C*****
C MAINTENANCE REPORT
C*****
C
C  ROUTINE TO DETERMINE PERSONNEL COSTS FOR THE AVUM MOS LEVELS
C    IVALUE(1) = MOS LEVEL
C    IVALUE(2) = AVAILABLE MANHOURS
C    IVALUE(3) = NO. OF MANHOURS EXPENDED
C    IVALUE(4) = OVERTIME IN .01 HOURS

```

```

C
  3 K=IVALUE(1)
    IF(K.EQ.15)GO TO 303
    IF(KHDR.NE.0)GO TO 203
    KHDR=1
    DO103J=1,4
    TOT(J)=0
103 CONTINUE
C
C  WRITE PERSONNEL HEADINGS
C
    WRITE(6,2003)
    WRITE(6,2050)
    WRITE(6,2100)
    WRITE(6,2200)
    WRITE(6,2300)
203 RVALU(1)=IVALUE(2)
    RVALU(2)=IVALUE(3)
    RVALU(3)=IVALUE(4)
    RVALU(1)=RVALU(1)/10
    RVALU(2)=RVALU(2)/100
    RVALU(3)=RVALU(3)/100
C
C  PERSONNEL COST = UNSCHEDULED MAINT. + INSP + OT
C
    RATE=AVUM(K,4)
    REGTM=RVALU(2)+RVALU(3)+PTOTP(K)
    REGCST=REGTM*RATE
    OVERTM=RVALU(3)*(RATE*AVUM(K,7))
    TOTHRM=RVALU(1)*RATE
    CINDCT=TOTHRM-REGCST
    IF(TOTHRM.LE.0.0)GO TO 1000
C
C  WRITE
C
    IROUND = REGCST + 0.5
    EVENT(K,1)=IROUND
    IROUND = OVERTM + 0.5
    EVENT(K,2)=IROUND
    IROUND = CINDCT + 0.5
    EVENT(K,3)=IROUND
    EVENT(K,4)=EVENT(K,1)+EVENT(K,2)+EVENT(K,3)
    DO213N=1,4
213 TOT(N)=TOT(N)+EVENT(K,N)
    MAXK=K
    GO TO 1000
C
C  WRITE TOTALS, CALCULATE PERCENTAGES AND PRINT
C
303 DO313K=1,MAXK
    IF(EVENT(K,4).EQ.0.00)GO TO 313
    PERCNT=(EVENT(K,4)/TOT(4))*100
    WRITE(6,2400)(AVUM(K,J),J=1,3),(EVENT(K,M),M=1,4),PERCNT
313 CONTINUE
    WRITE(6,2450)
    WRITE(6,2050)
    WRITE(6,2500)(TOT(I),I=1,4)
    TOTIND=TOT(3)

```

```

C
  DO3231=1,3
  TOT(I)=(TOT(I)/YOT(4))*100
323 CONTINUE
  TOT(4)=TOT(1)+TOT(2)+TOT(3)
  WRITE(6,2450)
  WRITE(6,2050)
  WRITE(6,2600)
  WRITE(6,2700)(TOT(I),I=1,4)
  ISHT=5
  GO TO 1000

C
C FORMATS FOR AVUM MOS PERSONNEL COST
C
2003 FORMAT(1H1,38X,54HINSPECTION AND UNSCHEDULED MAINTENANCE PERSONNEL
4 COSTS)
2050 FORMAT(24X,81H-----
7-----)
2100 FORMAT(1H0,24X,3HMOS,15X,22H----- DIRECT -----,7X,8HINDIRECT,1
50X,5HTOTAL,10H PERCENT)
2200 FORMAT(24X,5HLEVEL,14X,7HREGULAR,7X,8HDOVERTIME)
2300 FORMAT(1H )
2400 FORMAT(1H0,23X,3A4,4(4X,F11.0),3X,F6.2)
2500 FORMAT(1H0,23X,5HTOTAL,7X,4(4X,F11.0),' 100.00')
2600 FORMAT(1H0,23X,10HPERCENT OF)
2700 FORMAT(24X,5HTOTAL,16X,4(F6.2,9X))
C*****
C SUBSYSTEM REPORT
C*****
C
C IVALUE IS A DUMMY ARRAY
C
C
C COMPUTE PIPELINE COST
C
4 SIMHRS=IVALUE(1)/10
  ICNT=0
  KNTSUB=0
  NOSRT=1
  DO84I=1,NGSYS
  NOSRT=NOSRT+ICNT
  ICNT=SUBSYS(I,4)
  IF(ICNT.EQ.0)GO TO 84
  KNTSUB=KNTSUB+ICNT
  PLN=0
  DO64NK=NOSRT,KNTSUB
  PLN=PIPRAY(NK,1)*(PART(NK,7)/SIMHRS)
  PLN=PIPRAY(NK,2)*(PART(NK,8)/SIMHRS)+PLN
  PLN=PIPRAY(NK,3)*(PART(NK,9)/SIMHRS)+PLN
  PLN = PLN + 0.5
  IPLN = PLN
  PLN = IPLN
54 PIPE(I)=PIPE(1)+(PLN*PART(NK,2))
  PLN=0

```

```

64 CONTINUE
A4 CONTINUE
TOTCST=0.00
DO154I=1,NOSYS
  IROUND=CSTRAY(I,4) + 0.5
  CSTRAY(I,4) = -IROUND
  DO104J=1,3
    IROUND=CSTRAY(I,J) + 0.5
    CSTRAY(I,J)=IROUND
104 TOTCST=TOTCST+CSTRAY(I,J)
    IROUND=PIPE(I) + 0.5
    PIPE(I)=IROUND
    TOTCST=TOTCST+PIPE(I)+CSTRAY(I,4)
154 CONTINUE
C
C WRITE HEADER
C
  WRITE(6,1040)
  WRITE(6,1001)
  WRITE(6,1002)
  WRITE(6,1003)
  WRITE(6,1004)
  WRITE(6,1045)
  WRITE(6,1006)
  LNCNT=0
C
C PRINT SUBSYSTEM MAINTENANCE COST
C
  DO304I=1,NOSYS
    ACCUM=0.00
    DO214J=1,4
      ACCUM=ACCUM+CSTRAY(I,J)
214 CONTINUE
      ACCUM=ACCUM+PIPE(I)
      IF(ACCUM.LT.1.0)GO TO 304
      IF(LNCNT.LE.18)GO TO 224
      LNCNT=0
      WRITE(6,1040)
      WRITE(6,1001)
      WRITE(6,1002)
      WRITE(6,1003)
      WRITE(6,1004)
      WRITE(6,1045)
      WRITE(6,1006)
224 PERCNT=(ACCUM/TOTCST)*100
      WRITE(6,2040)(SUBSYS(I,J),J=1,3),(KNTRAY(I,K),K=1,3),CSTRAY(I,1),K
      KNTRAY(I,4),CSTRAY(I,2),KNTRAY(I,5),CSTRAY(I,3),KNTRAY(I,6),CSTRAY(
      *I,4),PIPE(I),ACCUM,PERCNT
      LNCNT=LNCNT+1
      IF(I.FQ.1)GO TO 304

```

```

C
C  ACCUMULATE MAINTENANCE TOTALS IN SYSRAY(1,M) AND CSTRAY(1,N)
C
      DO234M=1,6
234  KNTRAY(1,M)=KNTRAY(1,M)+KNTRAY(1,M)
      DO244N=1,4
244  CSTRAY(1,N)=CSTRAY(1,N)+CSTRAY(1,N)
      PIPE(1)=PIPE(1)+PIPF(1)
304  CONTINUE

C
C  PRINT TOTALS
C
      WRITE(6,1006)
      WRITE(6,2001)(KNTRAY(1,K),K=1,3),CSTRAY(1,1),KNTRAY(1,4),CSTRAY(1,
*2),KNTRAY(1,5),CSTRAY(1,3),KNTRAY(1,6),CSTRAY(1,4),PIPF(1),TOTCST
      WRITE(6,1007)
      TOTMNT=TOTCST
      ISWT=6
      WRITE(6,1006)
      IF(TOTCST.LE.0,DO)GO TO 1000
314  WRITE(6,2043)
      PCNT(5)=0.0
      DO354I=1,3
      PCNT(I)=(CSTRAY(1,I)/TOTCST)*100
      PCNT(5)=PCNT(5)+PCNT(I)
354  CONTINUE
      PIPE(1)=PIPE(1)+CSTRAY(1,4)
      PCNT(4)=(PIPE(1)/TOTCST)*100
      PCNT(5)=PCNT(5)+PCNT(4)
      WRITE(6,2004)(PCNT(I),I=1,5)
      GO TO 1000

C
C  FORMATS FOR SUBSYSTEM MAINTENANCE COSTS
C
1040  FORMAT(1H1,52X,28HSUBSYSTEM MAINTENANCE ACTION)
1001  FORMAT(50X,34H-----)
1002  FORMAT(1H0,30X,4HAVUM,25X,4HAVIM,13X,5HDEPOT,18X,4HPART)
1003  FORMAT(14X,100H-----)
      1-----)
1004  FORMAT(14X,25HNO. OF NO. OF NO. OF,67X,8HPIPELINE,/,14X,28HON
2-EQUIP REMOVE OFF-EQUIP,4X,5HTOTAL,3X,6HNO. OF,4X,14HTOTAL NO
3, OF,4X,49HTOTAL NO, OF SALVAGE REPL. TOTAL PERCENT)
1045  FORMAT(1X,9HSUBSYSTEM,4X,26HREPAIRS REPLACE REPAIRS,6X,86HCOST
5 REPAIRS COST REPAIRS COST CONDEMN VALUE COST
6COST OF TOTAL)
1006  FORMAT(1X,13PH-----)
      7-----)
      8-----)
2040  FORMAT(1H0,3A4,3X,15,5X,15,6X,3(15,3X,F7.0,3X),15,2X,F7.0,2X,F8.0,
91X,F8.0,2X,F6.2)
2001  FORMAT(1H0,5HTOTAL,10X,15,5X,15,6X,3(15,3X,F7.0,3X),15,2X,F7.0,2X,
*F8.0,1X,F8.0,' 100.00')
1007  FORMAT(1H0)
2043  FORMAT(1X,10HPERCENT OF)
2004  FORMAT(1X,5HTOTAL,40X,3(F6.2,12X),8X,F6.2,3X,F6.2)

```

```

C
C*****
C FLIGHT HOUR REPORT
C*****
C
C PRINT HEADFRS
C
C      5 WRITE(6,1060)
C        WRITE(6,1061)
C        WRITE(6,1062)
C        WRITE(6,1063)
C
C INITIALIZATION
C
C      DO156I=1,6
C      DO106J=1,3
C      106 SUMRY(I,J)=0
C        SVALUE(I)=IVALUE(I)
C      156 CONTINUE
C
C READ FLIGHT CARD:  DEPRECIATION COST/HR
C                    FLIGHT COST/HR
C                    CONSUMABLE COST/FLIGHT
C
C      READ(5,3060)DRATE,FRATE,CRATE
C      SVALUE(1)=SVALUE(1)/10
C      SVALUE(3)=SVALUE(3)/10
C      DO206I=4,6
C      SVALUE(I)=SVALUE(I)/100
C      206 CONTINUE
C
C COMPUTE FLIGHT HOUR AND TOTAL COSTS
C
C      SUMRY(1,1)=DRATE
C      SUMRY(1,2)=SVALUE(1)*DRATE
C      SUMRY(2,2)=FRATE*SVALUE(1)+CRATE*SVALUE(1)
C      SUMRY(2,1)=SUMRY(2,2)/SVALUE(1)
C      SUMRY(3,1)=TOTINS/SVALUE(1)
C      SUMRY(3,2)=TOTINS
C      SUMRY(4,1)=TOTIND/SVALUE(1)
C      SUMRY(4,2)=TOTIND
C      SUMRY(5,1)=TOTMNT/SVALUE(1)
C      SUMRY(5,2)=TOTMNT
C      DO256I=1,5
C      SUMRY(6,2)=SUMRY(6,2)+SUMRY(I,2)
C      SUMRY(6,1)=SUMRY(6,1)+SUMRY(I,1)
C      256 CONTINUE
C
C PERCENTAGES
C
C      DO306I=1,6
C      SUMRY(I,3)=(SUMRY(I,2)/SUMRY(6,2))*100
C      306 CONTINUE

```

```

C
C PRINT COSTS
C
  DO356I=1,5
  WRITE(6,2060)(TITL(K,I),K=1,5),(SUMRY(I,J),J=1,3)
356 CONTINUE
  WRITE(6,1063)
  WRITE(6,2060)(TITL(K,6),K=1,5),(SUMRY(6,J),J=1,3)
  WRITE(6,1064)
  SVALUF(3)=SVALUE(3)/24
  WRITE(6,2061)SVALUE(3)
  WRITE(6,2062)SVALUE(1)
  WRITE(6,2063)SVALUE(4)
  WRITE(6,2064)SVALUF(5)
  WRITE(6,2065)SVALUE(6)
  WRITE(6,1064)
  GO TO 1000

C
C FORMATS FOR FLIGHT HOUR COSTS AND STATISTICS
C
1060 FORMAT(1H1,56X,16HRMS COST SUMMARY)
1061 FORMAT(53X,25H-----)
1062 FORMAT(1H0,55X,39HCOST/FLIGHT HOUR   TOTAL COST   PERCENT)
1063 FORMAT(55X,41H-----)
1064 FORMAT(1H0,35X,60H-----)
1-----)
3060 FORMAT(F7.2,2(F5.2))
2060 FORMAT(1H0,36X,5A4,5X,F7.2,7X,F9.0,4X,F6.2)
2061 FORMAT(1H0,45X,'TOTAL SIMULATION TIME (DAYS)',7X,F6.1)
2062 FORMAT(1H0,45X,'TOTAL FLIGHT TIME (HRS)',11X,F7.1)
2063 FORMAT(1H0,45X,'UPTIME/TOTAL TIME',18X,F6.2)
2064 FORMAT(1H0,45X,'MISSIONS FLOWN/MISSIONS CALLED',5X,F6.2)
2065 FORMAT(1H0,45X,'MISSIONS COMPLETED/MISSIONS FLOWN ',F6.2)
  END

```

4.2 SHFTHR Subroutine

4.2.1 SHFTHR Subroutine Description

The SHFTHR subroutine is called for from the Data Compilation routine to compute the total number of hours available in each shift during the simulation period.

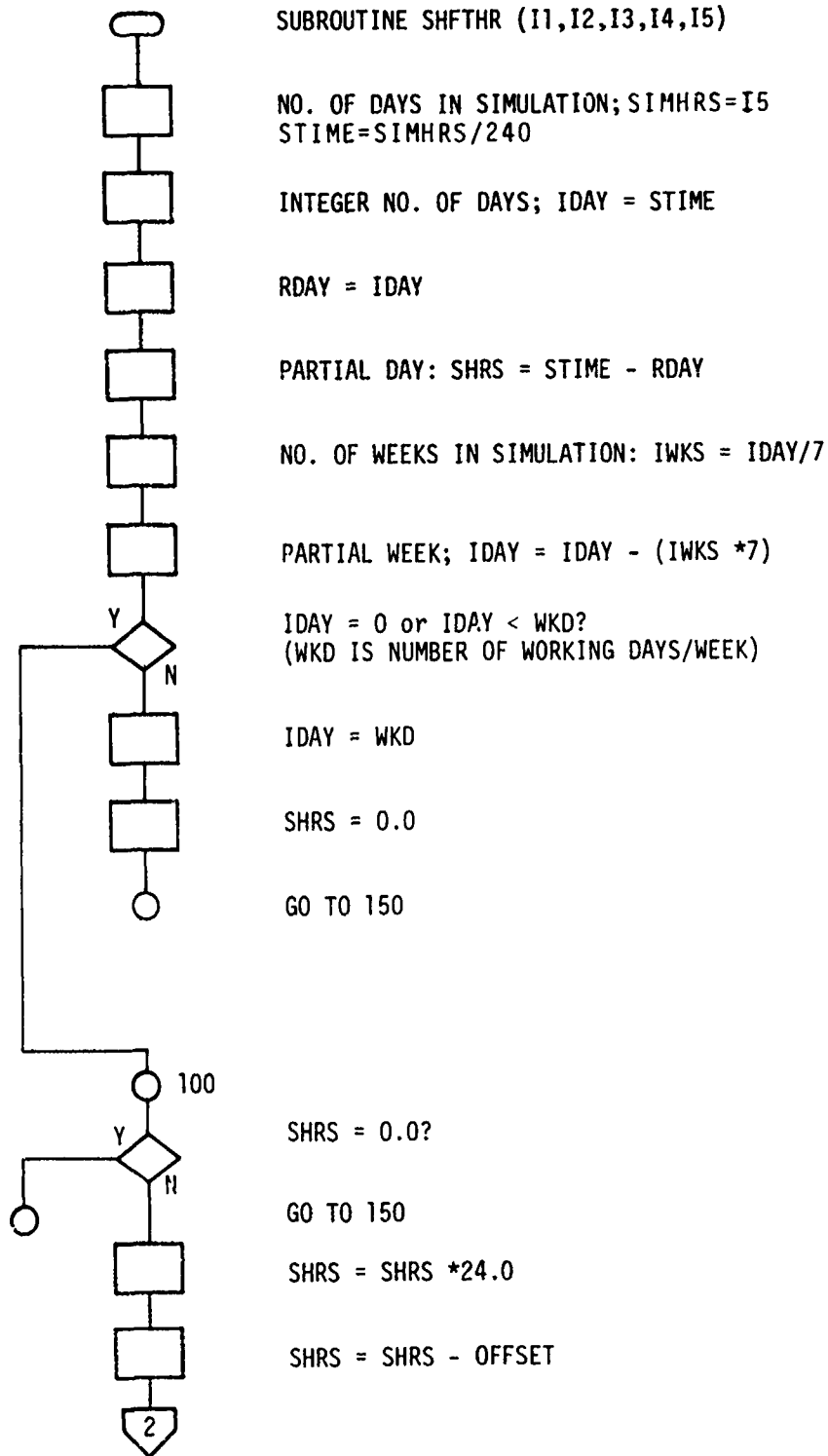
The HELPB block is used to interface the RMS COST model with the SHFTHR subroutine. HELPB provides two-way communications via the fullword Savevalues. The parameters passed to the subroutine are the number of work days per week, number of hours the first shift is available during one day, number of hours the second shift is available during one day, the offset from the start of the work day, and the simulation interval. When the SHFTHR subroutine returns control to RMS, the second and third parameters of the passed transactions contain the total available working hours for the first and the second shift, respectively. These values are then passed to the Maintenance Report routines of the MCOST subroutine to be used in the computation of the indirect personnel cost.

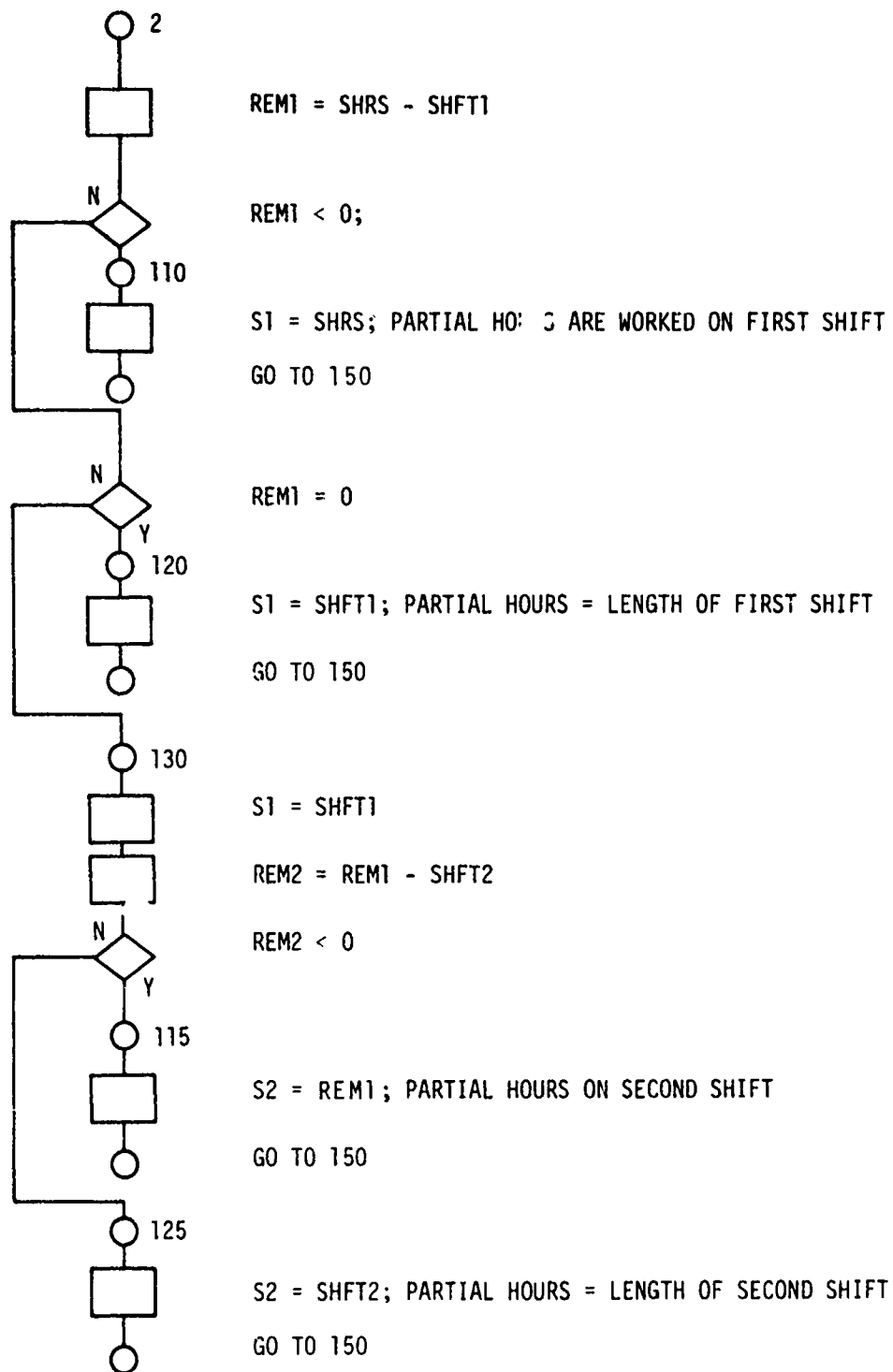
Since the subroutine SHFTHR is called for once, it is made core resident only during this time.

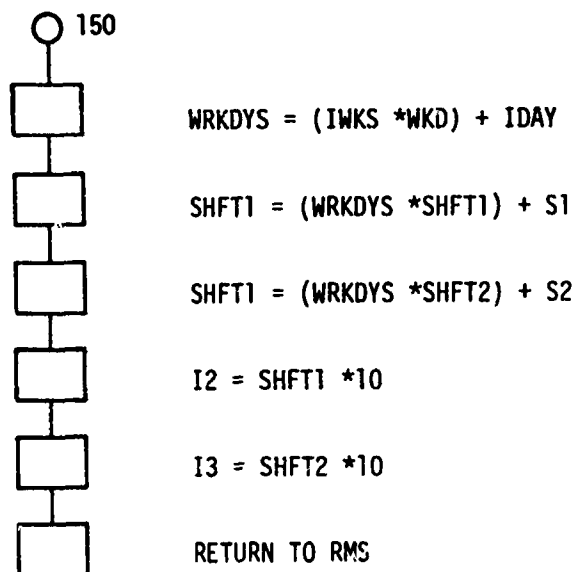
4.2.2

SHFTHR Logic Flow Chart

This section presents the flow chart for the SHFTHR logic.







4.2.3 SHFTHR Source Listing

This section presents the computer printout of the SHFTHR subroutine instructions.

```

      SUBROUTINE SHFTHR(I1,I2,I3,I4,I5)
C
C   CALCULATES THE NUMBER OF AVAILABLE AVUM WORKING HOURS.
C
      WKD=I1
      SHFT1=I2
      SHFT2=I3
      OFFSET=I4
      SIMHRS=I5
C
      SHFT1=SHFT1/10.
      SHFT2=SHFT2/10.
      OFFSET=(OFFSET+2.)/10.
      S1=0.
      S2=0.
      STIME=SIMHRS/240.
      IDAY=STIME
      HDAY=IDAY
      SHRS=STIME-HDAY
      IWKS=IDAY/7
      IDAY=IDAY-(IWKS*7)
      IF((IDAY.EQ.0).OR.(IDAY.LT.WKD))GO TO 100
      IDAY=WKD
      SHRS=0.0
      GO TO 150
100 IF(SHRS.EQ.0.0)GO TO 150
      SHRS=SHRS*24.0
      SHRS=SHRS-OFFSET
      REM1=SHRS-SHFT1
      IF(REM1)110,120,130
110 S1=SHRS
      GO TO 150
120 S1=SHFT1
      GO TO 150
130 S1=SHFT1
      REM2=REM1-SHFT2
      IF(REM2)115,125,125
115 S2=REM1
      GO TO 150
125 S2=SHFT2
150 WRKDYS=(IWKS*WKD)+IDAY
      SHFT1=(WRKDYS*SHFT1)+S1
      SHFT2=(WRKDYS*SHFT2)+S2
      I2=SHFT1*10
      I3=SHFT2*10
      RETURN
      END

```

5. RELIABILITY AND MAINTAINABILITY SIMULATOR (RMS) WITH COST LOGIC

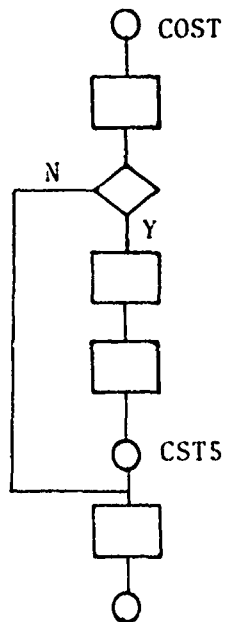
5.1 Introduction

The Reliability and Maintainability Simulator (RMS) with COST logic, referred to as the RMS COST model, was executed with various alternatives which are documented in the final technical report, USAAVSCOM TR 75-27, for the current contractual effort. The failure rates and a base manpower loading for the OH-58 were simulated for a 6-month operational period in an on-site demonstration at the AVSCOM Product Assurance Directorate.

The following sections present the flow chart for the RMS COST logic, a complete listing of the RMS COST model program, and the four cost-information tables generated by this program. The flow chart shows the modifications made to the basic RMS. Each modification in the RMS code to incorporate the COST logic is indicated in the RMS COST model program listing by a successive encircled number which is annotated accordingly.

5.2 RMS COST Logic Flow Chart

RMS COST LOGIC



GENERATE 1,,,1,126

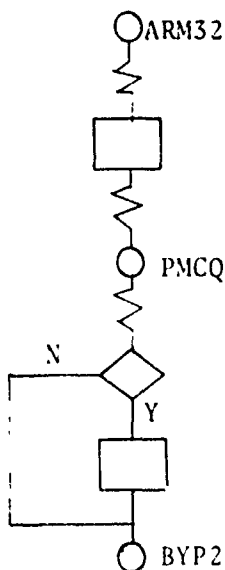
DETERMINE RMS COST? X1630 = 0

LOAD SUBROUTINE MCOST

HELPA MCOST; CALL MCOST TO INITIALIZE
COST VARIABLES AND READ COST DATA CARDS

TERMINATE

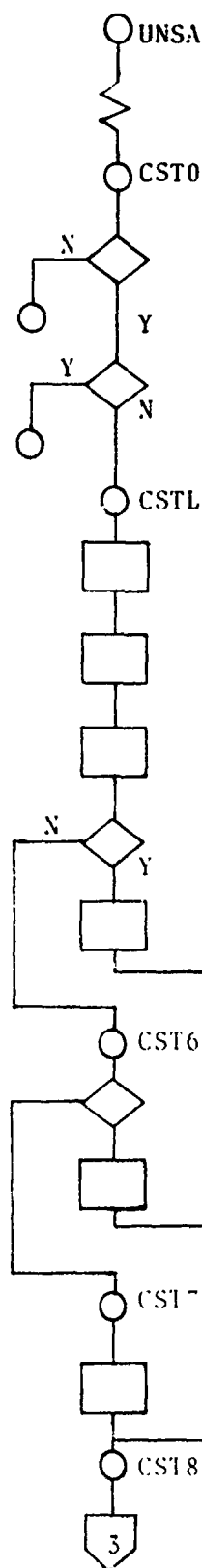
MISSION GENERATION ROUTINE



ACCUMULATE THE NUMBER OF PREFLIGHTS,
POSTFLIGHTS OR DAILY INSPECTIONS IN HALFWORD
MATRIX 7

PMI OR PMP INSPECTION CONTINUED FROM PREVIOUS
SHIFT? P26 = 0

ACCUMULATE THE NUMBER OF PMI'S AND PMP'S
IN HALFWORD MATRIX 7



UNSCHEDULED MAINTENANCE ROUTINE

COST LOGIC FOR AVUM REMOVE AND REPLACE
AND AVUM REPAIR

DETERMINE RMS COST? X1630=0

GO TO CSTX

UNSCHEDULED MAINTENANCE MANHOURS = 0?

GO TO CSTX

X1601=V46; SUBSYSTEM NØ.

X1602=FN46; COMPONENT NØ.

X1603=P2; MØS NØ.

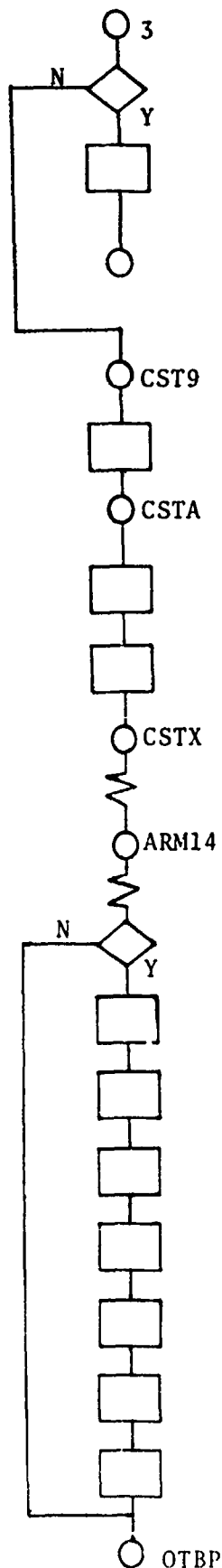
OFF A/C REPAIR? P17=18

X1604=3; MAINTENANCE ACTION CODE
FOR OFF A/C REPAIR

REMOVE AND REPLACI ACTION?
P25=1359;

X1604=2 ; MAINTINANCE ACTION CODE
FOR REMOVE AND REPLACI.

X1604=1; MAINTINACI ACTION CODE FOR
ON A/C REPAIR



PREVIOUSLY COUNTED EVENT? BV10=1

X1605=999; SWITCH TO SUPPRESS EVENT COUNTER

GO TO CSTA

X1605=P17; P17=19 FOR TIME CHANGE ACTION

X1606=V36; MAINTENANCE MANHOURS

HELPA MCOST,X1601,X1602,X1603,X1604,X1605,X1606

OVERTIME LOGIC

DETERMINE RMS COST? X1630=0

X1601=V46; SUBSYSTEM NØ.

X1602=FN46; COMPONENT NØ.

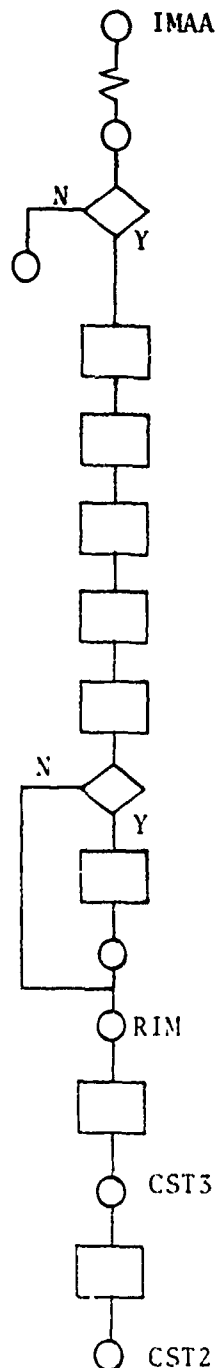
X1603=P2; MØS NØ.

X1604=K9; OVERTIME ACTION CODE

X1605=K0

X1606=V244; OVERTIME MAINTENANCE MANHOURS

HELPA MCOST, X1601,X1602,X1603,X1604,X1605,X1606



THREE LEVEL MAINTENANCE--AVUM,AVIM,DEPOT

COST ROUTINE FOR AVIM REPAIR, CODE=04;
DEPOT REPAIR, CODE=05

DETERMINE RMS COST? X1630=0

GO TO CST2

X1601=V46; SUBSYSTEM NO.

X1602=FN46; COMPONENT NO.

X1603=P28; MOS NO.

X1605=0

X1606=V70; MAINTENANCE MANHOURS

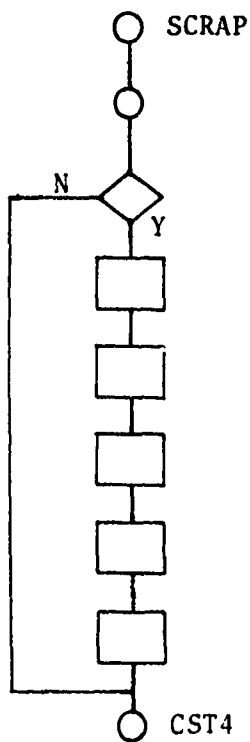
DEPOT REPAIR: P6≠8

X1604=5; MAINTENANCE ACTION CODE FOR DEPOT

GO TO CST3

X1604=4; MAINTENANCE ACTION CODE FOR AVIM

HELPA MCOST, X1601,X1602,X1603,X1604,X1605,X1606
DETERMINE COST FOR MAINTENANCE ACTION



COST ROUTINE FOR CONDEMNED COMPONENTS
CODE=6

DETERMINE RMS COST? X1630=0

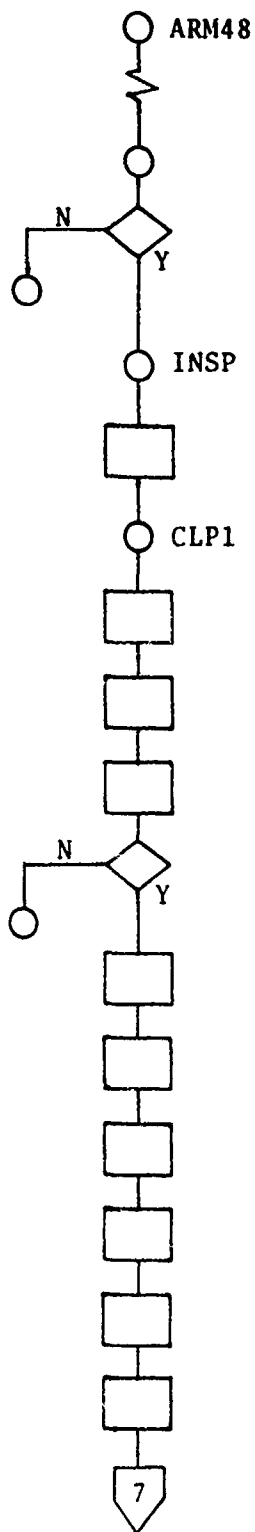
X1601=V46; SUBSYSTEM NO.

X1602=FN46; COMPONENT NO.

X1604=6; MAINTENANCE ACTION CODE FOR
CONDEMN

X1605=0

HELPA MCOST,X1601,X1602,X1603,X1604,X1605,X1606
DETERMINE COST FOR MAINTENANCE ACTION



DATA COMPILATION ROUTINE

LOGIC TO CALL COST SUBROUTINES

DETERMINE RMS COST? X1630=0

GO TO BRCH

INSPECTION COST CALCULATION ROUTINE

P2=0; MOS LEVEL = 0

P2=P2+1; INCREMENT MOS LEVEL

X1601=P2; MOS NO.

X1601=X1601+100; FLAGS AS INSPECTION MOS

P2 < 15; MOS INSPECTION VALUES

GO TO CALL

X1602=NØ. OF PREFLIGHTS INSPECTIONS AT THE MOS

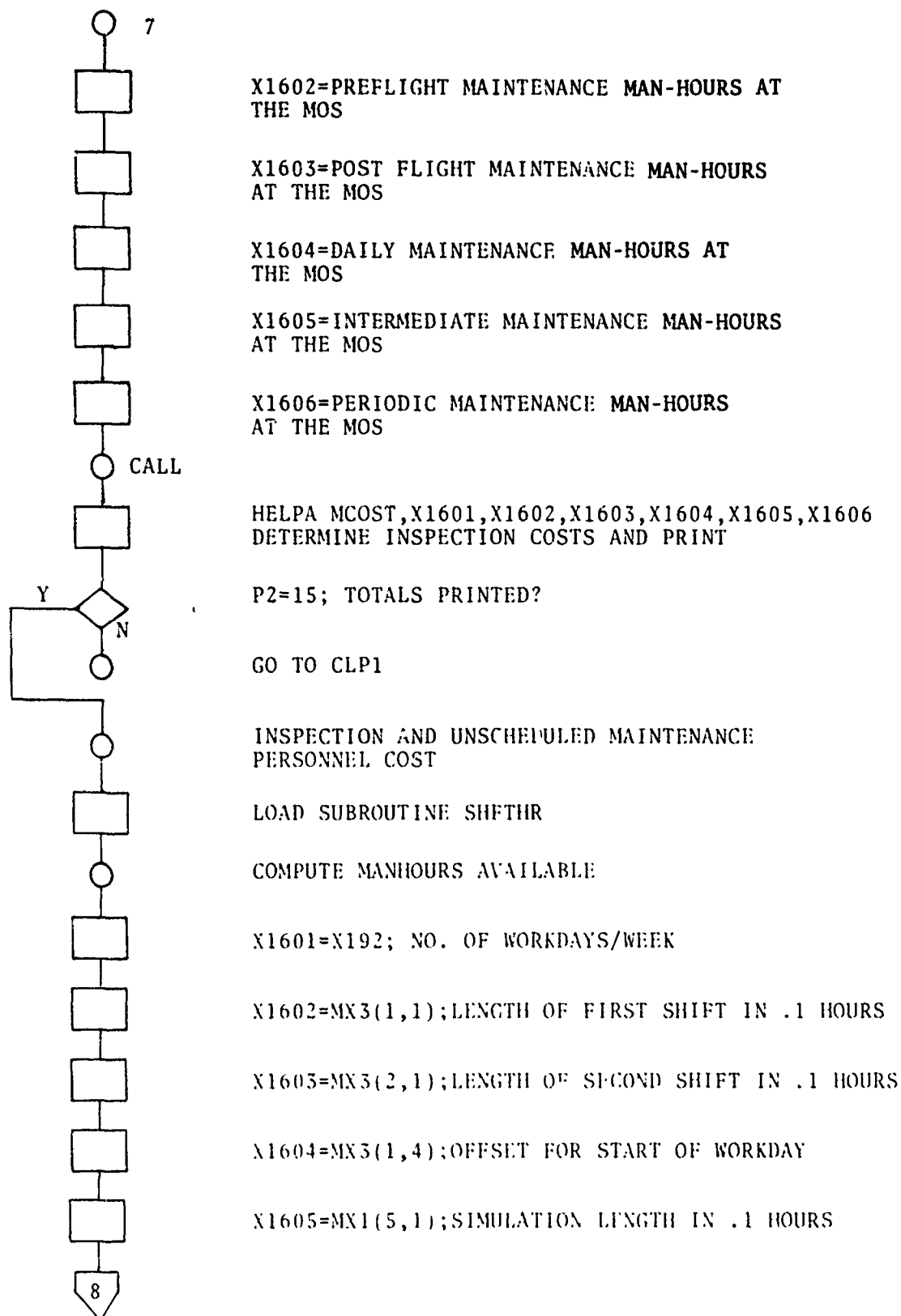
X1603=NØ. OF POST FLIGHTS INSPECTIONS AT THE MOS

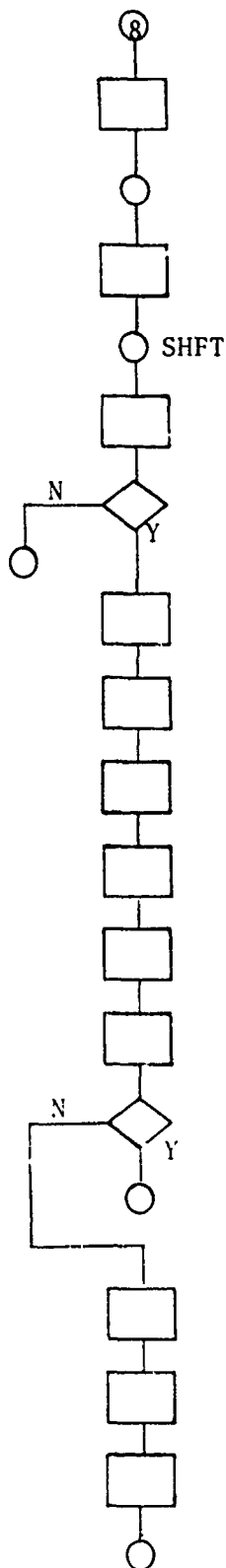
X1604=NØ. OF DAILY INSPECTIONS AT THE MOS

X1605=NØ. OF INTERMEDIATE INSPECTIONS AT THE MOS

X1606=NØ. OF PERIODIC INSPECTIONS AT THE MOS

HELPA MCOST,X1601,X1602,X1603,X1604,X1605,X1606
DETERMINE CONSUMABLE COST/INSPECTION





HELPA SHFTHR,1601XF,1602XF,1603XF,1604XF,1605XF
DETERMINE NO. OF HOURS SHIFTS WERE AVAILABLE

DETERMINE AND PRINT AVUM PERSONNEL COSTS

P2=0; MOS LEVEL=0

P2=P2+1; INCREMENT AVUM MOS LEVEL

P2≠12; LAST AVUM MOS?

GO TO CTOT

P3=V27; SHIFT 1 MANPOWER STORAGE LOCATION

P3=V241; DETERMINE STORAGE CAPACITY

P4=V28; SHIFT 2 MANPOWER STORAGE LOCATION

P4=V242; DETERMINE STORAGE CAPACITY

X1601=V236;SHIFT 1 AVAILABLE MAN-HOURS

X1601=X1601+V237; TOTAL AVAILABLE MAN-HOURS FOR
P2

X1601=0; MOS NOT USED

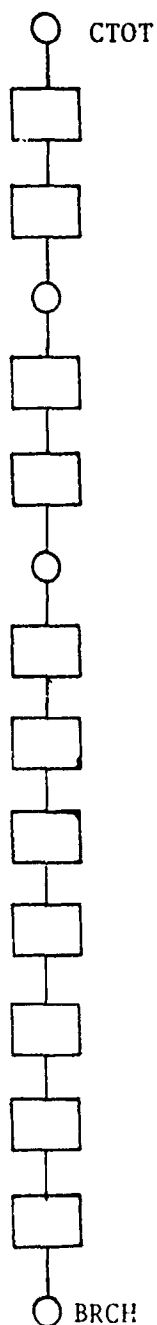
GO TO SHFT

X1602=V238; TOTAL MAN-HOURS WORKED IN .01 HOURS

X1603=MX2(P2,20); OVERTIME HOURS IN .01 HOURS

HELPA MCOST,P2,X1601,X1602,X1603
DETERMINE AND PRINT AVUM PERSONNEL COSTS

GO TO SHFT



P2=15; INDICATES PERSONNEL COST TOTALS
ARE TO BE PRINTED

HELPA MCOST,P2;PRINT PERSONNEL COST TOTALS

SUBSYSTEM MAINTENANCE COST

X1601=MX1(5,1);LENGTH OF SIMULATION IN .1 HOURS

HELPA MCOST,X1601
PERFORM SUBSYSTEM MAINTENANCE COST ROUTINE

COMPANY COST STATISTICS

X1601=X183; FLIGHT TIME IN .1 HOURS

X1602=X250; PLATOON MISSIONS COMPLETED

X1603=MX1(5,1); LENGTH OF SIMULATION IN .1 HOURS

X1604=X700; UPTIME/TOTAL TIME (IN .01%)

X1605=V243; FLOWN/CALLED (IN .01%)

X1606=X750; COMPLETED/CALLED (IN .01%)

HELPA MCOST,X1601,X1602,X1603,X1604,X1605,X1606

END COST ROUTINE

5.3 RMS COST Model Program Listing with Annotations for RMS Code Modifications

This section presents a complete listing of the RMS model program. Each modification in the RMS code to incorporate the COST logic is indicated in this listing by a successive encircled number which is annotated accordingly.

*** GPSS V - US VERSION ***
 *** IBM PROGRAM PRODUCT 5734-XS2 (V1M3) ***

	REALLOCATE BLU,1400	00000100
	REALLOCATE FAC,0	00000150
	REALLOCATE STC,90	00000200
	REALLOCATE QUE,70	00000250
	REALLOCATE LOG,40	00000300
	REALLOCATE FUN,55	00000350
①	REALLOCATE TAB,15	00000400
	REALLOCATE bvp,20	00000450
	REALLOCATE VAR,250	00000500
	REALLOCATE FSV,1700	00000550
	REALLOCATE HSV,90	00000600
	REALLOCATE CHA,60	00000650
	REALLOCATE GRP,70	00000700
	REALLOCATE FMS,5	00000750
①	REALLOCATE HMS,7	00000800
	REALLOCATE XAC,400	00000850
	REALLOCATE COM,110000	00000900

1. The memory requirements for the entities were changed to minimize the impact of the increased core requirements imposed by the RMS COST logic.

2	*LOC	OPERATION	A,B,C,D,E,F,G,H,I	COMMENTS	
		SIMULATE	9		00000950
		UNLIST	ABS		00001000
1	VARIABLE	P2+K5			00001050
2	VARIABLE	P11+K5			00001100
3	VARIABLE	P11+K8			00001150
4	VARIABLE	P11+K11			00001200
5	VARIABLE	P4+K5			00001250
6	VARIABLE	P4+K3			00001300
7	VARIABLE	P11+K13			00001350
8	VARIABLE	P4+K13			00001400
9	VARIABLE	P3-C1			00001450
10	VARIABLE	RN1*28/1000			00001500
11	VARIABLE	RN1*7/1000			00001550
13	VARIABLE	RN1*1000+RN1			00001600
14	VARIABLE	P8+K3			00001650
15	VARIABLE	P8+K13			00001700
16	VARIABLE	P8+K18			00001750
17	VARIABLE	P8+K24			00001800
18	VARIABLE	FN4/2			00001850
19	VARIABLE	(320-V20)*K240			00001900
20	VARIABLE	C1a240			00001950
21	VARIABLE	P14aMX1(1,10)			00002000
23	VARIABLE	FN6/10000			00002050
24	VARIABLE	FN6/100a100			00002100
25	VARIABLE	FN6a100			00002150
26	VARIABLE	P17+8			00002200
27	VARIABLE	P2+32			00002250
28	VARIABLE	P2+43			00002300
29	VARIABLE	P22*P20			00002350
30	VARIABLE	P2+8			00002400
31	VARIABLE	P2+43-P4*11			00002450
32	VARIABLE	8+BV14			00002500
33	VARIABLE	K2+BV14*8			00002550
34	VARIABLE	K3+BV14*b			00002600
35	VARIABLE	230-C1a240	TIME REMAINING 2ND SHIFT		00002650
36	VARIABLE	P3*P4			00002700
37	VARIABLE	P2+20			00002750
38	VARIABLE	150-C1a240	TIME LEFT CN 1ST SHIFT		00002800
39	VARIABLE	P4-P20			00002850
40	VARIABLE	P2+29			00002900
41	VARIABLE	P19+39			00002950
42	VARIABLE	P3*100+P5			00003000
45	VARIABLE	FN37/K1000			00003050
46	VARIABLE	P22/100			00003100
47	VARIABLE	P1+25			00003150
48	VARIABLE	FN40/10000			00003200
49	VARIABLE	FN40a10000/100			00003250
50	VARIABLE	FN40a100			00003300
51	VARIABLE	P1+28			00003350
52	VARIABLE	FN42/10000			00003400
53	VARIABLE	FN42a10000/100			00003450
54	VARIABLE	FN42a100			00003500
55	VARIABLE	K0+(FN43a1000*FN36+500)/1000			00003550
56	VARIABLE	P4*10			00003600
57	VARIABLE	(MX1(4,5)*FN36+500)/1000			00003650

2. The maximum run lengths used for all simulations of 6 months and less and for all simulations of 1 year were 9 and 11 CPU minutes, respectively.

58	VARIABLE	P2+37	00003700
59	VARIABLE	1+8V4	00003750
60	VARIABLE	M1*K10	00003800
61	VARIABLE	FN45	00003850
62	VARIABLE	N\$NORD-N\$NORM	00003900
63	VARIABLE	P2+K49	00003950
64	VARIABLE	P1+C1	00004000
65	VARIABLE	(FN43/1000*FN36+K500)/1000	00004050
66	VARIABLE	FN43/1000	00004100
67	VARIABLE	FN47/1000	00004150
68	VARIABLE	(FN49+10000*FN36+500)/1000 TIME FOR DEPOT REPAIR	00004200
69	VARIABLE	P28+K63	00004250
70	VARIABLE	P31*P4	00004300
71	VARIABLE	FN37+K1000	00004350
72	VARIABLE	FN47/1000	00004400
73	VARIABLE	FN47+1000	00004450
74	VARIABLE	P3+MX3(*2,4)-C1	00004500
76	VARIABLE	P8-R*1	00004550
77	VARIABLE	P4+43	00004600
78	VARIABLE	P4+32	00004650
79	VARIABLE	P3+P5	00004700
80	VARIABLE	P2+K4+4(K3-P14)	00004750
81	VARIABLE	K21+P4+K11(K3-P14)	00004800
82	VARIABLE	P5-C1+P3	00004850
83	VARIABLE	P6-R*7	00004900
84	VARIABLE	MX1(5,2)+MX1(5,3)+MX1(5,4)	00004950
85	FVARIABLE	X183*10/(X500+X450+X400) MT2BM	00005000
86	FVARIABLE	(X550*10)/X183+X501 INSP & SERVICE MMH/FH	00005050
87	FVARIABLE	(X550*10)/X183 SCHEDULED MMH/FH	00005100
88	FVARIABLE	(X575*10)/X183 AVUM CORRECTIVE MMH/FH	00005150
89	FVARIABLE	(X107*10)/X183 IS CORRECTIVE MMH/FH	00005200
90	FVARIABLE	(X521+X522) AVUM+IS CORR MMH/FH	00005250
91	FVARIABLE	(X75*10)/X183 DEPOT CORRECTIVE MMH/FH	00005300
92	FVARIABLE	(X521+X522+X519) TOTAL CORRECTIVE MMH/FH	00005350
95	VARIABLE	FN50/1000 NO MEN OFF AC REPAIR AT IS	00005400
96	VARIABLE	FN50+1000 NO MEN OFF AC REPAIR AT DEPOT	00005450
97	VARIABLE	(X183*10)/X500 SYSTEM MTBF	00005500
135	VARIABLE	FN31/1000	00005550
136	VARIABLE	FN54+100	00005600
137	VARIABLE	FN54/K100	00005650
138	VARIABLE	(FN53/1000*FN36+500)/1000	00005700
139	VARIABLE	FN52/1000	00005750
140	VARIABLE	FN52+1000	00005800
141	VARIABLE	(FN47+1000*FN36+500)/1000	00005850
142	VARIABLE	P28+56	00005900
143	VARIABLE	P28+95	00005950
144	VARIABLE	CH1+M\$ARM14	00006000
145	VARIABLE	240-P3-P2	00006050
146	VARIABLE	(MH6(26,P15)*RN1/1000) AC HRS TO TBC CHANGE	00006100
147	VARIABLE	P40+X189 A/C HRS MCD PMP INTERVAL	00006150
148	VARIABLE	P40+X190 A/C HRS MCD PMI INTERVAL	00006200
149	VARIABLE	MH6(P14,P12)*10-P40	00006250
150	VARIABLE	P40/10+MH6(26,*12) NEXT TIME TBC REPLACEMENT DUE	00006300
151	VARIABLE	P14+K200	00006350
152	VARIABLE	P14+K800	00006400
153	VARIABLE	P14+K225	00006450
154	VARIABLE	P14+K825	00006500
155	VARIABLE	P14+K250	00006550
156	VARIABLE	P14+K850	00006600
157	VARIABLE	P14+K275	00006650
158	VARIABLE	P14+K875	00006700
159	VARIABLE	P14+K300	00006750
160	VARIABLE	P14+K900	00006800

161	VARIABLE	P146K325	00006650
162	VARIABLE	P146K925	00006650
163	VARIABLE	P146K350	00006650
164	VARIABLE	P146K950	00007000
165	VARIABLE	P14+375	00007050
166	VARIABLE	P14+975	00007100
167	VARIABLE	P14+400	00007150
168	VARIABLE	P14+1000	00007200
169	VARIABLE	P14+425	00007250
170	VARIABLE	P14+1025	00007300
171	VARIABLE	P14+450	00007350
172	VARIABLE	P14+1050	00007400
173	VARIABLE	P14+475	00007450
174	VARIABLE	P14+1075	00007500
175	VARIABLE	P14+500	00007550
176	VARIABLE	P14+1100	00007600
177	VARIABLE	P5+525	00007650
178	VARIABLE	K300+P5	00007700
179	VARIABLE	K350+P5	00007750
180	VARIABLE	K400+P5	00007800
181	VARIABLE	K450+P5	00007850
182	VARIABLE	X*1+X*2+X*3+X*4	00007900
183	VARIABLE	X325+X375+X425+X475	00007950
184	VARIABLE	P14+1175	00008000
185	VARIABLE	P14+575	00008050
186	VARIABLE	P14+1200	00008100
187	VARIABLE	P14+600	00008150
188	VARIABLE	P5+1125	00008200
189	VARIABLE	P14+550	00008250
190	VARIABLE	P14+1150	00008300
191	VARIABLE	P20+P22	00008350
192	VARIABLE	P14+1225	00008400
193	VARIABLE	K625+P6	00008450
194	VARIABLE	K1250+P14	00008500
195	VARIABLE	K650+P14	00008550
196	VARIABLE	P14+K1400	IDENTIFIES BY A/C NORS TIME SAVEVALUES 00008600
204	VARIABLE	K1350+P14	00008650
205	VARIABLE	K750+P14	00008700
206	VARIABLE	K1362+P14	00008750
207	VARIABLE	1425+P14	00008800
208	VARIABLE	1550+P14	00008850
209	VARIABLE	1450+P14	00008900
210	VARIABLE	1575+P14	00008950
211	VARIABLE	1475+P14	00009000
212	VARIABLE	(X*1+X*2)*10	00009050
213	VARIABLE	P7/(X*3+X*4+X*5)	00009100
214	VARIABLE	(X550+X575)*10/(X275+X1450+X1500)	00009150
215	VARIABLE	X275+X1450+X1500	00009200
216	FVARIABLE	(MX1(5,1)-X1-X3)*10000/MX1(5,1) BY AC OPER AVAIL	00009250
217	FVARIABLE	(X191*MX1(5,1)-X675-X1425)*10000/(X191*MX1(5,1)) A(0)	00009300
218	FVARIABLE	X*1*10000/X*2	00009350
219	FVARIABLE	(X*1+X*2)*10000/X*3	00009400
220	FVARIABLE	(X250+X786)*10000/X225	00009450
221	FVARIABLE	X250*10000/X225	00009500
222	VARIABLE	P14+K525	00009550
223	VARIABLE	P14+K1125	00009600
224	VARIABLE	G1+G32+G30+G37	00009650
225	VARIABLE	(G31+G32)*K80	00009700
226	VARIABLE	(G31+G32)*560	00009750
227	VARIABLE	(G30+G37)*K80	00009800
228	VARIABLE	(G30+G37)*K560	00009850
229	FVARIABLE	(X191*MX1(5,1)-X625)*10000/(X191*MX1(5,1)) INHER AV	00009900
230	FVARIABLE	(X191*MX1(5,1)-X675)*10000/(X191*MX1(5,1)) ACH AVAIL	00009950
231	VARIABLE	(RN1*1000+RN1)*X189 TIME ON THE AIRCRAFT	00010000
234	VARIABLE	X189-FN4 PMP WINDCW	00010050
235	VARIABLE	X190-FN4 PMI WINDCW	00010100

3	236	VARIABLE	(P3*X1652)/10	CCST SUBROUTINE VARIABLE	00010150
	237	VARIABLE	(P4*X1653)/10	CCST SUBROUTINE VARIABLE	00010200
4	238	VARIABLE	MX2(P2,18)+MX2(P2,19)+MX2(P2,23)+MX2(P2,25)		00010250
5	241	VARIABLE	R*3+S*3	STORAGE CAPACITY	00010400
	242	VARIABLE	R*4+S*4	STORAGE CAPACITY	00010450
6	243	VARIABLE	(X225+10000)/XH1	CALLED/FLOWN MISSION 1	00010500
	244	VARIABLE	(P19*P3)		00010550
7	1	BVARIABLE	V20*G*250	ARMY DUMMY, POST FLT	00010600
	2	BVARIABLE	V20*G*250	DUMMY NO RESPOT	00010650
	3	BVARIABLE	V20*L*145+V20*G*75		00010700
	4	BVARIABLE	P25*E*K1359		00010750
	7	BVARIABLE	V20*L*250		00010800
8	10	BVARIABLE	P5*E*9999+P26*E*1	SPLIT SHFT OR SEC. MOS-COST FLAG	00010850
	11	BVARIABLE	V20*L*K220+V20*G*K185	DAILY OUT OF MAINT.	00010900
	14	BVARIABLE	P17*E*K8		00010950
	17	BVARIABLE	V144*L*X194+P8*E*1+P26*E*1		00011000
	18	BVARIABLE	P19*E*2+P19*E*5		00011050
	19	BVARIABLE	V20*G*70+V20*L*230+LR14		00011100

3. Variables 236 and 237 establish the available work center (MOS) manpower on the first and second shifts, respectively. P3 and 4 are the storage capacities for the first and second shift AVUM MOS manpower. X1652 and X1653 are the total number first and second shift hours that AVUM MOS levels are available during a simulation.
4. Variable 238 sums the total number of unscheduled maintenance man-hours for a given AVUM MOS: MX2(P2,18) is the AVUM off aircraft repair time; MX2(P2,19) is the time change component labor; MX2(P2,23) is the remove/replace and on aircraft repair time; MX2(P2,25) is the corrosion control labor.
5. Variables 241 and 242 establish the capacity of AVUM MOS storages from the current contents of the storage and the remaining available capacity of the storage. P3 is the location of the first shift MOS level (storages 33 to 43), and P4 is the location of the second shift MOS level (storages 44 to 54).
6. Variable 243 determines the percentage of the missions flown to the missions called. Savevalue 225 is the total number of missions flown (including flights which were later aborted). Halfword Savevalue 1 is the total number of flights called for during the simulation. The variable is used in Table VI, RMS Cost Summary.
7. Variable 244 determines the overtime maintenance man-hours required to complete an AVUM maintenance action. P19 is the overtime hours and P3 is the manpower.
8. Boolean Variable 10 ensures that AVUM maintenance actions which have secondary work centers (MOS) assigned or require more than one shift to be completed are properly accounted for. In such instances, there are two transactions for one maintenance action. BV10 therefore permits the counter for the event to be incremented only once.

1	MATRIX	H,10,22		00011150
2	MATRIX	H,2,2		00011200
3	MATRIX	H,45,9		00011250
5	MATRIX	H,45,9		00011300
6	MATRIX	H,28,28	INCREASE SIZE FOR 24 AC, 24 T80 ITEMS	00011350
7	MATRIX	H,15,27	LCST RTN MATRIX, COUNT INSPECTIONS	00011400
1	MATRIX	X,15,13		00011450
2	MATRIX	X,15,27		00011500
3	MATRIX	X,12,11		00011550
4	MATRIX	X,2,40		00011600
5	MATRIX	X,45,9		00011650
1	TABLE	P17,0,1,27	NUMBER INSPECTIONS PERFORMED	00011700
2	TABLE	P8,0,1,11	FLIGHTS BY MISSION TYPE	00011750
3	TABLE	P17,0,1,27	NUMBER INSPECTIONS	00011800
4	TABLE	P19,0,1,27	MA'S BY WHEN DISCOVERED	00011850
5	TABLE	P3,0,1,45	MA'S BY SYSTEM	00011900
6	TABLE	P19,0,1,27	MA'S BY SYSTEM & WHEN DISCOVERED	00011950
7	TABLE	FN46,0,1,300		0 012000
8	TABLE	V56,20,20,125	ORGANIZATIONAL MTTR	00012050
9	TABLE	V60,20,20,250	DOWNTIME DISTRIBUTION	00012100
10	TABLE	FN46,0,1,300	NORS EVENTS	00012150
11	TABLE	FN46,0,1,300	CANNIBALIZED PARTS	00012200
12	TABLE	FN46,0,1,300	PARTS CAUSING NORS OR CANNIBALIZATION	00012250
13	TABLE	FN46,0,1,300	PARTS R AND R BY SERVICE PLATOON	00012300
14	TABLE	V56,0,20,125	MTTR FOR OFF AIRCRAFT PART REPAIR	00012350
15	TABLE	FN46,0,1,300		00012400
	STORAGE	S33,40		00012450
	STORAGE	S34,0		00012500
	STORAGE	S35,30		00012550
	STORAGE	S36,10		00012600
	STORAGE	S37,20		00012650
	STORAGE	S38,40		00012700
	STORAGE	S39-S43,C		00012750
	STORAGE	S44,20		00012800
	STORAGE	S45,0		00012850
	STORAGE	S46,0		00012900
	STORAGE	S47,0		00012950
	STORAGE	S48,20		00013000
	STORAGE	S49,20		00013050
	STORAGE	S50-S54,0		00013100

9. Matrix Halfword 7 was added to tally the number of inspections. Matrix rows represent MOS levels. Column 2 is pre-flight inspection; column 8 is intermediate inspection (PMI); column 11 is post-flight inspection; column 16 is daily inspection; column 17 is periodic inspection (PMP).
10. First shift AVUM MOS storages 33-43 and second shift AVUM MOS storages 44-54 each contain personnel in 0.1-man increments and were optimized for the given execution:

<u>Storage</u>	<u>Description</u>
53,44	On aircraft repair
35,46	Periodic inspection and off aircraft repair
36,47	Pre-flight inspection
37,48	Daily inspection
38,49	Secondary on aircraft repair
34,45, } 39-43, } 50-54 }	No personnel assignments

69

70

426	34199427	750000428	926000429	980999430	846999431	90399900020350
501	106000502	128000503	666000504	866000601	480000602	64000000020400
603	866000604	921000605	943000606	745000607	491000608	72300000020450
609	358000610	596000701	905000702	200000703	856000704	92600000020500
705	716000706	743000707	923000708	961000709	781000801	11600000020550
802	931000803	640000804	923000901	333000902	926000903	10000000020600
904	768000905	998000906	500000907	8360001001	6850001002	15500000020650
1003	7650001004	7030001005	1430001006	7030001007	4030001008	39100000020700
1009	3210001010	4330001011	7210001012	845000		00020750
38	FUNCTION	P22,D106	PRCB OF PART	AVAILABILITY		00020800
101	990 102	990 103	990 104	990 105	990 106	990 00020850
107	990 108	990 109	990 110	990 111	990 201	990 00020900
202	990 203	990 301	990 302	990 303	990 304	990 00020950
305	990 306	990 307	990 308	990 309	990 310	990 00021000
311	990 312	990 313	990 314	990 315	990 401	990 00021050
402	990 403	990 404	990 405	990 406	990 407	990 00021100
408	990 409	990 410	990 411	990 412	990 413	990 00021150
414	990 415	990 416	990 417	990 418	990 419	990 00021200
420	990 421	990 422	990 423	990 424	990 425	990 00021250
426	990 427	990 428	990 429	990 430	990 431	990 00021300
501	990 502	990 503	990 504	990 601	990 602	990 00021350
603	990 604	990 605	990 606	990 607	990 608	990 00021400
609	990 610	990 701	990 702	990 703	990 704	990 00021450
705	990 706	990 707	990 708	990 709	990 801	990 00021500
802	990 803	990 804	990 901	990 902	990 903	990 00021550
904	990 905	990 906	990 907	990 1001	990 1002	990 00021600
1003	990 1004	990 1005	990 1006	990 1007	990 1008	990 00021650
1009	990 1010	990 1011	990 1012	990		00021700
39	FUNCTION	P1,E3	VARIABLE SORT FOR	MDS		00021750
1	V50 2	V49 3	V48			00021800
40	FUNCTION	FN46,L106	AVUM OFF AC	MDS, 2MDS, 1MDS ON AC		00021850
101	20601 102	20601 103	20601 104	20601 105	20601 106	20601 00021900
107	20601 108	20601 109	20601 110	20601 111	20601 201	20601 00021950
202	20601 203	20601 301	20601 302	20601 303	20601 304	20601 00022000
305	20601 306	20601 307	20601 308	20601 309	20601 310	20601 00022050
311	20601 312	20601 313	20601 314	20601 315	20601 401	20601 00022100
402	20601 403	20601 404	20601 405	20601 406	20601 407	20601 00022150
408	20601 409	20601 410	20601 411	20601 412	20601 413	20601 00022200
414	20601 415	20601 416	20601 417	20601 418	20601 419	20601 00022250
420	20601 421	20601 422	20601 423	20601 424	20601 425	20601 00022300
426	20601 427	20601 428	20601 429	20601 430	20601 431	20601 00022350
501	20601 502	20601 503	20601 504	20601 601	20601 602	20601 00022400
603	20601 604	20601 605	20601 606	20601 607	20601 608	20601 00022450
609	20601 610	20601 701	20601 702	20601 703	20601 704	20601 00022500
705	20601 706	20601 707	20601 708	20601 709	20601 801	20601 00022550
802	20601 803	20601 804	20601 901	20601 902	20601 903	20601 00022600
904	20601 905	20601 906	20601 907	20601 1001	20601 1002	20601 00022650
1003	20601 1004	20601 1005	20601 1006	20601 1007	20601 1008	20601 00022700
1009	20601 1010	20601 1011	20601 1012	20601		00022750
41	FUNCTION	P1,E3	VARIABLE SORT	MANPOWER DEF		00022800
1	V54 2	V53 3	V52			00022850
42	FUNCTION	FN46,L106	AVUM MPR CFF AC	RPR, 2MUS, 1MUS R&P MPR		00022900
101	101010102	102020103	104040104	102020105	102020106	10101000022950
107	101010108	102020109	102020110	103030111	103030201	10202000023000
202	102020203	102020301	102020302	102020303	203030304	20202000023050
305	201010306	201010307	202020308	101010309	101010310	10101000023100
311	101010312	101010313	101010314	101010315	101010401	20202000023150
402	202020403	101010404	101010405	101010406	202020407	20202000023200
408	202020409	101010410	101010411	303030412	101010413	20202000023250
414	101010415	202020416	202020417	101010418	101010419	10101000023300
420	202020421	202020422	101010423	202020424	101010425	10101000023350
426	202020427	101010428	101010429	101010430	101010431	10101000023400
501	202020502	101010503	101010504	101010601	101010602	10101000023450
603	101010604	101010605	101010606	101010607	101010608	10101000023500
609	101010610	101010701	101010702	101010703	101010704	10101000023550
705	101010706	101010707	101010708	101010709	101010801	10101000023600
802	101010803	202020804	101010901	101010902	101010903	10101000023650
904	101010905	101010906	101010907	1020201001	1010101002	10101000023700
1003	1010101004	1010101005	1010101006	1010101007	1010101008	10101000023750
1009	1010101010	1010101011	1010101012	101010		00023800

43	FUNCTION	FN46,L106	AVUM OFF	AC	MENT	AVUM R&R	MFMT		00023850
101	23031 102	63118 103	1481	104	43233 105	11035 106	11042	00023900	
107	13016 108	17008 109	15029 110	37048 111	14029 201	30021	00023950		
202	18049 203	44031 301	8020 302	56 303	15116 304	140245	00024000		
305	140106306	55132 307	42015 308	18018 309	33029 310	18049	00024050		
311	20070 312	21045 313	13014 314	28029 315	23011 401	44	00024100		
402	35 403	40025 404	1021 405	17037 406	1023 407	33	00024150		
408	21 409	35 410	38 411	9031 412	21011 413	85205	00024200		
414	23015 415	50018 416	136 417	16 418	25 419	43	00024250		
420	26050 421	9019 422	8010 423	10077 424	40 425	17042	00024300		
426	60024 427	46 428	28 429	25032 430	13049 431	40	00024350		
501	15035 502	15022 503	15058 504	18025 601	9016 602	6008	00024400		
603	31017 604	32013 605	9016 606	11011 607	20009 608	11016	00024450		
609	13023 610	1015 701	1021 702	55013 703	5009 704	10024	00024500		
705	28021 706	20012 707	23007 708	1009 709	6009 801	19025	00024550		
802	21018 803	185345804	25059 901	10013 902	13011 903	33046	00024600		
904	17007 905	22025 906	23016 907	25044 1001	20004 1002	4006	00024650		
1003	4003 1004	12006 1005	4019 1006	12004 1007	25008 1008	20006	00024700		
1009	29011 1010	25011 1011	6007 1012	12004			00024750		
44	FUNCTION	P22,D106	TEST	HOP	REQUIRED?			00024800	
101	0 102	0 103	0 104	0 105	0 106	0	00024850		
107	0 108	0 109	0 110	0 111	0 201	0	00024900		
202	0 203	0 301	0 302	0 303	1 304	1	00024950		
305	1 306	0 307	0 308	0 309	0 310	1	00025000		
311	1 312	1 313	0 314	1 315	0 401	1	00025050		
402	1 403	0 404	0 405	0 406	0 407	1	00025100		
408	1 409	1 410	0 411	1 412	0 413	1	00025150		
414	0 415	1 416	1 417	0 418	0 419	0	00025200		
420	1 421	1 422	0 423	1 424	0 425	0	00025250		
426	1 427	0 428	0 429	1 430	1 431	1	00025300		
501	1 502	0 503	1 504	1 601	0 602	0	00025350		
603	0 604	0 605	0 606	0 607	0 608	0	00025400		
609	0 610	0 701	0 702	0 703	0 704	0	00025450		
705	0 706	0 707	0 708	0 709	0 801	0	00025500		
802	0 803	0 804	1 901	0 902	0 903	0	00025550		
904	0 905	0 906	0 907	0 1001	0 1002	0	00025600		
1003	0 1004	0 1005	0 1006	0 1007	0 1008	0	00025650		
1009	0 1010	0 1011	0 1012	0			00025700		
45	FUNCTION	P22,D106	NORS	DELAY			00025750		
101	15 102	15 103	15 104	15 105	15 106	15	00025800		
107	15 108	15 109	25 110	240 111	240 201	10	00025850		
202	10 203	10 301	120 302	360 303	360 304	360	00025900		
305	240 306	240 307	15 308	110 309	110 310	10	00025950		
311	10 312	10 313	10 314	15 315	240 401	240	00026000		
402	10 403	15 404	15 405	15 406	15 407	120	00026050		
408	120 409	120 410	120 411	120 412	10 413	100	00026100		
414	10 415	50 416	50 417	50 418	10 419	10	00026150		
420	20 421	15 422	120 423	15 424	60 425	20	00026200		
426	10 427	30 428	10 429	40 430	40 431	40	00026250		
501	30 502	10 503	15 504	15 601	20 602	20	00026300		
603	20 604	20 605	20 606	20 607	20 608	20	00026350		
609	20 610	20 701	10 702	10 703	10 704	10	00026400		
705	10 706	10 707	20 708	10 709	10 801	30	00026450		
802	30 803	30 804	30 901	100 902	50 903	20	00026500		
904	30 905	10 906	10 907	10 1001	10 1002	10	00026550		
1003	10 1004	10 1005	10 1006	10 1007	10 1008	10	00026600		
1009	10 1010	10 1011	10 1012	10			00026650		
46	FUNCTION	P22,D106	ELEMENT	TABLE	CODE		00026700		
101	1 102	2 103	3 104	4 105	5 106	6	00026750		
107	7 108	8 109	9 110	10 111	11 201	12	00026800		
202	13 203	14 301	15 302	16 303	17 304	18	00026850		
305	19 306	20 307	21 308	22 309	23 310	24	00026900		
311	25 312	26 313	27 314	28 315	29 401	30	00026950		
402	31 403	32 404	33 405	34 406	35 407	36	00027000		
408	37 409	38 410	39 411	40 412	41 413	42	00027050		
414	43 415	44 416	45 417	46 418	47 419	48	00027100		
420	49 421	50 422	51 423	52 424	53 425	54	00027150		
426	55 427	56 428	57 429	58 430	59 431	60	00027200		
501	61 502	62 503	63 504	64 601	65 602	66	00027250		
603	67 604	68 605	69 606	70 607	71 608	72	00027300		
609	73 610	74 701	75 702	76 703	77 704	78	00027350		
705	79 706	80 707	81 708	82 709	83 801	84	00027400		
802	85 803	86 804	87 901	88 902	89 903	90	00027450		

904	91	905	92	906	93	907	94	1001	95	1002	96	00027500
1003	97	1004	98	1005	99	1006	100	1007	101	1008	102	00027550
1009	103	1010	104	1011	105	1012	106					00027600
47	FUNCTION FN46,L106 PROB EL REP, MEMT AVIM RP											00027650
101	990044102		998050103		10481	104	998108105		998034106		99807100027700	
107	950026108		998049109		990063110		990133111		990026201		99002200027750	
202	990017203		950044301		990019302		950215303		950049304		94618700027800	
305	950180306		990053307		990019308		990032309		990022310		99002600027850	
311	990035312		990030313		990013314		990013315		998018401		1000 00027900	
402	1000 403		998030404		1001 405		998023406		50010 407		99827500027950	
408	998030409		1000 410		1000 411		998022412		998011413		99011100028000	
414	990000415		998085416		1000 417		1000 418		1000 419		1000 00028050	
420	998033421		998028422		998010423		990040424		990038425		10015 00028100	
420	998053427		10000 428		10011 429		998035430		998023431		99802800028150	
501	990020502		10021 503		990010504		1055 601		5007 602		99800600028200	
603	100011604		100011605		100013606		50010 607		50010 608		50010 00028250	
609	990013610		50001 701		5001 702		998032703		950004704		1010 00028300	
705	998015706		990010707		950025708		990005709		500005801		99001400028350	
802	990020803		950185804		990030901		500010902		890010903		99004000028400	
904	990013905		508037906		998011907		9980261001		9980151002		99800600028450	
1003	9980051004		9980141005		9500061006		9900141007		9980101008		99801100028500	
1009	9960171010		9980121011		9980081012		998014					00028550
48	FUNCTION P22,D2 PRUB OF CANNIPALIZATION											00028600
101	999 1012		999									00028650
49	FUNCTION FN46,L106 MEMT DEPOT REPAIR											00028700
101	0 102		0 103		0 104		0 105		0 106		0 00028750	
107	0 108		0 109		0 110		0 111		130 201		0 00028800	
202	0 203		0 301		0 302		115 303		3450 304		3000 00028850	
305	300 306		830 307		0 308		0 309		0 310		0 00028900	
311	160 312		180 313		0 314		0 315		0 401		0 00028950	
402	0 403		300 404		0 405		0 406		0 407		0 00029000	
408	1000 409		100 410		80 411		687 412		0 413		0 00029050	
414	0 415		100 416		0 417		0 418		0 419		0 00029100	
420	0 421		210 422		0 423		0 424		0 425		0 00029150	
426	240 427		0 428		0 429		180 430		100 431		80 00029200	
501	0 502		0 503		0 504		0 601		0 602		0 00029250	
603	0 604		0 605		0 606		0 607		0 608		0 00029300	
609	0 610		0 701		0 702		0 703		0 704		0 00029350	
705	0 706		0 707		0 708		0 709		0 801		0 00029400	
802	0 803		0 804		0 901		0 902		0 903		0 00029450	
904	0 905		0 906		0 907		0 1001		0 1002		0 00029500	
1003	0 1004		0 1005		0 1006		0 1007		0 1008		0 00029550	
1009	0 1010		0 1011		0 1012		0					00029600
50	FUNCTION FN46,L106 MPR OFF AC RPR AVIM,DEPOT											00029650
101	10000 102		10000 103		10000 104		10000 105		10000 106		10000 00029700	
107	10000 108		10000 109		10000 110		10000 111		10020 201		10000 00029750	
202	10000 203		10000 301		10000 302		10020 303		20040 304		20030 00029800	
305	20020 306		20020 307		20000 308		10000 309		10000 310		10000 00029850	
311	10010 312		10020 313		10000 314		10000 315		10000 401		20000 00029900	
402	20000 403		10020 404		10000 405		10000 406		20000 407		20000 00029950	
408	20010 409		10020 410		10010 411		30030 412		10000 413		20000 00030000	
414	10000 415		20010 416		20000 417		10000 418		10000 419		10000 00030050	
420	20000 421		20020 422		10000 423		20000 424		10000 425		10000 00030100	
426	20020 427		10000 428		10000 429		10020 430		10010 431		10010 00030150	
501	20000 502		10000 503		10000 504		10000 601		10000 602		10000 00030200	
603	10000 604		10000 605		10000 606		10000 607		10000 608		10000 00030250	
609	10000 610		10000 701		10000 702		10000 703		10000 704		10000 00030300	
705	10000 706		10000 707		10000 708		10000 709		10000 801		10000 00030350	
802	10000 803		20000 804		10000 901		10000 902		10000 903		10000 00030400	
904	10000 905		10000 906		10000 907		10000 1001		10000 1002		10000 00030450	
1003	10000 1004		10000 1005		10000 1006		10000 1007		10000 1008		10000 00030500	
1009	10000 1010		10000 1011		10000 1012		10000					00030550
52	FUNCTION FN46,L106 PROB AVIM RPR/RER, PROB AVIM RPR/RCD											00030600
101	405999102		1955 103		55999 104		361999105		545999106		49099900030650	
107	533999108		383999109		341999110		226999111		371841201		65199900030700	
202	901999203		933999301		720999302		625533303		26077 304		26077 00030750	
305	200875306		196751307		851999308		716999309		736999310		49699900030800	
311	333500312		221742313		958999314		881999315		960549401		51199900030850	
402	641959403		250079404		500999405		600999406		600999407		35599900030900	
408	340515409		258999410		788999411		64 412		873999413		15199900030950	
414	856999415		533571416		81999 417		966999418		371959419		99699900031000	
420	281999421		650726422		923999423		848999424		658999425		84899900031050	
426	341848427		768999428		600999429		123149430		296857431		71067 00031100	

501	423999502	378999503	711999504	863999601	568999602	94699900031150
603	966999604	918999605	881999606	648999607	448999608	63899900031200
609	883999610	478999701	986999702	706999703	540999704	65899900031250
705	638999706	846999707	751999708	983999709	863999801	93399900031300
802	741999803	480999804	871999901	461999902	556999903	60099900031350
904	286999905	831999906	353999907	8689991001	95999 1002	34899900031400
1003	68999 1004	1259991005	5789991006	8959991007	1369991008	29899900031450
1009	1889991010	3669991011	91999 1012	95599		00031500
53	FUNCTION	FN46,L106	MENT ON	AC REPAIR		00031550
101	87C00 102	21000 103	35000 104	40000 105	36000 106	45000 00031600
107	14000 108	32000 109	78000 110	62000 111	49000 201	30000 00031650
202	56000 203	28000 301	16000 302	15000 303	36000 304	18000 00031700
305	109000306	92000 307	17000 308	5000 309	32000 310	26000 00031750
311	28000 312	25000 313	1000 314	27000 315	59000 401	26000 00031800
402	0 403	53000 404	0 405	0 406	23000 407	75000 00031850
408	85000 409	0 410	20000 411	33000 412	22000 413	36000 00031900
414	11000 415	71000 416	0 417	4000 418	35000 419	26000 00031950
420	29000 421	13000 422	8000 423	45000 424	38000 425	63000 00032000
426	13000 427	26000 428	35000 429	25000 430	47000 431	42000 00032050
501	20000 502	29000 503	55000 504	8000 601	9000 602	7000 00032100
603	13000 604	30000 605	10000 606	20000 607	13000 608	22000 00032150
609	23000 610	19000 701	25000 702	28000 703	13000 704	10000000032200
705	18000 706	63000 707	13000 708	7000 709	8000 801	12000 00032250
802	44000 803	10000 804	10000 901	32000 902	10000 903	42000 00032300
904	31000 905	10000 906	17000 907	27000 1001	3000 1002	17000 00032350
1003	30000 1004	35000 1005	23000 1006	9000 1007	17000 1008	15000 00032400
1009	22000 1010	10000 1011	6000 1012	9000		00032450
54	FUNCTION	FN46,L106	MPR CN	AC RPR	2MOS, 1MGS	00032500
101	1010 102	1010 103	1010 104	1010 105	1010 106	1010 00032550
107	1010 108	1010 109	1010 110	2020 111	2020 201	2020 00032600
202	2020 203	2020 301	2020 302	2020 303	2020 304	2020 00032650
305	2020 306	2020 307	2020 308	1010 309	1010 310	1010 00032700
311	1010 312	1010 313	1010 314	1010 315	1010 401	2020 00032750
402	0 403	1010 404	0 405	0 406	2020 407	2020 00032800
408	2020 409	0 410	1010 411	3030 412	1010 413	2020 00032850
414	1010 415	2020 416	0 417	1010 418	1010 419	1010 00032900
420	2020 421	2020 422	1010 423	2020 424	1010 425	1010 00032950
426	2020 427	1010 428	1010 429	1010 430	1010 431	1010 00033000
501	2020 502	1010 503	1010 504	1010 601	1010 602	1010 00033050
603	1010 604	1010 605	1010 606	1010 607	1010 608	1010 00033100
609	1010 610	1010 701	1010 702	1010 703	1010 704	1010 00033150
705	1010 706	1010 707	1010 708	1010 709	1010 801	1010 00033200
802	1010 803	2020 804	1010 901	1010 902	1010 903	1010 00033250
904	1010 905	2020 906	1010 907	1010 1001	1010 1002	1010 00033300
1003	1010 1004	1010 1005	1010 1006	1010 1007	1010 1008	1010 00033350
1009	1010 1010	1010 1011	1010 1012	1010		00033400
55	FUNCTION	P1,E3	SORT FN ON	AC REPAIR		00033450
1	V136 2	V137 3	V138			00033500
	INITIAL	XH78,1586				00033550
	INITIAL	MX1(1,2),158				00033600
	INITIAL	MX1(1,3),240				00033650
	INITIAL	MX1(1,10),3				00033700
	INITIAL	MX1(1,8),100				00033750
	INITIAL	MX1(4,6),959999				00033800
	INITIAL	MX1(4,10),1				00033850
11	INITIAL	MX1(5,1),43680				00033900
	INITIAL	MX1(5,9),1				00033950
	INITIAL	MX1(2,3),30				00034000
	INITIAL	MX1(3,3),100				00034050
	INITIAL	MX3(1,4),68				00034100
	INITIAL	MX3(1,1),80				00034150
	INITIAL	MX3(2,1),80	SECOND SHIFT			00034200
	INITIAL	MX3(3,2),160	WORKING INTERVAL			00034250
	INITIAL	MX3(3,3),80	NCN-WORKING			00034300
	INITIAL	MX3(3,4),70				00034350
	INITIAL	MX3(2,2),1200				00034400
	INITIAL	MX3(2,3),480				00034450

11. Initializes simulation interval for 4368.0 hours (182 days).

INITIAL	MH1(1-4,5),1	00034500
INITIAL	MH1(1,10),3	00034550
INITIAL	MH1(2,10),3	00034600
INITIAL	MH1(3,10),3	00034650
INITIAL	MH1(4,10),3	00034700
INITIAL	MH1(1,11),73	00034750
INITIAL	MH1(2,11),20	00034800
INITIAL	MH1(3,11),20	00034850
INITIAL	MH1(4,11),20	00034900
INITIAL	MH1(2,12),107	00034950
INITIAL	MH1(1,12),4	00035000
INITIAL	MH1(3,12),3	00035050
INITIAL	MH1(8,12),5	00035100
INITIAL	MH1(1,15),1	00035150
INITIAL	MH1(1-2,16),2	00035200
INITIAL	MH1(1,21),5	00035250
INITIAL	MH1(6,17),1200	00035300
INITIAL	MH1(6,18),480	00035350
INITIAL	MH6(26,1),300	00035400
INITIAL	MH6(26,2),1200	00035450
INITIAL	MH6(26,3),1200	00035500
INITIAL	MH6(26,4),1200	00035550
INITIAL	MH6(26,5),1200	00035600
INITIAL	MH6(26,6),1200	00035650
INITIAL	MH6(27,1),303	00035700
INITIAL	MH6(27,2),403	00035750
INITIAL	MH6(27,3),407	00035800
INITIAL	MH6(27,4),408	00035850
INITIAL	MH6(27,5),416	00035900
INITIAL	MH6(27,6),423	00035950
INITIAL	X189,3000	00036000
INITIAL	X190,999999	00036050
INITIAL	X191,3	00036100
INITIAL	X192,5	00036150
INITIAL	X193,480	00036200
INITIAL	X194,3	00036250
INITIAL	X197,6	00036300
INITIAL	X1630,KO COST SWITCH, X1630=1 BYPASS COST	00036350

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12. Fullword Savevalue 1630 acts as a switch which permits or prevents the use of the cost logic. The RMS costs are determined when X1630=0, and the logic is bypassed when X1630=1.

(13)	*			00036400
	*			00036450
(14)	COST GENERATE	1,,1,126		00036500
	TEST NE	X1630,K1,CST5		00036550
(15)	LOAD	MCOST		00036600
	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606		00036650
(16)	CST5 TERMINATE			00036700
(17)	*			00036750
	*			00036800
	*			00036850
	*			00036900
	*			00036950
	* MISSION GENERATOR ROUTINE			00037000
	*			00037050
	* SCHEDULED MISSION SUBROUTINE			00037100
	*			00037150
	*			00037200
	ZZA GENERATE	,,2,1,50,25,F		00037250
	SPLIT	1,DLCA,,25		00037300
	SPLIT	1,HPCA,,25		00037350
	SPLIT	1,FTA,,25		00037400
	SPLIT	1,DCRA,,25		00037450
	*			00037500
	*			00037550
	SMGF ASSIGN	9+,K1		00037600
	SMGG ADVANCE	MH1(*9,11)		00037650
	TEST E	P9,1,SMGT		00037700
	SPLIT	1,SACA,,25		00037750
	SMGT ASSIGN	2,5		00037800
	SMGB TEST GE	MH1(*9,V1),K1,SMGE		00037850

13. A single transaction is generated at time 1 with a priority of 126. The transaction enables the Fortran subroutine MCOST to be loaded and initialized before the actual simulation begins.
14. This check determines whether the cost logic is to be used during execution. If the cost logic is not used, then the transaction branches to CST5.
15. This LOAD block makes the MCOST module core resident for the duration of the simulation.
16. This HELPA block calls for the MCOST routine which then sets the arrays to zero and reads the cost input data cards.
17. The transaction is terminated at this block.

	ASSIGN	3,MH1(*9,V1)	00037900
	ASSIGN	4,MH1(*9,*2)	00037950
	LOOP	2,SMGC	00038000
SMGD	SPLIT	1,SMGH,,25	00038050
SMGE	GATE LR	2,SMGQ	00038100
	TEST E	P9,MH1(1,12),SMGF	00038150
	ADVANCE	MH1(2,12)	00038200
	ASSIGN	9,K1	00038250
	GATE LR	1	00038300
	TRANSFER	,SMGG	00038350
SMGC	SPLIT	1,SMGH,,25	00038400
	TRANSFER	,SMGB	00038450
SMGH	GATE LR	V8,SMGQ	00038500
	GATE LR	1,SMGQ	00038550
	GATE LR	2,SMGQ	00038600
	ASSIGN	2+,K1	00038650
	ASSIGN	6,C1	00038700
	SPLIT	1,SMGR,,25	00038750
	SAVEVALUE	P4+,P3,H	00038800
SMGN	ALTER	16,ALL,7,P6,15,1	00038850
	ALTER	16,ALL,8,*4,15,1	00038900
SMGK	UNLINK	1,PLAB,1,11,P4,SMGJ	00038950
	LOOP	3,SMGK	00039000
SMGQ	TERMINATE		00039050
SMGJ	ASSIGN	1+,K1	00039100
	TEST E	P1,K6,SMGL	00039150
	TEST E	P11,KO,SMGM	00039200
	MARK	7	00039250
	ASSIGN	11,1	00039300
	ASSIGN	8,MH1(3,12)	00039350
SMGM	ADVANCE	1	00039400
	TEST G	MP7,P8,SMGP	00039450
	UNLINK	4,ARM37,1,,,ARM39	00039500
	SPLIT	1,ARM40,,60	00039550
	ASSIGN	3-,1	00039600
ARM39	SAVEVALUE	V5+,P3,H	00039650
	TRANSFER	,SMGQ	00039700
SMGL	ASSIGN	4,FN1	00039750
	TRANSFER	,SMGK	00039800
SMGP	ASSIGN	1,KO	00039850
	ASSIGN	4,MH1(*9,*2)	00039900
	TRANSFER	,SMGN	00039950
SMGR	ADVANCE	MH1(8,12)	00040000
	BUFFER		00040050
	LOGICS	V6	00040100
	LOGICS	19	00040150
	ADVANCE	MH1(P4,21)	00040200
	BUFFER		00040250
	LOGICR	V6	00040300
	LOGICR	19	00040350
	TRANSFER	,SMGQ	00040400
*			00040450
*			00040500
*			00040550
*			00040600
*	FLYING TERMINATION SUBROUTINE		00040650
*			00040700
FTA	PRIORITY	80	00040750
	SPLIT	1,FTH,,25	00040800
	SPLIT	4,FTB,2,25	00040850
FTB	ASSIGN	3,MH1(*2,14)	00040900
	TEST GE	P3,K1,SMGQ	00040950
	ASSIGN	4,MH1(*2,13)	00041000
	ADVANCE	V9	00041050
FTC	LOGICS	1	00041100
	SPLIT	1,FTF,,25	00041150
	ADVANCE	P4	00041200
	UNLINK	2,SMGQ,1	00041250
	UNLINK	2,FTD,1,,,FTF	00041300
	TRANSFER	,FTG	00041350
FTF	LOGICR	1	00041400
FTG	ADVANCE	P3	00041450
	TRANSFER	,FTC	00041500

FTF	LINK	2,FIFC	00041550
FTD	TRANSFER	,FTF	00041600
FTH	ASSIGN	1,MX1(4,6)	00041650
	TEST NE	P1,KO,SMGQ	00041700
	SPLIT	1,FTR,,25	00041750
FTJ	TEST GE	XH11,P1,FTK	00041800
	LOGICS	2	00041850
	LOGICS	1	00041900
	TERMINATE		00041950
FTK	ADVANCE	20	00042000
	TRANSFER	,FTJ	00042050
FTR	SPLIT	1,FTL,,25	00042100
	SPLIT	1,FTT,,25	00042150
	SPLIT	4,FTX,11,25	00042200
FTX	ASSIGN	9,MH1(V2,16)	00042250
	TEST GE	P9,K1,SMGQ	00042300
	ASSIGN	1,V3	00042350
	ASSIGN	6,MH1(V2,17)	00042400
	LOGICS	V7	00042450
	ADVANCE	MH1(V2,16)	00042500
FTZ	LOGICR	V7	00042550
	ADVANCE	P6	00042600
	LOGICS	V7	00042650
	ADVANCE	P9	00042700
	GATE LR	*1,SMGQ	00042750
	TRANSFER	,FTZ	00042800
FTL	SPLIT	4,FTP,11,25	00042850
FTP	ASSIGN	9,MH1(V2,14)	00042900
	TEST GE	P9,K1,SMGQ	00042950
	ASSIGN	1,V3	00043000
	ASSIGN	8,V4	00043050
FTN	TEST GE	XH*8,P9,FTM	00043100
	LOGICS	V7	00043150
	LOGICS	*1	00043200
	TERMINATE		00043250
FTM	ADVANCE	10	00043300
	TRANSFER	,FTN	00043350
FTT	SPLIT	4,FTS,11,25	00043400
FTS	ASSIGN	9,MH1(V2,15)	00043450
	TEST GE	P9,K1,SMGQ	00043500
	LOGICS	V7	00043550
	ADVANCE	P9	00043600
	LOGICR	V7	00043650
	TERMINATE		00043700
*			00043750
*			00043800
*			00043850
*			00043900
*	AIRCRAFT ROUTINE		00043950
*			00044000
*			00044050
*	AIRCRAFT COMPLEMENT SUBROUTINE		00044100
*			00044150
*			00044200
*			00044250
*			00044300
*			00044350
ZZB	GENERATE	,,1,X191,90,60,F GENERAL	00044400
	ADVANCE	69 THIS CARD IS 2ND OF AC COMP SUBROUTINE	00044450
	ASSIGN	47,V10	00044500
AAA	JOIN	25	00044550
	ASSIGN	41,V11	00044600
	ASSIGN	40,V231	00044650
	ASSIGN	14,N\$AAA	00044700
	MSAVEVALUE	6,25,P14,P40,H	00044750
	TEST NF	P15,KO,NOTBC IF NO TBU ITEMS GO TO NOTBO	00044800
	SAVEVALUE	17*,K1,H	00044850
	ASSIGN	15,X197 ASSIGN VO. TBU ITEMS TO P15	00044900
AKH.6	MSAVEVALUE	6,P14,P15,V146,H	00044950
	LOOP	15,ARM16	00045000
NOTBO	JOIN	16	00045050
	JOIN	23	00045100

AAC	ASSIGN	15,1	00045150
	TEST NE	P35,999,HLH2	00045200
	TEST L	V147,V234,ARM17	00045250
	TES. L	V148,V235,ARM19	00045300
HLH2	JOIN	29	00045350
	ASSIGN	35,KO	00045400
AAD	LINK	1,FIFO	00045450
AAB	TEST NE	P16,K2,AAF	00045500
	ASSIGN	16,KO	00045550
AAF	PRIORITY	90	00045600
	TRANSFER	,AAC	00045650
* THIS CARD WAS REMOVE BECAUSE IT WAS NO LONGER NECESSARY			00045700
ARM17	ASSIGN	15,KO	00045750
	JCIN	30	00045800
	ASSIGN	17,17	00045850
	SAVEVALUE	V169+,K1	00045900
	SAVEVALUE	V170+,K1	00045950
	SAVEVALUE	450+,K1	00046000
	SAVEVALUE	1050+,K1	00046050
	TRANSFER	,ARM18	00046100
ARM19	ASSIGN	15,KO	00046150
	JOIN	37	00046200
	ASSIGN	17,8	00046250
	SAVEVALUE	V165+,K1	00046300
	SAVEVALUE	V166+,K1	00046350
	SAVEVALUE	400+,K1	00046400
	SAVEVALUE	1000+,K1	00046450
	TRANSFER	,ARM23	00046500
*			00046550
*			00046600
*			00046650
*			00046700
*	STANDBY AIRCRAFT SUBROUTINE		00046750
*			00046800
SACA	PRIORITY	70	00046850
	ASSIGN	4,KO	00046900
	SPLIT	4,SACB,4,25	00046950
SACH	ASSIGN	3,MH1(*4,15)	00047000
	GATE LR	V8,SMGQ	00047050
	TEST GE	P3,K1,SMGQ	00047100
SACG	EXECUTE	SMGH	00047150
	ASSIGN	2,P4	00047200
SACE	ALTER	16,ALL,8,*4,15,1	00047250
	GATE LR	1,SMGQ	00047300
	TEST F	BV3,1,SMGQ	00047350
SACC	UNLINK	1,PLAA,1,,,SACD	00047400
	LOOP	3,SACC	00047450
	TERMINATE		00047500
SACD	ASSIGN	1+,K1	00047550
	TEST GE	P1,K6,SACF	00047600
	ASSIGN	4,P2	00047650
	ASSIGN	1,KO	00047700
	ADVANCE	1	00047750
	TRANSFER	,SACE	00047800
SACF	ASSIGN	4,FN1	00047850
	TRANSFER	,SACC	00047900
SACH	ASSIGN	4,P8	00047950
	REMOVE	32	00048000
	ASSIGN	1,KO	00048050
	ASSIGN	3,1	00048100
	TRANSFER	,SACG	00048150
ARM40	ASSIGN	8,K1	00048200
	TRANSFER	,SACH	00048250
*			00048300
*			00048350
*			00048400
*	AIRCRAFT MAINLINE SUBROUTINE		00048450
*			00048500
*			00048550
*	PRELAUNCH LOOP		00048600
*			00048650
PLAA	ASSIGN	16,1	00048700
PLAB	ASSIGN	15,2	00048750

	TEST F	P16,K0,ARM41	00048800
	SAVEVALUE	V151+,K1	00048850
	SAVEVALUE	225+,K1	00048900
	SAVEVALUE	V152+,K1	00048950
	SAVEVALUE	825+,K1	00049000
ARM41	REMOVE	29	00049050
	JCIN	28	00049100
PLAT	ASSIGN	19,K0	00049150
	ASSIGN	17,MH1(*8,16)	00049200
	TEST NE	P8,P11,PLAG	00049250
	ASSIGN	9,K1	00049300
PLAG	ASSIGN	1,MH1(*8,22)	00049350
PLAX	ASSIGN	19,P17	00049400
	TEST E	P17,K1,PLAC	00049450
	TRANSFER	,*1,PLAH,PLAC	00049500
PLAC	TRANSFER	SBR,L1A,5	00049550
	TEST LE	V13,FN2,PLAK	00049600
PLAH	LOOP	17,PLAX	00049650
PLAN	ASSIGN	17,5	00049700
	ENTER	1	00049750
	ADVANCE	MH1(6,13)	00049800
	TABULATE	3	00049850
	TEST LF	V13,FN2,PLAL	00049900
PLAJ	TEST NE	P16,K1,PLAD	00049950
PLAF	ENTER	2	00050000
	GATE LS	V14	00050050
PLAQ	REMOVE	28	00050100
	MARK		00050150
	UNLINK	3,TSTHA,ALL,12,P12	00050200
	LEAVE	2	00050250
	GATE LR	V15,PLAM	00050300
	TRANSFER	,FLTA	00050350
PLAM	LEAVE	1	00050400
	TRANSFER	,AAB	00050450
PLAK	ASSIGN	19,P17	00050500
	REMOVE	28	00050550
	ASSIGN	18,PLAR	00050600
	TRANSFER	,CMA	00050650
PLAL	ASSIGN	19,P17	00050700
	REMOVE	28	00050750
	ASSIGN	18,PLAS	00050800
	TRANSFER	,CMA	00050850
PLAD	JOIN	27	00050900
	REMOVE	28	00050950
	ASSIGN	15,K37	00051000
	LINK	4,FIFO	00051050
PLAE	REMOVE	27	00051100
	ASSIGN	15,K2	00051150
	SPLIT	1,SACH,,60	00051200
	JOIN	28	00051250
	TRANSFER	,PLAF	00051300
PLAR	JOIN	28	00051350
	TRANSFER	,PLAH	00051400
PLAS	JOIN	28	00051450
	TRANSFER	,PLAJ	00051500
ARM37	ASSIGN	16,K0	00051550
	SAVEVALUE	V151+,K1	00051600
	SAVEVALUE	V152+,K1	00051650
	SAVEVALUE	225+,K1	00051700
	SAVEVALUE	825+,K1	00051750
	TRANSFER	,PLAN	00051800
*			00051850
*			00051900
*			00051950
*			00052000
*			00052050
*			00052100
*	FLIGHT LOOP		00052150
*			00052200
FLTA	JCIN	26	00052250
FLTL	TABULATE	2	00052300
	ENTER	V14	00052350
	TEST LE	P8,K5,FLTE	00052400

	TEST LF	V13, FN3, FLTC	00052450
	SAVEVALUE	V16+, K1, H	00052500
FLTD	ADVANCE	FN4	00052550
	TEST G	P8, K0, ARM42	00052600
	SAVEVALUE	V153+, K1	00052650
	SAVEVALUE	250+, K1	00052700
	SAVEVALUE	V154+, K1	00052750
	SAVEVALUE	850+, K1	00052800
	SAVEVALUE	V155+, FN4	00052850
	SAVEVALUE	275+, FN4	00052900
	SAVEVALUE	V156+, FN4	00052950
	SAVEVALUE	875+, FN4	00053000
	ASSIGN	40+, FN4	00053050
FLTH	LEAVE	V14	00053100
	ASSIGN	16, K0	00053150
	TEST LE	P8, K5, FLTK	00053200
FLTG	SAVEVALUE	V17+, M1, H	00053250
	SAVEVALUE	11+, M1, H	00053300
	SAVEVALUE	7+, M1	00053350
	ASSIGN	11, P8	00053400
	LEAVE	1	00053450
	PRIORITY	20, BUFFER	00053500
	PRIORITY	90	00053550
	REMOVE	26	00053600
	REMOVE	34	00053650
*			00053700
	TEST G	P19, 5, AAB	00053750
	ASSIGN	18, AAB	00053800
	TRANSFER	, CMA	00053850
ARM42	SAVEVALUE	V205+, 1	00053900
	SAVEVALUE	775+, 1	00053950
	SAVEVALUE	V207+, FN4	00054000
	SAVEVALUE	1450+, FN4	00054050
	SAVEVALUE	V204+, 1	00054100
	SAVEVALUE	1375+, 1	00054150
	SAVEVALUE	V206+, FN4	00054200
	SAVEVALUE	1550+, FN4	00054250
	ASSIGN	40+, FN4	00054300
	TRANSFER	, FLTH	00054350
FLTC	TEST LE	V13, FN5, FLTJ	00054400
	ASSIGN	19, 6	00054450
	TRANSFER	, FLTD	00054500
FLTJ	ASSIGN	19, 7	00054550
	TRANSFER	, 999, FLTF, FLTE	00054600
FLTF	UNLINK	4, FLTB, 1, 8, P8	00054650
FLTE	ADVANCE	V18	00054700
	TEST G	P8, K0, HLH3	00054750
	TEST L	V147, V234, HLH21	00054800
	TEST L	V148, V235, HLH21	00054850
	TRANSFER	, HLH22	00054900
HLH21	ASSIGN	35, 999	00054950
HLH22	SAVEVALUE	V208+, 1	00055000
	SAVEVALUE	V209+, 1	00055050
	SAVEVALUE	V210+, V18	00055100
	SAVEVALUE	V211+, V18	00055150
	SAVEVALUE	1475+, 1	00055200
	SAVEVALUE	1575+, 1	00055250
	SAVEVALUE	1500+, V18	00055300
	SAVEVALUE	1600+, V18	00055350
	ASSIGN	40+, V18	00055400
	TRANSFER	, FLTH	00055450
HLH3	SAVEVALUE	799+, K1	00055500
	ASSIGN	40+, V18	00055550
	TEST L	V147, V234, HLH5	00055600
	TEST L	V148, V235, HLH5	00055650
	TRANSFER	, FLTH	00055700
HLH5	ASSIGN	35, 999	00055750
	TRANSFER	, FLTH	00055800
FLTB	SPLIT	1, SACH, , 60	00055850
	ADVANCE	MH1(7, 13)	00055900
	ASSIGN	40+, MH1(7, 13)	00055950
	MARK		00056000
	ASSIGN	8+, K6	00056050
	TRANSFER	, FLTA	00056100

GENERAL ROUTINE TO
INSURE AGAINST DOING
AN EXTRA PMP OR PMI
AFTER AN ABORTED
TEST HOP.

TSTHP	ASSIGN	8,KO	00056150
	GATE LR	1,AAB	00056200
	JOIN	34	00056250
	MARK	6	00056300
	ENTER	1	00056350
	GATE LS	19	00056400
	LINK	3,FIFD	00056450
	SPLIT	1,TSTHR,,60	00056500
TSTHB	TEST E	BV2,0,TSTHC	00056550
	ADVANCE	V19	00056600
TSTHC	UNLINK	3,TSTHA,ALL	00056650
	TERMINATE		00056700
TSTHA	MARK		00056750
	TRANSFER	,FLTL	00056800
UNLK	TRANSFER	P,21	00056850
FLTK	ASSIGN	8-,K6	00056900
	TRANSFER	,FLTG	00056950
*			00057000
*			00057050
*	POST FLIGHT LOOP		00057100
*			00057150
PFAG	TEST E	P19,KO,PFAF	00057200
PFAE	TEST E	BV2,K1,PFAA	00057250
	ASSIGN	17,K12	00057300
	JOIN	28	00057350
	ASSIGN	16,K2	00057400
	TRANSFER	SBR,LIA,5	00057450
	REMOVE	28	00057500
	TEST LE	V13,FN2,PFAD	00057550
PFAC	TRANSFER	,AAB	00057600
PFAF	ASSIGN	18,PFAE	00057650
	TRANSFER	,CMA	00057700
PFAA	ASSIGN	18,AAB	00057750
PFAB	ASSIGN	17,11	00057800
	JOIN	35	00057850
	TRANSFER	SBR,LIA,5	00057900
	REMOVE	35	00057950
	TRANSFER	P,18	00058000
PFAD	ASSIGN	19,12	00058050
	ASSIGN	16,KO	00058100
	ASSIGN	18,PFAC	00058150
	TRANSFER	,CMA	00058200
*			00058250
*			00058300
*			00058350
*	PREVENTIVE MAINTENANCE ROUTINE		00058400
*			00058450
*			00058500
*	DAILY INSPECTION SUBROUTINE		00058550
*			00058600
DLCA	PRIORITY	40	00058650
	ASSIGN	2,MX1(1,3)	00058700
	TEST GE	P2,K1,SMGQ	00058750
	ADVANCE	MX1(1,2)	00058800
ARM36	ASSIGN	3,X192	00058850
DLCB	GATE LR	1,DLCC	00058900
DLCD	UNLINK	1,CLB,ALL	00058950
	UNLINK	4,DLA,ALL	00059000
	ASSIGN	14,KO	00059050
DLCE	ADVANCE	P2	00059100
	LOOP	3,DLCB	00059150
	ADVANCE	X193	00059200
	TRANSFER	,ARM36	00059250
	TRANSFER	,DLCB	00059300
DLCC	ASSIGN	14+,K1	00059350
	TEST E	V21,KO,DLCE	00059400
	TRANSFER	,DLCD	00059450
DLA	ASSIGN	16,KO	00059500
	REMOVE	27	00059550
	LEAVE	1	00059600
	ASSIGN	19,KO	00059650
DLB	ASSIGN	17,16	00059700
			00059750

	REMOVE	29		00059800
	ASSIGN	16,K0		00059850
	ASSIGN	15,2		00059900
	TRANSFER	,DLH		00059950
DLH	ASSIGN	17,K16		00060000
DLE	TEST LE	P24,MX1(4,10),RLARA		00060050
	JOIN	33		00060100
	TRANSFER	SBR,LIA,5		00060150
DLD	ADVANCE	K0		00060200
	REMOVE	33		00060250
	TEST GE	V148,V235,DLC	LOGIC CHANGE TO FLAG A/C	00060300
	ASSIGN	35,999	THAT HAVE JUST HAD A PMI	00060350
DLC	TEST G	V13,FN2,AAB		00060400
	ASSIGN	19,P17		00060450
	ASSIGN	18,AAB		00060500
	TRANSFER	,CMA		00060550
*				00060600
*				00060650
*	LINE MAINTENANCE SUBROUTINE			00060700
*				00060750
LIA	QUEUF	P17		00060800
	ASSIGN	22,V23		00060850
	ASSIGN	2,V24		00060900
	TEST NF	P22,K0,LMM		00060950
	MARK			00061000
	ENTER	V26		00061050
	QUEUE	V27		00061100
LMI	GATE LR	20,LMB		00061150
LMF	ASSIGN	3,V28		00061200
	ASSIGN	4,K0		00061250
LMD	TEST GE	R*3,P22,LMG		00061300
	DEPART	V27		00061350
	DEPART	P17		00061400
	ENTER	*3,P22		00061450
	ASSIGN	20,V25		00061500
	ADVANCE	P20		00061550
	TEST NF	P17,K2,ARM30		00061600
	TEST NE	P17,K16,ARM31		00061650
ARM32	LEAVE	*3,P22		00061700
	LEAVE	V26		00061750
	TABULATE	3		00061800
	MSAVEVALUE	2+,P2,P17,V29		00061850
18	MSAVEVALUE	7+,P2,P17,K1,H		00061900
	SAVEVALUE	V30+,V29		00061950
	SAVEVALUE	20+,V		00062000
	UNLINK	V31,U ,ALL		00062050
	TRANSFER	P,5,1		00062100
ARM30	SAVEVALUE	V157+,K1		00062150
	SAVEVALUE	300+,K1		00062200
	SAVEVALUE	V158+,K1		00062250
	SAVEVALUE	900+,K1		00062300
	SAVEVALUE	V159+,V191		00062350
	SAVEVALUE	325+,V191		00062400
	SAVEVALUE	V160+,V191		00062450
	SAVEVALUE	925+,V191		00062500
	TRANSFER	,ARM32		00062550
ARM31	SAVEVALUE	V161+,K1		00062600
	SAVEVALUE	350+,K1		00062650
	SAVEVALUE	V162+,K1		00062700
	SAVEVALUE	950+,K1		00062750
	SAVEVALUE	V163+,V191		00062800
	SAVEVALUE	375+,V191		00062850
	SAVEVALUE	V164+,V191		00062900
	SAVEVALUE	575+,V191		00062950
	SAVEVALUE	V195+,M1	DAILY FLAPSED TIME	00063000
	SAVEVALUE	675+,M1	ELAPSED TIME FOR A DAILY	00063050
	TRANSFER	,ARM32		00063100

18. This block tabulates the number of pre-flight, post-flight, and daily inspections in Matrix Halfword Savevalue 7.

LMB	ASSIGN	3,V27		00063150
	ASSIGN	4,1		00063200
	TRANSFER	,LMD		00063250
LMG	ASSIGN	21,LME		00063300
	ASSIGN	23,FM7		00063350
	LINK	V31,P23		00063400
LME	TEST E	P16,KO,LMI		00063450
	TEST NE	P8,KO,LMI		00063500
	TEST NE	P17,K1,LMP		00063550
	TEST G	M1,FM8,LMI		00063600
LMN	DEPART	V27		00063650
	DEPART	P17		00063700
LML	LEAVE	V26		00063750
	REMOVE	28		00063800
	TRANSFER	,AAB		00063850
LMM	DEPART	P17		00063900
	TRANSFER	P,5,1		00063950
LMP	TEST G	M7,FM8,LMI		00064000
	TRANSFER	,LMN		00064050
*				00064100
*	PMP-PMI	SLROUTINE		00064150
*				00064200
*				00064250
ARM18	ASSIGN	12,X197	ASSIGN NO. TBC ITEMS TO P12	00064300
	TEST NE	P12,KO,PMCY	IF NC TBC ITEMS GO TO PMCY	00064350
ARM22	TEST G	V149,X189,ARM24		00064400
ARM21	LOOP	12,ARM22		00064450
PMCY	ADVANCE			00064500
ARM23	PRIORITY	20,BUFFER		00064550
	MARK			00064600
	ASSIGN	35,999		00064650
	ASSIGN	26,KO		00064700
	ASSIGN	15,2		00064750
	ASSIGN	21,PMCH		00064800
	ASSIGN	23,FM7		00064850
	ASSIGN	2,KO		00064900
	SPLIT	1,PMCF,,60		00064950
	QUEUE	P17		00065000
	ENTER	V26		00065050
	DEPART	P17		00065100
	SPLIT	1,PMCG,,60		00065150
	SPLIT	1,PMCR,,60		00065200
PMCH	ASSEMBLE	13		00065250
	PRIORITY	90		00065300
	LEAVE	V26		00065350
	TABULATE	3		00065400
	REMOVE	30		00065450
	REMOVE	37		00065500
	TEST NE	P17,K17,PMCZ		00065550
	TEST E	P17,K8,ARM33		00065600
ARM33	SPLIT	1,REEG		00065650
	TEST LE	V13,FM2,HLH1	LOGIC TO DETECT	00065700
	ASSIGN	27,KO	FAILURES AT PMI AND	00065750
	TEST E	P24,KO,RLARA	DO AWAY WITH TSHAPS	00065800
	TRANSFER	,AAB	AFTER PMI	00065850
PMCAA	TEST LE	V13,FM2,PMCS		00065900
	TEST E	P24,KO,PMCT		00065950
	TRANSFER	,ARRG		00066000
HLH1	ASSIGN	19,P17		00066050
	ASSIGN	25,K1		00066100
	ASSIGN	27,KO		00066150
	TRANSFER	,CMA		00066200
PMCZ	SPLIT	1,REAA,,60		00066250
	TRANSFER	,PMCAA		00066300
PMCS	ASSIGN	19,P17		00066350
	ASSIGN	25,K1		00066400
	ASSIGN	27,K1		00066450
	TRANSFER	,CMA		00066500
PMCT	ASSIGN	27,K1		00066550
	TRANSFER	,RLAKA		00066600
PMCF	LINK	27,FIFO		00066650
PMCG	ADVANCE	MX1(1,V32)		00066700
	UNLINK	27,SMGQ,1,14,P14		00066750
	TRANSFER	,PMCM		00066800

PMCR	SPLIT	10,PMCU,2,60	00066850
PMCU	ASSIGN	3,MX1(V33,*2)	00066900
	TEST GE	P3,K1,PMCM	00066950
	ASSIGN	4,MX1(V34,*2)	00067000
	TEST E	P17,K8,ARM34	00067050
	SAVEVALUE	V167+,V36	00067100
	SAVEVALUE	V168+,V36	00067150
	SAVEVALUF	425+,V36	00067200
	SAVEVALUF	1025+,V36	00067250
PMCV	GATE LR	29	00067300
	BUFFER		00067350
	QUEUE	V27	00067400
PMCH	GATE LR	20,PMCL	00067450
	ASSIGN	7,V28	00067500
	ASSIGN	20,V35	00067550
	ASSIGN	8,1	00067600
PMCK	TEST GE	R*7,P3,PMCL	00067650
PMCO	TEST LE	P4,P20,PMCN	00067700
PMCQ	DEPART	V27	00067750
	ENTER	*7,P3	00067800
	ADVANCE	P4	00067850
	LEAVE	*7,P3	00067900
	UNLINK	P7,UNIK,ALL	00067950
(19)	MSAVEVALUE	2+,P2,P17,V36	00068000
(20)	TEST E	P26,K0,BYP2	00068050
(21)	MSAVEVALUE	7+,P2,P17,K1,H	00068100
BYP2	SAVEVALUE	V37+,V36	00068150
	SAVEVALUE	J2+,V36	00068200
	TEST E	P26,K0,PMCP	00068250
	TRANSFER	,PMCM	00068300
ARM34	TEST E	P17,K17,PMCV	00068350
	SAVEVALUE	V171+,V36	00068400
	SAVEVALUE	V172+,V36	00068450
	SAVEVALUE	475+,V36	00068500
	SAVEVALUE	1075+,V36	00068550
	TRANSFER	,PMCV	00068600
PMCL	ASSIGN	7,V27	00068650
	ASSIGN	8,K0	00068700
	ASSIGN	20,V38	00068750
	TRANSFER	,PMCK	00068800
PMCN	ASSIGN	22,V39	00068850
	ASSIGN	4,P20	00068900
	ASSIGN	26,K1	00068950
	TEST E	P4,K0,PMCQ	00069000
	DEPART	V27	00069050
PMCP	ASSIGN	4,P22	00069100
	PRIORITY	1,BUFFER	00069150
	PRIORITY	20	00069200
	ASSIGN	26,K0	00069250
	TRANSFER	,PMCV	00069300
PMCL	LINK	P7,P23	00069350
ARM24	SPLIT	1,ARM20	00069400
	TRANSFER	,ARM21	00069450
*			00069500
*			00069550

19. The transaction is checked to determine whether it has been previously tallied. If P26=1, the inspection has been continued from the previous shift and the transaction branches to BYP2.
20. This block tabulates the number of PMI and PMP inspections in Matrix Halfword Savevalue 7.
21. This block was modified to include the label BYP2.

* TIME CHANGE OVERHAUL ,RETIREMENT SUBROUTINE	00069600
*	00069650
*	00069700
ARM20 ASSIGN 22,MH6(27,P12)	00069750
MSAVEVALUE 6,*14,*12,V150,H	00069800
ASSIGN 12,1	00069850
ASSIGN 6,9	00069900
ASSIGN 25,K1359	00069950
ASSIGN 17,19	00070000
MSAVEVALUE 5+,V46,*6,K1,H	00070050
SAVEVALUE V175+,K1	00070100
SAVEVALUE 525+,K1	00070150
SAVEVALUE V176+,K1	00070200
SAVEVALUE 1125+,K1	00070250
TRANSFER ,MPAA	00070300
*	00070350
*	00070400
*	00070450
*	00070500
* FAILURE DETERMINATION ROUTINE	00070550
*	00070600
CMA ASSIGN 2,FN9	00070650
TABULATE 4	00070700
*	00070750
FDA ASSIGN 24+,K1	00070800
ASSIGN 3,FN15	00070850
TABULATE 5	00070900
TABULATE 6	00070950
SAVEVALUE V173+,K1	00071000
SAVEVALUE 500+,K1	00071050
SAVEVALUE V174+,K1	00071100
SAVEVALUE 1100+,K1	00071150
SAVEVALUE V41+,K1,H	00071200
ASSIGN 4,K23	00071250
SAVEVALUE 1,RN2	00071300
ASSIGN 5,FN22	00071350
MSAVEVALUE 2,2,1,0,H	00071400
FDB ASSIGN 22,V42	00071450
TEST NE P5,K1,ARM54	00071500
MSAVEVALUE 2+,2,1,FN*4,H	00071550
ARM55 TEST LE X1,MH2(2,1),FDD	00071600
TABULATE 7	00071650
SPLIT 1,FDK,,60	00071700
TEST E P19,K7,FDL	00071750
ASSIGN 19,6	00071800
FDC ASSIGN 25,K1	00071850
FDF LOOP 2,FCA	00071900
TEST E P25,K1,FDM	00071950
TEST E BV18,1,RLARA	00072000
UNLINK 4,ARM37,1,,,ARM38	00072050
SPLIT 1,ARM40,,60	00072100
ARM38 TEST E P19,K5,RLARA	00072150
SAVEVALUE 33+,K1	00072200
TRANSFER ,RLARA	00072250
FDD LOOP 5,FDB	00072300
FDL TRANSFER ,FDF	00072350
TEST G RN3,FN30,FDC	00072400
FDR GATE LS 1,FDF	00072450
TRANSFER ,FDC	00072500
FDM TEST NE P27,K1,FDM	00072550
ASSIGN 25,KO	00072600
ASSIGN 19,KO	00072650
TRANSFER P,18	00072700
FDK LINK 32,FIFO	00072750
ARM54 MSAVEVALUE 2,2,1,999,H	00072800
TRANSFER ,ARM55	00072850
FDM ASSIGN 27,KO	00072900
TEST F P35,999,ARM56	00072950
ASSIGN 35,0	00073000
TRANSFER ,TSTHP	00073050
FDP TEST L RN3,V135,FDF	00073100
TRANSFER ,FDC	00073150

ARM56	TEST !	V147,V234,ARM17	GENERAL	00073200
	TEST L	V148,V235,ARM19	GENERAL	00073250
	TRANSFER	,TSTMP		00073300
*				00073350
*				00073400
*				00073450
*				00073500
*	REPAIR LOCATION AND RESPOT SUBROUTINE			00073550
*				00073600
RLAR	JOIN	32		00073650
	TEST F	P19,K5,RLARB		00073700
	LEAVE	1		00073750
RLARB	TEST E	P16,K1,RLARC		00073800
	SPLIT	1,SACH,,60		00073850
RLARC	TEST E	BV1,K1,RLARD		00073900
	ASSIGN	18,RLARK		00073950
	TRANSFER	,PFAB		00074000
RLARD	MARK			00074050
RLARK	TEST E	BV2,K1,RLARE		00074100
	TEST E	BV7,K0,RLARE		00074150
	ASSIGN	18,V44		00074200
	TEST L	P18,MX1(4,2),RLARL		00074250
	ASSIGN	18,MX1(4,2)		00074300
RLARL	ADVANCE	P18		00074350
	SAVEVALUE	34+,M1		00074400
RLARE	PRIORITY	80,BUFFER		00074450
	PRIORITY:	90		00074500
	UNLINK	32,USMA,ALL,14,P14,AAB		00074550
	ASSIGN	20,K123		00074600
	ASSIGN	24+,K1		00074650
	REMOVE	32		00074700
	SPLIT	1,RLARH,,60		00074750
	TRANSFER	,AKRA		00074800
RLARH	PRIORITY	110,BUFFER		00074850
	SPLIT	1,RLARG,,60		00074900
RLARF	JOIN	32		00074950
	ASSEMBLE	P24		00075000
	SAVEVALUE	V187+,M1		00075050
	SAVEVALUE	625+,M1		00075100
	SAVEVALUE	V186+,M1		00075150
	SAVEVALUE	1225+,M1		00075200
	SAVEVALUE	35+,M1		00075250
	SAVEVALUE	V195+,M1		00075300
	SAVEVALUE	675+,M1		00075350
	SAVEVALUE	V194+,M1		00075400
	SAVEVALUE	1275+,M1		00075450
	SCAN	40,14,P14,,,RLARM		00075500
	REMOVE	32		00075550
	JOIN	31		00075600
RLARN	MATCH	RLARP		00075650
	TERMINATE			00075700
RLARG	JOIN	40		00075750
	ASSEMBLE	P24		00075800
	SAVEVALUE	36+,M1		00075850
	REMOVE	40		00075900
RLARP	MATCH	RLARN		00075950
	JOIN	32		00076000
RLARQ	MATCH	ARRJ		00076050
RLARM	TERMINATE			00076100
*				00076150
*				00076200
*				00076250
*				00076300
*	REPAIR PART ASSESSMENT SUBROUTINE			00076350
*				00076400
USMA	PRIORITY	60,BUFFER		00076450
	MARK			00076500
	ASSIGN	18,K0		00076550
	ASSIGN	25,V45		00076600
RPAB	TRANSFER	.*25,KPAD,KPAA		00076650

RPA	ADVANCE	MX1(4,8)	00076700
	ASSIGN	25,K1359	00076750
	MSAVEVALUE	5+,V46,2,1,h	00076800
	SAVEVALUE	175+,K1	00076850
	TEST LE	RM1,FN38,NURCA	00076900
RPAC	TRANSFER	,MPAA	00076950
RPAD	MSAVEVALUE	5+,V46,1,1,h	00077000
	SAVEVALUE	176+,K1	00077050
*			00077100
*			00077150
*	MANPOWER ASSESSMENT SUBROUTINE		00077200
*			00077250
MPAA	ASSIGN	1,K3	00077300
MPAB	ASSIGN	V47,FN39	00077350
	TEST E	P25,1359,ARM1	00077400
	ASSIGN	V51,FN41	00077450
	TRANSFER	,ARM2	00077500
ARM1	ASSIGN	V51,FN55	00077550
ARM2	LOOP	1,MPAB	00077600
*			00077650
*			00077700
*	MYTR SUBROUTINE		00077750
*			00077800
ARM3	TEST E	P25,K1359,ARM4	00077850
MTRA	ASSIGN	4,V55	00077900
	TRANSFER	,ARM5	00077950
ARM4	ASSIGN	4,V138	00078000
ARM5	TABULATE	8	00078050
*	THESE CARDS HAD PUT A MIN REPAIR TIME IN P4		00078100
*			00078150
*			00078200
*	GSE SUBROUTINE		00078250
*			00078300
GSEA	TRANSFER	,UNSA	00078350
GSEB	ASSIGN	1,V57	00078400
	ADVANCE	P1	00078450
	SAVEVALUE	37+,P1	00078500
*			00078550
*			00078600
*			00078650
*	UNSCHEDULED MAINTENANCE ROUTINE		00078700
*			00078750
*			00078800
UNSA	TEST NE	P17,K19,ARM25	00078850
	ASSIGN	17,K23	00078900
ARM25	TEST E	P27,KO,UNSB	00078950
UNSJ	ASSIGN	3,P29	00079000
	ASSIGN	2,P26	00079050
	ASSIGN	26,KO	00079100
UNSK	GATE LR	29	00079150
	BUFFER		00079200
	QUEUE	V27	00079250
	QUEUE	25	00079300
UNSE	GATE LR	20,UNSC	00079350
	ASSIGN	7,V28	00079400
	ASSIGN	20,V35	00079450
	ASSIGN	8,1	00079500
UNSD	TEST GE	R*7,P3,UNSP	00079550
	TEST LE	P4,P20,UNSF	00079600
UNSG	DEPART	V27	00079650
	DEPART	25	00079700
	ENTER	*7,P3	00079750
	ADVANCE	P4	00079800
	TEST NE	BV17,K1,ARM14	00079850
ARM15	LEAVE	*7,P3	00079900
	UNLINK	P7,UNLK,ALL	00079950
	MSAVEVALUE	2+,P2,P17,V36	00080000
*			00080050

* COST LOGIC FOR AVUM REMOVE-REPLACE , ON A/C REPAIR AND AVUM OFF					00080100
A/C REPAIR					
22	*				00080150
	CST0	TEST NE	X1630,K1,CSTX	CHK COST BYPASS	00080200
23		TEST NE	V36,K0,CSTX	CHK FOR NO MMH	00080250
	*				00080300
					00080350
					00080400
24	CST1	SAVEVALUE	1601,V46	SYSTEM NO.	00080450
		SAVEVALUE	1602,FN46	COMPONENT NO.	00080500
		SAVEVALUE	1603,P2	MOS NO.	00080550
25		TEST E	P17,18,CST6		00080600
		SAVEVALUE	1604,K3	AVUM OFF A/C REPAIR -- CODE = 3	00080650
		TRANSFER	,CST8		00080700

22. This check determines whether the cost logic is being employed (X1630=1). When the cost logic is not being used, the transaction branches to CSTX.
23. This test determines whether there were maintenance man-power hours associated with the action; if not, the transaction branches to CSTX and no accounting is done.
24. The subsystem component and MOS numbers for the maintenance action are assigned to Savevalues 1601 to 1603.
25. This logic determines whether the maintenance action is off aircraft repair (P17=18). Off aircraft repair transactions have their action code set to 3 (X1604=3), and the transaction then branches to CST8.

26	CST6	TEST F	P25,K1359,CST7		00080750
		SAVEVALUE	1604,K2	REMOVE-REPLACE ACTION -- CODE = 2	00080800
		TRANSFER	,CST8		00080850
27	CST7	SAVEVALUE	1604,K1	ON A/C REPAIR -- CODE = 1	00080900
	CST8	TEST F	BV10,K1,CST9	CHK FOR PREV. COUNTED EVNT	00080950
28		SAVEVALUE	1605,K999	SUPPRESS EVNT COUNTER IN MCOST	00081000
		TRANSFER	,CST9		00081050
29	CST9	SAVEVALUE	1605,P17	P17 = 19, 23 OR 18	00081100
	CST9	SAVEVALUE	1606,V36	MMH	00081150
30	CSTX	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606		00081200
	ARM61	TEST NE	P17,K19,ARM10		00081250
31		SAVEVALUE	V58+,V36		00081300
		SAVEVALUE	49+,V36		00081350
32		SAVEVALUE	V189+,V36		00081400
		SAVEVALUE	575+,V36		00081450
		SAVEVALUE	V190+,V36		00081500
		SAVEVALUE	1175+,V36		00081550
		TEST NE	P12,K1,ARM57		00081600
		MSAVEVALUE	5+,V46,V59,V36		00081650

26. This logic determines whether the maintenance action is a remove and replace (P25=1359). Remove and replace events have their action code set to 2 (X1604=2), and the transaction branches to CST8.
27. Maintenance actions which are on aircraft repair have their action code set to 1 (X1604=1).
28. This test determines whether the transaction was previously tallied. Transactions which represent secondary work centers (P26=1) or multiple-shift action (P5=9999) are tallied when the initial transaction was passed to MCOST. The Savevalue 1605 is set to 999 when BV10=1, and in the MCOST subroutine only the man-hours are tabulated.
29. When the Boolean Variable 10 is equal to zero, Savevalue 1605 is set to P17. P17=19 represents a time change component, P17=18 represents off aircraft repair, and P17=23 represents remove/replace or on aircraft repair.
30. The maintenance man-hours for the event are assigned to Savevalue 1606.
31. This HELPA block passes to MCOST the Savevalues 1601 to 1606. The subroutine tabulates the AVUM maintenance man-hours and when applicable (1605=999) the event. The events which are tabulated by the RMS logic in Matrix Halfword Savevalue 5 may not be equal to those in Table V, Subsystem Maintenance Action, since MH5 events are counted before the Unscheduled Maintenance routine and the simulation may terminate before the transaction is passed to MCOST for accounting.
32. This block was modified to include the label CSTX.

ARM58	TEST E	P26,KO,UNSH	00081700
	TEST NE	P5,K9999,CANN	00081750
	TEST NE	P12,1,CANN	00081800
	TEST E	P25,K1359,UNSL	00081850
	SPLIT	1,IMAA,,60	00081900
UNSL	TEST E	P18,KO,UNSM	00081950
	SPLIT	1,RLARF,,60	00082000
	SPLIT	1,RLARG,,60	00082050
UNSM	TRANSFER	,ARRA	00082100
ARM10	MSAVEVALUE	5+,V46,+6,V36	00082150
	SAVEVALUE	V222+,V36	00082200
	SAVEVALUE	550+,V36	00082250
	SAVEVALUE	V223+,V36	00082300
	SAVEVALUE	1150+,V36	00082350
	TEST E	P26,KO,UNSH	00082400
	TERMINATE		00082450
UNSB	SPLIT	1,UNSN,,60	00082500
	TRANSFER	,UNSJ	00082550
UNSN	ASSIGN	5,K9999	00082600
	ASSIGN	3,P30	00082650
	ASSIGN	2,P27	00082700
	ASSIGN	26,KO	00082750
	TRANSFER	,UNSK	00082800
ARM14	ADVANCE	P19	00082850
	ASSIGN	26,0	00082900
	ASSIGN	4+,P19	00082950
	SAVEVALUE	108+,P19	00083000
33	TEST NE	X1630,K1,OTBP	00083050
	*		00083100
	* CALL MCOST TO ADD OVERTIME RESIDUALS TO TOTAL AVUM SUBSYSTEM COST		00083150
	*		00083200
34	SAVEVALUE	1601,V46	00083250
	SAVEVALUE	1602,FN46	00083300
	SAVEVALUE	1603,P2	00083350
35	SAVEVALUE	1604,K9	00083400
36	SAVEVALUE	1605,KO	00083450

33. This check determines whether the cost logic is being employed (X1630=1).
34. The subsystem, component, and MOS numbers for overtime are assigned to Savevalues 1601, 1602, and 1603, respectively.
35. This block sets the overtime action code to 9 (X1604=9).
36. Savevalue 1605 is not used in the overtime logic of the MCOST subroutine.

37	SAVEVALUE	1606,V244	00083500
38	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606	00083550
	*		00083600
	*		00083650
	*		00083700
	*		00083750
39	OTBP	MSAVEVALUE 2+,P2,20,V244	00083800
		TRANSFER ,ARM15	00083850
	UNSC	ASSIGN 7,V27	00083900
		ASSIGN 20,V38	00083950
		ASSIGN 8,K0	00084000
		TRANSFER ,UNSD	00084050
	UNSP	ASSIGN 23,FN7	00084100
		ASSIGN 21,UNSE	00084150
		LINK P7,P23	00084200
	UNSF	ASSIGN 19,V39	00084250
		ASSIGN 4,P20	00084300
		ASSIGN 26,K1	00084350
		TEST E P4,K0,UNSG	00084400
		DEPART V27	00084450
		DEPART 25	00084500
		PRIORITY 1,BUFFER	00084550
		TEST NE P12,K1,ARM11	00084600
		PRIORITY 60	00084650
	UNSH	ASSIGN 4,P19	00084700
		ASSIGN 26,K0	00084750
		TEST NE V35,0,ARM59	00084800
		TEST E P4,K0,UNSK	00084850
		TRANSFER ,UNSE	00084900
	ARM11	PRIORITY 0	00084950
		TRANSFER ,UNSH	00085000
	ARM57	MSAVEVALUE 5+,V46,*6,V36	00085050
		TRANSFER ,ARM58	00085100
	ARM59	GATE LS 20	00085150
		QUEUE 25	00085200
		QUEUE V27	00085250
		DEPART V27	00085300
		DEPART 25	00085350
		TRANSFER ,UNSH	00085400
	*		00085450
	*	AIRCRAFT RELEASE AND REASSEMBLY SUBROUTINE	00085500
	*		00085550
	ARRA	GATHER P24	00085600
		PRIORITY 90,BUFFER	00085650
		TEST NE P20,K123,ARRB	00085700
		TEST NE P8,K0,ARRB	00085750
		TEST E FN44,1,ARRB	00085800
		TRANSFER .533,ARRB,ARRH	00085850
	ARRH	LOGICS 21	00085900

37. The overtime maintenance man-hours (V244) are assigned to Savevalue 1606.
38. This HELPA block passes to MCOST the values in Savevalues 1601 to 1606. The subroutine determines with the overtime factor from the AVUM Input Data Card (Figure 6) whether there is any additional cost to be applied to the AVUM total cost in Table V, Subsystem Maintenance Action.
39. This block was added to tabulate the overtime maintenance man-hours in Matrix Savevalue 2. Overtime man-hours are also included in MX2 (P2,23), unscheduled maintenance.

ARRB	ASSEMBLE	P24		00085950
ARRJ	MATCH	RLARQ		00086000
	ASSIGN	19,KO		00086050
	ASSIGN	24,KO		00086100
	ASSIGN	20,KO		00086150
	ASSIGN	25,KO		00086200
	ASSIGN	16,KO		00086250
ARRC	TABULATE	9		00086300
	SAVEVALUE	188+,V60		00086350
	TEST E	P27,K1,ARRD		00086400
	ASSIGN	27,KO		00086450
	TRANSFER	,ARRE		00086500
ARRD	GATE LS	21,ARRF		00086550
ARRE	LOGICR	21		00086600
	TEST NE	P35,999,ARRG		00086650
	TEST L	V147,V234,ARM17	GENERAL	00086700
	TEST L	V148,V235,ARM19	GENERAL	00086750
* REMOVED				00086800
ARRG	ASSIGN	17,2		00086850
	MARK	44		00086900
	ASSIGN	8,KO		00086950
	TRANSFER	SBR,LIA,5		00087000
	TEST LE	V13,FN2,AARM		00087050
	ASSIGN	35,0		00087100
	TRANSFER	,TSTHP		00087150
ARRF	GATE LR	1,AAB		00087200
	TEST NE	P17,K16,AAB		00087250
	TEST E	BV11,K1,AAB		00087300
	TEST GE	MX1(1,3),K1,AAB		00087350
	TRANSFER	,DLB		00087400
AARM	ASSIGN	27,K1		00087450
	ASSIGN	19,2		00087500
	ASSIGN	19,2		00087550
	TRANSFER	,CMA		00087600
*				00087650
*				00087700
*				00087750
*				00087800
* NORS/CANNIBALIZATION ROUTINE				00087850
*				00087900
NORCA	TEST NE	MX1(4,7),K1,NORA		00087950
	ASSIGN	1,V61		00088000
NORY	TEST LE	RN6,FN48,NORCB		00088050
	TABULATE	10		00088100
*				00088150
*				00088200
	ADVANCE	P1		00088250
	TEST E	BV19,K1		00088300
	SAVEVALUE	V196+,M1		00088350
	SAVEVALUE	1425+,M1		00088400
*				00088450
	TRANSFER	,MPAA		00088500
NORCB	SPLIT	1,NORCD		00088550
	TRANSFER	,NORCE		00088600
NORCD	ADVANCE	P1		00088650
	TRANSFER	,CAND		00088700
NORA	ASSIGN	23,74		00088750
	TEST E	V62,CH28		00088800
	TEST F	WSNORL,KO		00088850
	ASSIGN	1,KO		00088900
	GATE LS	22,NORC		00088950
	GATE LR	23		00089000
	SCAN	12,14,P14,,,NORM		00089050
	SPLIT	1,NORT,,60		00089100
	SPLIT	1,NORS,,60		00089150
	SPLIT	1,RLARF,,60		00089200
	TRANSFER	,NORJ		00089250
CAND	ASSIGN	17,K22		00089300
	TRANSFER	,CANP		00089350
NORT	UNLINK	28,NORL,1,14,P14		00089400
NORG	PRIORITY	110		00089450
NORN	JOIN	11		00089500

NORH	LINK	29,FIFO	00089550
NORN	LOGICS	23	00089600
	TEST E	MSNORL,KO	00089650
NORB	UNLINK	28,CANA,1,,,NORE	00089700
	SAVEVALUE	75,KO,H	00089750
	SAVEVALUE	*23,P22,H	00089800
	GATE LS	24	00089850
	LOGICR	24	00089900
	TEST E	XH75,KO,NORB	00089950
	ASSIGN	1,XH76	00090000
	UNLINK	29,CANB,1,14,P1	00090050
	BUFFER		00090100
NORCE	TABULATE	11	00090150
	MSAVEVALUE	5+,V46,2,K1,H	00090200
	LOGICR	23	00090250
	ASSIGN	19,K14	00090300
	TABULATE	6	00090350
	ASSIGN	1,K5431	00090400
CANP	ASSIGN	3,V54	00090450
	ASSIGN	2,V50	00090500
	ASSIGN	4,V55	00090550
	TEST L	P4,K5,CANE	00090600
	ASSIGN	4,K5	00090650
CANE	QUEUE	V27	00090700
	QUEUE	44	00090750
CANH	GATE LR	20,CANF	00090800
	ASSIGN	7,V28	00090850
	ASSIGN	20,V35	00090900
	ASSIGN	8,K1	00090950
CANG	TEST GE	R*7,P3,CANJ	00091000
	TEST LE	P4,P20,CANL	00091050
CANK	DEPART	V27	00091100
	DEPART	44	00091150
	ENTER	*7,P3	00091200
	ADVANCE	P4	00091250
	LEAVE	*7,P3	00091300
	UNLINK	P7,UNLK,ALL	00091350
	ASSIGN	17,24	00091400
	MSAVEVALUE	2+,P2,P17,V36	00091450
	SAVEVALUE	V63+,V36	00091500
	SAVEVALUE	61+,V36	00091550
	MSAVEVALUE	5+,V46,2,V36	00091600
	TEST E	P26,KO,CANM	00091650
	TEST E	P1,K5431,CANN	00091700
	TRANSFER	,MPAA	00091750
NORS	ASSIGN	18,K1	00091800
	TABULATE	10	00091850
	LINK	30,FIFO	00091900
NORC	LOGICS	22	00091950
NORD	TABULATE	10	00092000
	SPLIT	1,NRNG,,60	00092050
	SPLIT	1,RLARF,,60	00092100
	SPLIT	1,NORJ,,60	00092150
	ASSIGN	18,K1	00092200
NORL	PRIORITY	10,BUFFER	00092250
	ASSIGN	2,MX4(1,P14)	00092300
	JOIN	12	00092350
NORF	LINK	20,P2	00092400
NORE	LOGICR	23	00092450
	BUFFER		00092500
	TRANSFER	,NORI	00092550
CANB	SPLIT	1,NCRN,,60	00092600
	ASSIGN	22,XH*23	00092650
	SPLIT	1,NCRN,,60	00092700
NORJ	PRIORITY	50	00092750
	ASSIGN	1,V61	00092800
	ASSIGN	3,V64	00092850
	TEST G	P3,MX4(1,P14),NORK	00092900
	MSAVEVALUE	4,1,*14,*3	00092950
NORK	ADVANCE	P1	00093000
	ASSIGN	19,K15	00093050
	TABULATE	6	00093100
	TABULATE	12	00093150

	GATE LR	25	0C093200
	TEST E	V62,CH28	00093250
	LOGICS	25	00093300
	SAVEVALUE	62,P22	0C093350
	UNLINK	28,NORP,ALL	00093400
	GATE LR	25	00093450
	GATE LS	26,CAND	00093500
	LOGICR	26	00093550
CANN	TERMINATE		00093600
CANC	LOGICS	24	00093650
	TEST F	P22,XH*23,NORM	00093700
	SAVEVALUE	75,K1,H	00093750
	TRANSFER	,NORM	00093800
NORQ	JOIN	10	00093850
	GATE LR	27	00093900
	GATE LS	28,NORR	0C093950
	TEST E	P22,X62,NORR	0C094000
	LOGICR	28	00094050
	TERMINATE		0C094100
NORR	REMOVE	10	0C094150
	PRIORITY	110	00094200
	TRANSFER	,NORH	00094250
CANA	ASSIGN	24,XH*23	00094300
	UNLINK	24,CANC,ALL,14,P14	00094350
	SAVEVALUE	76,P14,H	0C094400
	PRIORITY	110,BUFFER	00094450
	GATE LR	23	00094500
	TRANSFER	,NORL	00094550
NORP	GATE LS	25,NORF	00094600
	LOGICS	27	00094650
	UNLINK	29,NORQ,ALL,14,P14	00094700
	BUFFER		00094750
	SCAN	10,22,X62,,,NORU	00094800
	LOGICS	28	00094850
	LOGICR	27	0C094900
	LOGICR	25	00094950
	TEST E	G10,K1,NORF	0C095000
	ASSIGN	22,X62	00095050
NORW	LOGICS	26	00095100
	SAVEVALUE	63+,M1	00095150
	SAVEVALUE	V196+,M1	00095200
	SAVEVALUE	1425+,M1	00095250
	UNLINK	30,NORX,ALL,14,P14	00095300
	REMOVE	12	00095350
NORX	SPLIT	1,RI,ARG	0C095400
	TRANSFER	,MPAA	00095450
NORU	LOGICR	27	00095500
	GATE LR	25	00095550
	TRANSFER	,NORF	00095600
CANF	ASSIGN	7,V27	00095650
	ASSIGN	20,V38	0C095700
	ASSIGN	8,KO	0C095750
	TRANSFER	,CANG	00095800
CANJ	ASSIGN	23,FN7	00095850
	ASSIGN	21,CANH	00095900
	LINK	P7,P23	00095950
CANL	ASSIGN	19,V39	0C096000
	ASSIGN	4,P20	00096050
	ASSIGN	26,K1	00096100
	TEST E	P4,KO,CANK	00096150
	DEPART	V27	00096200
	DEPART	44	00096250
	PRIORITY	1,BUFFER	0C096300
	PRIORITY	90	00096350
CANM	ASSIGN	4,P19	00096400
	ASSIGN	26,KO	00096450
	TRANSFER	,CANE	00096500
*			00096550
*			00096600
*			00096650
*			00096700

* THREE LEVEL MAINTENANCE -- OFF-AIRCRAFT COMPONENT REPAIR			00096750
* IMAA TABULATE 13 TABULATE PARTS REMOVED & REPLACED			00096800
TEST LE	RN1,V67,SCRAP	IS PART REPAIRABLE? IF NOT TO SCRAP	00096850
TEST LE	V139,RN1,ARM6	AVUM REP? IF YES GC TO ARM6	00096900
TEST LE	V140,RN1,ARM7	IS REP? IF YES GO TO ARM7	00096950
TEST LE	RN1,V71,SCRAP	DEPOT REP? IF NO GO TO SCRAP	00097000
ASSIGN	4,V68	ASSIGNS REPAIR TIME TO P4	00097050
TABULATE	14	TABULATE OFF AC MTTR	00097100
ASSIGN	31,V96	ASSIGN DEPOT OFF AC REP MPWR REQ	00097150
SAVEVALUE	V69+,V70	INCREMENTS DEPOT MMH BY MOS	00097200
SAVEVALUE	75+,V70	INCREMENTS TOTAL DEPOT MMH	00097250
SAVEVALUE	179+,1	INCREMENTS # PARTS REPAIRED AT DEPOT	00097300
ASSIGN	6,3	FLAGS AS DEPOT REPAIR	00097350
DEPA TABULATE	15	TABULATES DEPOT REPAIRS	00097400
IMAG MSAVEVALUE	5+,V46,P6,1,M	INCREMENTS # REPAIRS BY SUBSYS & M LEV	00097450
MSAVEVALUE	5+,V46,P6,V70	INCREMENTS MMH REQ BY SUBSYS & M LEVEL	00097500
SAVEVALUE	V193+,V70		00097550
SAVEVALUE	650+,V70		00097600
SAVEVALUE	V192+,V70		00097650
SAVEVALUE	1250+,V70		00097700
* COST ROUTINE FOR AVIM REPAIR CODE=04, DEPOT REPAIR CODE=05			00097750
40	TEST NE	X1630,K1,CST2	00097800
41	SAVEVALUE	1601,V46	00097850
42	SAVEVALUE	1602,FN46	00097900
43	SAVEVALUE	1603,P28	00097950
44	SAVEVALUE	1605,K0	00098000
	SAVEVALUE	1606,V70	00098050
	TEST NE	P6,K8,RIM	00098100
	SAVEVALUE	1604,K5	00098150
	TRANSFER	,CST3	00098200
			00098250
			00098300
			00098350

40. This check determines whether the cost logic is being employed (X1630=1).
41. The subsystem, component, and MOS numbers are assigned to Savevalues 1601, 1602, and 1603, respectively.
42. Savevalue 1605 is not used in the AVIM and Depot cost computations of MCOST.
43. The maintenance man-hours are assigned to Savevalue 1606.
44. This logic determines whether the maintenance action is a depot repair; if so, the action code is set to 5 (X1604=5) and the transaction branches to CST3.

45	RIM	SAVEVALUE	1604,X4	AVIM REPAIR CODE=4	00098400
	CST3	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606		00098450
46	*				00098500
	*				00098550
	*				00098600
47	CST2	TERMINATE			00098650
	ARM6	ASSIGN	12,1	FLAGS AVUM REP ITEM	00098700
		PRIORITY	0	ZEROES PRIORITY	00098750
		ASSIGN	4,V65	ASSIGNS AVUM REPAIR TIME TO P4	00098800
		TABULATE	14	TABULATE OFF AC MTTR	00098850
		ASSIGN	29,P31	ASSIGNS OFF EQP MPR REQ	00098900
		ASSIGN	30,0	NO SECONDARY MANPOWER	00098950
		TEST E	P28,5,ARM8		00099000
		ASSIGN	26,2		00099050
	ARM9	ASSIGN	27,0		00099100
		ASSIGN	17,18	FLAGS AS AVUM OFF-AC REPAIR	00099150
		ASSIGN	6,7	FLAGS AS AVUM OFF-AC REPAIR	00099200
		SAVEVALUE	177+,1	INCREMENTS # PARTS REP AT AVUM	00099250
		MSAVEVALUE	5+,V46,P6,1,H	INCR # PARTS REP AVUM BY SUBSYSTEM	00099300
		TRANSFER	,UNSJ		00099350
	ARM8	ASSIGN	26,3		00099400
		TRANSFER	,ARM9		00099450
	ARM7	ASSIGN	4,V141	ASSIGNS IS REPAIR TIME TO P4	00099500
		TABULATE	14	TABULATE OFF AC MTTR	00099550
		ASSIGN	31,V95	ASSIGN IS OFF AC REP MANPOWER REQ	00099600
		SAVEVALUE	V143+,V70	INCREMENTS IS MMH BY MOS	00099650
		SAVEVALUE	107+,V70	INCREMENTS TOTAL DEPOT MMH	00099700
		SAVEVALUE	178+,1	INCREMENTS # IS OFF AC REPAIRS	00099750
		ASSIGN	6,8	FLAGS IS OFF AC REPAIR	00099800
		TRANSFER	,IMAG	GO DO ACCOUNTING	00099850
	SCRAP	SAVEVALUE	181+,1	INCREMENT # OF PARTS SCRAPPED	00099900
	*				00099950

45. Maintenance actions which are not depot repairs are AVIM repairs (P6=8). The action code for AVIM is 4 (X1604=4).
46. This HELPA block passes to MCOST the values in Savevalues 1601 to 1606. MCOST computes the maintenance cost and tabulates the event occurrence.
47. This block was modified to include the label CST3.

(48)	* COST ROUTINE CALLED FOR CONDEMN	CODE = 06	00100000
	*		00100050
(49)	TEST NE	X1630,K1,CST4	CHECK COST BYPASS
	SAVEVALUE	1601,V46	SYSTEM NO.
	SAVEVALUE	1602,FN46	PART NO.
(50)	SAVEVALUE	1604,K6	CONDEMN CODE = 6
	SAVEVALUE	1605,KO	C0100300
(51)	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606	00100350
	*		00100400
(52)	* END CONDEMN COST LOG.C		00100450
	*		00100500
(53)	CST4	TERMINATE	00100550

48. This check determines whether the cost logic is being employed (X1630=1).
49. Savevalues 1601 and 1602 are set to the subsystem number and component number, respectively.
50. Savevalue 1604 is set to the action code for a condemned component (X1604=6).
51. Savevalue 1605 is not required in the logic for condemned components.
52. This HELPA block passes to the MCOST subroutine Savevalues 1601 to 1606. MCOST tabulates the event, the salvage value, and the new part cost.
53. This block was modified to include the label CST4.

*			00100600
*			00100650
*			00100700
*			00100750
*	MANPOWER CONTROL ROUTINE		00100800
*			00100850
*			00100900
*	SHIFT TERMINATION SUBROUTINE		00100950
*			00101000
MPCA	PRIORITY	100	00101050
	SPLIT	1,MPC,,25	00101100
	SPLIT	3,MPCB,2,25	00101150
MPCB	ASSIGN	3,MX3(*2,2)	00101200
	TEST GE	P3,K1,SMGQ	00101250
	ASSIGN	5,MX3(*2,3)	00101300
	ADVANCE	V74	00101350
MPCN	ASSIGN	1,K31	00101400
	SPLIT	22,MPCX,1,25	00101450
MPCG	LOGICS	29	00101500
	SPLIT	1,MPCD,,25	00101550
	ADVANCE	P5	00101600
	UNLINK	56,SMGQ,1,13	00101650
	UNLINK	56,MPCF,1,13,,MPCG	00101700
	ADVANCE	P3	00101750
	TRANSFER	,MPCC	00101800
MPCX	TEST L	R*1,K900,SMGQ	00101850
	TEST F	S*1,K0,MPCJA	00101900
MPCJ	ASSIGN	11,R*1	00101950
	ENTER	*1,P11	00102000
	GATE LR	29	00102050
	LEAVE	*1,P11	00102100
	TERMINATE		00102150
MPCK	ASSIGN	15,V76	00102200
	ASSIGN	8,P15	00102250
MPCJB	SPLIT	1,MPCJ,,25	00102300
	ASSIGN	21,MPCM	00102350
	ASSIGN	23,K1	00102400
	LINK	P1,P23	00102450
MPCD	LINK	56,FIFO	00102500
MPCF	TRANSFER	,MPCD	00102550
MPCM	TEST E	P8,R*1,MPCK	00102600
	TRANSFER	,MPCJ	00102650
MPCG	LOGICS	29	00102700
	ADVANCE	P3	00102750
	UNLINK	56,MPCF,1,13,,MPCN	00102800
	TRANSFER	,MPCC	00102850
MPCJA	ASSIGN	8,S*1	00102900
	TRANSFER	,MPCJB	00102950
*			00103000
*	SHIFT CHANGE SUBROUTINE		00103050
*			00103100
MPC	ASSIGN	3,MX3(1,1)	00103150
	ASSIGN	2,MX3(2,1)	00103200
	ADVANCE	MX3(1,4)	00103250
MPCJ	LOGICS	20	00103300
	GATE LR	30,MPCAA	00103350
	LOGICS	30	00103400
	ASSIGN	4,11	00103450
MPCAB	UNLINK	V77,UNLK,ALL	00103500
	LOOP	4,MPCAB	00103550
MPCAD	ADVANCE	P3	00103600
	TRANSFER	,MPCJ	00103650
MPCAA	LOGICS	30	00103700
	ASSIGN	4,11	00103750
MPCAC	UNLINK	V78,UNLK,ALL	00103800
	LOOP	4,MPCAC	00103850
	ADVANCE	P2	00103900
	ADVANCE	V145	00103950
	TRANSFER	,MPCJ	00104000

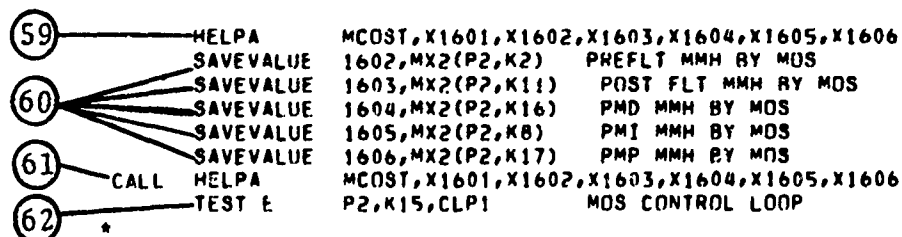
*			00104050
*			00104100
* DATA COMPILATION ROUTINE			00104150
*			00104200
DCRA	ASSIGN	3,MX1(5,1)	00104250
	PRIORITY	1,BUFFER	00104300
	ADVANCE	V9	00104350
	MSAVEVALUE	1,6,11,V84	00104400
	ASSIGN	5,X191	00104450
ARM35	ASSIGN	1,V178	00104500
	ASSIGN	2,V179	00104550
	ASSIGN	3,V180	00104600
	ASSIGN	4,V181	00104650
	SAVEVALUE	V177+,V182	00104700
	SAVEVALUE	V188+,V182	00104750
	LOOP	5,ARM35	00104800
	SAVEVALUE	550+,V183	00104850
	SAVEVALUE	1150+,V183	00104900
	ASSIGN	6,K1	00104950
	ASSIGN	1,526	00105000
	ASSIGN	2,551	00105050
	ASSIGN	3,251	00105100
	ASSIGN	4,1426	00105150
	ASSIGN	5,1476	00105200
ARM44	ASSIGN	7,V212	00105250
	SAVEVALUE	V193,V213	00105300
	TEST E	P6,X191,ARM43	00105350
	SAVEVALUE	650,V214	00105400
	SAVEVALUE	183+,V215	00105450
	ASSIGN	1,226	00105500
	ASSIGN	2,1451	00105550
	ASSIGN	3,201	00105600
	ASSIGN	4,7C1	00105650
ARM50	SAVEVALUE	*4,V219	00105700
	TEST NE	P4,724,ARM51	00105750
	ASSIGN	1+,1	00105800
	ASSIGN	2+,1	00105850
	ASSIGN	3+,1	00105900
	ASSIGN	4+,1	00105950
	TRANSFER	,ARM50	00106000
ARM51	SAVEVALUE	725,V220	00106050
	ASSIGN	1,226	00106100
	ASSIGN	2,201	00106150
	ASSIGN	3,726	00106200
ARM52	SAVEVALUE	*3,V218	00106250
	TEST NE	P3,749,ARM53	00106300
	ASSIGN	1+,1	00106350
	ASSIGN	2+,1	00106400
	ASSIGN	3+,1	00106450
	TRANSFER	,ARM52	00106500
ARM53	SAVEVALUE	750,V221	00106550
	ASSIGN	2,K11	00106600
DCRR	ASSIGN	3,MX1(6,P2)	00106650
	TEST GE	P3,K1,DCRC	00106700
	ASSIGN	17,25	00106750
	MSAVEVALUE	2+,P2,P17,P3	00106800
	SAVEVALUE	20+,P3	00106850
	SAVEVALUE	V30+,P3	00106900
DCRC	LOOP	2,DCRB	00106950
	TEST E	MX1(5,8),K0,DCRE	00107000
DCRD	UNLINK	27,REAA,ALL	00107050
	UNLINK	28,REAB,ALL	00107100
DCRE	BUFFER		00107150
	ASSIGN	2,25	00107200
DCRG	ASSIGN	3,K14	00107250
DCRF	ASSIGN	5,MX2(*3,*2)	00107300
	MSAVEVALUE	2+,15,*2,*5	00107350
	LOOP	3,DCPF	00107400
	LOOP	2,LCRG	00107450
REED	TRANSFER	,PEEA	00107500

ARM43	ASSIGN	1+,K1		00107550
	ASSIGN	2+,K1		00107600
	ASSIGN	3+,K1		00107650
	ASSIGN	4+,K1		00107700
	ASSIGN	5+,K1		00107750
	ASSIGN	6+,K1		00107800
	TRANSFER	,ARM44		00107850
REEA	SAVEVALUE	675-,X1425	TAKE NORS OUT OF DOWN TIME	00107900
	SAVEVALUE	625-,X1425	TAKE NORS OUT OF UNSCHED DOWN TIME	00107950
	SAVEVALUF	185,V229	INHERENT AVAILABILITY	00108000
	SAVEVALUF	186,V230		00108050
	ASSIGN	2,699		00108100
	ASSIGN	3,1424	ESTAB SAVEVAL NGS. FOR NORS/AVAIL	00108150
	ASSIGN	1,674		00108200
ARM49	SAVEVALUE	*2,V216		00108250
	ASSIGN	2-,K1		00108300
	ASSIGN	3-,K1		00108350
	TEST NE	P1,651,ARM48		00108400
		1,ARM49		00108450
	TERMINATE			00108500
ARM48	SAVEVALUF	70,V217		00108550
	SAVEVALUE	776,V97	SYSTEM MTBF	00108600
	SAVEVALUE	525,V85	MTBF	00108650
	SAVEVALUE	524,V86	N PREVENTIVE MMH/FH	00108700
	SAVEVALUE	523,V87	SCHEDULED MMH/FH	00108750
	SAVEVALUE	522,V88	AVUM CORRECTIVE MMH/FH	00108800
	SAVEVALUF	521,V89	IS CORRECTIVE MMH/FH	00108850
	SAVEVALUF	520,V90	AVUM+IS CORR MMH/FH	00108900
	SAVEVALUE	519,V91	DEPOT CORRECTIVE MMH/FH	00108950
	SAVEVALUE	518,V92	TOTAL CORRECTIVE MMH/FH	00109000
	SAVEVALUE	517,T88		00109050
				00109100
	* LOGIC TO CALL COST SUBROUTINES - CHECK SUBROUTINE BYPASS			00109150
				00109200
54	TEST NE	X1630,K1,BRCH	X1630=1 BYPASS COST	00109250

54. This check determines whether the cost logic is being employed (X1630=K1).

	* INSPECTION COST CALCULATION ROUTINE			00109300
(55)	*			00109350
	INSP	ASSIGN 2,K0	SET MOS LEVEL TO 0	00109400
(56)	CLP1	ASSIGN 2+,K1	ADD 1 TO MOS LEVEL	00109450
	SAVEVALUE	1601,P2	MOS LEVEL	
	SAVEVALUE	1601+,K100	SET ROUTINE SWITCH	
(57)	TEST L	P2,K15,CALL		00102110
	SAVEVALUF	1602,MH7(P2,K2)	NO, PREFLTS	
(58)	SAVEVALUE	1603,MH7(P2,K11)	NO, POST FLTS	
	SAVEVALUE	1604,MH7(P2,K16)	NO, PMD	
	SAVEVALUE	1605,MH7(P2,K8)	NO, PMI	
	SAVEVALUF	1606,MH7(P2,K17)	NO, PMP	

55. P2 is used to identify the MOS level. It is initially set at zero.
56. The MOS level (P2) is incremented by 1 and assigned to Savevalue 1601. This Savevalue is then incremented by 100 to signal the MCOST subroutine that it is to begin the Inspection Cost routine logic.
57. This check determines whether the last MOS values were passed. When P2=15, the transaction exits the CLP1, Inspection Cost Calculation routine, and is passed to MCOST which will compute the inspection totals and print the table. If the limit of 11 MOS levels is increased to 15, then change the logic to test for P2 less than 16.
58. Savevalues 1602 through 1606, the number of pre-flight, post-flight, daily, intermediate (PMI), and periodic (PMP) inspections, respectively, are assigned from Matrix Halfword Savevalue 7.



00097992
00098751

59. This HELPA block passes to MCOSt the number of inspections by MOS. The values are used to determine consumable costs per inspection.
60. Savevalues 1602 through 1606, the man-hours for pre-flight, post-flight, daily, intermediate, and periodic inspections, respectively, are assigned from Matrix Savevalue 2.
61. This HELPA block passes to MCOSt the inspection man-hours by MOS. Within MCOSt the man-hour costs are computed and added to the consumable cost to give the total inspection cost by MOS levels. When the MOS level is equal to 15, the HELPA block passes the transaction which causes the inspection totals to be tabulated and Table III, RMS Inspection Cost, to be printed.
62. This test determines whether the last MOS inspection values were passed. When P2=15, the inspection loop is exited.

	* INSPECTION AND UNSCHEDULED MAINTENANCE PERSONNEL COST	00098752
	*	00098753
	*	00102910
	*	00098757
	* COMPUTE MANHOURS AVAILABLE AT MOS IN SHFTHR	00098758
	*	00098759
63	SAVEVALUE 1601,X192	NO. OF WORKDAYS PER WEEK
64	SAVEVALUE 1652,MX3(1,1)	NO. HOURS SHIFT1 IN .1 HOURS
	SAVEVALUE 1653,MX3(2,1)	NO. HOURS SHIFT2 IN .1 HOURS
65	SAVEVALUE 1604,MX3(1,4)	OFFSET FOR START OF WORKDAY
	SAVEVALUE 1605,MX1(5,1)	SIMULATION INTERVAL IN .1 HOURS
66	HELPR	SHFTHR,1601XF,1652XF,1653XF,1604XF,1605XF
67		

63. Savevalue 1601 is assigned the number of workdays per week.
64. Savevalues 1652 and 1653 are assigned the number of hours for the first and second work shifts.
65. Savevalue 1604 is given the value of the offset for the start of a workday.
66. Savevalue 1605 is assigned the number of hours in the simulation.
67. This HELPB block passes to the subroutine SHFTHR the values to determine the available working hours. This HELPB block provides the capability of returning the total available hours for the first shift in Savevalue 1652 and for the second shift in Savevalue 1653. These values are used in variables 236 and 237.

	* PRINT PERSONNEL COSTS FROM PERSNL		00098766
(68)			00111000
			00111050
(69)	ASSIGN 2,K0	SET AVUM MOS LEVEL TO 0	00111100
	SHFT ASSIGN 2+,K1	INCREMENT AVUM MOS LEVEL	00111150
(70)	TEST NE P2,K12,CTOT	CHECK FOR LAST AVUM MOS	00111200
	ASSIGN 3,V27	LOC. OF AVUM MOS STORAGE SHIFT1	00111250
	ASSIGN 3,V241	DETERMINE STORAGE CAPACITY	00111300
(71)	ASSIGN 4,V28	MOS MANPOWER STORAGE LOC, SHIFT2	00111350
	ASSIGN 4,V242	DETERMINE STORAGE CAPACITY	00111400
(72)	SAVEVALUE 1601,V236	AVAILABLE MANHOURS SHIFT1	00111450
	SAVEVALUE 1601+,V237	TOTAL AVAILABLE MANHOURS	00111500
(73)	TEST NE X1601,0,SHFT	CHECK FOR UNUSED MOS	00111550
	SAVEVALUE 1602,V238	TOTAL MANHOURS EXPENDED - IN .01 HR	00111600

68. P2 represents the AVUM MOS level.

69. The number of first and second shift work center storages are limited to 11. Therefore, when P2=12, the transaction will branch to CTOT. If the limit of 11 MOS levels is increased to 15, then change the logic to test for P2 not equal to 16.

70. P3 and P4 are assigned the work center storage capacity.

71. Variables 236 and 237 provide the total number of available man-hours during the simulation interval. The number is assigned to Savevalue 1601 and will be used in MCOST to determine the indirect labor cost in Table IV, Inspection and Unscheduled Maintenance Personnel Costs.

72. This test checks each storage in turn for a zero capacity; if capacity is zero, the storage has no costs associated with it. When a storage has a zero capacity, control is passed to SHFT.

73. Savevalue 1602 is provided the total unscheduled maintenance man-hours (V238) for the MOS level represented by P2.

74	SAVEVALUE	1603,MX2(P2,20)	OVERTIME HOURS IN .01 HR	00111650
	HELPA	MCOST,P2,X1601,X1602,X1603,X1604,X1605		00111700
75	TRANSFER	,SHFT		00111750
	CTOT	ASSIGN	2,K15	00111800
76	HELPA	MCOST,P2,X1601,X1602,X1603,X1604,X1605	TOTAL LINE INDICATOR	00111850
	*			00111900
77	*	SUBSYSTEM MAINTENANCE COST ROUTINE		00111950
	*			00112000
78	SAVEVALUE	1601,MX1(5,1)	NO. OF HOURS IN SIMULATION (.1 HRS)	00112050
	HELPA	MCOST,X1601,X1602,X1603,X1604,X1605,X1606		00112100
	*			00112150

74. Savevalue 1603 is assigned the overtime maintenance man-hours.
75. This HELPA block transfers to MCOST the values to compute the unscheduled maintenance personnel cost for the MOS level represented by P2.
76. This block transfers control to SHFT.
77. In upper block, P2 is assigned the value 15; in lower block, this value when passed to the MCOST subroutine by this HELPA block causes the personnel cost totals to be computed and Table IV, Inspection and Unscheduled Maintenance Personnel Costs, to be printed.
78. The number of hours in the simulation is assigned to Savevalue 1601 and passed via this HELPA block to the MCOST subroutine. This action initiates the tabulating and printing of Table V, Subsystem Maintenance Action.

	* COMPANY COST STATISTICS		00112200
	*		00112250
(79)	SAVEVALUE 1601,X183	FLT HRS IN .1 HR	00112300
	SAVEVALUE 1602,X250	PLATOON MISSIONS COMPLETED	00112350
	SAVEVALUE 1603,MXI(5,1)	MODEL SIMULATION INTERVAL IN .1 HR	00112400
(80)	SAVEVALUE 1604,X700	UPTIME/TOT TIME IN .01%	00112450
	SAVEVALUE 1605,V243	FLOWN/CALLED IN .01%	00112500
	SAVEVALUE 1606,X750	COMPLETED/CALLED IN .01%	00112550
(81)	HELPA MCOST,X1601,X1602,X1603,X1604,X1605,X1606		00112600
	*		00112650
	* END COST ROUTINE		00112700
	*		00112750
(82)	BRCH TERMINATE 1		00112800
	REAA ASSIGN 2,K3		00112850
	ASSIGN 3,MXI(5,7)		00112900
	MSAVEVALUE 2+,4,17,P3		00112950
	SAVEVALUE V37+,P3		00113000
	SAVEVALUE 32+,P3		00113050
	REEG SAVEVALUE 90+,M1		00113100
	SAVEVALUE 187+,M1		00113150
	SAVEVALUE V185+,M1		00113200
	SAVEVALUE 600+,M1		00113250
	SAVEVALUE V184+,M1		00113300
	SAVEVALUE 1200+,M1		00113350
	SAVEVALUE V195+,M1		00113400
	SAVEVALUE 675+,M1		00113450
	SAVEVALUE V194+,M1		00113500
	SAVEVALUE 1275+,M1		00113550
	TERMINATE		00113600

79. Savevalues 1601, 1602, and 1603 provide values which are used in MCOST to determine flight hour costs. Savevalue 1601 is assigned X183, the total number of hours flown during the simulation. Savevalue 1602 is provided the number of missions completed (X250). Savevalue 1603 is the total number of simulated hours (MXI(5,1)).
80. Savevalues 1604, 1605, and 1606 provide the percentages for uptime/total time (X700), missions flown/missions called for (V243), and missions completed/missions flown (X750), respectively.
81. This HELPA block initiates the tabulation and printing of Table VI, RMS Cost Summary, in the MCOST subroutine.
82. This block was modified to include the label BRCH.

REAB	TABULATE	9	00113650
	SAVEVALUE	36+,M1	00113700
	SAVEVALUE	63+,M1	00113750
	TERMINATE		00113800
PMCB	TERMINATE		00113850
DATA	PRIORITY	0	00113900
	ADVANCE	K60	00113950
DATA1	ASSIGN	2,K4	00114000
DATA2	ADVANCE	230	00114050
	TEST E	V224,K0,DATA4	00114100
DATA3	ADVANCE	K10	00114150
	LOOP	2,DATA2	00114200
	ADVANCE	K710	00114250
	TEST E	V224,K0,DATA6	00114300
DATA5	ADVANCE	K10	00114350
	TRANSFER	,DATA1	00114400
DATA4	SAVEVALUE	188-,V225	00114450
	SAVEVALUE	187-,V227	00114500
	TRANSFER	,DATA3	00114550
DATA6	SAVEVALUE	188-,V226	00114600
	SAVEVALUE	187-,V228	00114650
	TRANSFER	,DATA5	00114700
	START	1,,1	00114750
	REPORT		00114800
	EJECT		00114850
44	TEXT	R&M DIVISION, PRODUCT ASSURANCE DIRECTORATE	00114900
	SPACE	2	00114950
52	TEXT	R & M SIMULATION (RMS) MODEL	00115000
52	TEXT	-----	00115050
	SPACE	2	00115100
20	TEXT	AIRCRAFT STATISTICS	00115150
	SPACE	2	00115200
20	TEXT	TOTAL FLYING HOURS	M00115250
#X183,2/1LXXXX.X#			00115300
*			00115350
*			00115400
20	TEXT	FLYING HOURS - COMPLETED MISSIONS	*00115450
#X275,2/1LXXXX.X#			00115500
20	TEXT	FLYING HOURS - ABORTED MISSIONS	*00115550
#X1500,2/1LXXXX.X#			00115600
20	TEXT	FLYING HOURS - TEST HOPS	*00115650
#X1450,2/1LXXXX.X#			00115700
	SPACE	2	00115750
20	TEXT	MISSION RELIABILITY	*00115800
#X750,2/2LXXXX.XX#			00115850
20	TEXT	SYSTEM MTBF	*00115900
#X776,2/2LXXXX.XX#			00115950
	SPACE	2	00116000
20	TEXT	INHERENT AVAILABILITY	*00116050
#X185,2/2LXXXX.XX#			00116100
20	TEXT	ACHIEVED AVAILABILITY	*00116150
#X186,2/2LXXXX.XX#			00116200
20	TEXT	OPERATIONAL AVAILABILITY	*00116250
#X700,2/2LXXXX.XX#			00116300
	SPACE	2	00116350
20	TEXT	MEAN TIME BETWEEN MAINTENANCE	*00116400
#X525,2/2LXXXX.XX#			00116450
20	TEXT	MEAN TIME TO REPAIR	*00116500
#X517,2/2LXXXX.XX#			00116550
	SPACE	2	00116600
20	TEXT	AVUM PREVENTIVE MMH/FH (INSPECTIONS & SERVICING)	*00116650
#X524,2/2LXXXX.XX#			00116700
20	TEXT	AVUM SCHEDULED MMH/FH (INSPECTIONS & TBO'S)	*00116750
#X523,2/2LXXXX.XX#			00116800
20	TEXT	AVUM CORRECTIVE MMH/FH	*00116850
#X522,2/2LXXXX.XX#			00116900
20	TEXT	AVUM & INTERMEDIATE CORRECTIVE MMH/FH	*00116950
#X520,2/2LXXXX.XX#			00117000
20	TEXT	INTERMEDIATE CORRECTIVE MMH/FH	*00117050

```
#X521,2/2LXXXX.XX#
20  TEXT      DEPOT CORRECTIVE MMH/FH
#X519,2/2LXXXX.XX#
20  TEXT      TOTAL CORRECTIVE MMH/FH
#X518,2/2LXXXX.XX#
```

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*
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OUTPUT
END
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```
00117100
*00117150
00117200
*00117250
00117300
00117350
00117400
00117450
00117500
00117550
00117600
00117650
00117700
00117750
00117800
00117850
00117900
00117950
00118000
00118050
00118100
00118150
00118200
```

5.4 Four Cost-Information Tables Generated by RMS COST Model Program

TABLE III. RMS INSPECTION COST

RMS INSPECTION COST							
MOS LEVEL	PREFLIGHT	POST FLIGHT	DAILY	INTERMEDIATE	PERIODIC	TOTAL	PERCENT
PERIODIC MOS	0.	0.	0.	0.	1047.	1047.	4.22
PREFLIGHT	3670.	0.	0.	0.	0.	3670.	14.79
DAILY MOS	0.	0.	20092.	0.	0.	20092.	80.99
TOTAL	3670.	0.	20092.	0.	1047.	24809.	100.00
PERCENT OF TOTAL	14.79	0.0	80.99	0.0	4.22	100.00	

TABLE IV. RMS INSPECTION AND UNSCHEDULED MAINTENANCE PERSONNEL COSTS

INSPECTION AND UNSCHEDULED MAINTENANCE PERSONNEL COSTS					
MOS LEVFL	DIRECT REGULAR	OVERTIME	INDIRECT	TOTAL	PERCENT
ON A/C MOS	10804.	0.	61767.	72571.	30.00
PERIODIC MOS	1719.	0.	34567.	36286.	15.00
PREFLIGHT	3670.	0.	8425.	12095.	5.00
DAILY MOS	20092.	0.	28289.	48381.	20.00
ON A/C MOS	10804.	0.	61767.	72571.	30.00
TOTAL	47089.	0.	194815.	241904.	100.00
PERCENT OF TOTAL	19.47	0.0	80.53	100.00	

TABLE V. SUBSYSTEM MAINTENANCE ACTION

SUBSYSTEM MAINTENANCE ACTION													

SUBSYSTEM	AVUM				AVIM				DEPOT		PART		
	NO. OF ON-EQUIP REPAIRS	NO. OF REMOVE REPLACE	NO. OF OFF-EQUIP REPAIRS	TOTAL COST	NO. OF REPAIRS	TOTAL COST	NO. OF REPAIRS	TOTAL COST	NO. OF CONDEMN	SALVAGE VALUE	PIPELINE REPL. COST	TOTAL COST	PERCENT OF TOTAL

STRUCTURE	1	1	1	370.	0	0.	0	0.	0	0.	0.	370.	0.22
LANDING GEAR	0	2	2	288.	0	0.	0	0.	0	0.	0.	288.	0.17
ENGINE ASSY	15	24	10	6465.	4	533.	6	61047.	3	-15806.	52686.	105325.	61.88
ROTAT.COMPON	14	77	12	13986.	13	4999.	23	29454.	23	-6217.	20722.	62944.	36.98
INSTRUMENTS	1	0	0	49.	0	0.	0	0.	0	0.	0.	49.	0.03
ELECTRICAL	2	5	3	397.	1	12.	0	0.	1	-1.	3.	411.	0.24
FUEL	1	0	0	7.	0	0.	0	0.	0	0.	0.	7.	0.00
FLT CONTROLS	2	5	2	270.	1	5.	0	0.	2	-194.	643.	727.	0.43
NAV/COM COMP	2	2	0	49.	2	29.	0	0.	0	0.	0.	78.	0.05

TOTAL	38	116	30	22241.	21	5578.	29	90501.	29	-22218.	74057.	170199.	100.00

PERCENT OF TOTAL	13.09				3.28				53.17		30.46		100.00
