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DISPOSAL OF CHEMICAL AGENT IDENTIFICATION SETS

AT ROCKY MOUNTAIN ARSENAL, COLORADO

FINAL REPORT

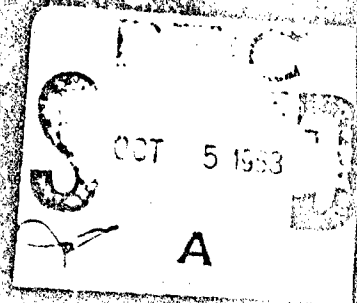
VOLUME II

APPENDICES A-D

AUGUST 1983

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL TOXICOLOGY AND HAZARDOUS WASTE RESEARCH
INSTITUTE FOR ENVIRONMENTAL HEALTH EFFECTS

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**DISPOSAL OF CHEMICAL AGENT
IDENTIFICATION SETS
AT ROCKY MOUNTAIN ARSENAL, COLORADO
FINAL REPORT
VOLUME II
APPENDICES A-D
AUGUST 1983**



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**DEPARTMENT OF THE ARMY
US ARMY TOXIC AND HAZARDOUS MATERIALS AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010**

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VOLUME 2

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APPENDIX A

APPENDIX A OPERATION OF THE DATA ENTRY AND DATA PRINT PROGRAMS

A.1 OPERATION OF THE DATA ENTRY PROGRAMS

The ID Sets Data Entry Programs are a series of interactive computer programs that were designed to enter air monitoring, inventory and plant downtime data onto computer cartridge tape. The twelve computer programs are each stored in separate files on a single cartridge or program tape. The Data Entry Programs were written to utilize the Tektronix 4051/4052 micro-computers in conjunction with the Tektronix 4924 external tape drives.

The computer operator begins the data entry process by inserting the cartridge tape containing the Data Entry Programs into the internal tape drive of the computer. The operator then presses the "AUTO LOAD" key on the upper right-hand side of the keyboard. The "AUTO LOAD" feature automatically executes three functions:

- 1) FIND 1 - this statement tells the computer to find the beginning of the first program file on the cassette tape.
- 2) OLD - This statement directs the computer to load the contents of the first program file into the computer's memory.
- 3) RUN - This statement executes the program that was loaded into memory.

After pressing the "AUTO LOAD" key, the message in Figure A-1 appears.

From this time on, the interactive process between the computer and the operator continues. The computer communicates with the operator by printing messages on the screen of the CRT. The first question asked by the computer concerns instructions for using the program. See Figure A-2.

If no directions are required, the operator responds by entering an "N" and pressing the "RETURN" key. The computer then asks the operator if the data tape has been labeled. See Figure A-3.

An "N" in response to this question will result in the computer executing the tape labeling routine. The operator is then instructed to place a cartridge tape into the 4924 external tape drive. See Figure A-4.

Next the operator is asked a series of questions that will determine the internal label which will become the first record on the tape file. This record contains the day of the week and a numeric code which represents the data type. Once the data tape has been labeled, the operator is ready to enter data. See Figures A-5 and A-6.

The operator is now instructed to enter a data sheet number from a list of available programs. See Figure A-7.

The computer will then ask a series of questions that correspond to the data coded on the various data sheets. Selection of a data sheet number which corresponds to Analyst and Lab Coordinator Work Sheets will result in the computer asking a series

of questions similar to those given in Figure A-8. The questions asked for the MIRAN selection can be found in Figure A-9. Figure A-10 shows the questions asked for Bldg. 1611 Receipt Inspection. Five separate data entry programs exist for the Process Data. See Figures A-11 through A-16. Questions for plant downtime data can be found in Figure A-17.

Once the operator has finished entering data, he or she responds with an "N" to the question of more data. The computer places an "End of File" mark on the data tape and the program is ended. The data tape is then printed out, verified and edited.

A.2 OPERATION OF THE DATA PRINT PROGRAMS

The ID Sets Data Print Programs are a set of interactive computer programs that are used to print out air monitoring, inventory and plant downtime data. The Data Print Programs were written to utilize the Tektronix 4051/4052 micro-computers in conjunction with the Tektronix 4924 external tape drives and the Tektronix 4641 character printer.

The computer operator begins the data print process by inserting the cartridge tape containing the print programs into the internal tape drive of the computer. The operator then presses the "AUTO LOAD" key on the upper right-hand side of the keyboard. The directory shown in Figure A-17 appears and the operator is instructed to enter the data sheet number which corresponds to the type of data he or she wishes to print.

A message similar to that shown in Figure A-18 then appears on the computer screen.

The operator is instructed to insert the data tape into the external 4924 tape drive. See Figure A-19.

The operator then presses the "RETURN" key to begin. Data is then printed out on the 4641 character printer. See Figure A-20.

The procedure is similar, with the exception of downtime data, for all data types. The operator may be asked to enter the unit number for the external tape drive for some programs. The operator may also have the option of producing a hard copy via the Tektronix 4631 hard copy unit. See Figures A-21 through A-24.

The print program for downtime data has two options. Downtime data, the first option, prints a particular day's plant downtime data on the line printer. See Figure 25. The downtime data is stored on the data tape as a numeric code. The downtime print program translates the numeric code into the actual descriptive terms (names).

The second option prints the names corresponding to the downtime keys. In other words, the program prints *all* numeric codes and corresponding descriptive terms. See Figure A-26.

A.3 DATA CORRECTION

Once the computer operator has finished entering data, he or she then prints out the data using the ID Sets Data Print Programs. Verification of the data is performed by comparing the computer print-out to the original data sheets.

Errors detected during the verification process are corrected by the use of the Tektronix 4050 series R06 editor. The editor is an ROM pack that is plugged into the back of the Tektronix computer. The computer operator inserts the data tape that he or she wishes to correct into the computer's internal tape drive. The operator enters the statement "CALL EDITOR" from the keyboard in order to make the editor routines available. Editor commands and instructions on the use of the editor can be found in the Tektronix 4050 Series R06 Editor Operator Manual. This manual is available through:

Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97077

A.4 OPERATION OF THE MERGE PROGRAM

The Merge Program was designed to merge the six separate data files of the inventory data tape into a single file that is acceptable to the USATHAMA Univac computer. The program also changes the dates given on the inventory data tape to Julian format.

The computer operator places the Merge Program tape into the internal tape drive of the computer and presses the "AUTO LOAD" key. The directory on Figure A-27 appears on the computer screen. Option 2 is selected. Option 1 (MIRAN 80 data) was discarded before the ID Sets processing activity was started.

The operator is instructed to place the inventory data tape into the internal tape drive. The output data tape is placed in the external 4924 tape drive. The computer reads the tape placed in the internal tape drive, reformats the data and writes the reformatted data on both the line printer and the data tape located in the external tape drive. The data on the original data tape is left unchanged. The data on the new tape is now in a format compatible with the USATHAMA Univac computer. See Figure A-28.

A.5 OPERATION OF THE TOTALS PROGRAMS

The ID Sets Totals Programs are a set of computer programs that update data tapes for ID Sets processed, drums of waste and plant downtime. The Totals Programs also produce daily reports and reports for any given period of time.

The computer operator inserts the Totals Program cartridge tape into the internal tape drive of the Tektronix computer. The "AUTO LOAD" key is pressed and the directory in Figure A-29 appears on the computer screen.

Program 1 updates the processed ID Sets Totals and prints a daily report. The operator is instructed to place the inventory data tape into the internal tape drive. Another tape, the ID Sets Totals tape, is placed into the 4924 external tape drive (see Figure A-30). The ID Sets Totals data tape contains a running total by type of sets destroyed and is updated by the Totals Program.

Program 2 reads the ID Sets Totals tape and produces a report for any given period of time. See Figure A-31 for its instructions.

Drum totals are updated and a daily report is printed by Program 3. The inventory data tape for a particular day is inserted into the computer's internal tape drive. A Drum Totals data tape is inserted into the 4924 external tape drive. The Drum Totals data tape contains a running total by type of drums produced. See Figure A-32 for instructions.

Program 4 reads the Drum Totals data tape and prints a report for any period of time. See Figure A-33 for instructions.

Program 5 updates a downtime data tape but does not produce a daily report. See Figure A-34 for instructions.

Program 6 reads the Downtime Totals data tape and produces up to five different downtime reports for any given period of time. See Figure A-35 for instructions and Figure A-36 for the directory of downtime reports.

All Totals Programs print reports on the Tektronix 4641 character printer. The ID sets processed and drum totals routines contain an option for hard copies on the Tektronix 4631 hard copy unit.

GLOSSARY OF TEKTRONIX HARDWARE TERMS
List of Tektronix Hardware Used in ID Sets by Model Number

- 4051** A micro-computer containing 32K RAM high resolution graphics display, internal cartridge tape drive and BASIC interpreter in ROM.
- 4052** Enhanced version of 4051 containing a faster CPU and 64K RAM. Otherwise the two machines are compatible. Both use the same version of BASIC.
- 4631** Device used to make a hard copy image of the display on the 4050 series micro-computer. The copy is produced on heat sensitive paper that is suitable for reproduction.
- 4641** Character printer that can be connected to a 4050 series micro-computer through a serial interface module. The printer is used to produce printouts of all data.
- 4662** Digital plotter which can be used with the 4050 series micro-computers by way of the GPIB (General Purpose Interface Bus). The plotter is used to produce larger scale plots than can be shown on the screen. The plotter serves as an alternative display device that may be used as backup when the 4631 is inoperable.
- 4924** External cartridge tape drive that may be connected to the 4050 series Tektronix micro-computers. The GPIB is used to allow communication between the computer and the external drive. The external drive is completely compatible with the internal drive.

DO YOU NEED DIRECTIONS FOR USING THESE PROGRAMS? (Y OR N)

FIGURE A-1

INSTRUCTIONS FOR DATA ENTRY PROGRAMS:

1. FOR THE FIRST RECORD, A NUMBER OF X'S WILL APPEAR TO SHOW THE LENGTH OF EACH DATA FIELD. FOR EXAMPLE, XXXXXX REQUIRES THAT 6 OR FEWER CHARACTERS BE ENTERED.
2. AFTER THE FIRST RECORD HAS BEEN ENTERED, INSTEAD OF X'S, THE PREVIOUSLY ENTERED VALUE APPEARS. IF YOU WISH TO REPEAT THIS VALUE SIMPLY PRESS THE ENTER KEY. IT IS NOT NECESSARY TO REENTER THE VALUE.
3. IN SOME CASES (EXAMPLE: DATE, TIME, CONTROL NUMBER) THE FIELD MUST BE COMPLETELY FILLED.
4. NUMERICAL DATA MUST CONTAIN A DECIMAL POINT.
5. SOME NUMERICAL DATA MAY BE PRECEDED BY A < OR > SYMBOL. NO + OR - SIGNS ARE ALLOWED.
6. IF AN ITEM IS MISSING ENTER: M
7. IF AN ITEM IS NOT APPLICABLE ENTER: NA
8. IF YOU MAKE AN ERROR AND WISH TO BEGIN THE RECORD AGAIN PRESS USER DEFINABLE KEY #1 (UPPER LEFT). REENTER DATA FROM THE BEGINNING OF THE RECORD.
9. IF YOU WISH TO EXIT FROM A PROGRAM, PRESS USER DEFINABLE KEY #2 (UPPER LEFT).

THE PROGRAM CHECKS THE INPUT FORMATS AND WILL PROMPT YOU IF YOU MAKE A MISTAKE.

PRESS 'HOME PAGE' KEY TO CONTINUE

FIGURE A-2

DO YOU NEED DIRECTIONS FOR USING THESE PROGRAMS? (Y OR N) N
HAS YOUR DATA TAPE BEEN LABELLED? (ENTER Y OR N) N

FIGURE A-3

DO YOU WANT TO LABEL A DATA TAPE? (ENTER Y OR N) Y
PLACE TAPE CASSETTE IN UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
IS THIS A BRAND NEW TAPE? (ENTER Y OR N) N
ENTER THE COMPLETE NAME OF THE DAY OF THE WEEK MONDAY

FIGURE A-4

<u>DATA SHEET #</u>	<u>CONTENTS</u>
1	ANALYST AND LAB COORD WORK SHEETS (H, CK, CH, PS)
2	ANALYST AND LAB COORD WORK SHEETS (AS)
3	ANALYST AND LAB COORD WORK SHEETS (CS)
4	ANALYST AND LAB COORD WORK SHEETS (L)
9	ANALYTICAL DATA SHEET (MIRAN 88)
10-15	INVENTORY DATA
16	PLANT DOWNTIME DATA

ENTER DATA SHEET NUMBER FROM THE ABOVE LIST 1
THIS LABEL IS FOR DATA SHEET #1 FOR MONDAY
IS THIS OK? (ENTER Y OR N) Y
DO YOU WANT TO LABEL ANOTHER TAPE? (ENTER Y OR N) N
NORMAL END OF PROGRAM
DO YOU WANT TO ENTER DATA? (ENTER Y OR N)

FIGURE A-5

DO YOU NEED DIRECTIONS FOR USING THESE PROGRAMS? (Y OR N) N
HAS YOUR DATA TAPE BEEN LABELLED? (ENTER Y OR N)

FIGURE A-6

DIRECTORY FOR ID SETS DATA ENTRY PROGRAMS
VERSION 1 - 05/03/81

<u>DATA SHEET #</u>	<u>CONTENTS</u>
1	ANALYST AND LAB COORD WORK SHEETS (H, CK, CH, PS, T)
2	ANALYST AND LAB COORD WORK SHEETS (AS)
3	ANALYST AND LAB COORD WORK SHEETS (GB)
4	ANALYST AND LAB COORD WORK SHEETS (L)
9	ANALYTICAL DATA SHEET (MIRAN 88)
10	BLDG 1611 RECEIPT INSPECTION
11	PROCESS DATA - DISASSEMBLY ROOM
12	PROCESS DATA - RESIDUE AREA (PIGS)
13	PROCESS DATA - RESIDUE AREA (DRUMS)
14	PROCESS DATA - SPRAY DRYER
15	PROCESS DATA - ELECTROSTATIC PRECIPITATOR
16	PLANT DOWNTIME DATA

ENTER DATA SHEET NUMBER FROM THE ABOVE LIST 1

FIGURE A-7

IS THIS ANALYST WORK SHEET DATA FOR K, CK, CN OR PG?
ENTER Y OR N Y

INSERT THE DATA TAPE INTO UNIT 4924

ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON

IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)

BEGIN DATA ENTRY FROM ANALYST WORK SHEET 01
ENTER PAGE NUMBER XX

ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX

ENTER AGENT XX

ENTER SERIAL NUMBER X

ENTER CONTROL NUMBER XXXXXX

ENTER CALIBRATION STD. CONC. XX.XXX

ENTER PEAK HEIGHT XXX.XX

ENTER AGENT CONCENTRATION XXX.XX

ENTER DILUTION XXXX.X

ENTER BUBBLER VOLUME XXXX.X

ENTER CONCENTRATION(/SAMPLE) XXX.XX

ENTER ANALYSIS TIME XXXX

ENTER INITIALS XXX

BEGIN DATA ENTRY FROM LAB COORDINATOR WORK SHEET 02
ENTER THE CONTROL NUMBER (AAXXXX)
XXXXXX

IS THIS REANALYSIS DATA? (ENTER Y OR N)
ENTER PAGE NUMBER XX

ENTER SET TYPE XXXX

ENTER LOCATION XX

ENTER PURPOSE XX

ENTER START TIME XXXX

ENTER STOP TIME XXXX

ENTER AIRFLOW XXXX.X

ENTER CONTROL CONCENTRATION X.XXX

ENTER AIR SAMPLE CONCENTRATION XXX.XXXX

IS THERE AN ANALYST'S COMMENT? (ENTER Y OR N) N

IS THERE A LAB. DATA COORD. COMMENT? (ENTER Y OR N) N

MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) Y

FIGURE A-8

A-9

DATA ENTRY PROGRAM FOR MIRAN 80
INSERT THE OUTPUT DATA TAPE INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE 11
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON
IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y
ENTER PAGE NUMBER XX
ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX
ENTER SERIAL NUMBER OF MIRAN X
ENTER SET TYPE XXXX
ENTER LOCATION XX
ENTER PURPOSE XX
ENTER START TIME XXXX
ENTER STOP TIME XXXX
ENTER CHLOROPICRIN - 1 HOUR AVERAGE XXXX.XX
ENTER CHLOROPICRIN - PEAK XXXX.XX
ENTER INITIALS XXX
ENTER PHOSGENE - 1 HOUR AVERAGE XXXX.XX
ENTER PHOSGENE - PEAK XXXX.XX

ENTER INITIALS XXX
ENTER CHLOROFORM - 1 HOUR AVERAGE XXXX.XX
ENTER CHLOROFORM - PEAK XXXX.XX
ENTER INITIALS XXX

IS THERE A COMMENT? (ENTER Y OR N)
MORE DATA? (ENTER Y OR N; N WILL END PROGRAM)

FIGURE A-9

IS THIS BLDG 1611 RECEIPT INSPECTION DATA? (ENTER Y OR N) Y
INSERT THE DATA TAPE INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON
IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y
ENTER PAGE NUMBER XX
ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX
ENTER SET TYPE XXXX
ENTER SET NUMBER XXXX
ENTER ACTION - IF DESTROYED ENTER AN X
X
ENTER COMMENT (43 CHARACTERS OR LESS)

IS THERE ANOTHER COMMENT? (ENTER Y OR N) N
MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) N
PROGRAM FINISHED

FIGURE A-10

IS THIS PROCESS DATA (DISASSEMBLY ROOM)? (ENTER Y OR N) Y
INSERT THE DATA TAPE INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON
IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y
ENTER PAGE NUMBER XX
ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX
ENTER SET TYPE XXXX
ENTER STATION NUMBER XX
ENTER COMMENT (47 CHARACTERS OR LESS)

IS THERE ANOTHER COMMENT? (ENTER Y OR N) N
MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) N
PROGRAM FINISHED

FIGURE A-11

IS THIS PROCESS DATA (RESIDUE AREA - PIGS)?
ENTER Y OR N Y

INSERT THE DATA TAPE INTO UNIT 4924

ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON

IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y

ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N) Y

ENTER PAGE NUMBER XX

ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX

ENTER SET TYPE XXXX

ENTER SET NUMBER XXXX

ENTER SKID NUMBER XXXX

FIGURE A-12

IS THIS PROCESS DATA (RESIDUE AREA - DRUMS)?
ENTER Y OR N Y

INSERT THE DATA TAPE INTO UNIT 4924

ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON

IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y

ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N) Y

ENTER PAGE NUMBER XX

ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX

ENTER DRUM NUMBER XXXXX

ENTER DRUM WEIGHT XXX

ANY MORE DATA FROM THIS SHEET? (ENTER Y OR N) N

ENTER TOTAL DRUMS

FIGURE A-13

IS THIS PROCESS DATA (SPRAY DRYER)?
ENTER Y OR N Y

INSERT THE DATA TAPE INTO UNIT 4924

ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON

IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y

ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N) Y

ENTER PAGE NUMBER XX

ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX

ENTER DRUM NUMBER XXXXX

ENTER DRUM WEIGHT XXX

ANY MORE DATA FROM THIS SHEET? (ENTER Y OR N) N

ENTER TOTAL DRUMS

FIGURE A-14

IS THIS PROCESS DATA (ELECTROSTATIC PRECIPITATOR)?
ENTER Y OR N Y

INSERT THE DATA TAPE INTO UNIT 4924

ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK
MON

IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y

ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N) Y

ENTER PAGE NUMBER XX

ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX

ENTER DRUM NUMBER XXXXX

ENTER DRUM WEIGHT XXX

ANY MORE DATA FROM THIS SHEET? (ENTER Y OR N) N

ENTER TOTAL DRUMS

FIGURE A-15

IS THIS ID SETS PLANT DOWNTIME DATA? (ENTER Y OR N) Y
INSERT THE DATA TAPE INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK MON
IS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) Y
ENTER PAGE NUMBER XX
ENTER DATE OF THE SAMPLE COLLECTION (DDMMYY) XXXXXX
ENTER START TIME XXXX
ENTER STOP TIME XXXX
ENTER SIMULTANEOUS (Y OR N) X
ENTER SUBSYSTEM NUMBER XX
ENTER PRIMARY COMPONENT NUMBER XX
ENTER SECONDARY COMPONENT NUMBER XX
ENTER DESCRIPTIVE ACTION XX
ENTER FAILURE MODE XX
ENTER CORRECTIVE ACTION XX
ENTER EFFECT ON PRODUCTION XX

ENTER COMMENT (37 CHARACTERS OR LESS)

MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) N
PROGRAM FINISHED

FIGURE A-16

**DIRECTORY FOR ID SEYS DATA PRINT PROGRAMS
VERSION 9 - 8/28/81**

DATA SHEET #	CONTENTS
1	ANALYST AND LAB COORD WORK SHEET (H,CK,CH,PS,T)
2	ANALYST AND LAB COORD WORK SHEET (AS)
3	ANALYST AND LAB COORD WORK SHEET (GB)
4	ANALYST AND LAB COORD WORK SHEET (L)
9	ANALYTICAL DATA SHEET (MIRAH 88)
10	BLDG 1611 - RECEIPT INSPECTION
11	PROCESS DATA - DISASSEMBLY ROOM
12	PROCESS DATA - RESIDUE AREA (PIGS)
13	PROCESS DATA - RESIDUE AREA (DRUMS)
14	PROCESS DATA - SPRAY DRYER
15	PROCESS DATA - ELECTROSTATIC PRECIPITATOR
16	PLANT DOWNTIME DATA

ENTER DATA SHEET NUMBER

FIGURE A-17

**INSERT THE DATA TAPE INTO UNIT 4924
PRESS ENTER KEY TO BEGIN**

FIGURE A-18

INSERT DATA TAPE INTO EXTERNAL TAPE DRIVE

FIGURE A-19

**PROGRAM TO PRINT
PROCESS DATA SHEET - DISASSEMBLY ROOM
INSERT DATA TAPE IN UNIT 4924**

**DO YOU WANT TO USE THE HARD COPIER?
ENTER (Y OR N) N**

ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

FIGURE A-20

PROGRAM TO PRINT
PROCESS DATA SHEET - DECONED PIG CONTROL
INSERT DATA TAPE IN UNIT 4924

DO YOU WANT TO USE THE HARD COPIER?
ENTER (Y OR N) N

ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE

FIGURE A-21

PROGRAM TO PRINT
PROCESS DATA SHEET - FURNACE RESIDUE CONTROL
INSERT DATA TAPE IN UNIT 4924

DO YOU WANT TO USE THE HARD COPIER?
ENTER (Y OR N) N

ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

FIGURE A-22

PROGRAM TO PRINT
PROCESS DATA SHEET - SPRAY DRYER
INSERT DATA TAPE IN UNIT 4924

DO YOU WANT TO USE THE HARD COPIER?
ENTER (Y OR N) N

ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

FIGURE A-23

PROGRAM TO PRINT
PROCESS DATA SHEET - ELECTROSTATIC PRECIPITATOR
INSERT DATA TAPE IN UNIT 4924

DO YOU WANT TO USE THE HARD COPIER?
ENTER (Y OR N) N

ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

FIGURE A-24

DO YOU WANT TO LIST
 1 - DOWNTIME DATA
 2 - NAMES CORRESPONDING TO DOWNTIME KEYS

ENTER 1 OR 2: 1

INSERT DATA TAPE IN UNIT 4924
 ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11

SUBSYSTEMS

1	POWER DISTRIBUTION	30	SPRAY TREE
2	SERVICE AIR	31	CONVEYOR
3	POTABLE WATER	32	GEAR
4	STEAM AND CONDENSATE	33	WINDOW
5	FUEL OIL	34	HOT SHOE
6	PROCESS WASTE	35	INSIDE CART
7	DOORS	36	OUTSIDE CART
8	FIRE PROTECTION	37	DOOR
9	HVAC	38	GAUGE
10	ELECTROSTATIC PRECIP	39	TANK
11	SCRUBBERS	40	HOPPER
12	CONTROL ROOM	41	TRAY
13	DEACT FURNACE	42	RACK
14	DECON FURNACE	43	HOIST
15	AFTER BURNER	44	CABLE
16	EMERGENCY POWER	45	BLOCK/HOOK
17	QUENCH	46	LIFTING DEVICE
18	SPRAY DRYER	47	PALLET
19	RECEIVING & HANDLING	48	BURNER
20	GLOVE BOX	49	PILOT
21	DECON MODULE	50	FIREYE
22	BOX FEED	51	SUMP
23	RESIDUE HANDLING	52	PIPE
24	SET MOVEMENT(TSY)	53	BOILER
25	ENVIRO MONITORING	54	COIL
		55	TRAP
99	ADMINISTRATIVE	56	HEATER
		57	FILTER
		58	STRAINER
		59	THERMOSTAT/THERMOCO
		60	LINKAGE
		61	BLOWER
		62	FAN
		63	OVERPACK
		64	GLOVES
		65	SPHINCTER
		66	WRENCH
		67	COMPRESSOR
		68	DRYER
		69	HEAT EXCHANGE/COOLER
		70	CONTROL PANEL
		71	TV MONITOR
		72	CART TOP
		73	CIRCUIT BREAKER
		74	
		75	LIGHT
		76	MIRAN 80
		77	BUBBLER/FILTER
		78	TABLE
		79	PIG SET
		80	BOX SET
		81	CONNECTOR/ATTACHMENT
		82	LINK/TAB
		83	PIN
		84	ALARM
		85	STAGE
		86	STATION
		87	VIBRATOR
		88	RAPPER
		89	GRID
		90	SAMPLE
		91	WHEEL
		92	BAND
		93	STACK
		94	SKI
		95	BATTERY
		96	REGULATOR
		97	BRIDGE
		98	IRIS
		99	OTHER

COMPONENTS

1	ACTUATOR,FEELER	71	
2	MOTOR	72	
3	PUMP	73	
4	VALVE	74	
5	BELT	75	
6	SEAL	76	
7	SHAFT	77	
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22	DAMPER	92	
23	POSITIONER	93	
24	AIR HANDLING UNIT 1	94	
25	AIR HANDLING UNIT 2	95	
26	AIR HANDLING UNIT 3	96	
27	TIMER	97	
28	HOSE	98	
29	TRANSMITTER	99	

FIGURE A-25

DESCRIPTIVE ACTION

FAILURE MODES

1	NORTH	1	MISSING
2	SOUTH	2	NOT READY
3	EAST	3	WAITING
4	WEST	4	BURNED
5	N01	5	LEAK
6	N02	6	MADE
7	N03	7	NOT MADE
8	N04	8	BENT
9	N05	9	BROKEN
10	UPPER	10	OUT OF ADJUSTMENT
11	LOWER	11	FLAMEOUT
12	HYDRAULIC	12	OFF
13	PNEUMATIC	13	ON
14	TEMPERATURE	14	LOOSE
15	PRESSURE	15	AIF IN LINE
16	LEVEL	16	JAMMED
17	FLOW	17	STUCK
18	POSITION	18	FALSE SIGNAL/READ
19	FLAME	19	EMPTY
20	BRINE	20	OUT OF STOCK
21	STEAM	21	HUMAN ERROR
22	CONDENSATE	22	CAUSE UNKNOWN
23	NATURAL GAS	23	PEGGED
24	FUEL OIL	24	INSPECTION
25	LUBRICANT	25	OFF TRACK
26	AIR	26	REBURN
27	WATER	27	DROPPED PIG
28	BYPASS	28	CHANGE TEST
29	CONTROL	29	INCOMPLETE
30	SHUTOFF	30	HIGH
31	SUPPLY	31	LOW
32	ISOLATION	32	WARPED
33	SOLENOID	33	PLUGGED
34	RELIEF	34	FULL
35	TRANSFER	35	FROZEN
36	AGENT	36	DIRTY
37	PIG SET		
38	BOX SET	99	OTHER
39	OVERSIZE		
99	OTHER		

EFFECT ON OPERATION

CORRECTIVE ACTION

1	DISCONTINUED	1	INVESTIGATE
2	INTERRUPT/RESUMED	2	ADJUST
3	SLOWED	3	LUBRICATE
4	DELAYED START	4	REPAIR IN PLACE
5	NOT AFFECTED	5	RESET
6	CAUSED OVERTIME	6	REMOVE/REPAIR/REPL
		7	INSTALL
		8	REMOVE/REPLACE
		9	RESTART
		10	START BACKUP/STDBY
		11	PROBLEM DISAPEARED
		12	ACTION DEFERRED
		13	CLEANED
		14	UNJAMMED
		98	NONE
		99	OTHER

FIGURE A-26

DIRECTORY FOR PROGRAMS TO MERGE DATA
FOR TRANSMISSION TO THE UNIVAC 1108

<u>KEY</u>	<u>PROGRAM</u>
1	MIRAN 80 DATA (DATA SHEET 9)
2	INVENTORY DATA (DATA SHEETS 10-15)

ENTER KEY FROM THE ABOVE LIST:

FIGURE A-27

DO YOU WANT TO MERGE INVENTORY DATA? (ENTER Y OR N) Y
INSERT THE INPUT DATA TAPE INTO THE CONSOLE
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK: WED
INSERT OUTPUT TAPE INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE: 11

FIGURE A-28

DIRECTORY FOR TOTALS PROGRAMS TO UPDATE
PIG AND DRUM TOTALS AND PRINT REPORTS

<u>KEY</u>	<u>PROGRAM</u>
1	P1 - UPDATE PROCESSED ID SET TOTALS AND PRINT A DAILY REPORT
2	P2 - READ ID SET TOTALS TAPE (P1 OUTPUT) AND PRINT REPORTS FOR ANY PERIOD OF TIME
3	D1 - UPDATE DRUM TOTALS AND PRINT A DAILY REPORT
4	D2 - READ DRUM TOTALS TAPE (D1 OUTPUT) AND PRINT REPORTS FOR ANY PERIOD OF TIME
5	T1 - UPDATE DOWNTIME TOTALS
6	T2 - READ DOWNTIME TOTALS TAPE (T1 OUTPUT) AND PRINT REPORTS FOR ANY PERIOD OF TIME

ENTER KEY FROM THE ABOVE LIST:

FIGURE A-29

DO YOU WANT TO UPDATE ID SET TOTALS? (ENTER Y OR N) Y
DO YOU HAVE DATA TO ENTER? (ENTER Y OR N) Y
INSERT THE INVENTORY DATA TAPE INTO THE CONSOLE
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK: WED
INSERT OUTPUT DATA TAPE (ID SET TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE: 11
DO YOU NEED TO INITIALIZE THIS TAPE? (ENTER Y OR N) N

FIGURE A-30

DO YOU WANT TO PRINT ID SET TOTALS? (ENTER Y OR N) Y
INSERT THE INPUT DATA TAPE (ID SET TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDMMYY): 010180
ENTER THE ENDING DATE OF THE REPORT PERIOD (DDMMYY): 010181

FIGURE A-31

DO YOU WANT TO UPDATE DRUM TOTALS? (ENTER Y OR N) Y
DO YOU HAVE DATA TO ENTER? (ENTER Y OR N) Y
INSERT THE INVENTORY DATA TAPE INTO THE CONSOLE
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK: WED

INSERT OUTPUT DATA TAPE (DRUM TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE: 11

FIGURE A-32

DO YOU WANT TO PRINT DRUM TOTALS? (ENTER Y OR N) Y
INSERT THE INPUT DATA TAPE (DRUM TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDMMYY): 010681
ENTER THE ENDING DATE OF THE REPORT PERIOD (DDMMYY): 010781

FIGURE A-33

DO YOU WANT TO UPDATE DOWNTIME TOTALS? (ENTER Y OR N) Y
INSERT THE DOWNTIME DATA TAPE INTO THE CONSOLE
ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK: WED
INSERT OUTPUT DATA TAPE (DOWNTIME TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE: 11

FIGURE A-34

DO YOU WANT TO PRINT DOWNTIME REPORTS ? (ENTER Y OR N) Y
INSERT THE INPUT DATA TAPE (DOWNTIME TOTALS) INTO UNIT 4924
ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE 11
ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDMMYY): 010182
ENTER THE ENDING DATE OF THE REPORT PERIOD (DDMMYY): 020282

FIGURE A-35

DIRECTORY FOR DOWNTIME REPORTS

<u>KEY</u>	<u>PROGRAM</u>
1	ALL DOWNTIME LISTED BY SUBSYSTEM
2	CHARGEABLE DOWNTIME LISTED BY SUBSYSTEM
3	NON-CHARGEABLE DOWNTIME LISTED BY SUBSYSTEM
4	ALL DOWNTIME TOTALLED BY SUBSYSTEM
5	DOWNTIME LISTED BY PRIMARY COMPONENT

ENTER KEY FROM THE ABOVE LIST:

FIGURE A-36

APPENDIX B

APPENDIX B

LISTING OF THE DATA ENTRY AND
DATA PRINT PROGRAMS

FILE 0 1

1 GO TO 100
4 GO TO 790
8 GO TO 790

+++++ 100 FFM ***** DIRECTORY FOR DATA ENTRY PROGRAMS
110 NEM ***** VERSION B - 05/03/81

120 PAGE
130 INIT
140 SET KEY
150 DIM A*(1)
160 PRINT "DO YOU NEED DIRECTIONS FOR USING THESE PROGRAMS? (Y OR N) *"
170 INPUT A\$
180 IF A\$="Y" THEN 460

190 KFM
200 NEM ***** PRINT INSTRUCTIONS *****

210 PAGE
220 PRINT "INSTRUCTIONS FOR DATA ENTRY PROGRAMS:J"
230 PRINT " 1. FOR THE FIRST RECORD, A NUMBER OF X'S WILL APPEAR."
240 PRINT " TO SHOW THE LENGTH OF EACH DATA FIELD. FOR EXAMPLE,
250 PRINT " XXXXX INDICATES THAT 4 OR FEWER CHARACTERS BE ENTERED.J"
260 PRINT " 2. AFTER THE FIRST RECORD HAS BEEN ENTERED, INSTEAD OF
270 PRINT " X'S, THE PREVIOUSLY ENTERED VALUE APPEARS. IF YOU
280 PRINT " WISH TO REPEAT THIS VALUE SIMPLY PRESS THE ENTER KEY."
290 PRINT " IT IS NOT NECESSARY TO REENTER THE VALUE.J"
300 PRINT " 3. IN SOME CASES (EXAMPLE: DATE, TIME, CONTROL NUMBER).
310 PRINT " THE FIELD MUST BE COMPLETELY FILLED.J"
320 PRINT " 4. NUMERICAL DATA MUST CONTAIN A DECIMAL POINT.J"
330 PRINT " 5. SOME NUMERICAL DATA MAY BE PRECEDED BY A < OR >.
340 PRINT " SYMBOL. NO + OR - SIGNS ARE ALLOWED.J"
350 PRINT " 6. IF AN ITEM IS MISSING ENTER: NJ."
360 PRINT " 7. IF AN ITEM IS NOT APPLICABLE ENTER: MAJ."
370 PRINT " 8. IF YOU MAKE AN ERROR AND WISH TO BEGIN THE RECORD."
380 PRINT " AGAIN PRESS USER DEFINABLE KEY #1 (UPPER LEFT)."
390 PRINT " REENTER DATA FROM THE BEGINNING OF THE RECORD.J"
400 PRINT " 9. IF YOU WISH TO EXIT FROM A PROGRAM, PRESS USER."
410 PRINT " DEFINABLE KEY #2 (UPPER LEFT).JJ"
420 PRINT " THE PROGRAM CHECKS THE INPUT FORMATS AND WILL PROMPT."
430 PRINT " YOU IF YOU MAKE A MISTAKE.J"
440 PRINT " PRESS 'HOME' PAGE' KEY TO CONTINUE"

450 KEM
+++++ 460 PRINT "HAS YOUR DATA TAPE BEEN LABELLED? (ENTER Y OR N) *"
470 INPUT A\$
480 IF A\$="Y" THEN 520
490 PRINT " "
500 END

510 FFM ***** PRINT DIRECTORY *****

520 PAGE
530 PRINT "DIRECTORY FOR IP-SETS DATA ENTRY PROGRAMS.J"
540 PRINT "VERSION B - 05/03/81JJJ"
550 PRINT " DATA"
560 PRINT " SHEET # CONTENTS"

```

560 FKINT *-----*
570 FKINT * 1 ANALYST AND LAB COORD WORK SHEETS (H.CK/CH.F8.T)*
580 FKINT * 2 ANALYST AND LAB COORD WORK SHEETS (AS)*
590 FKINT * 3 ANALYST AND LAB COORD WORK SHEETS (GB)*
600 FKINT * 4 ANALYST AND LAB COORD WORK SHEETS (L)*
610 FKINT * 9 ANALYTICAL DATA SHEET (MIRAN BU)*
620 FKINT * 10 BLDG JOB RECEIPT INSPECTION*
630 FKINT * 11 PROCESS DATA - DISASSEMBLY ROOM*
640 FKINT * 12 PROCESS DATA - RESIDUE AREA (FIGS)*
650 FKINT * 13 PROCESS DATA - RESIDUE AREA (DRUMS)*
660 FKINT * 14 PROCESS DATA - SPRAY DRYER*
670 FKINT * 15 PROCESS DATA - ELECTROSTATIC PRECIPITATOR*
680 FKINT * 16 PLANT DOWNTIME DATA*

```

```

690 REM

```

```

700 PRINT "ENTER DATA SHEET NUMBER FROM THE ABOVE LIST *!"
710 INPUT F
720 IF F<16 THEN 770
730 IF F<5 OR F>8 THEN 750
740 F=F-4
750 FIND F+2
760 GOTO 770
770 PRINT "INVALID DATA SHEET NUMBER - REENTER *!"
780 GOTO 710
790 PRINT "END OF PROGRAM"
800 END

```

```

+++
+++
+++
+++
+++

```

```

810 REM ***** END OF PROGRAM *****

```

1 GO TO 100
4 GO TO 230
8 GO TO 1360

+++1+++ PROGRAM TO LABEL DATA ENTRY TAPES *****
110 REM
120 REM
130 REM
140 REM *****
BY: STEARNS-ROGER, INC.
M. E. MARTIN *****

150 INIT
160 SET KEY
170 DIM A\$(16)-M(8),M(7,2),A\$(1),G\$(111),H\$(112),K\$(6),L\$(127),M\$(40)
180 READ H,M,N,W,A\$
190 H\$=

+++1+++ 200 H\$=H\$+H\$
210 H\$=H\$+H\$
220 PAGE
230 PRINT "JOO YOU WANT TO LABEL A DATA TAPET (ENTER Y OR N) *"
240 INPUT A\$

+++1+++ 250 IF A\$="N" THEN 1310
260 PRINT "PLACE TAPE CASSETTE IN UNIT 4924."
270 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
280 INPUT U
290 PRINT "JIS THIS A BRAND NEW TAPET (ENTER Y OR N) *"
300 INPUT A\$

+++1+++ 310 IF A\$="N" THEN 340
320 FIND PUTO
330 MARK PU,28:1,100000
340 FIND PUTO
+++2+++ 350 PRINT "ENTER THE COMPLETE NAME OF THE DAY OF THE WEEK *"
360 INPUT C\$

370 FOR I=1 TO 7
380 B\$=SEG(M\$(I),1),M(I,2)
390 IF C\$=B\$ THEN 430
400 NEXT I
410 PRINT "THIS IS NOT AN ALLOWABLE DAY. PLEASE CHECK YOUR SPELLING."
420 GO TO 350

+++1+++ 430 IF I=3 THEN 480
440 L=LENGTH
450 FOR I=L+1 TO 9
460 B\$=B\$+
470 NEXT I
480 PAGE

+++1+++ 490 PRINT "DATA"
500 PRINT "SHEET # CONTENTS"
510 PRINT
520 PRINT " 1 ANALYST AND LAB COOKD WORK SHEETS (H, CK, CM, PB) *"
530 PRINT " 2 ANALYST AND LAB COOKD WORK SHEETS (AS) *"
540 PRINT " 3 ANALYST AND LAB COOKD WORK SHEETS (GB) *"
550 PRINT " 4 ANALYST AND LAB COOKD WORK SHEETS (L) *"
560 PRINT " 9 ANALYTICAL DATA *"
570 PRINT " 10-15 IDENTIFY DATA *"
580 PRINT " 16 FLAMM DENTIFIE DATA *"

590 REM
+++1+++ 600 PRINT "ENTER DATA SHEET NUMBER FROM THE ABOVE LIST *"

```

610 INPUT N*
620 N=VAL(N*)
630 L$="KKA0000"
640 L$=L$*B*
650 G$=SEG(H$,1,H(N))
660 L$=L$*G$
670 IF N>0 AND N<17 THEN 700
680 PRINT "THIS IS NOT A VALID DATA SHEET NUMBER"
690 GO TO 600
700 GO TO N OF 740,740,740,740,740,740,740,740,740
710 GO TO N-Y OF 840,860,860,860,860,860,860,1010

```

```

720 REM
730 REM ***** LABEL FILE 1 FOR DATA SHEETS 1-9 *****

```

```

740 MARK GU,28:1,H(7)
750 FIND GU:1
760 IF N<5 OR N-Y THEN 800
770 V$=SEG(N$,N-3,1)
780 L$=REP(V$,5,1)
790 GO TO 810
800 L$=REF(N$,5,1)
810 I=1
820 GOSUB 1090
830 GO TO 1250

```

```

840 REM
850 REM ***** LABEL FILES 1-6 FOR DATA SHEETS 10-15 *****

```

```

860 L$=REP("1",4,1)
870 FOR I=1 TO 6
880 FIND GU:1
890 MARK GU,28:1,H(1)
900 FIND GU:1
910 L$=SEG(L$,1,16)
920 G$=SEG(H$,1,H(1+9))
930 L$=L$*G$
940 A$=SEG(K$,1,1)
950 L$=REP(A$,5,1)
960 GOSUB 1090
970 NEXT I
980 GO TO 1250

```

```

990 REM
1000 REM ***** LABEL FILE 1 FOR DATA SHEET 16 *****

```

```

1010 MARK BU,28:1,H(8)
1020 FIND BU:1
1030 L$=REP(M$,4,2)
1040 I=1
1050 GOSUB 1090
1060 GO TO 1250

```

```

1070 REM
1080 REM ***** SUBROUTINE 1 *****

```

```

1090 IF I<1 THEN 1180
1100 PRINT "THIS LABEL IS FOR DATA SHEET #"NI" FOR "IB"

```



```
1110 PRINT "IS THIS OK? (ENTER Y OR N) " ;
1120 INPUT A$
1130 IF A$="Y" THEN 1180
1140 PRINT "JUD YOU WANT TO TRY AGAIN? (ENTER Y OR N) " ;
1150 INPUT A$
1160 IF A$="Y" THEN 350
1170 GO TO 1250
1180 PRINT @U,12:L$
1200 PRINT @U,2:
1210 RETURN
```

+++2+++

```
1220 REM ***** END SUBROUTINE 1 *****
1230 REM
1240 REM ***** ANY MORE TAPES TO BE LABELLED? *****
```

```
+++4+++
1250 PRINT "JUD YOU WANT TO LABEL ANOTHER TAPET (ENTER Y OR N) " ;
1260 INPUT A$
1270 IF A$<>"Y" THEN 1300
1280 PAUSE
```

```
1290 GO TO 260
+++11+++
1300 PRINT "JUNKHAL END OF PROGRAM"
+++11+++
1310 PRINT "JUD YOU WANT TO ENTER DATAT (ENTER Y OR N) " ;
1320 INPUT A$
1330 IF A$="N" THEN 1370
1340 FIND 1
1350 GOTO
```

```
+++11+++
1360 PRINT "J**** ABNORMAL END OF PROGRAM ****"
+++11+++
1370 END
```

```
1380 REM
1390 REM ***** H ARRAY (16) *****
```

```
1400 DATA 11,111,111,111,111,111,111,88,34,54,15,11,11,11,84
```

```
1410 REM
1420 REM ***** M ARRAY (6) *****
```

```
1430 DATA 50000,50000,50000,10000,10000,10000,10000,10000,100000
```

```
1440 REM
1450 REM ***** W ARRAY (7,2) *****
```

```
1460 DATA 1,6,8,7,16,9,26,8,35,6,42,8,51,6
```

```
1470 REM
1480 REM ***** U$ ARRAY (60) *****
```

```
1490 DATA "MONDAY/TUESDAY/WEDNESDAY/THURSDAY/FRIDAY/SATURDAY/SUNDAY"
```

```
1500 REM
1510 REM ***** K$ ARRAY (6) *****
```

```
1520 DATA "012345"
```

```
1530 REM
1540 REM ***** END OF PROGRAM *****
```

1 GO TO 100
4 GO TO 730
8 GO TO 2900

+++1111
100 REM *** DATA SHEET #1 - ANALYST WORK SHEET FOR H, CK, CN, PS, T ***
110 REM #3 - LAB DATA COORDINATOR WORK SHEET
120 REM DATA ENTRY - LOFD INPUT DATA TO TAPE
130 REM VERSION 10 - 3/5/82
140 REM
150 REM
160 REM ***

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M. E. MARTIN

170 PAGE
180 INIT
190 SET KEY
200 DIM B(23,5),C(23,2),E(23)
210 DIM F(68),G(78),J(20),K(40),N(1),X(350),M(127),Z(127)
220 H=0
230 G=0
240 S=0
250 H\$="X XXXX.X XXX.XXXXXXXXXX XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXXX"
260 I\$="XX XXXXXXXXXXXXXXXX XX.XXXNA NA XXX.XX XXX.XX XXXX."
270 L\$=" XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXXX"
280 PRINT "JIS THIS ANALYST WORK SHEET DATA FOR H, CK, CN OR PS?"
290 PRINT "ENTER Y OR N";
300 INPUT N\$
310 IF N\$="Y" THEN 340
320 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
330 GO TO 2900
340 READ B,C,E,F,Y\$
350 F\$=F*Y\$
360 READ J,Z,N\$
370 N\$=N\$
380 FOR I=1 TO 6
390 READ Y\$
400 X\$=X\$Y\$
410 NEXT I
420 DELETE Y\$
430 PRINT "INSERT THE DATA TAPE INTO UNIT 4924"
440 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE";
450 INPUT U
460 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK";
470 INPUT T\$
480 T\$=SEG(T\$,1,3)
490 FIND EUI
500 INPUT EUI;Z\$
510 G\$=SEG(Z\$,4,2)
520 E\$=SEG(Z\$,8,3)
530 L\$=SEG(Z\$,8,9)
540 IF G\$="01" AND B\$=T\$ THEN 580
550 PRINT "THIS IS THE WRONG DATA TAPE"
560 PRINT "THIS TAPE IS FOR DATA SHEET #";I\$; " FOR #";C\$
570 GO TO 2900
580 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)";
590 INPUT N\$
600 IF N\$="Y" THEN 490
610 IF U=33 THEN 660
620 INPUT EUI;I

+++1111

+++1111

+++1111

```

630 IF I=1 THEN 690
640 INPUT BU,13:Z$
650 GO TO 620
660 IF TYP(0)=1 THEN 690
670 INPUT BU,13:Z$
680 GO TO 650
690 Z$=RAD1010*81$
700 Z$=Z$8H$

710 REM
720 REM ***** BEGIN DATA INPUT *****

730 PAGE
740 PRINT "JREGIN DATA ENTRY FROM ANALYST WORK SHEET #1."
750 I=1
760 I2=13
770 C1=0
780 C0=0
790 FOR I=11 TO 12
800 IF I>11 OR C0=0 OR I<8 THEN 830
810 V$=NA.
820 GO TO 970
830 IF I<>23 THEN 850
840 IF N=0 THEN 1060
850 D$=SEG(X$;C(1,1),C(1,2))
860 C$=SEG(Z$;B(1,1),B(1,2))
870 PRINT "ENTER "D$";"C$";
880 INPUT V$
890 IF V$="" THEN 1060
900 Z1=LEN(V$)
910 IF Z1<B(1,2) THEN 3040
920 IF V$="" THEN 1350
930 IF V$="M" THEN 960
940 V$="MISSING."
950 GO TO 1050
960 IF V$<>NA. THEN 1010
970 FOR K1=3 TO K(1,2)
980 V$=V$11.
990 NEXT K1
1000 GO TO 1050
1010 IF I<>6 THEN 1030
1020 C0=1
1030 GO TO R(1,3) OF 1350,1410,1550,1570,1850,1920,2090,2190,2280,2330
1040 IF LEN(V$)<>B(1,2) THEN 3000
1050 Z$=REF(V$,B(1,1),B(1,2))
1060 NEXT I
1070 IF I2=25 THEN 2410
1080 I1=14
1090 I2=23
1100 PAGE
1110 A$=SEG(Z$;21,3)
1120 IF A$<>"Col." THEN 1170
1130 A$=SEG(Z$;8,2)
1140 Z$=REF(A$,10,2)
1150 Z1=REF(Z$,70,38)
1160 GO TO 2410
1170 A$=SEG(Z$;21,6)
1180 PRINT "JREGIN DATA ENTRY FROM LAB COORDINATOR WORK SHEET #5."
1190 PRINT "ENTER THE CONTROL NUMBER (#####)."
1200 INPUT B$

```

```

1210 IF B#-A# THEN 1240
1220 PRINT "YOU SHOULD BE ENTERING DATA FOR ",A#
1230 GO TO 1190
1240 A#-SEG(7#*8,2)
1250 Z#-REP(A#,10,2)
1260 PRINT "JIS THIS REANALYSIS DATA? (ENTER Y OR N) ",I
1270 INPUT N#
1280 IF N#<>"Y" THEN 770
1290 H#1
1300 Z#-REP("30",6,2)
1310 Z#-REP("XXXXXX",12,6)
1320 GO TO 770

1330 REM
1340 REM ***** CHECK NO. 1 - LEFT ZERO FILL *****
+++1+++
1350 IF Z1=B(I,2) THEN 1050
1360 FOR N=Z1+1 TO B(I,2)
1370 V#="0"RV#
1380 NEXT N
1390 GO TO 1050

1400 REM ***** CHECK NO. 2 - LIMITS *****
+++1+++
1410 IF Z1>B(I,2) THEN 3000
1420 FOR N=1 TO Z1
1430 E#-SEG(V#,N,1)
1440 E1-ASC(E#)
1450 IF E1>47 AND E1<58 THEN 1480
1460 PRINT "THIS ENTRY MUST BE NUMERIC"
1470 GO TO 1520
1480 NEXT N
1490 IF VAL(V#)<B(I,4) OR VAL(V#)>B(I,5) THEN 1510
1500 GO TO 1050
+++1+++
1510 PRINT "MUST BE IN THE RANGE OF ",B(I,4)," TO ",B(I,5)
+++13+++
1520 PRINT "REENTER ",V#," "
1530 GO TO 880

1540 REM ***** CHECK NO. 3 - NOT USED
+++1+++
1550 GO TO 1050

1560 REM ***** CHECK NO. 4 - LINE UP DECIMAL POINTS *****
+++1+++
1570 Q#-SEG(V#,1,1)
1580 IF Q#<"." OR Q#>"." THEN 1620
1590 V#="."RV#
1600 Z1=Z1+1
1610 IF Z1=B(I,2) THEN 1800
1620 J#F03(V#,".",1)
1630 IF J#>0 THEN 1820
1640 J1=Z1-J
1650 N1-E(I)
1660 IF J1#1 THEN 1780
1670 IF J1#1 THEN 1720
1680 FOR N=J1+1 TO N1
1690 V#="0"RV#
1700 NEXT N
1710 Z1=LEN(V#)
1720 IF Z1=B(I,2) THEN 1050

```

1730 IF Z1>B(I,2) THEN 1800
1740 FOR K=Z1+1 TO B(I,2)
1750 V=REF(' ',2+0)
1760 NEXT K

+++1+++
1770 GO TO 1050
1780 PRINT 'ONLY *K1* DECIMAL FIGURES ARE ALLOWED.'
1790 GO TO 1520
+++2+++
1800 PRINT 'THIS NUMBER HAS TOO MANY FIGURES.'
1810 GO TO 1520
+++1+++
1820 PRINT 'THIS NUMBER HAS NO DECIMAL POINT.'
1830 GO TO 1520

1840 REM ***** CHECK NO. 5 - CHECK FOR < AND > *****

+++1+++
1850 IF Z1>B(I,2) THEN 3040
1860 Q=SEG(V,1,1)
1870 IF Q<='.' OR Q='>' THEN 1890

+++1+++
1880 GO TO 1590
1890 PRINT 'NO < OR > IS ALLOWED WITH THIS VALUE.'
1900 GO TO 1520

1910 REM ***** CHECK NO. 6 - CONTROL NUMBER FORMAT *****

+++1+++
1920 IF Z1>B(I,2) THEN 3000

1930 FOR K=1 TO 6
1940 E=SEG(V,K,1)
1950 E1=ASC(E)
1960 IF E1<65 OR E1>90 THEN 2000
1970 IF K=5 THEN 2030
1980 PRINT 'CHARACTER NUMBER *K* MUST BE NUMERIC.'
1990 GO TO 1520

+++1+++
2000 IF K=4 AND E1>47 AND E1<58 THEN 2030
2010 PRINT 'CHARACTER NUMBER *K* MUST BE ALPHABETIC.'
2020 GO TO 1520

+++2+++
2030 NEXT K
2040 E=SEG(V,1,3)
2050 IF E<='CAL' THEN 1050
2060 C1=1
2070 GO TO 1050

2080 REM ***** CHECK NO. 7 - CHECK SET TYPE *****

+++1+++
2090 IF Z1>B(I,2) THEN 3000

2100 K4=1
2110 FOR K=1 TO 17
2120 S=SEG(F,K,1)
2130 IF V=S THEN 1050
2140 K4=K4+1
2150 NEXT K
2160 PRINT 'S IS NOT A VALID SET TYPE.'
2170 GO TO 1520

2180 REM ***** CHECK NO. 8 - LOCATION *****

+++1+++
2190 K2=1
2200 FOR N=1 TO 20
2210 S1=SEG(A,K2,2)
2220 IF V=S1 THEN 1050
2230 K2=K2+1
2240 NEXT N

```

2250 PRINT V$1: IS NOT A VALID LOCATION*
2260 GO TO 1520

2270 REM ***** CHECK NO. 9 - PURPOSE *****
2280 IF V$=FL OR V$=OP OR V$=OL OR V$=CA THEN 1050
2290 PRINT V$1: IS NOT A VALID PURPOSE CODE*
2300 GO TO 1520

2310 REM
2320 REM ***** CHECK NO. 10 - ACCEPTABLE CHEMICAL AGENTS *****
2330 IF V$<>H AND V$<>T THEN 2360
2340 V$=V$1.
2350 GO TO 1050
2360 IF V$=CK OR V$=CN OR V$=PS THEN 1050
2370 PRINT U$1: MUST BE H, CK, CN OR PS*
2380 GO TO 1520

2390 REM
2400 REM ***** WRITE RECORD TO TAPE AND CHECK FOR COMMENTS *****
2410 Z1=LEN(Z$)
2420 IF Z1<127 THEN 2960
2430 PRINT @41Z$
2440 PRINT @U,12:Z$
2450 PRINT *JIS THERE AN ANALYST'S COMMENT? (ENTER Y OR N) *
2460 INPUT N$
2470 IF N$<>Y THEN 2760

2480 REM
2490 REM ***** PROCESS COMMENTS *****
2500 N=1
2510 I$=ANALYST'S*
2520 A$=SEG(J$,N,2)
2530 U$=Z$
2540 U$=REP(A$,6,2)
2550 U$=REP(U$,34,7B)
2560 PRINT *ENTER COMMENT (72 CHARACTERS OR LESS)*
2570 INPUT C$
2580 Z1=LEN(C$)
2590 IF Z1<72 THEN 2620
2600 PRINT *THIS COMMENT IS TOO LONG*
2610 GO TO 2560
2620 U$=REP(C$,34,Z1)
2630 Z1=LEN(U$)
2640 IF Z1<127 THEN 2960
2650 PRINT @41U$
2660 PRINT @U,12:U$
2670 IF N=9 THEN 2760
2680 IF N=19 THEN 2840
2690 PRINT *JIS THERE ANOTHER *I$* COMMENT? (ENTER Y OR N) *
2700 INPUT N$
2710 N=N+1
2720 IF N=9 THEN 2920

2730 REM
2740 REM ***** MORE COMMENTS *****

```

```

2750 IF N>10 THEN 2840
2760 PRINT "JIS THERE A LAB. DATA COORD. COMMENT (ENTER Y OR N) "
2770 INPUT N$
2780 IF N$="Y" THEN 2840
2790 N=N+1
2800 I$="LAB. DATA COORD."
2810 GO TO 2520

2850 REM
2830 REM ***** CHECK END OF DATA *****
2840 M=0
2850 Z$=REP("0",6,2)
2860 PRINT "JMORE DATA? (ENTER Y OR N) N WILL END PROGRAM) "
2870 INPUT N$
2880 IF N$="N" THEN 730
2890 GO TO 2920
2900 PRINT "J**** APPROXHL PROGRAM END ****"
2910 GO TO 2930
2920 PRINT "JORMAL PROGRAM END."
2930 PRINT (0,2)
2940 END

2950 REM ***** DIAGNOSTIC MESSAGES *****
2960 PRINT "ERROR IN LENGTH OF Z$."
2970 PRINT "JTHE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD."
2980 GO TO 740
2990 REM

3000 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY 'B(I,2)'"
3010 PRINT " CHARACTERS."
3020 GO TO 1520
3030 REM

3040 PRINT D$:" CANNOT BE LONGER THAN 'B(I,2)'" CHARACTERS."
3050 GO TO 1520
3060 REM
3070 REM ***** B ARRAY (23,5) *****
3080 DATA 8,2,1,0,0,12,6,0,0,18,2,10,0,0,20,1,2,1,6
3090 DATA 21,6,6,0,0,27,7,5,0,0,48,7,4,0,0,55,7,4,0,0
3100 DATA 62,7,4,0,0,69,7,5,0,0,76,7,4,0,0,83,4,2,0,2,400,87,3,0,0,0
3110 DATA 10,2,1,0,0,112,4,7,0,0,116,2,8,0,0,118,2,9,0,0
3120 DATA 120,4,2,0,2,400,124,4,2,0,2,400,90,7,5,0,0
3130 DATA 97,6,5,0,0,103,9,4,0,0,12,6,0,0,0

3140 REM
3150 REM ***** C ARRAY (23,2) *****
3160 DATA 1,11,13,28,52,5,57,13,71,14,86,22,108,11,120,19
3170 DATA 140,8,147,14,163,23,186,13,200,8
3180 DATA 211,11,222,18,231,19,240,7,248,10,259,9,268,7,276,21,298,24
3190 DATA 322,15

3200 REM
3210 REM ***** E ARRAY (23) *****

```

3220 DATA 0.0,0.0,0.0,3.2,2.1,1.2,0.0,0.0,0.0,0.0,1.3,4.0

3230 REM

3240 REM ***** F\$ ARRAY (68) *****

3250 DATA 'K9.1K942K945K951K952K953K954K955'

3260 DATA 'X302X545X546X547X548X549X550X551X552'

3270 REM

3280 REM ***** J\$ ARRAY (20) AND K\$ ARRAY (40) *****

3290 DATA '202122323242526272829'

3300 DATA 'DS1CRKRDCCVHDKHXENNAABEASSWSELAOTDS'

3310 REM

3320 REM ***** X\$ ARRAY (350) *****

3330 DATA 'PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDHHYY)/AGENT'

3340 DATA 'SERIAL NUMBER/CONTROL NUMBER/CALIBRATION STD. CONC.'

3350 DATA 'PEAK HEIGHT/AGENT CONCENTRATION/DILUTION/BUBBLER VOLUME'

3360 DATA 'CONCENTRATION(/SAMPLE)/ANALYSIS TIME/INITIALS***PAGE NUMBER'

3370 DATA 'SET TYPE/LOCATION/PURPOSE/START TIME/STOP TIME'

3380 DATA 'AIRFLOW/CONTROL CONCENTRATION/AIR SAMPLE CONCENTRATION'

3390 DATA 'REANALYSIS DATE'

3400 REM

3410 REM ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 730
8 GO TO 2800

+++++ 100 REM **** DATA SHEET #2 - ANALYST WORK SHEET FOR AS *****
110 REM #6 - LAB DATA COORDINATOR WORK SHEET
120 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
130 REM VERSION Y - 10/29/81

140 REM BY: STEWANS-ROGER, INC.
150 REM M. E. MARTIN *****

170 PAGE
180 INIT
190 SET KEY
200 DIM R(22,5),C(22,2),E(22)
210 DIM F(68),G(78),J(20),K(38),M(1),X(350),W(127),Z(127)
220 A=0
230 G=.

240 G=GSIGS
250 M=X XXXX.X XXX.XXXXXXXXX XXXX.X XXX XXX.XXXXXXXXXXXXXXXXXXXXX*
260 I=X XX XXXXXL XXXXXX XX.XXNA NA XX.XXX XXX.XX XXX.*
270 L=X XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXX*
280 PRINT "JIS THIS ANALYST WORK SHEET DATA FOR AS? (ENTER Y OR N) *"

290 REM
300 INPUT M\$
310 IF M\$.Y THEN 340
320 PRINT "JYGO ARE USING THE WRONG DATA ENTRY PROGRAM."
330 GO TO 1300

+++++ 340 READ R,C,E,F,I,Y
350 F=F+R
360 READ J,W
370 READ A\$
380 FOR I=1 TO 6
390 READ Y\$
400 A=X+Y\$

410 NEXT I
420 DELETE Y\$
430 PRINT "INSERT THE DATA TAPE INTO UNIT 4924"
440 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
450 INPUT U

460 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
470 INPUT T\$
480 T=SEG(T\$(1,3))
490 F=J+T
500 INPUT G(13,1)F
510 A=SEG(G(13,1))
520 F=F+G(13,1)

530 F=F+G(13,1)
540 IF G(13,1) AND B=1 THEN 580
550 PRINT "THIS IS THE WRONG DATA TAPE."
560 PRINT "THIS TAPE IS FOR DATA SHEET #1A111 FOR #1C4"
570 GO TO 2800
580 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) *"
590 INPUT M\$
600 IF M\$.Y THEN 670

610 IF U=33 THEN 660
620 INPUT Q0,6:1
630 IF T=1 THEN 690
640 INPUT Q0,13:28
650 GO TO 620
660 IF TYP(0)=1 THEN 690
670 INPUT Q0,13:28
680 GO TO 660
690 Z8=KMAQ210*816
700 Z8=Z8*816

710 KFM
720 REM ***** BEGIN DATA INPUT *****

730 PAGE
740 PRINT "JBEGIN DATA ENTRY FROM ANALYST WORK SHEET #2"

750 I1=1
760 I2=12
770 C1=0
780 Q0=0
790 FOR I=11 TO 12
800 IF I>10 OR Q0=0 OR I<7 THEN 830
810 V8="NA"
820 GO TO 970

830 IF I=22 THEN 850
840 IF M=0 THEN 1060
850 B=SEG(X,C(I,1),C(I,2))
860 C=SEG(Z,B(I,1),B(I,2))
870 PRINT "ENTER 'D', 'IC'
880 INPUT V8

890 IF V8="" THEN 1060
900 Z1=LEN(V8)
910 IF Z1=8(I,2) THEN 2940
920 IF V8="" THEN 1350
930 IF V8="M" THEN 960
940 V8="MISSING"
950 GO TO 1050
960 IF V8="NA" THEN 1010
970 FOR K=3 TO 8(I,2)
980 V8=V8*

990 NEXT K
1000 GO TO 1050
1010 IF I=5 THEN 1030
1020 Q0=1
1030 GO TO 8(I,2) OF 1350,1410,1550,1630,1900,2070,2170,2240

1040 IF LEN(V8)/8(I,2) THEN 2900
1050 Z=REP(V8,8(I,1),8(I,2))
1060 NEXT I

1070 IF I=22 THEN 2310
1080 I1=13
1090 I2=22
1100 PAGE

1110 Z1=LEN(Z)
1120 IF Z1=8(I,2) THEN 1170
1130 Z=REP(Z,8(I,1),8(I,2))
1140 Z=REP(Z,8(I,1),8(I,2))
1150 Z=REP(Z,8(I,1),8(I,2))
1160 GO TO 2310

1170 Z=SEG(Z,8(I,1),8(I,2))
1180 PRINT "JBEGIN DATA ENTRY FROM LAB COORDINATOR WORK SHEET #6"

+++1+++ 1190 PRINT *ENTER THE CONTROL NUMBER (AANNNN)*

1200 INPUT B\$
1210 IF B\$=A\$ THEN 1240
1220 PRINT *YOU SHOULD BE ENTERING DATA FOR *IAB

+++1+++ 1230 GO TO 1190
1240 A\$=SEG(Z\$*8*2)
1250 Z\$=REF(A\$*10*2)

1260 PRINT *JIS THIS REANALYSIS DATA? (ENTER Y OR N) *I
1270 INPUT N\$
1280 IF N\$=Y THEN 770

1290 M=1
1300 Z\$=REF(*30*6*2)
1310 Z\$=REF(*XXXXX*12*6)
1320 GO TO 770

1330 REM
1340 REM ***** CHECK NO. 1 - LEFT ZERO FILL *****

+++2+++ 1350 IF Z1=B(I,2) THEN 1050
1360 FOR N=Z1+1 TO B(I,2)
1370 V\$=V\$*10
1380 NEXT N
1390 GO TO 1050

1400 REM ***** CHECK NO. 2 - LIMITS *****

+++1+++ 1410 IF Z1>B(I,2) THEN 2900
1420 FOR N=1 TO Z1
1430 E\$=SEG(V\$*N*1)
1440 E1=ASC(E\$)
1450 IF E1>47 AND E1<58 THEN 1480
1460 PRINT *THIS ENTRY MUST BE NUMERIC*
1470 GO TO 1520

+++1+++ 1480 NEXT N
1490 IF VAL(V\$)<B(I,4) OR VAL(V\$)>B(I,5) THEN 1510
1500 GO TO 1050

+++1+++ 1510 PRINT B\$ *MUST BE IN THE RANGE OF *B(I,4)* TO *B(I,5)*
+++12+++ 1520 PRINT *REENTER *ID\$* *IC\$
1530 GO TO 800

1540 REM ***** CHECK NO. 4 - LINE UP DECIMAL POINTS *****

+++2+++ 1550 Q\$=SEG(V\$*1*1)
1560 IF Q\$=K\$ OR Q\$=J\$ THEN 1600

+++1+++ 1570 V\$=V\$*10
1580 Z1=Z1+1

+++1+++ 1590 IF Z1>B(I,2) THEN 1780
1600 J=POS(V\$*1*1)
1610 IF J=0 THEN 1600

1620 J1=Z1-J
1630 N1=E(I)

1640 IF J1=N1 THEN 1760
1650 IF J1=N1 THEN 1700
1660 FOR N=J1+1 TO K1
1670 V\$=V\$*10

+++1+++ 1680 NEXT N
1690 Z1=LEN(Q\$)
1700 IF Z1=B(I,2) THEN 1050
1710 IF Z1>B(I,2) THEN 1780
1720 FOR N=Z1+1 TO B(I,2)

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1730 V=REP(*,2.0)
1740 NEXT K
1750 GO TO 1050
+++1+++
1760 FRIN. 'ONLY 'JK1' DECIMAL FIGURES ARE ALLOWED'
+++2+++
1770 GO TO 1520
1780 FRINT 'THIS NUMBER HAS TOO MANY FIGURES'
+++1+++
1790 GO TO 1520
1800 FRINT 'THIS NUMBER HAS NO DECIMAL POINT'
1810 GO TO 1520

1820 REM ***** CHECK NO. 5 - CHECK FOR < AND > *****
+++1+++
1830 IF Z1>B(I,2) THEN 2940
1840 G=SEG(V,K,1)
1850 IF G='<' OR G='>' THEN 1870
1860 GO TO 1570
+++1+++
1870 FRINT 'NO < OR > ALLOWED WITH THIS VALUE'
1880 GO TO 1520

1890 REM ***** CHECK NO. 6 - CONTRL NUMBER FORMAT *****
+++1+++
1900 IF Z1<B(I,2) THEN 2900
1910 FOR N=1 TO 6
1920 E=SEG(V,K,1)
1930 E1=ASC(E)
1940 IF E1=65 OR E1>90 THEN 1980
1950 IF N=5 THEN 2010
1960 FRINT 'CHARACTER NUMBER 'JK1' MUST BE NUMERIC'
1970 GO TO 1520
+++1+++
1980 IF N=4 AND E1>7 AND E1<8 THEN 2010
1990 FRINT 'CHARACTER NUMBER 'JK1' MUST BE ALPHABETIC'
2000 GO TO 1520
+++2+++
2010 NEXT N
2020 E=SEG(V,I,3)
2030 IF E='CM' THEN 1050
2040 C1=1
2050 GO TO 1050

2060 REM ***** CHECK NO. 7 - CHECK SET TYPE *****
+++1+++
2070 IF Z1>B(I,2) THEN 2900
2080 A=1
2090 FOR N=1 TO 17
2100 S=SEG(F,K,4)
2110 IF S='S' THEN 1050
2120 N4=N+4
2130 NEXT N
2140 FRINT 'S IS NOT A VALID SET TYPE'
2150 GO TO 1520

2160 REM ***** CHECK NO. 8 - LOCATION *****
+++1+++
2170 N2=1
2180 FOR N=1 TO 19
2190 G=SEG(A,N,2)
2200 IF G='S' THEN 1050
2210 N2=N+2
2220 NEXT N
2230 FRINT 'S IS NOT A VALID LOCATION'
2240 GO TO 1520

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2250 REM ***** CHECK NO. 9 - PURPOSE *****
2260 IF V$=PL OR V$=OP OR V$=DL OR V$=CA THEN 1050
2270 PRINT V$; IS NOT A VALID PURPOSE CODE.
2280 GO TO 1520

2290 REM
2300 REM ***** WRITE ACCORD TO TAPE AND CHECK FOR COMMENTS *****
2310 Z1=LEN(Z)
2320 IF Z1<127 THEN 2860
2330 PRINT @41;Z
2340 PRINT @0;12;Z
2350 PRINT *JIS THERE AN ANALYST'S COMMENT? (ENTER Y OR N) *
2360 INPUT N$
2370 IF N$=Y THEN 2660

2380 REM
2390 REM ***** PROCESS COMMENTS *****
2400 N=1
2410 I$=ANALYST'S
2420 A$=SEG(J$,N,2)
2430 N=N+1
2440 W$=REP(A$,6,2)
2450 W$=REP(W$,34,78)
2460 PRINT *ENTER COMMENT (72 CHARACTERS OR LESS)*
2470 INPUT C$
2480 Z1=LEN(C$)
2490 IF Z1=72 THEN 2520
2500 PRINT *THIS COMMENT IS TOO LONG*
2510 GO TO 2460
2520 W$=REP(C$,34,71)
2530 Z1=LEN(W$)
2540 IF Z1<127 THEN 2860
2550 PRINT @41;W$
2560 PRINT @0;12;W$
2570 IF N=9 THEN 2660
2580 IF N=19 THEN 2740
2590 PRINT *JIS THERE ANOTHER *JIS* COMMENT? (ENTER Y OR N) *
2600 INPUT N$
2610 N=N+1
2620 IF N=Y THEN 2420

2630 REM
2640 REM ***** MORE COMMENTS *****
2650 IF N=10 THEN 2740
2660 PRINT *JIS THERE A LAB. DATA COORD. COMMENT? (ENTER Y OR N) *
2670 INPUT N$
2680 IF N=Y THEN 2740
2690 N=11
2700 I$=LAB. DATA COORD.*
2710 GO TO 2420

2720 REM
2730 REM ***** CHECK END OF DATA *****
2740 H=0

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2750 Z$=REF('10',6,2)
2760 PRINT "JHORE DATA? (ENTER Y OR N) N WILL END PROGRAM) "
2770 INPUT R$
2780 IF N<>"N" THEN 730
2790 GO TO 2820
+++3+++
2800 PRINT "J***** ABNORMAL PROGRAM END *****"
2810 GO TO 2830
+++1+++
2820 PRINT "JNORMAL PROGRAM END"
+++1+++
2830 PRINT @U,2:
2840 END

2850 REM ***** DIAGNOSTIC MESSAGES *****
+++2+++
2860 PRINT "EKKOR IN LENGTH OF Z$"
2870 PRINT "JTHE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD"
2880 GO TO 740

2890 REM

+++4+++
2900 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY 'B(I,2)'"
2910 PRINT " CHARACTERS"
2920 GO TO 1520

2930 REM

+++2+++
2940 PRINT D$ " CANNOT BE LONGER THAN 'B(I,2)'. CHARACTERS"
2950 GO TO 1520

2960 REM
2970 REM ***** B ARRAY (22,5) *****
2980 DATA 8,2,1,0,0,12,6,0,0,0,20,1,2,1,5
2990 DATA 21,6,6,0,0,27,7,5,0,0,48,7,4,0,0,55,7,4,0,0
3000 DATA 62,7,4,0,0,69,7,5,0,0,76,7,4,0,0,83,4,2,0,0,2400,87,3,0,0,0
3010 DATA 10,2,1,0,0,11,2,4,7,0,0,116,2,18,0,0,118,2,9,0,0
3020 DATA 120,4,2,0,2400,124,4,2,0,2400,90,7,5,0,0
3030 DATA 57,6,5,0,0,103,9,4,0,0,12,6,0,0,0

3040 REM
3050 REM ***** C ARRAY (22,2) *****
3060 DATA 1,11,13,38,57,13,71,14,86,22,108,11,120,19
3070 DATA 140,8,149,14,163,23,186,13,200,8
3080 DATA 211,11,222,8,231,8,240,7,248,10,259,9,268,7,276,21,298,24
3090 DATA 322,15

3100 REM
3110 REM ***** E ARRAY (22) *****
3120 DATA 0,0,0,0,3,3,2,1,1,2,0,0,0,0,0,0,0,0,0,1,3,4,0

3130 REM
3140 REM ***** F$ ARRAY (68) *****
3150 DATA "K941K942K945K951K952K953K954K955"
3160 DATA "X302X545X546X547X548X549X550X551X552"

3170 REM
3180 REM ***** J$ ARRAY (20) AND K$ ARRAY (38) *****

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3190 DATA *2012223242526272829*
3200 DATA *DKSTLKRABEDCCVHDKKXFNAAABEAE9SSUSLAOT*
3210 KEH
3220 KEH ***** X# ARRAY (350) *****
3230 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY) .
3240 DATA *SERIAL NUMBER/CONTROL NUMBER/CALIBRATION STD. CONC.*
3250 DATA *PEAK HEIGHT/AGENT CONCENTRATION/DILUTION/BUBBLER VOLUME*
3260 DATA *CONCENTRATION(/SAMPLE)/ANALYSIS TIME/INITIAL.S***PAGE NUMBER*
3270 DATA *SET TYPE/LOCATION/PURPOSE/START TIME/STOP TIME*
3280 DATA *AIRFLOW/CONTROL CONCENTRATION/AIR SAMPLE CONCENTRATION*
3290 DATA *REANALYSIS DATE*
3300 KEH
3310 KEH ***** END OF PROGRAM *****

FILE # 5

1 GO TO 100
4 GO TO 730
8 GO TO 2800

+++++ 100 REM *** DATA SHEET #3 - ANALYST WORK SHEET FOR GB
110 REM #7 - LAB DATA COORDINATOR WORK SHEET
120 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
130 REM VERSION 9 - 10/29/81
140 REM
150 REM BY: STEARNS-ROGER, INC.
160 REM *** M. E. MARTIN ***

170 PAGE
180 INIT
190 SET NEY
200 DIM B(22,5),C(22,2),E(22)
210 DIM F(72),G(78),J(20),K(38),N(1),X(350),M(127),Z(127)
220 M=0
230 G1=.
240 G1=G1G1
250 N1=X XXXX.X XXX.XXXXXXXXXX XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXX
260 I1=XX XXXXXGXXXXXXXXX XX.XXXNA NA XXX.XX XXX.XX XXXX.
270 L1=X XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXX
280 PRINT "JIS THIS ANALYST WORK SHEET DATA FOR GB? (ENTER Y OR N) "
290 REM

+++++ 300 INPUT N1
310 IF N1=Y THEN 340
320 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
330 GO TO 2800
340 READ B,C,E,F,Y
350 F=F1Y1
360 READ J,K
370 READ X
380 FOR I=1 TO 6
390 READ Y1
400 X1=X1Y1
410 NEXT I
420 DELETE Y
430 PRINT "JINSERT THE DATA TAPE INTO UNIT 4924"
440 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
450 INPUT U
460 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK "
470 INPUT T
480 T=SEG(T,1,3)
490 FIND G11
500 INPUT G1,131Z
510 G1=SEG(G1,4,2)
520 L1=SEG(L1,8,3)
530 G1=SEG(G1,8,9)
540 IF G1="05" AND B1=I THEN 560
550 PRINT "THIS IS THE WRONG DATA TAPE"
560 PRINT "THIS TAPE IS FOR DATA SHEET #1A1" FOR "IC1"
570 GO TO 2800
+++++ 580 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) "
590 INPUT N1
600 IF N1=Y THEN 690

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610 IF U=33 THEN 660
+++1+++ 620 INPUT @U,@IT
630 IF I=1 THEN 690
640 INPUT @U,@I3I2$
650 GO TO 620
+++2+++ 660 IF IYP(O)=1 THEN 690
670 INPUT @U,@I3I2$
680 GO TO 660
+++3+++ 690 Z$=RM#0310*81$
700 Z$=Z$RH$

710 REM
720 REM ***** BEGIN DATA INPUT *****
730 PAGE
+++2+++ 740 PRINT *JBEGIN DATA ENTRY FROM ANALYST WORK SHEET #3.
+++1+++ 750 I1=1
760 I2=12
+++2+++ 770 I1=0
780 I2=0
790 I1=11 TO I2
800 IF I>10 OR O=0 OR I<7 THEN 830
810 V$=NA.
820 GO TO 970
+++1+++ 830 IF I<>22 THEN 850
840 IF M=0 THEN 1060
+++1+++ 850 I$=SEG(X$+C(I,1),C(I,2))
860 C$=SEG(Z$+B(I,1),B(I,2))
870 PRINT *ENTER *I1$* *I2$
+++1+++ 880 INPUT V$
890 IF V$="" THEN 1060
900 Z1=LEN(V$)
910 IF Z1<B(I,2) THEN 2940
920 IF V$="" THEN 1350
930 IF V$<>"M" THEN 960
940 V$="MISSING."
950 GO TO 1050
+++1+++ 960 IF V$<>"NA" THEN 1010
+++1+++ 970 FOR K1=3 TO B(I,2)
980 V1=V$K1.
990 NEXT K1
1000 GO TO 1050
+++1+++ 1010 IF I<>5 THEN 1030
1020 O=1
+++1+++ 1030 GO TO B(I,3) OF 1350,1410,1550,1550,1830,1900,2070,2170,2260
1040 IF LEN(V$)<B(I,2) THEN 2900
+++12+++ 1050 Z$=REP(V$,B(I,1),B(I,2))
+++2+++ 1060 NEXT I
1070 IF I2=22 THEN 2310
1080 I1=13
1090 I2=22
1100 PAGE
1110 A$=SEG(Z$+21,3)
1120 IF A$<>"CAL" THEN 1170
1130 M$=SEG(Z$+8,2)
1140 Z$=REP(A$,10,2)
1150 Z$=REP(I$,90,38)
1160 GO TO 2310
+++1+++ 1170 A$=SEG(Z$+21,6)
1180 PRINT *JBEGIN DATA ENTRY FROM LAB COORDINATOR WORK SHEET #7.

```

```

++++1+++ 1190 PRINT "ENTER THE CONTROL NUMBER (AAANNN)".
1200 INPUT N$
1210 IF R$=A$ THEN 1240
1220 PRINT "YOU SHOULD BE ENTERING DATA FOR 'JA$
1230 GO TO 1190
++++1+++ 1240 A$=SEG(Z$,6,2)
1250 Z$=REP(A$,10,2)
1260 PRINT "JIS THIS REANALYSIS DATAT (ENTER Y OR N) "
1270 INPUT N$
1280 IF N$<>"Y" THEN 770
1290 M=1
1300 Z$=REP("30",4,2)
1310 Z$=REP("XXXXX",12,6)
1220 GO TO 770
1330 REM
1340 REM ***** CHECK NO. 1 - LEFT ZERO FILL *****
++++2+++ 1350 IF Z1=B(I,2) THEN 1050
1360 FOR K=Z1+1 TO B(I,2)
1370 V$="0"IV$
1380 NEXT K
1390 GO TO 1050
++++1+++ 1400 REM ***** CHECK NO. 2 -LIMITS *****
1410 IF Z1>B(I,2) THEN 2900
1420 FOR K=1 TO Z1
1430 E$=SEG(V$,K,1)
1440 E1=ASC(E$)
1450 IF E1>47 AND E1<58 THEN 1480
1460 PRINT "THIS ENTRY MUST BE NUMERIC"
1470 GO TO 1520
1480 NEXT K
1490 IF VAL(V$)<E(I,4) OR VAL(V$)>B(I,5) THEN 1510
1500 GO TO 1050
++++1+++ 1510 PRINT "MUST BE IN THE RANGE OF 'B(I,4)' TO 'B(I,5)
++++12+++ 1520 PRINT "REENTER 'JD$'."IC$
1530 GO TO 660
1540 REM ***** CHECK NO. 4 - LINE UP DECIMAL POINTS *****
++++2+++ 1550 Q$=SEG(V$,1,1)
1560 IF Q$="." OR Q$=">" THEN 1600
1570 V$=" "IV$
1580 Z1=Z1+1
++++1+++ 1590 IF Z1>B(I,2) THEN 1780
1600 J=F05(V$,".",1)
1610 IF J=0 THEN 1800
1620 J1=Z1-J
1630 K1=E(I)
1640 IF J1=N1 THEN 1760
1650 IF J1=N1 THEN 1700
1660 FOR K=J1+1 TO K1
1670 V$=V$+"0"
1680 NEXT K
1690 Z1=LEN(V$)
1700 IF Z1=B(I,2) THEN 1050
1710 IF Z1>B(I,2) THEN 1780
1720 FOR N=Z1+1 TO B(I,2)

```

```

1730 V:=REP(' ',2,0)
1740 NEXT K
1750 GO TO 1050
+++1+++ 1760 PRINT 'ONLY *K1* DECIMAL FIGURES ARE ALLOWED'
+++2+++ 1770 GO TO 1520
+++1+++ 1780 PRINT 'THIS NUMBER HAS TOO MANY FIGURES'
+++1+++ 1790 GO TO 1520
1800 PRINT 'THIS NUMBER HAS NO DECIMAL POINT'
1810 GO TO 1520

1820 REM ***** CHECK NO. 5 - CHECK FOR < AND > *****
+++1+++ 1830 IF Z1>B(I,2) THEN 2940
1840 G:=SEG(V,1,1)
1850 IF Q#< OR Q#> THEN 1870
1860 GO TO 1570
+++1+++ 1870 PRINT 'NO < OR > IS ALLOWED WITH THIS VALUE'
1880 GO TO 1520

1890 REM ***** CHECK NO. 6 - CONTROL NUMBER FORMAT *****
+++1+++ 1900 IF Z1<>B(I,2) THEN 2900
1910 FOR K=1 TO 6
1920 E:=SEG(V,K,1)
1930 E:=ASC(E)
1940 IF E<65 OR E>90 THEN 1980
1950 IF K=5 THEN 2010
1960 PRINT 'CHARACTER NUMBER *K* MUST BE NUMERIC'
1970 GO TO 1520
+++1+++ 1980 IF N=1 AND E=17 AND E<5B THEN 2010
1990 PRINT 'CHARACTER NUMBER *K* MUST BE ALPHABETIC'
2000 GO TO 1520
+++2+++ 2010 NEXT N
2020 E:=SEG(V,1,3)
2030 IF E<>'CAL' THEN 1050
2040 G:=1
2050 GO TO 1050

2060 REM ***** CHECK NO. 7 - CHECK SET TYPE *****
+++1+++ 2070 IF Z1<>B(I,2) THEN 2900
2080 K=1
2090 FOR N=1 TO 18
2100 S:=SEG(F,K,4)
2110 IF V=S THEN 1050
2120 K=K+4
2130 NEXT K
2140 PRINT V; ' IS NOT A VALID SET TYPE'
2150 GO TO 1520

2160 REM ***** CHECK NO. 8 - LOCATION *****
+++1+++ 2170 K=1
2180 FOR N=1 TO 19
2190 S:=SEG(N,K,2)
2200 IF V=S THEN 1050
2210 K=K+2
2220 NEXT N
2230 PRINT V; ' IS NOT A VALID LOCATION'
2240 GO TO 1520

```

2250 REM ***** CHECK NO. 9 - PURPOSE *****

2260 IF V\$='FL' OR V\$='OP' OR V\$='OI' OR V\$='CA' THEN 1050
2270 PRINT V\$: IS NOT A VALID PURPOSE CODE.
2280 GO TO 1520

2290 REM
2300 REM ***** WRITE RECORD TO TAPE AND CHECK FOR COMMENTS *****

2310 ZI=LEN(Z\$)
2320 IF ZI<>127 THEN 2860
2330 PRINT @411Z\$
2340 PRINT @0,12:Z\$
2350 PRINT *JIS THERE AN ANALYST'S COMMENT (ENTER Y OR N) *
2360 INPUT N\$
2370 IF N\$<>'Y' THEN 2460

2380 REM
2390 REM ***** PROCESS COMMENTS *****

2400 N=1
2410 I\$='ANALYST'S'
2420 A\$=SEG(J\$,N,2)
2430 W\$=Z\$
2440 W\$=REP(A\$,6,2)
2450 W\$=REP(G\$,34,78)
2460 PRINT *ENTER COMMENT (72 CHARACTERS OR LESS)*
2470 INPUT C\$
2480 ZI=LEN(C\$)
2490 IF ZI<>72 THEN 2520
2500 PRINT *THIS COMMENT IS TOO LONG*
2510 GO TO 2460
2520 W\$=REP(C\$,34,ZI)
2530 ZI=LEN(W\$)
2540 IF ZI<>127 THEN 2660
2550 PRINT @411W\$
2560 PRINT @0,121W\$
2570 IF N\$=9 THEN 2660
2580 IF N\$=19 THEN 2740
2590 PRINT *JIS THERE ANOTHER *JIS* COMMENT (ENTER Y OR N) *
2600 INPUT N\$
2610 N=N+1
2620 IF N\$='Y' THEN 2420

2630 REM
2640 REM ***** MORE COMMENTS *****

2650 IF N>10 THEN 2740
2660 PRINT *JIS THERE A LAB. DATA COORD. COMMENT (ENTER Y OR N) *
2670 INPUT N\$
2680 IF N\$<>'Y' THEN 2740
2690 N=N+1
2700 I\$='LAB. DATA COORD.*'
2710 GO TO 2420

2720 REM
2730 REM ***** CHECK END OF DATA *****

2740 N=0

```

2750 Z=REF('10',6,2)
2760 PRINT 'JMORE DATA (ENTER Y OR N) N WILL END PROGRAM) '
2770 INPUT N$
2780 IF N<>'N' THEN 730
2790 GO TO 2820
+++3+++ 2800 PRINT 'J*** ABNORMAL PROGRAM END ***'
2810 GO TO 2830
+++1+++ 2820 PRINT 'JNORMAL PROGRAM END'
+++1+++ 2830 PRINT 'U,2'
2840 END

2850 REM ***** DIAGNOSTIC MESSAGES *****
+++2+++ 2860 PRINT 'ERROR IN LENGTH OF Z$'
2870 PRINT 'JTIF THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD'
2880 GO TO 740
2890 REM

+++4+++ 2900 PRINT 'THE STRING MUST BE COMPLETELY FILLED - EXACTLY *JB(I,2)*
2910 PRINT ' CHARACTERS'
2920 GO TO 1520
2930 REM

+++2+++ 2940 PRINT 'I$' CANNOT BE LONGER THAN *JB(I,2)* CHARACTERS'
2950 GO TO 1520
2960 REM
2970 REM ***** B ARRAY (22,5) *****
2980 DATA 6,2,1,0,0,12,6,0,0,0,20,1,2,1,5
2990 DATA 21,6,6,0,0,27,7,5,0,0,48,7,4,0,0,55,7,4,0,0
3000 DATA 62,7,4,0,0,69,7,5,0,0,76,7,4,0,0,83,4,2,0,0,2400,87,3,0,0,0
3010 DATA 10,2,1,0,0,112,4,7,0,0,116,2,8,0,0,118,2,9,0,0
3020 DATA 120,4,2,0,0,2400,124,4,2,0,2400,190,7,5,0,0
3030 DATA 97,6,5,0,0,103,2,4,0,0,12,6,0,0,0
3040 REM
3050 REM ***** C ARRAY (22,2) *****
3060 DATA 1,11,13,38,57,13,71,14,86,22,108,11,120,19
3070 DATA 140,8,149,14,163,22,186,13,200,8
3080 DATA 211,11,222,8,231,8,240,7,248,10,259,9,268,7,276,21,298,24
3090 DATA 322,15
3100 REM
3110 REM ***** E ARRAY (22) *****
3120 DATA 0,0,0,0,3,2,2,1,1,2,0,0,0,0,0,0,0,1,3,4,0
3130 REM
3140 REM ***** F$ ARRAY (72) *****
3150 DATA 'A941NS42K945K951K952K953K954K955'
3160 DATA 'X302X545X546X547X548X549X550X551X552DATS'
3170 REM
3180 REM ***** J$ ARRAY (20) AND K$ ARRAY (38) *****

```

3190 DATA *202122323245526275029*
3200 DATA *DKSTCRKADCCVUHREXENAREAEASSSELAD0*

3210 REM
3220 REM ***** X\$ ARKAY (350) *****

3230 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDHHYY)
3240 DATA *SERIAL NUMBER/CONTROL NUMBER/CALIBRATION STD. CONC.*
3250 DATA *PEAK HEIGHT/AGENT CONCENTRATION/DILUTION/BURBLER VOLUME*
3260 DATA *CORRECTION(/SAMPLE)/ANALYSIS TIME/INITIALS**PAGE NUMBER*
3270 DATA *SET TYPE/LOCATION/PURPOSE/START TIME/STOP TIME*
3280 DATA *AIRFLOW/CONTROL CONCENTRATION/AIR SAMPLE CONCENTRATION*
3290 DATA *REANALYSIS DATE*

3300 REM
3310 REM ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 730
8 GO TO 2600

+++++ 100 REM *** DATA SHEET #4 - ANALYST WORK SHEET FOR L *****
110 REM #8 - LAB DATA COORDINATOR WORK SHEET
120 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
130 REM VERSION 9 - 10/29/81

140 REM BY: STEARNS-ROGER, INC.
150 REM M. E. MARTIN *****

170 PAGE
180 INIT
190 SET KEY
200 DIM R(22,5),C(22,2),E(22)
210 DIM F(68,6),J(20),N(38),M(1),X(350),W(127),Z(127)
220 N=0
230 G=0

240 G=G+1
250 H=X XXXX.X XXX.XXXXXXXXXX XXXX.X X.XXX XXX.XXXXXXXXXXXXXXXXXXXXX
260 I=X XXXXL XXXXXXN XX.XXXN XXXXX. XXX.XX XXX.
270 L=X XXXX.X XXX XXXXXXXXXXXXXXXXXXXXXXX
280 PRINT "JIS THIS ANALYST WORK SHEET DATA FOR LT (ENTER Y OR N)";I

290 REM

300 INPUT N\$
310 IF N\$="Y" THEN 340
320 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"

+++++ 330 GO TO 2600
340 READ B,C,E,F,Y
350 F=F+1
360 READ J,N
370 READ A
380 FOR I=1 TO 6
390 READ Y
400 X=X+Y
410 NEXT I

420 DELETE Y
430 PRINT "INSERT THE DATA TAPE INTO UNIT 424"
440 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE";I
450 INPUT I
460 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK";I

470 INPUT T
480 F=F+1
490 FOR G=1 TO 17
500 INPUT G,T
510 W=W+G
520 F=F+G
530 G=G+1
540 IF G=104 AND B=1 THEN 380
550 PRINT "THIS IS THE WRONG DATA TAPE"
560 PRINT "THIS TAPE IS FOR DATA SHEET #";J
570 GO TO 2600

+++++ 580 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)";I
590 INPUT N\$
600 IF N\$="Y" THEN 690

```

+++1+++ 610 IF U=J3 THEN 660
        620 INP JT 20,6:1
        630 IF J=1 THEN 690
        640 INPUT 20,13:Z8
        650 GO TO 620
+++2+++ 650 IF TYP(O)=1 THEN 690
        670 INPUT 20,13:Z8
        680 GO TO 660
+++3+++ 690 Z8=KAO0410*818
        700 Z8=Z8H8

```

```

710 END
720 KLM ***** BEGIN DATA INPUT *****

```

```

+++2+++ 730 PAGE
+++1+++ 740 PRINT "JBEGIN DATA ENTRY FROM ANALYST WORK SHEET 64"

```

```

750 I=1
760 I=12
770 C1=0
780 UO=0
790 FOR I=11 TO 12
800 IF I=10 OR O=0 OR I<7 THEN 810
810 U4="NA"
820 GO TO 970

```

```

+++1+++ 830 IF I=12 THEN 850
+++1+++ 840 IF M=0 THEN 1060
+++1+++ 850 B=SEG(Z8,C(I,1),C(I,2))
+++1+++ 860 C=SEG(Z8,B(I,1),B(I,2))
+++1+++ 870 PRINT "ENTER "B(I,1)" "C(I,2)

```

```

+++1+++ 880 INPUT V1
890 IF V1="" THEN 1060
900 Z1=LEN(V1)
910 IF Z1=0 THEN 2940
920 IF V1="" THEN 1350
930 IF V1="M" THEN 960
940 V4="MISSING"
950 GO TO 1070

```

```

+++1+++ 960 IF V1="NA" THEN 1010
+++1+++ 970 FOR K=3 TO B(I,2)
980 V4=V1
990 NEXT K
1000 GO TO 1050

```

```

+++1+++ 1010 IF I=5 THEN 1030
1020 O3=1
+++1+++ 1030 GO TO B(I,3) OF 1350,1410,1550,1830,1906,2070,2170,2260
+++1+++ 1040 IF LEN(V4)=B(I,2) THEN 2900
+++1+++ 1050 Z8=AFF(V4,K(I,1),B(I,2))
+++1+++ 1060 NEXT I

```

```

1070 IF I=22 THEN 2310
1080 I=I+1
1090 I=22
1100 PAGE
+++1+++ 1110 B=SEG(Z8,C(I,1),C(I,2))
+++1+++ 1120 IF B="CON" THEN 1170
+++1+++ 1130 M1=SEG(Z8,B(I,2))
+++1+++ 1140 Z8=AFF(M1,I,O3)
+++1+++ 1150 IF M1="Y0,38"
1160 GO TO 2310
1170 M4=SEG(Z8,B(I,6))

```

```

+++1+++ 1180 PRINT "JBEGIN DATA ENTRY FROM LAB COORDINATOR WORK SHEET 68"

```



```

+++++ 1190 PRINT "ENTER THE CONTROL NUMBER (N=NNNN)."
1200 INPUT B
1210 IF B=0 THEN 1240
1220 PRINT "YOU SHOULD BE ENTERING DATA FOR 'A'"
1230 GO TO 1190
+++++ 1240 A=SEG(Z,8,2)
1250 Z=REF(A,10,2)
1260 PRINT "JIS THIS REANALYSIS DATAT (ENTER Y OR N) "
1270 INPUT M
1280 IF M="Y" THEN 770
1290 M=1
1300 Z=REF("30",6,2)
1310 Z=REF("XXXXXX",12,6)
1320 GO TO 770
1330 REM
1340 REM ***** CHECK NO. 1 - LEFT ZERO FILL *****
+++++ 1350 IF Z1=B(I,2) THEN 1050
1360 FOR N=Z1+1 TO B(I,2)
1370 V="0"
1380 NEXT N
1390 GO TO 1050
1400 REM ***** CHECK NO. 2 - LIMITS *****
+++++ 1410 IF Z1>B(I,2) THEN 2900
1420 FOR K=1 TO Z1
1430 E=SEG(V,K,1)
1440 E=ASC(E)
1450 IF E<47 AND E>58 THEN 1480
1460 PRINT "THIS ENTRY MUST BE NUMERIC"
1470 GO TO 1520
1480 NEXT K
1490 IF VAL(V)<B(I,4) OR VAL(V)>B(I,5) THEN 1510
1500 GO TO 1050
+++++ 1510 PRINT "MUST BE IN THE RANGE OF 'B(I,4)' TO 'B(I,5)'"
1520 PRINT "J=ENTER 'J' TO 'J'"
1530 GO TO 800
1540 REM ***** CHECK NO. 4 - LINE UP DECIMAL POINTS *****
+++++ 1550 G=SEG(V,1,1)
1560 IF G="." OR G=">" THEN 1600
1570 V=" "
1580 Z1=Z1+1
1590 IF Z1>B(I,2) THEN 1780
1600 J=POS(V, ".")
1610 IF J=0 THEN 1900
1620 J1=Z1-J
1630 M=E(I)
1640 IF J1<1 THEN 1760
1650 IF J1=1 THEN 1700
1660 FOR N=J1+1 TO K1
1670 V=V+A*0.
1680 NEXT N
1690 Z1=LEN(V)
1700 IF Z1=B(I,2) THEN 1050
+++++ 1710 IF Z1>B(I,2) THEN 1780
1720 FOR N=Z1+1 TO B(I,2)

```

```

1730 V=REF(*,2.0)
1740 NEXT K
1750 GO TO 1050
+++1+++ 1760 PRINT 'ONLY *IK1* DECIMAL FIGURES ARE ALLOWED'
+++2+++ 1770 GO TO 1520
+++1+++ 1780 PRINT 'THIS NUMBER HAS TOO MANY FIGURES'
1790 GO TO 1520
+++1+++ 1800 PRINT 'THIS NUMBER HAS NO DECIMAL POINT'
1810 GO TO 1520

1820 REM ***** CHECK NO. 5 - CHECK FOR < AND > *****
+++1+++ 1830 IF Z1<>B(I,2) THEN 2940
1840 S=SEG(V,1,1)
1850 IF 0=S< OR 0=S> THEN 1870
1860 GO TO 1570
+++1+++ 1870 PRINT 'NO < OR > IS ALLOWED WITH THIS VALUE'
1880 GO TO 1520

1890 REM ***** CHECK NO. 6 - CONTROL NUMBER FORMAT *****
+++1+++ 1900 IF Z1<>B(I,2) THEN 2900
1910 FOR N=1 TO 6
1920 E=SEG(V,K,1)
1930 C1=ASC(E)
1940 IF E1<65 OR E1>90 THEN 1980
1950 IF N=5 THEN 2010
1960 PRINT 'CHARACTER NUMBER *IK1* MUST BE NUMERIC'
1970 GO TO 1520
+++1+++ 1980 IF N=4 AND E1=47 AND E1<58 THEN 2010
1990 PRINT 'CHARACTER NUMBER *IK1* MUST BE ALPHABETIC'
2000 GO TO 1520
+++2+++ 2010 NEXT N
2020 E=SEG(V,1,3)
2030 IF E<>'CAL' THEN 1050
2040 C1=1
2050 GO TO 1050

2060 REM ***** CHECK NO. 7 - CHECK SET TYPE *****
+++1+++ 2070 IF Z1<>B(I,2) THEN 2900
2080 N=1
2090 FOR N=1 TO 17
2100 S=SEG(F,N,4)
2110 IF 0=S< THEN 1050
2120 N=N+4
2130 NEXT N
2140 PRINT 'S' IS NOT A VALID SET TYPE'
2150 GO TO 1520

2160 REM ***** CHECK NO. 8 - LOCATION *****
+++1+++ 2170 N=1
2180 FOR N=1 TO 19
2190 S=SEG(K,N,2)
2200 IF 0=S< THEN 1050
2210 N=N+2
2220 NEXT N
2230 PRINT 'S' IS NOT A VALID LOCATION'
2240 GO TO 1520

```

```

2250 REM ***** CHECK NO. 9 - PURPOSE *****
+++1+++ 2260 IF V#='FL' OR V#='GP' OR V#='OL' OR V#='CA' THEN 1050
2270 PRINT V#; ' IS NOT A VALID PURPOSE CODE.'
2280 GO TO 1520

2290 REM
2300 REM ***** WRITE RECORD TO TAPE AND CHECK FOR COMMENTS *****
+++2+++ 2310 Z1=LEN(Z#)
2320 IF Z1<127 THEN 2660
2330 PRINT @41;Z#
2340 PRINT @0;12;Z#
2350 PRINT 'JIS THERE AN ANALYST'S COMMENT (ENTER Y OR N) '
2360 INPUT N#
2370 IF N#>'Y' THEN 2660

2380 REM
2390 REM ***** PROCESS COMMENTS *****
+++1+++ 2400 N=1
2410 I#='ANALYST'S'
2420 A#='SEG(J#N,2)
2430 W#='Z#
2440 W#='REP(A#;6;2)
2450 W#='REF(G#;34;78)
+++1+++ 2460 PRINT 'ENTER COMMENT (72 CHARACTERS OR LESS)'.
2470 INPUT C#
2480 Z1=LEN(C#)
2490 IF Z1>72 THEN 2520
2500 PRINT 'THIS COMMENT IS TOO LONG.'
2510 GO TO 2460
+++1+++ 2520 W#='REF(C#;34;Z1)
2530 Z1=LEN(W#)
2540 IF Z1<127 THEN 2060
2550 PRINT @41;W#
2560 PRINT @0;12;W#
2570 IF N#>'Y' THEN 2660
2580 IF N#>'Y' THEN 2740
2590 PRINT 'JIS THERE ANOTHER 'JIS' COMMENT (ENTER Y OR N) '
2600 INPUT N#
2610 N=N+2
2620 IF N#>'Y' THEN 2420

2630 REM
2640 REM ***** MORE COMMENTS *****
+++2+++ 2650 IF N#>10 THEN 2740
2660 PRINT 'JIS THERE A LAB. DATA COORD. COMMENT (ENTER Y OR N) '
2670 INPUT N#
2680 IF N#>'Y' THEN 2740
2690 N=N+1
2700 I#='LAB. DATA COORD.'.
2710 GO TO 2420

2720 REM
2730 REM ***** CHECK END OF DATA *****
+++3+++ 2740 H=0

```

```

2750 Z$=REP(*10*,6,2)
2760 PRINT *JMORE DATA? (ENTER Y OR N) N WILL END PROGRAM) *
2770 INPUT N$
2780 IF N$=>N* THEN 730
2790 GO TO 2820
+++3+++
2800 PRINT *J*** ABNORMAL PROGRAM END ****
2810 GO TO 2830
+++1+++
2820 PRINT *JOURNAL PROGRAM END*
2830 PRINT @U,2:
2840 END

2850 REM ***** DIAGNOSTIC MESSAGES *****
+++2+++
2860 PRINT *ERROR IN LENGTH OF Z$*
2870 PRINT *THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD*
2880 GO TO 740

2890 REM

+++4+++
2900 PRINT *THE STRING MUST BE COMPLETELY FILLED - EXACTLY *;B(I,2);
2910 PRINT * CHARACTERS*
2920 GO TO 1520

2930 REM

+++2+++
2940 PRINT D$; * CANNOT BE LONGER THAN *;B(I,2); * CHARACTERS*
2950 GO TO 1520

2960 REM ***** B ARRAY (22,5) *****
2970 REM ***** B ARRAY (22,5) *****
2980 DATA 8,2,1,0,0,12,6,0,0,20,0,20,1,2,1,5
2990 DATA 21,6,6,0,0,27,7,5,0,0,48,7,4,0,0,55,7,4,0,0
3000 DATA 62,7,4,0,0,69,7,5,0,0,76,7,4,0,0,83,4,2,0,2400,87,3,0,0,0
3010 DATA 10,2,1,0,0,112,4,7,0,0,116,2,8,0,0,118,2,9,0,0
3020 DATA 120,4,2,0,2400,124,4,2,0,2400,90,7,5,0,0
3030 DATA 97,6,5,0,0,103,9,4,0,0,12,6,0,0,0

3040 REM
3050 REM ***** C ARRAY (22,2) *****
3060 DATA 1,11,13,30,57,13,71,14,86,22,108,11,120,19
3070 DATA 140,8,149,14,143,22,186,13,200,8
3080 DATA 211,11,222,8,231,8,240,7,248,10,259,9,2,0,8,7,276,21,298,24
3090 DATA 322,15

3100 REM
3110 REM ***** E ARRAY (22) *****
3120 DATA 0,0,0,0,3,0,2,1,1,2,0,0,0,0,0,0,0,0,0,0,0,0,1,3,4,0

3130 REM
3140 REM ***** F ARRAY (68) *****
3150 DATA *K94IK94K95IK95IK95IK95IK95K954K955*
3160 DATA *X302X5+5X5+6X5+7X5+8X5+9X5+50X551X552*

3170 REM
3180 REM ***** J ARRAY (20) AND K ARRAY (38) *****

```

3190 DATA *2012223242526272829*
3200 DATA *UKSTCRRAEDCCUHQHREXENNAWBEAESSUSLAOT*

3210 KEM
3220 KEM ***** X# ARRAY (350) *****

3230 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY) *
3240 DATA *SERIAL NUMBER/CONTROL NUMBER/CALIBRATION STD. CONC.*
3250 DATA *PEAK HEIGHT/AGENT CONCENTRATION/DILUTION/BUBBLER VOLUME*
3260 DATA *CONCENTRATION(/SAMPLE)/ANALYSIS TIME/INITIALS**PAGE NUMBER*
3270 DATA *SET TYPE/LOCATION/PURPOSE/START TIME/STOP TIME*
3280 DATA *AIRFLOW/CONTROL CONCENTRATION/AIR SAMPLE CONCENTRATION*
3290 DATA *REANALYSIS DATE*

3300 KEM
3310 FL1 ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 660
8 GO TO 2040

+++++ 100 REM **** DATA SHEET # 9 - ANALYTICAL DATA SHEET FOR MIRAN 80 ****
110 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM VERSION 10 - 3/5/82
130 REM
140 REM
150 REM ***

BY: STEAKNS-ROGER, INC. *****
M. E. MARTIN

MODIFIED BY: Computer Sciences Corporation
Isaac Willy Traxler
April 8, 1982

151 REM
152 REM
153 REM
154 REM
155 REM
156 REM PROGRAM MODIFIED TO ACCEPT NEW FORMAT FOR QL DATA SHEET
157 REM

160 INIT
170 SET KEY
180 DIM B(23,5),C(23,2),I(2,17)
190 DIM F(68),J(10),K(38),N(1),X(450),W(104),Z(104)
200 F=0
210 G=0
220 H=0
230 I=0
240 PRINT "LUA DATA ENTRY PROGRAM FOR MIRAN 80"
250 READ G,C
260 READ J,K,F
270 READ Y
280 F=F+Y
290 DELETE Y
300 READ X
310 FOR I=1 TO 7
320 READ Y
330 X=X+Y
340 NEXT I
350 DELETE Y
360 READ IO
370 PRINT "INSERT THE OUTPUT DATA TAPE INTO UNIT 4924"
380 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE"

390 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
400 INPUT T
410 L=SEG(T),1,3
420 FIND GUIT
430 INPUT Q,13,7
440 A=SEG(Z),4,2
450 B=SEG(W),8,3
460 C=SEG(Z),8,9
470 IF A="09" AND B="T" THEN 510
480 PRINT "THIS IS THE WRONG DATA TAPE"
490 PRINT "THIS TAPE IS FOR DATA SHEET #14" FOR "IC"
500 GO TO 2040
510 PRINT "JIS THIS DATA FOR A NEW WEEK (ENTER Y OR N)"
520 INPUT N
530 IF N="Y" THEN 620
540 IF U=33 THEN 590

```

+++1+++ 550 INPUT Q0,61T
560 IF I=1 THEN 620
570 INPUT Q0,13:Z$
580 GO TO 550
+++2+++ 590 IF TYP(Q)=1 THEN 620
500 INPUT Q0,13:Z$
610 GO TO 590
+++4+++ 620 Z$=RMA0Y10*11$
630 Z$=Z$8H$

640 REM
650 REM ***** BEGIN DATA INPUT *****
+++2+++ 660 PRINT
665 I=1
670 FOR I2=1 TO 17
675 I=10(I1,12)
680 B=SEG(X)+C(I,1),C(I,2)
690 C=SEG(Z)+B(I,1),B(I,2)
700 PRINT *ENTER *I1* *I2*
+++1+++ 710 INPUT V$
712 IF I<4 THEN 720
714 IF V$<>'QL' THEN 720
716 I1=2
+++2+++ 720 IF V$='.' THEN 870
730 ZI=LEN(V$)
740 IF ZI>B(I,2) THEN 2150
750 IF V$='.' THEN 910
760 IF V$<>'H' THEN 790
770 V$='MISSING'
780 GO TO 860
+++1+++ 790 IF V$<>'NA' THEN 840
800 FOR K1=3 TO B(I,2)
810 V$=V$3.
820 NEXT K1
830 GO TO 860
+++1+++ 840 GO TO B(I,3) OF 910,970,1110,1210,1300,1340,1590
850 IF LEN(V$)>B(I,2) THEN 2110
+++10+++ 860 Z$=REF(V$,B(I,1),B(I,2))
+++1+++ 870 NEXT I2
880 GO TO 1670

890 REM
900 REM ***** CHECK NO. 1 - LEFT ZERO FILL *****
+++2+++ 910 IF ZI=B(I,2) THEN 860
920 FOR K=Z1+1 TO B(I,2)
930 V$='0'50$
940 NEXT K
950 GO TO 860

960 REM ***** CHECK NO. 2 - LIMITS *****
+++1+++ 970 IF ZI>B(I,2) THEN 2110
980 FOR K=1 TO Z1
990 C1=SEG(V$,K,1)
1000 E1=ASC(E$)
1010 IF E1>47 AND E1<58 THEN 1040
1020 PRINT *THIS ENTRY MUST BE NUMERIC*
1030 GO TO 1080

```

```
++++11111 1040 NEXT K
1050 IF VAL(V$)<B(I,4) OR VAL(V$)>B(I,5) THEN 1070
1060 GO TO 860
++++11111 1070 PRINT U$; MUST BE IN THE RANGE OF 'B(I,4)' TO 'B(I,5)
++++11101 1080 PRINT 'JREENTER 'D$; 'C$
1090 GO TO 710
```

```
1100 REM ***** CHECK NO. 3 - ACCEPTABLE SET TYPES *****
```

```
++++11111 1110 IF Z1<B(I,2) THEN 2110
1120 K1=1
1130 FOR K=1 TO 17
1140 S=SEG(F$;K,4)
1150 IF V$=S THEN 860
1160 N4=K+14
1170 NEXT K
1180 PRINT V$; IS NOT A VALID SET TYPE*
1190 GO TO 1080
```

```
1200 REM ***** CHECK NO. 4 - LOCATIONS *****
```

```
++++11111 1210 K2=1
1220 FOR K=1 TO 19
1230 S=SEG(K$;K,2)
1240 IF V$=S THEN 860
1250 K2=K+2
1260 NEXT K
1270 PRINT V$; IS NOT AN ALLOWABLE LOCATION*
1280 GO TO 1080
```

```
1290 REM ***** CHECK NO. 5 - PURPOSE *****
```

```
++++11111 1300 IF V$='PL' OR V$='QL' OR V$='CA' THEN 860
1310 PRINT V$; IS NOT A VALID PURPOSE CODE*
1320 GO TO 1080
```

```
1330 REM ***** CHECK NO. 6 - LINE UP DECIMAL POINTS *****
```

```
++++11111 1340 O=SEG(V$,1,1)
1350 IF (O=C OR O=S) THEN 1390
++++11111 1360 V1= ' '
1370 Z1=Z1+1
1380 IF Z1<B(I,2) THEN 1540
1390 J=POS(V$,',')
1400 IF J=0 THEN 1560
1410 J1=Z1-J
1420 GO TO J1 OF 1440,1450,1520,1520,1520
```

```
++++11111 1430 V4=V$*0.
++++11111 1440 V5=V$*0.
++++11111 1450 Z1=LEN(V$)
```

```
1460 IF Z1<B(I,2) THEN 860
1470 IF Z1<B(I,2) THEN 1540
1480 FOR K=Z1+1 TO B(I,2)
1490 V=REP(' ',2,0)
1500 NEXT K
```

```
1510 GO TO 860
++++11111 1520 PRINT 'ONLY TWO DECIMAL FIGURES ARE ALLOWED*
1530 GO TO 1080
```

```
++++21111 1540 PRINT 'THIS NUMBER HAS TOO MANY FIGURES*
1550 GO TO 1080
```



```

+++|+++ 1560 PRINT 'THIS NUMBER HAS NO DECIMAL POINT'
1570 GO TO 1080

1580 REM ***** CHECK NO. 7 - CHECK FOR < AND > *****

+++|+++ 1590 IF Z1>B(I,2) THEN 2150
1600 O=SEG(V,1,1)
1610 IF G= '<' OR G='>' THEN 1630
1620 GO TO 1360
1630 PRINT 'NO < OR > IS ALLOWED WITH THIS VALUE.'
1640 GO TO 1080

1650 REM
1660 REM ***** WRITE RECORD TO TAPE AND CHECK FOR COMMENTS *****

+++|+++ 1670 Z1=LEN(Z$)
1680 IF Z1<104 THEN 2070
1690 PRINT @411Z$
1700 PRINT @0,121Z$
1710 PRINT 'JIS THERE A COMMENT? (ENTER Y OR N) '
1720 INPUT N$
1730 IF N$='Y' THEN 2000

1740 REM
1750 REM ***** PROCESS COMMENTS *****

+++|+++ 1760 N=1
1770 A$=SEG(J,N,2)
1780 W$=Z$
1790 W$=REP(A$,6,2)
1800 W$=REP(G$,37,34)
1810 W$=REP(C$,71,34)
1820 PRINT 'ENTER COMMENT (68 CHARACTERS OR LESS) '
1830 INPUT C$
1840 Z1=LEN(C$)
1850 IF Z1<68 THEN 1860
1860 PRINT 'THIS COMMENT IS TOO LONG.'
1870 GO TO 1820
1880 Q$=REP(C$,37,Z1)
1890 Z1=LEN(Q$)
1900 IF Z1<104 THEN 2070
1910 PRINT @411W$
1920 PRINT @0,121W$
1930 IF N=9 THEN 2000
1940 PRINT 'JIS THERE ANOTHER COMMENT? (ENTER Y OR N) '
1950 INPUT N$
1960 N=N+2
1970 IF N='Y' THEN 1770

1980 REM
1990 REM ***** CHECK END OF DATA *****

+++|+++ 2000 PRINT 'MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) '
2010 INPUT N$
2020 IF N$='N' THEN 660
2030 PRINT @0,2:
2040 PRINT 'PROGRAM FINISHED.'
2050 END

2060 REM ***** DIAGNOSTIC MESSAGES *****

```

```

++12+++ 2070 PRINT *ERROR IN LENGTH OF Z*
2080 PRINT *THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD*
2090 GO TO 620
2100 REM
++13+++ 2110 PRINT *THE STRING MUST BE COMPLETELY FILLED - EXACTLY *(I,2)*
2120 PRINT * CHARACTERS.
2130 GO TO 1080
2140 REM
++14+++ 2150 PRINT I$; * CANNOT BE LONGER THAN *(I,2)* CHARACTERS.
2160 GO TO 1020
2170 REM
2180 REM ***** B ARRAY (23,5) *****
2190 DATA 8,2,1,0,0,12,6,0,0,20,2,4,0,0,22,2,5,0,0,24,1,2,1,6
2200 DATA 25,4,3,0,0,29,4,2,0,2400,33,4,2,0,2400,37,7,6,0,0
2210 DATA 44,7,6,0,0,51,3,0,0,0,54,7,6,0,0,61,7,6,0,0
2220 DATA 69,3,0,0,0,71,7,6,0,0,78,7,6,0,0,85,3,0,0,0
2230 DATA 37,7,6,0,0,44,7,6,0,0,54,7,6,0,0
2240 DATA 61,7,6,0,0,71,7,6,0,0,78,7,6,0,0
2250 REM
2260 REM ***** C ARRAY (23,2) *****
2270 DATA 1,11,13,38,52,8,60,7,68,22,91,8,100,10,111,9,120,29,150,19
2280 DATA 170,8,176,25,204,15,220,8,228,27,256,17,274,8
2290 DATA 282,26,309,25,334,22,357,21,370,24,403,23
2300 REM
2310 REM ***** J* ARRAY (10) AND K* ARRAY (38) *****
2320 REM ***** J* ARRAY (10) AND K* ARRAY (38) *****
2330 DATA *202122324*
2340 DATA *DKSTCKKAFELCCVHUKHXENNAEAEASSSELAOT*
2350 REM
2360 REM ***** F* (68) *****
2370 DATA *N941K942K945K951N952K953K954K955*
2380 DATA *X302X545X546X547X548X549X550X551X552*
2390 REM
2400 REM ***** X* (450) *****
2410 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY)/LOCATION*
2420 DATA *PURPOSE/SERIAL NUMBER OF HIRAN/SET TYPE/START TIME/STOP TIME*
2430 DATA *CHLOROPICRIN - 1 HOUR AVERAGE/CHLOROPICRIN - PEAK/INITIALS*
2440 DATA *PHOSGENE - 1 HOUR AVERAGE/PHOSGENE - PEAK/INITIALS*
2450 DATA *CHLOROPICRIN - 1 HOUR AVERAGE/CHLOROPICRIN - FOUND CONC*
2460 DATA *CHLOROPICRIN - TARGET CONC/CHLOROPICRIN - FOUND CONC*
2470 DATA *PHOSGENE - TARGET CONC/PHOSGENE - FOUND CONC*
2480 DATA *CHLOROPICRIN - TARGET CONC/CHLOROPICRIN - FOUND CONC*
2490 REM
2500 REM ***** IO(2,17) *****
2510 REM

```

2450 DATA 1,2,5,6,3,4,7,8,9,10,11,12,13,14,15,16,17
2460 DATA 1,2,5,6,3,4,7,8,9,10,11,20,21,14,22,23,17

9430 REM ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 670
6 GO TO 1540

+++++ 100 DIM **** DATA SHEET # 10 - BLDG 1611 RECEIPT INSPECTION ****
110 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM VERSION B - 06/08/81

130 REM
140 REM BY: STEARNS-ROGER, INC.
150 REM **** M. E. MARTIN ****

160 PAGE
170 INIT
180 SET KEY
190 DIM B(7,5),C(7,2),F\$(68),J\$(10),N\$(1),X\$(170),Z\$(70)
200 GOTO

210 H\$=XX XXXXXXXXXXXXXXX
220 PRINT "JIS THIS BLDG 1611 RECEIPT INSPECTION DATA? (ENTER Y OR N) *"
230 INPUT N\$
240 IF N\$="Y" THEN 270

250 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
260 GO TO 1540

+++++ 270 READ B,C
280 READ J\$,F\$
290 READ Y\$
300 F\$=F\$AY\$
310 DELETE Y\$
320 READ X\$
330 FOR I=1 TO 3
340 READ Y\$
350 X\$=X\$AY\$
360 NEXT I
370 DELETE Y\$
380 PRINT "INSERT THE DATA TAPE INTO UNIT 492A"
390 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
400 INPUT U
410 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
420 INPUT F\$

430 F\$=SIG(F\$,1,3)
440 END:GOTO
450 INPUT PU,13:Z\$
460 G\$=SEG(Z\$,4,2)
470 F\$=SIG(Z\$,4,3)
480 F\$=SEG(Z\$,4,9)
490 IF A\$="10" AND B\$="I" THEN 530
500 PRINT "JIS IS THE WRONG DATA TAPE"
510 PRINT "JIS TAPE IS FOR DATA SHEET #;A\$;" FOR ;I\$
520 GO TO 1530
+++++ 530 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) *"
540 INPUT R\$
550 IF R\$="Y" THEN 640
560 INPUT PU,6:Z\$
570 IF I=1 THEN 640
580 INPUT PU,13:Z\$
590 GO TO 570
+++++ 610 IF IFF(0)=1 THEN 640
620 INPUT PU,13:Z\$

630 GO TO 610
640 Z←RAN1010*84

650 RHM ***** BEGIN DATA INPUT *****
660 RHM *****

670 PRINT
680 V←. . .
690 FOR I=1 TO 7
700 IF I=6 AND V=“X” THEN B30
710 C←SEG(X)C(I,1),C(I,2)
720 C←SEG(Z)B(I,1),B(I,2)
730 PRINT “ENTER “;C;” :C”
740 INPUT V
750 IF V=“.” THEN 780
760 IF I=7 THEN B30
770 V←. . .

780 Z←LEN(V)
790 IF Z≠B(I,2) THEN 1650
800 GO TO B(I,3) OF 910,970,1070,1090,1150
810 IF LEN(V)≠B(I,2) THEN 1610
820 Z←REF(V)B(I,1),B(I,2)
825 IF I=7 THEN B27
826 GO TO B30

827 PAGE
830 NEXT I
840 M←SEG(Z)20,2)
850 IF M=“.” THEN 1220
860 PRINT “THE FIG MUST BE EITHER DESTROYED OR RETURNED”
870 PRINT “REENTER FROM THE BEGINNING”
880 GO TO 640

890 RHM ***** CHECK NO. 1 - CHECK ACTION *****
900 RHM *****

910 IF V<>“X” AND V<>“.” THEN 930
920 GO TO B20
930 PRINT “ACTION MUST BE X OR BLANK”
940 PRINT “REENTER “;C;” :C”
950 GO TO 740

960 RHM ***** CHECK NO. 2 - ACCEPTABLE SET TYPES *****
970 IF Z<>B(I,2) THEN 1610

980 N←1
990 FOR K=1 TO 17
1000 S←SEG(F)K,4)
1010 IF V=“S” THEN B20
1020 N←N+1
1030 NEXT K
1040 PRINT V;” IS NOT A VALID SET TYPE”
1050 GO TO 540

1060 RHM ***** CHECK NO. 3 - NOT USED
1070 GO TO B20

1080 RHM ***** CHECK NO. 4 - LEFT ZERO FILL *****
1090 IF Z≠B(I,2) THEN B20

1100 FOR N=Z1+1 TO B(I,2)
1110 V\$=O*20\$
1120 NEXT N
1130 GO TO B20

1140 REM ***** CHECK NO. 5 - FILL IN COMMENT WITH BLANKS *****

1150 IF Z1=43 THEN B20
1160 FOR N=Z1+1 TO 43
1170 V\$=V\$1*
1180 NEXT N
1190 GO TO B20

1200 REM ***** WRITE RECORD TO TAPE *****

1210 N=1
1220 Z1=LEN(7\$)
1230 IF Z1=70 THEN 1570
1240 PRINT G41:Z\$
1250 PRINT G0:12:Z\$
1260 IF N=11 THEN 1500
1270 PRINT "JIS THERE ANOTHER COMMENT? (ENTER Y OR N) "
1280 INPUT N\$
1290 IF N\$="Y" THEN 1450

1310 REM ***** PROCESS ADDITIONAL COMMENTS *****

1320 N=1
1330 A\$=SEG\$(N,2)
1340 Z\$=REP\$(A\$,6:2)
1350 Z\$=REP\$(Z\$,26:45)
1360 PRINT "JUNILR COMMENT (43 CHARACTERS OR LESS) "
1370 INPUT C\$
1380 Z1=LEN(C\$)
1390 IF Z1=43 THEN 1420
1400 PRINT "JUNIS COMMENT IS TOO LONG"
1410 GO TO 1360
1420 Z\$=REP\$(C\$,28:Z1)
1430 NEXT N
1440 GO TO 1230
1450 N=N+10
1460 Z\$=REP\$(Z\$,6:2)
1470 Z\$=REP\$(Z\$,26:45)

1480 REM ***** CHECK END OF DATA *****

1490 PRINT "JUNDF DATA? (ENTER Y OR N; N WILL END PROGRAM) "
1500 INPUT N\$
1510 IF N\$="N" THEN 670
1520 PRINT G0:Z\$
1530 PRINT "PROGRAM FINISHED"
1540 END

1550 REM ***** DIAGNOSTIC MESSAGES *****

1560 PRINT "ERROR IN LENGTH OF Z\$"
1570 PRINT "JUNR LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD"
1580 GO TO 500

```

1600 REM
++2+++ 1610 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY '(I,2)'"
1620 PRINT " CHARACTERS."
1630 GO TO 940
1640 REM
++1+++ 1650 IF I=7 THEN 1680
1660 PRINT G$;" CANNOT BE LONGER THAN '(I,2)' CHARACTERS."
1670 GO TO 940
++1+++ 1680 PRINT "THIS COMMENT IS TOO LONG."
1690 GO TO 940
1700 REM
1710 REM ***** B ARRAY (7,5) *****
1720 DATA 8,2,4,0,0,12,6,0,0,0,18,4,2,0,0
1730 DATA 22,4,4,0,0,25,1,1,0,0,27,1,1,0,0,28,43,5,0,0
1740 REM
1750 REM ***** C ARRAY (7,2) *****
1760 DATA 1,11,13,38,51,8,60,16,71,32,103,31,134,31
1770 REM
1780 REM ***** J# ARRAY (10) AND F# ARRAY (48) *****
1790 DATA "202122324"
1800 REM
1810 DATA "K941K942K945K951K952K953K954K955"
1820 DATA "X302X545X546X547X548X549X550X551X552"
1830 REM
1840 REM ***** X# ARRAY (170) *****
1850 DATA "PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DUMMY)"
1860 DATA "SET TYPE/SET NUMBER/ACTION - IF DESTROYED ENTER AN X"
1870 DATA "ACTION - IF RETURNED ENTER AN X"
1880 DATA "COMMENT (43 CHARACTERS OR LESS)"
1890 REM
1900 REM ***** END OF PROGRAM *****

```

1 GO TO 100
4 GO TO 450
8 GO TO 1450

+++++ 100 REM **** DATA SHEET # 11 - PROCESS DATA (DISASSEMBLY ROOM)
110 REM **** DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM **** VERSION 7 - 2/24/81
130 REM

140 FMODE
150 INIT
160 SET KEY
170 DIM B(5,2),C(5,2),F(68),J(110),N*(1),X*(110),Z*(70)
180 GOTO 190

190 REM ***XXXXXXXXXX
200 PRINT "JIS THIS PROCESS DATA (DISASSEMBLY ROOM)? (ENTER Y OR N) *"
210 INPUT N\$
220 IF N\$="Y" THEN 250
230 PRINT "JIF YOU WANT USING THE WRONG DATA ENTRY PROGRAM"
240 GO TO 1450

+++++ 250 READ B,C
260 READ J,N
270 READ F
280 F=F*10
290 DELETE F\$
300 READ X\$
310 READ Y\$
320 X=X*10
330 DELETE Y\$
340 PRINT "JINSERT THE DATA TAPE INTO UNIT 4924."
350 PRINT "JENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
350 INPUT U

370 PRINT "JENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
380 INPUT T\$
390 T=SEG(T\$+1,3)
400 FMODE=0
410 INPUT C(1,13:Z\$)
420 B=SEG(Z\$,4:2)
430 B=SEG(Z\$,8:3)
440 B=SEG(Z\$,8:9)

450 IF A\$="11" AND B\$="T" THEN 490
460 PRINT "JTHIS IS THE WRONG DATA TAPE."
470 PRINT "JTHIS TAPE IS FOR DATA SHEET #1466 FOR *J1\$"

+++++ 480 GO TO 1450
490 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) *"
500 INPUT N\$
510 IF N\$="Y" THEN 600
520 IF U=33 THEN 570

+++++ 530 INPUT C(1,13:Z\$)
540 IF 1=1 THEN 600
550 INPUT C(1,13:Z\$)
560 GO TO 590
570 IF 1=1 THEN 600
580 INPUT C(1,13:Z\$)

+++++ 590 GO TO 570
600 Z\$="XXXXXXXXXX"
610 END


```

620 REM ***** BEGIN DATA INPUT *****
+++2+++ 630 FRINT
640 FOR I=1 TO 5
650 B=SEG(X)+C(I,1),C(I,2))
660 C=SEG(Z)+B(I,1),B(I,2))
670 FRINT 'ENTER 'I+',';'; 'IC'
+++1+++ 680 INPUT V;
690 IF V#.. THEN 750
700 ZI=LEN(V;)
710 IF ZI>B(I,2) THEN 1560
720 GO TO B(I,3) OF 790,880,980,1000,1060
730 IF LEN(V;)<>B(I,2) THEN 1520
+++8+++ 740 Z=REF(V;)+B(I,1),B(I,2))
+++1+++ 750 NEXT I
760 GO TO 1130

770 REM
780 REM ***** CHECK NO. 1 - CHECK STATION NUMBER *****
+++1+++ 790 IF V#BF THEN 740
800 IF ZI=B(I,2) THEN 820
810 V#0'IV;
+++1+++ 820 IF VAL(V;)<B(I,4) OR VAL(V;)>B(I,5) THEN 840
830 GO TO 740
+++1+++ 840 FRINT 'STATION NUMBER MUST BE 1, 2, 3, 4, 5 OR BF'
+++1+++ 850 FRINT 'JREENTER 'I+',';'; 'IC'
860 GO TO 680

870 REM ***** CHECK NO. 2 - ACCEPTABLE SET TYPES *****
+++1+++ 880 IF ZI<>B(I,2) THEN 1520
890 K4=1
900 FOR K=1 TO 17
910 S=SEG(F;)+K4,4)
920 IF V#S THEN 740
930 K4=N4+4
940 NEXT N
950 FRINT V; ' IS NOT A VALID SET TYPE'
960 GO TO 850

970 REM ***** CHECK NO. 3 - NOT USED
+++1+++ 980 GO TO 740

990 REM ***** CHECK NO. 4 - LEFT ZERO FILL *****
+++1+++ 1000 IF ZI=B(I,2) THEN 740
1010 FOR N=ZI+1 TO B(I,2)
1020 V#0'8V;
1030 NEXT N
1040 GO TO 740

1050 REM ***** CHECK NO. 5 - FILL IN COMMENT WITH BLANKS *****
+++1+++ 1060 IF ZI=47 THEN 740
1070 FOR N=ZI+1 TO 47
1080 V#0'1'
1090 NEXT N
1100 GO TO 740

```

```

1110 REM ***** WRITE RECORD TO TAPE *****
1120 REM *****
1130 N=1
1140 Z1=LEN(Z$)
1150 IF Z1<70 THEN 1480
1160 PRINT @41;Z$
1170 PRINT @41;Z$
1180 IF N=11 THEN 1410
1190 PRINT "JIS THERE ANOTHER COMMENT? (ENTER Y OR N) ";
1200 INPUT N$
1210 IF N$="Y" THEN 1360
1220 REM
1230 REM ***** PROCESS ADDITIONAL COMMENTS *****
1240 N$=SEG(J$,N,2)
1250 Z1=REP(A$,5,2)
1260 Z1=REP(G$,24,47)
1270 PRINT "ENTER COMMENT (47 CHARACTERS OR LESS)";
1280 INPUT C$
1290 Z1=LEN(C$)
1300 IF Z1<47 THEN 1330
1310 PRINT "THIS COMMENT IS TOO LONG";
1320 GO TO 1270
1330 Z1=REP(C$,24,Z1)
1340 N=N+1
1350 GO TO 1140
1360 N1="10";
1370 Z1=REP(A$,6,2)
1380 Z1=REP(G$,24,47)
1390 REM
1400 REM ***** CHECK END OF DATA *****
1410 PRINT "MORE DATA? (ENTER Y OR N) N WILL END PROGRAM) ";
1420 INPUT N$
1430 IF N$="N" THEN 630
1440 PRINT @41;Z$
1450 PRINT "PROGRAM FINISHED";
1460 END
1470 REM ***** DIAGNOSTIC MESSAGES *****
1480 PRINT "ERROR IN LENGTH OF Z$";
1490 PRINT "THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD";
1500 GO TO 600
1510 REM
1520 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY ";B(I,2);
1530 PRINT " CHARACTERS";
1540 GO TO 630
1550 REM
1560 IF I=5 THEN 1590
1570 PRINT @41;" CANNOT BE LONGER THAN ";B(I,2);" CHARACTERS";
1580 GO TO 630

```

+++1+++ 1590 FKINT *JTHIS COMMENT IS TOO LONG*
1600 GO TO 850

1610 REM ***** B ARRAY (5,5) *****

1620 DATA 8,2,4,0,0,12,6,0,0,0,18,4,2,0,0
1640 DATA 22,2,1,1,5,24,47,5,0,0

1650 REM ***** C ARRAY (5,2) *****

1670 DATA 1,11,13,38,51,8,60,14,75,31

1680 REM ***** J% ARRAY (10) AND F% ARRAY (68) *****

1700 DATA *2021222324*

1710 REM

1720 DATA *K941K942K943K951K952K953K954K955*

1730 DATA *X302X545X546X547X548X549X550X551X552*

1740 REM ***** X% ARRAY (110) *****

1750 DATA *****

1760 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY)*

1770 DATA *SET TYPE/STATION NUMBER/COMMENT (47 CHARACTERS OR LESS)*

1780 REM *****

1790 REM ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 700
8 GO TO 1410

+++++
100 REM **** DATA SHEET # 12 - PROCESS DATA (RESIDUE AREA - PIGS)
110 REM **** DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM **** VERSION 7 - 2/24/81
130 REM

140 PAGE
150 INIT
160 SET KEY
170 DIM B(5,5),C(5,2),F\$(68),K\$(1),X\$(90),Z\$(31)
180 H\$="XX XXXXXXXXXXXXXXXX"
190 PRINT "JIS THIS PROCESS DATA (RESIDUE AREA - PIGS)?"
200 PRINT "ENTER Y OR N"
210 INPUT N\$
220 IF N\$="Y" THEN 250
230 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
240 GO TO 1410
250 READ B,C
260 READ F\$
270 READ Y\$
280 F1=F\$+Y\$
290 DELETE Y\$
300 READ X\$
310 READ Y\$
320 Y1=X1+Y1\$
330 DELETE Y\$
340 H=0
350 J=0

+++++
360 PRINT "INSERT THE DATA TAPE INTO UNIT 4924"
370 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE"
380 INPUT U
390 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
400 INPUT T\$

410 T1=SEG(T\$,1,3)
420 FIND BUI3
430 INPUT BUI13:Z\$
440 B1=SEG(Z\$,4,2)
450 F1=SEG(Z\$,8,3)
460 I1=SEG(Z\$,8,9)
470 IF B1="12" AND B1="T" THEN 510
480 PRINT "THIS IS THE WRONG DATA TAPE"
490 PRINT "THIS TAPE IS FOR DATA SHEET #14# FOR #11#"
500 GO TO 1400

+++++
510 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
520 INPUT N\$
530 IF N\$="Y" THEN 620
540 INPUT BUI6:Y1
550 IF T1="1" THEN 620
560 INPUT BUI13:Z\$
570 GO TO 550
580 INPUT BUI13:Z\$
590 GO TO 590

+++++
600 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
610 INPUT N\$
620 IF N\$="Y" THEN 590
630 INPUT BUI6:Y1
640 INPUT BUI13:Z\$
650 GO TO 550

+++++
660 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
670 INPUT N\$
680 IF N\$="Y" THEN 650
690 INPUT BUI6:Y1
700 INPUT BUI13:Z\$
710 GO TO 590

+++++
720 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
730 INPUT N\$
740 IF N\$="Y" THEN 710
750 INPUT BUI6:Y1
760 INPUT BUI13:Z\$
770 GO TO 590

```

630 INPUT N#
640 IF N#="Y" THEN 670
650 N:=SEG(Z#,30,2)
660 N=VAL(N#)
670 Z#="RMA1210"1H#
+++2+++

680 REM
690 REM ***** BEGIN DATA INPUT *****
700 PRINT
710 FOR I=1 TO 5
720 IF J=0 THEN 740
730 GO TO I OF 870,870,870,740,740
740 D:=SEG(X#,C(I,1),C(I,2))
750 C:=SEG(Z#,B(I,1),B(I,2))
760 PRINT "ENTER :D#; :C#"
770 INPUT V#
780 IF V#="END" THEN 810
790 J=0
800 GO TO 1270
810 IF V#="" THEN 870
820 ZI=LEN(V#)
830 IF ZI>B(I,2) THEN 1520
840 GO TO B(I,3) OF 910,1020,1040
850 IF LEN(V#)<>B(I,2) THEN 1480
860 ZI=REP(V#,B(I,1),B(I,2))
870 NEXT I
880 GO TO 1110

890 REM
900 REM ***** CHECK NO. 1 - ACCEPTABLE SET TYPE *****
910 IF ZI<>B(I,2) THEN 1480
920 K4=1
930 FOR K=1 TO 17
940 S:=SEG(F#,K4,4)
950 IF V#S# THEN 860
960 K4=K4+4
970 NEXT K
980 PRINT V#; " IS NOT A VALID SET TYPE"
990 PRINT "REENTER :D#; :C#"
1000 GO TO 770

1010 REM ***** CHECK NO. 2 - NOT USED
1020 GO TO 860

1030 REM ***** CHECK NO. 3 - LEFT ZERO FILL *****
1040 IF ZI=B(I,2) THEN 860
1050 FOR N=21+1 TO B(I,2)
1060 V#="0"2V#
1070 NEXT N
1080 GO TO 860

1090 REM
1100 REM ***** TOTAL FIGS DECONED *****
1110 H=N+1
1120 V#="STR(N)

```

```

1130 V=REP("0",1,1)
1140 IF N<10 THEN 1160
1150 V=SEG(V,2,2)
1160 Z=REP(V,30,2)
+++1111+

1170 REM
1180 REM ***** WRITE RECORD TO TAPE *****
1190 ZI=LEN(Z)
1200 IF ZI<231 THEN 1440
1210 PRINT @41:Z
1220 PRINT @0,12:Z
1230 J=1
1240 GO TO 700

1250 REM
1260 REM ***** CHECK END OF DATA *****
+++1111+
1270 PRINT "JANY MORE DATA FROM THIS SHEET (ENTER Y OR N) "
1280 INPUT K
1290 IF K="Y" THEN 700
1300 PRINT "JENTER TOTAL PIGS DECONNED "
1310 INPUT N
1320 IF N="N" THEN 1350
1330 PRINT "JTHIS TOTAL DOES NOT AGREE WITH THE CALCULATED TOTAL - "
1340 PRINT "PLEASE CHECK YOUR SHEET."
1350 PRINT "JMORE DATA? (ENTER Y OR N) N WILL END PROGRAM "
1360 INPUT K
1370 IF K="N" THEN 1400
1380 G=0
1390 GO TO 700
+++11211+
1400 PRINT @0,2:
+++11211+
1410 PRINT "PROGRAM FINISHED"
1420 END

1430 REM ***** DIAGNOSTIC MESSAGES *****
+++1111+
1440 PRINT "ERROR IN LENGTH OF Z"
1450 PRINT "JTHE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD"
1460 GO TO 670
1470 REM
+++11211+
1480 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY "B(1,2)"
1490 PRINT " CHARACTERS."
1500 GO TO 990
1510 REM
+++1111+
1520 PRINT @0,2: "CANNOT BE LONGER THAN "B(1,2)" CHARACTERS."
1530 GO TO 990
1540 REM
1550 REM ***** B ARRAY (5,5) *****
1560 DATA 0,2,3,0,0,12,6,0,0,0,18,4,1,0,0
1570 DATA 22,4,3,0,0,26,4,3,0,0
1580 REM
1590 REM ***** C ARRAY (5,2) *****

```

1600 DATA 1,11,13,38,51,8,60,10,71,11
1610 REM
1620 REM ***** F# ARRAY (68) *****
1630 DATA "N94IK942K945K951K952K953K954K955"
1640 DATA "X302X545X546X547X548X549X550X551X552"
1650 REM
1660 REM ***** X# ARRAY (90) *****
1670 DATA "PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDHNY)"
1680 DATA "SET TYPE/SET NUMBER/SKID NUMBER"
1690 REM
1700 REM ***** END OF PROGRAM *****

1 GO TO 100
 4 GO TO 250
 8 GO TO 1290

+++++ 100 REM *** DATA SHEET # 13 - PROCESS DATA (RESIDUE AREA - DRUMS)
 110 REM *** DATA ENTRY - LOAD INPUT DATA TO TAPE
 120 REM *** VERSION 7 - 2/24/81
 130 REM

140 PAGE
 150 INIT
 160 SET KEY
 170 DIM B(4,5),C(4,2),K\$(1),X\$(90),Z\$(27)
 180 IH="XX XXXXXXXXXXXXX"
 190 PRINT "JIS THIS PROCESS DATA (RESIDUE AREA - DRUMS)?"
 200 PRINT "ENTER Y OR N"
 210 INPUT N\$
 220 IF N\$="Y" THEN 250

230 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
 240 GO TO 1290

+++++ 250 READ B,C
 260 READ X\$
 270 READ Y\$
 280 X=X\$+Y\$
 290 DELETE Y\$
 300 N=N+1

310 PRINT "INSERT THE DATA TAPE INTO UNIT 4924"
 320 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE"
 330 INPUT U
 340 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
 350 INPUT T\$

360 IF SEG(T\$,1,3)
 370 END 6014
 380 INPUT R0,13,Z\$
 390 A=SEG(Z\$,4,2)
 400 B=SEG(Z\$,8,3)
 410 L=SEG(Z\$,6,9)
 420 IF A="13" AND B="T" THEN 460
 430 PRINT "THIS IS THE WRONG DATA TAPE"
 440 PRINT "THIS IS FOR DATA SHEET #14", FOR "14"
 450 GO TO 1280

+++++ 460 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
 470 INPUT K\$
 480 IF K\$="Y" THEN 570
 490 IF U=33 THEN 540

+++++ 500 INPUT R0,51T
 510 IF 1-1 THEN 570
 520 INPUT R0,13,Z\$
 530 GO TO 500

+++++ 540 IF 1-1 THEN 570
 550 INPUT R0,13,Z\$
 560 GO TO 500

+++++ 570 PRINT "ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N)"
 580 INPUT K\$
 590 IF K\$="Y" THEN 620
 600 READ SEG(Z\$,26,2)
 610 READ (M\$)

+++++ 620 Z1="K0A1310"3H\$


```

630 REM ***** BEGIN DATA INPUT *****
640 REM *****

+++1+++ 650 PRINT
660 FOR I=1 TO 4
670 U=SEG(X),C(I,1),C(I,2)
680 G=SEG(Z),B(I,1),B(I,2)
690 PRINT "ENTER 'ID': ";IC
+++1+++ 700 INPUT U;
710 IF V=... THEN 770
720 ZI=LEN(U)
730 IF ZI>B(I,2) THEN 1400
740 GO TO R(I,3) OF B10,880,900,960
750 IF LEN(U)<>B(I,2) THEN 1360
+++5+++ 760 ZI=REP(V),B(I,1),B(I,2)
+++1+++ 770 NEXT I
780 GO TO 1010

790 REM ***** CHECK NO. 1 - ACCEPTABLE DRUM KEYS *****
800 REM *****

+++1+++ 810 IF ZI>B(I,2) THEN 1360
820 G=SEG(U),I,1)
830 IF G="F" THEN 760
840 PRINT "THE FIRST CHARACTER OF THE 'ID' MUST BE F"
+++2+++ 850 PRINT "REENTER 'ID': ";IC
860 GO TO 700

+++1+++ 870 REM ***** CHECK NO. 2 - NOT USED
880 GO TO 760

+++2+++ 890 REM ***** CHECK NO. 3 - LEFT ZERO FILL *****
900 IF ZI=B(I,2) THEN 760
910 FOR K=ZI+1 TO B(I,2)
920 V="0";V;
930 NEXT K
940 GO TO 760

+++1+++ 950 REM ***** CHECK NO. 4 - DRUM WEIGHT *****
960 IF U<>"NA" THEN 900
970 V="NA";
980 GO TO 760

990 REM ***** TOTAL DRUMS *****
1000 REM *****

+++1+++ 1010 N=N+1
1020 V=STR(N)
1030 V=REP("0",1,1)
1040 IF N<10 THEN 1060
1050 V=SEG(V),2,2)
+++1+++ 1060 ZI=REP(V),2,2)
1070 REM ***** WRITE RECORD TO TAPE *****
1080 REM *****

```

```

1070 Z1=LERCZ$)
1100 IF Z1<Z2 THEN 1320
1110 PRINT 0411Z$
1120 PRINT 00,121Z$

1130 REM
1140 REM ***** CHECK END OF DATA *****
1150 PRINT "JUNKY MORE DATA FROM THIS SHEET (ENTER Y OR N) "
1160 INPUT K$
1170 IF K$="Y" THEN 650
1180 PRINT "JENIEK TOTAL DRUGS "
1190 INPUT N1
1200 IF N1=N THEN 1230
1210 PRINT "JTHIS TOTAL DOES NOT AGREE WITH THE CALCULATED TOTAL. - "
1220 PRINT "PLEASE CHECK YOUR SHEET."
1230 PRINT "JMORE DATA? (ENTER Y OR N) N WILL END PROGRAM "
1240 INPUT N$
1250 IF N$="N" THEN 1280
1260 N=0
1270 GO TO 650
1280 PRINT 00,2:
1290 PRINT "PROGRAM FINISHED"
1300 END

1310 REM ***** DIAGNOSTIC MESSAGES *****
1320 PRINT "ERROR IN LENGTH OF Z$"
1330 PRINT "JTHE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD"
1340 GO TO 650

1350 REM
1360 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY *J(I,2)*"
1370 PRINT "CHARACTERS"
1380 GO TO 850

1390 REM
1400 PRINT 0$:" CANNOT BE LONGER THAN *J(I,2)* CHARACTERS."
1410 GO TO 850

1420 REM
1430 REM ***** B ARRAY (4,5) *****
1440 DATA 8,2,3,0,0,12,6,0,0,0,18,5,1,0,0
1450 DATA 23,3,4,0,0

1460 REM
1470 REM ***** C ARRAY (4,2) *****
1480 DATA 1,11,13,36,51,11,63,11

1490 REM
1500 REM ***** X ARRAY (90) *****
1510 DATA "PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DIPHY)"
1520 DATA "DRUG NUMBER/DRUG WEIGHT"

1530 REM

```

1540 KEN ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 650
6 GO TO 1290

+++++ 100 REM *** DATA SHEET # 14 - PROCESS DATA (SFRAY DRYER)
110 REM *** DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM *** VERSION 7 - 2/24/81
130 REM

140 F005
150 INIT
160 SET KEY
170 DIM B(4,5),C(4,2),A\$(1),X\$(90),Z\$(27)
180 H\$="XX XXXXXXXXXXXX"
190 PRINT "JIS THIS PROCESS DATA (SFRAY DRYER)?"
200 PRINT "ENTER Y OR N"
210 INPUT N\$
220 IF N\$="Y" THEN 250
230 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
240 GO TO 1290

+++++ 250 READ B,C
260 FOR A=1
270 FOR B=1
280 A\$=X\$B
290 DELETE Y\$
300 P=0
310 PRINT "INSERT THE DATA TAPE INTO UNIT 4Y24"
320 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE"
330 INPUT U
340 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
350 FOR B=1
360 FOR C=1
370 FOR D=1
380 INPUT B,C,D
390 A\$(B+C*D)=D
400 B\$=B\$+C
410 B\$=B\$+D
420 B\$=B\$+C+D
430 PRINT "THIS IS THE WRONG DATA TAPE"
440 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
450 GO TO 1290

+++++ 460 PRINT "JIS THIS DATA FOR A NEW WEEK (ENTER Y OR N)"
470 INPUT N\$
480 IF N\$="Y" THEN 570
490 IF N\$="N" THEN 540
500 PRINT "YOU ARE ENTERING DATA FROM A NEW PAGE (ENTER Y OR N)"
510 IF N\$="Y" THEN 570
520 GO TO 500

+++++ 530 PRINT "JIS THIS DATA FOR A NEW WEEK (ENTER Y OR N)"
540 INPUT N\$
550 IF N\$="Y" THEN 570
560 IF N\$="N" THEN 540
570 PRINT "YOU ARE ENTERING DATA FROM A NEW PAGE (ENTER Y OR N)"
580 IF N\$="Y" THEN 570
590 IF N\$="N" THEN 540
600 PRINT "THIS IS THE WRONG DATA TAPE"
610 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
620 GO TO 1290

+++++ 630 PRINT "THIS IS THE WRONG DATA TAPE"
640 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
650 GO TO 1290

+++++ 660 PRINT "THIS IS THE WRONG DATA TAPE"
670 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
680 GO TO 1290

+++++ 690 PRINT "THIS IS THE WRONG DATA TAPE"
700 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
710 GO TO 1290

+++++ 720 PRINT "THIS IS THE WRONG DATA TAPE"
730 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
740 GO TO 1290

+++++ 750 PRINT "THIS IS THE WRONG DATA TAPE"
760 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
770 GO TO 1290

+++++ 780 PRINT "THIS IS THE WRONG DATA TAPE"
790 PRINT "THIS TAPE IS FOR DATA SHEET #14, FOR JIS"
800 GO TO 1290

```

630 REM ***** BEGIN DATA INPUT *****
640 REM *****

+++1+++ 450 PRINT
660 FOR I=1 TO 4
670 D=SEG(X),C(I,1),C(I,2)
680 C=SEG(Z),B(I,1),B(I,2)
690 PRINT "ENTER 'JD' :";IC
+++1+++ 700 INPUT V
710 IF V=0 THEN 770
720 ZI=LEN(V)
730 IF ZI>B(I,2) THEN 1400
740 GO TO B(I,3) OF 810,800,900,960
+++1+++ 750 IF LEN(V)>B(I,2) THEN 1360
+++1+++ 760 ZI=LEN(V);B(I,1),B(I,2)
770 NEXT I
780 GO TO 1010

790 REM
800 REM ***** CHECK NO. 1 - ACCEPTABLE DRUM KEYS *****
+++1+++ 810 IF ZI<>B(I,2) THEN 1360
820 O=SEG(V),1,1)
830 IF O="S" THEN 760
840 PRINT "THE FIRST CHARACTER OF THE 'JD' MUST BE S"
+++1+++ 850 PRINT "GREEN ER 'JD' :";IC
860 GO TO 700

870 REM ***** CHECK NO. 2 - NOT USED
+++1+++ 880 GO TO 760

890 REM ***** CHECK NO. 3 - LEFT ZERO FILL *****
+++1+++ 900 IF ZI<B(I,2) THEN 760
910 FOR N=ZI+1 TO B(I,2)
920 V="0";N)
930 NEXT N
940 GO TO 760

950 REM ***** CHECK NO. 4 - DRUM WEIGHT *****
+++1+++ 960 IF V<>"NA" THEN 900
970 V="NA"
980 GO TO 760

990 REM
1000 REM ***** TOTAL DRUMS *****
+++1+++ 1010 N=NA)
1020 V=STR(N)
1030 V=REF("0",1,1)
1040 IF N=10 THEN 1060
1050 V=SEG(V),2,2)
1060 ZI=LEN(V),2,2)

1070 REM
1080 REM ***** WRITE RECORD TO TAPE *****

```

```

1090 Z1=LEN(Z1)
1100 IF Z1= 27 THEN 1320
1110 PRINT B(1,Z1)
1120 PRINT B(0,121Z)

1130 REM
1140 REM ***** CHECK END OF DATA *****
1150 PRINT "JUNKY HOLE DATA FROM THIS SHEET? (ENTER Y OR N) "
1160 INPUT N$
1170 IF N$="Y" THEN 650
1180 PRINT "ENTER TOTAL DRUMS "
1190 INPUT N1
1200 IF N1=N THEN 1230
1210 PRINT "THIS TOTAL DOES NOT AGREE WITH THE CALCULATED TOTAL - *IN
1220 PRINT "PLEASE CHECK YOUR SHEET"
1230 PRINT "JUNKY HOLE DATA? (ENTER Y OR N) N WILL END PROGRAM) "
1240 INPUT N$
1250 IF N$="N" THEN 1280
1260 N=0
1270 GO TO 650
1280 PRINT B(0,2)
1290 PRINT "PROGRAM FINISHED"
1300 END

1310 REM ***** DIAGNOSTIC MESSAGES *****
1320 PRINT "ERROR IN LENGTH OF Z$"
1330 PRINT "THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD"
1340 GO TO 620

1350 REM
1360 PRINT "THE STRING MUST BE COMPLETELY FILLED - EXACTLY *B(I,2)*
1370 PRINT "CHARACTERS"
1380 GO TO 850

1390 REM
1400 PRINT B(0)* "CANNOT BE LONGER THAN *B(I,2)* CHARACTERS"
1410 GO TO 850

1420 REM
1430 REM ***** B ARRAY (4,5) *****
1440 DATA B(2,3),0,0,12,6,0,0,0,0,18,5,1,0,0
1450 DATA B(3,3),4,0,0

1460 REM
1470 REM ***** C ARRAY (4,2) *****
1480 DATA C(1,1),13,30,51,11,63,11

1490 REM
1500 REM ***** X5 ARRAY (90) *****
1510 PRINT "PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DUMMY)"
1520 DATA "DRUM NUMBER/DRUM WEIGHT"

1530 REM

```

1540 KEM ***** END OF PROGRAM *****

```

1 GO TO 100
4 GO TO 650
8 GO TO 1290

+++++ 100 REM *** DATA SHEET # 15 - PROCESS DATA (ELECTROSTATIC PRECIPITATOR)
110 REM *** DATA ENTRY - LOAD INPUT DATA TO TAPE
120 REM *** VERSION 7 - 2/24/81
130 REM

140 PAGE
150 INIT
160 SET KEY
170 DIM B(4,5),C(4,2),N$(1),X$(90),Z$(27)
180 H1="XX XXXXXXXXXXXXXXX"
190 PRINT "JIS THIS PROCESS DATA (ELECTROSTATIC PRECIPITATOR)?"
200 PRINT "ENTER Y OR N"
210 INPUT N$
220 IF N$="Y" THEN 250
230 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM"
240 GO TO 1290
+++++ 250 READ B,C
260 READ X$
270 READ Y$
280 X$=X$+Y$
290 DELETE Y$
300 N=0
310 PRINT "INSERT THE DATA TAPE INTO UNIT 4924"
320 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE"
330 INPUT U
340 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
350 INPUT T$
360 T$=SEG(T$,1,3)
370 FIND E016
380 INPUT E013:Z$
390 M=SEG(Z$,4,2)
400 B=SEG(Z$,6,3)
410 I=SEG(Z$,8,9)
420 IF M="15" AND B="T$ THEN 460
430 PRINT "THIS IS THE WRONG DATA TAPE"
440 PRINT "THIS TAPE IS FOR DATA SHEET #15", FOR "IIS"
450 GO TO 1280
+++++ 460 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N)"
470 INPUT N$
480 IF N$="Y" THEN 570
490 IF U=33 THEN 540
500 INPUT E016:IT
510 IF I=1 THEN 570
520 E016=IT
530 GO TO 500
+++++ 540 IF I=0 THEN 570
550 INPUT E013:Z$
560 GO TO 540
+++++ 570 PRINT "ARE YOU ENTERING DATA FROM A NEW PAGE? (ENTER Y OR N)"
580 INPUT N$
590 IF N$="Y" THEN 620
600 M=SEG(Z$,26,2)
610 M=VAL(M$)
620 Z$=M001510+8H$

```



```

630 REM ***** BEGIN DATA INPUT *****
640 REM *****

+++3+++
650 PRINT
660 FOR I=1 TO 4
670 B=SEG(X,C(I,1),C(I,2))
680 C=SEG(Z,B(I,1),B(I,2))
690 PRINT CENTER 'ID'; 'IC'
+++1+++
700 INPUT V#
710 IF V#="" THEN 770
720 ZI=LEN(V#)
730 IF ZI>B(I,2) THEN 1400
740 GO TO B(I,3) OF B10,880,900,960
750 IF LEN(V#)<>B(I,2) THEN 1360
+++5+++
760 Z=REP(V#,B(I,1),B(I,2))
+++1+++
770 NEXT I
780 GO TO 1010

790 REM ***** CHECK NO. 1 - ACCEPTABLE DRUM KEYS *****
800 REM *****
+++1+++
810 IF ZI<>B(I,2) THEN 1360
820 Q=SEG(V#,1,1)
830 IF Q#="E" THEN 760
840 PRINT "THE FIRST CHARACTER OF THE 'ID' MUST BE E."
+++2+++
850 PRINT "JKENTER 'ID'; 'IC'"
860 GO TO 700

+++1+++
870 REM ***** CHECK NO. 2 - NOT USED
880 GO TO 760

890 REM ***** CHECK NO. 3 - LEFT ZERO FILL *****
900 IF ZI=B(I,2) THEN 760
910 FOR K=ZI+1 TO B(I,2)
920 V#="0" & V#
930 NEXT K
940 GO TO 760

950 REM ***** CHECK NO. 4 - DRUM WEIGHT *****
+++1+++
960 IF V#<>"NA" THEN 900
970 V#="NA"
980 GO TO 760

990 REM ***** TOTAL DRUMS *****
1000 REM *****
+++1+++
1010 N=N+1
1020 V#="STRN"
1030 V#="REP('0',1,1)
1040 IF N=10 THEN 1060
1050 V#="SEG(V#,2,2)
1060 Z#="REP(V#,2,2)
1070 FFH
1080 REM ***** WRITE RECORD TO TAPE *****

```

```

1090 71=LEN(Z$)
1100 IF Z1>27 THEN 1320
1110 PRINT @41:Z$
1120 PRINT @0,12:Z$
1130 REM
1140 REM ***** CHECK END OF DATA *****
1150 PRINT *JANY MORE DATA FROM THIS SHEET (ENTER Y OR N) *
1160 INPUT N$
1170 IF N$="Y" THEN 650
1180 PRINT *ENTER TOTAL DRUMS *
1190 INPUT N1
1200 IF N1=N THEN 1230
1210 PRINT *THIS TOTAL DOES NOT AGREE WITH THE CALCULATED TOTAL - *IN
1220 PRINT *PLEASE CHECK YOUR SHEET.
1230 PRINT *JAGKE DATA? (ENTER Y OR N) N WILL END PROGRAM) *
+++++++
1240 INPUT N$
1250 IF N$="N" THEN 1280
1260 N=0
1270 GO TO 650
1280 PRINT @0,2:
+++++++
1290 PRINT *PROGRAM FINISHED*
1300 END

1310 REM ***** DIAGNOSTIC MESSAGES *****
1320 PRINT *ERROR IN LENGTH OF Z$*
1330 PRINT *THE LAST ENTRY WAS DISREGARDED, REENTER ENTIRE RECORD*
1340 GO TO 620
1350 REM

1360 PRINT *THE STRING MUST BE COMPLETELY FILLED - EXACTLY *;B(I,2);
1370 PRINT * CHARACTERS.
1380 GO TO 850
1390 REM

1400 PRINT @; * CANNOT BE LONGER THAN *;B(I,2);* CHARACTERS*
1410 GO TO 650
1420 REM
1430 REM ***** B ARRAY (4,5) *****
1440 DATA 8,2,3,0,0,12,6,0,0,0,18,5,1,0,0
1450 DATA 23,3,4,0,0
1460 REM
1470 REM ***** C ARRAY (4,2) *****
1480 DATA 1,11,13,38,51,11,63,11
1490 REM
1500 REM ***** X$ ARRAY (90) *****
1510 DATA *PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY)*
1520 DATA *DRUM NUMBER/DRUM WEIGHT*
1530 REM

```

1540 REM ***** END OF PROGRAM *****

1 GO TO 100
4 GO TO 200
8 GO TO 1700

+++++ 100 FLM **** DATA SHEET # 16 - IO SET PLANT DOWNTIME DATA ****
110 REM DATA ENTRY - LOAD INPUT DATA TO TAPE
VERSION 9 - 7/17/81

BY: STEARNS-ROGER, INC.
H. E. MARTIN

120 REM ****
130 REM
140 REM
150 REM ****
160 PAGE
170 UNIT
180 SET KEY
190 DIM B(12,5),C(12,2),J(2),N*(1),X*(250),Z*(101)
200 H="XX" XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
210 PRINT "JIS THIS IO SETS PLANT DOWNTIME DATA? (ENTER Y OR N) *"
220 INPUT N*

230 IF N="Y" THEN 260
240 PRINT "YOU ARE USING THE WRONG DATA ENTRY PROGRAM."
250 GO TO 1700

+++++ 260 READ B,C
270 READ X*
280 FOR I=1 TO 5
290 READ Y*
300 X=X*Y*
310 REZ I

320 DELETE Y*
330 PRINT "JINSERT THE DATA TAPE INTO UNIT 4924."
340 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
350 INPUT U

360 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
370 INPUT T*
380 I=506(1+1,3)
390 FIND 6011
400 INPUT R0,13:Z*
410 A=SEG(Z*,4,2)
420 B=SEG(Z*,6,3)
430 C=SEG(Z*,8,9)
440 IF A="10" AND B="T" THEN 400
450 PRINT "THIS IS THE WRONG DATA TAPE."
460 PRINT "THIS TAPE IS FOR DATA SHEET #1041 FOR IOCS"
470 GO TO 1700

+++++ 480 PRINT "JIS THIS DATA FOR A NEW WEEK? (ENTER Y OR N) *"
490 INPUT N*

+++++ 500 IF N="Y" THEN 590
510 IF U=33 THEN 560
520 INPUT 60,13:Z*

+++++ 530 IF I=1 THEN 590
540 INPUT 60,13:Z*
550 GO TO 520
560 IF (Y*0)=1 THEN 590
570 INPUT 60,13:Z*

+++++ 580 GO TO 560
590 X=X*610*811*
600 REM
610 FLM ***** BEGIN DATA INPUT *****

```

+++1+++ 630 PRINT
630 FOR I=1 TO 12
640 B=SEG(X),C(I,1),C(I,2))
650 C=SEG(Z),B(I,1),B(I,2))
660 PRINT 'ENTER 'D$)' 'C$
+++1+++ 670 INPUT V$
680 IF V$="" THEN 740
690 ZI=LEN(V$)
700 IF ZI>B(I,2) THEN 1870
710 GO TO R(I,3) OF 1010,1220,1250,1330,1380
+++2+++ 720 IF LEN(V$)>B(I,2) THEN 1830
+++5+++ 730 Z=REP(V$,B(I,1),B(I,2))
+++1+++ 740 NEXT I

```

```

750 REM
760 REM ***** SUBROUTINE - CALC DT IN HOURS AND 2 DEC PLACES ***

```

```

770 M=18
780 FOR I=1 TO 2
790 J=SEG(Z$,M,2)
800 K=SEG(Z$,M+2,2)
810 J(I)=VAL(J$)
820 K=VAL(K$)
830 J(I)=J(I)+K/60
840 M=M+4
850 NEXT I
860 N=(J(2)-J(1))*100+0.5
870 K=INT(N)
880 R=SIR(K)
890 N=REP(' ',1,1)
900 K1=LEN(R$)
910 GO TO K1 OF 940,950,960,970
920 F1=SEG(N$,2,4)
93  1 TO 970
+++1+++ 940 A$='0'EN$
+++1+++ 950 N$='0'EN$
+++1+++ 960 K1='0'EN$
+++2+++ 970 Z=REP(N$,4,4)
980 GO TO 1560

```

```

970 REM
1000 REM ***** CHECK NO. 1 - LIMITS *****

```

```

+++2+++ 1010 IF Z1<B(I,2) THEN 1830
1020 FOR K=1 TO Z1
1030 E=SEG(V$,K,1)
1040 EI=ASC(E$)
1050 IF EI>47 AND EI<58 THEN 1080
1060 PRINT 'THIS ENTRY MUST BE NUMERIC'
1070 GO TO 1190
1080 NEXT K
1090 V=VAL(V$)
1100 IF I=5 THEN 1380
1110 IF V<K(1,4) AND V>=R(I,5) THEN 730
1120 GO TO 1 OF 1180,1180,1180,1180,1180,1140,1140,1140,1140
1130 GO TO I-11 OF 1180
1140 IF V=99 THEN 720
1150 IF I=11 AND V=98 THEN 720
1160 PRINT 'V$ IS AN INVALID NUMBER'

```



```

1640 REM
1650 REM ***** WRITE RECORD TO TAPE *****
+++2+++
1660 PRINT G411Z$
1670 PRINT G0,12,1Z4
1680 Z1=REF('1',6,1)
1690 Z1=SEG(Z1,1,44)
1700 REM
1710 REM ***** CHECK END OF DATA *****
1720 PRINT 'MORE DATA (ENTER Y OR N; N WILL END PROGRAM) '
1730 INPUT N$
1740 IF N$='Y' THEN 620
1750 PRINT G0,21
+++1+++
+++2+++
1760 PRINT 'PROGRAM FINISHED'
1770 END
1780 REM ***** DIAGNOSTIC MESSAGES *****
1790 PRINT 'ERROR IN LENGTH OF Z$'
1800 PRINT 'THE LAST ENTRY WAS DISREGARDED. REENTER ENTIRE RECORD'
1810 GO TO 620
1820 REM
+++3+++
1830 PRINT 'THE STRING MUST BE COMPLETELY FILLED - EXACTLY 'B(I,2)'  

1840 PRINT ' CHARACTERS.'
1850 GO TO 1190
1860 REM
+++1+++
1870 PRINT B$; ' CANNOT BE LONGER THAN 'B(I,2)'  

1880 GO TO 1190
1890 REM
1900 REM ***** B ARRAY (12,5) *****
1910 DATA 8,2,3,0,0,12,6,2,0,0,18,4,1,0,2400
1920 DATA 22,4,1,0,2400,26,1,4,0,0,27,2,3,1,25,29,2,3,0,99
1930 DATA 31,2,3,0,99,33,2,3,0,39,35,2,3,1,36,37,2,3,1,14
1940 DATA 39,2,3,1,6
1950 REM
1960 REM ***** C ARRAY (12,2) *****
1970 DATA 1,11,13,38,51,10,62,9,72,21,93,16,110,24,134,26,174,18
1980 DATA 193,12,206,17,223,20
1990 REM
2000 REM ***** X$ ARRAY (250) *****
2010 DATA 'PAGE NUMBER/DATE OF THE SAMPLE COLLECTION (DDMMYY)'
2020 DATA 'START TIME/STOP TIME/SIMULTANEOUS (Y OR N)'
2030 DATA 'SENSITION NUMBER/FIRTHARK COMPONENT NUMBER'
2040 DATA 'Secondary Component Number'
2050 DATA 'DEFECTIVE ACTION/FAILURE, MODE/CORRECTIVE ACTION'
2060 DATA 'EFFECT OR PRODUCTION'
2070 REM

```

***** END OF PROGRAM *****

100 INIT
 110 PAGE
 120 PRINT *DIRECTORY FOR ID SETS DATA PRINT PROGRAMS*
 130 PRINT *VERSION 9 - 8/28/81*
 140 PRINT
 150 PRINT *DATA*
 160 PRINT *SHEET # CONTENTS*
 170 PRINT * 1 ANALYST AND LAB COORD WORK SHEET (M,CK,CH,PS,T)*
 180 PRINT * 2 ANALYST AND LAB COORD WORK SHEET (AS)*
 190 PRINT * 3 ANALYST AND LAB COORD WORK SHEET (GR)*
 200 PRINT * 4 ANALYST AND LAB COORD WORK SHEET (L)*
 210 PRINT * 9 ANALYTICAL DATA SHEET (MIRAN 80)*
 220 PRINT * 10 BLING 1611 - RECEIPT INSPECTION*
 230 PRINT * 11 PROCESS DATA - F1ASSEMBLY ROOM*
 240 PRINT * 12 PROCESS DATA - RESIDUE AREA (FIRS)*
 250 PRINT * 13 PROCESS DATA - RESIDUE AREA (NRUMS)*
 260 PRINT * 14 PROCESS DATA - SPRAY DRYER*
 270 PRINT * 15 PROCESS DATA - ELECTROSTATIC PRECIPITATOR*
 280 PRINT * 16 FIGHT DOWNTIME DATA*
 290 PRINT *ENTER DATA SHEET NUMBER*
 310 INPUT F
 320 IF F<4 THEN 350
 330 F=2
 340 GO TO 370
 350 IF F=9 OR F>16 THEN 390
 360 F=4-6
 370 FIND F
 380 OUI
 390 PRINT *INVALID FILE NUMBER, REENTER*
 400 GO TO 300
 410 END

FILE 0 2

100 REM *****
110 REM PRINT PROGRAM FOR DATA SHEETS 1 THRU 8 *****
120 REM ANALYST AND LAB COORDINATOR DATA
130 REM FOR H, CK, CM, PS, AS, GB AND L
140 REM VERSION 9 - 9/22/81

M. E. MARTIN

160 INIT
170 PRINT @32,7610
180 PRINT @41,15:150
190 PRINT "LINSEKI THE DATA TAPE INTO UNIT 4924"
200 PRINT "JFRESS ENTER KEY TO BEGIN"
210 INPUT B\$
220 DIM A(16),AA(256),I(16),L(132),O(74)

230 FEM
240 REM ***** INITIALIZE ARRAYS FOR CHECKING AGENTS

250 U1=11
260 U2=41
270 O1=7
280 O1=05108
290 Z1=7
300 Y1=7
310 READ I\$
320 A(1)=1
330 A(2)=2
340 FOR I=3 TO 14
350 A(I)=0
360 NEXT I
370 J0=0
380 F100=0
390 F100=0
400 INPUT Q1:G1Z0
410 INPUT Q1:G1Z0

420 REM ***** CHECK TO SEE IF READ FOR X AGENT IS NECESSARY
430 FEM
440 INPUT Q1:AS
450 I\$=SEG(A\$;18;2)
460 FOR I=1 TO 7
470 N\$=SEG(I\$,281-1;2)
480 IF R\$=B\$ THEN 530
490 NEXT I
500 PRINT "THIS IS THE WRONG DATA TAPE"
510 GO TO 740
520 INPUT Q1:G1Z0
530 IF 70=0 THEN 440
540 J0=J0+1
550 IF 20=14 THEN 740
560 IF A(I)=-1 THEN 540
570 J2=0
580 F100=0
590 F100=0
600 INPUT Q1:AS
610 INPUT Q1:AS


```

+++16+++ 620 L1=SEG(A1,18,2)
          630 C1=SEG(A1,6,1)
          640 INPUT Q1,61Z0
          650 I0=1
          660 IF I0=(J0+1)/2 THEN 700
          670 IF I0=J0/2 THEN 700
          680 IF Z0=2 THEN 610
          690 GO TO 540
+++12+++ 700 GO TO J0 OF 760,1440
          710 INPUT Q11,61Z0
          720 IF Z0=2 THEN 740
          730 GO TO 610
+++13+++ 740 PRINT "JEND OF PROGRAM"
          750 END

```

```

760 REM
770 KLM ***** ANALYST WORK SHEET *****

```

```

+++11+++ 780 IF J2=0 THEN 800
          790 GO TO 970
+++16+++ 800 L1=ANALYST WORK SHEET
          810 PRINT Q41,"L"
          820 E1=AGENT "ED"
          830 PRINT Q41,""
          840 G1=SEG(A1,10,2)
          850 H1=SEG(A1,12,2)
          860 I1=SEG(A1,14,2)
          870 J1=SEG(A1,16,2)
          880 K1=SEG(A1,20,1)
          890 E1=DAY HO YR
          900 PRINT Q41,E1,""
          910 PRINT Q41,""
          920 E1=CONTROL CALIB
          930 PRINT Q41,E1,"CONC"
          940 E1=NUMBER STD CONC
          950 PRINT Q41,E1,"SAMPLE TIME"
          960 J2=1
          970 E1=SEG(A1,10,2)
          980 IF L1=J1 THEN 800
          990 L1=SEG(A1,12,2)
          1000 IF E1=H1 THEN 800
          1010 L1=SEG(A1,14,2)
          1020 IF E1=I1 THEN 800
          1030 E1=SEG(A1,16,2)
          1040 IF E1=J1 THEN 800
          1050 E1=SEG(A1,20,1)
          1060 IF E1=K1 THEN 800
          1070 L1=01
          1080 M1=SEG(A1,21,6)
          1090 L1=REF(M1,1,6)
          1100 M1=SEG(A1,27,7)
          1110 IF M1=NA THEN 1130
          1120 M1=00
          1130 L1=REF(M1,9,7)
          1140 M1=SEG(A1,30,7)
          1150 L1=REF(M1,18,7)
          1160 M1=SEG(A1,35,7)
          1170 IF M1=NA THEN 1190
          1180 M1=00
          1190 L1=REF(M1,27,7)

```

•IE1•J•

•IE1•J•

SERIAL NUMBER
 COMPUTER PAGE *100
 PEAK
 AGENT
 ANAL ANAL
 HEIGHT CONC DILUTION VOLUME
 INIT COMMENTSJ•

```

+++11+++ 970 E1=SEG(A1,10,2)
          980 IF L1=J1 THEN 800
          990 L1=SEG(A1,12,2)
          1000 IF E1=H1 THEN 800
          1010 L1=SEG(A1,14,2)
          1020 IF E1=I1 THEN 800
          1030 E1=SEG(A1,16,2)
          1040 IF E1=J1 THEN 800
          1050 E1=SEG(A1,20,1)
          1060 IF E1=K1 THEN 800
          1070 L1=01
          1080 M1=SEG(A1,21,6)
          1090 L1=REF(M1,1,6)
          1100 M1=SEG(A1,27,7)
          1110 IF M1=NA THEN 1130
          1120 M1=00
          1130 L1=REF(M1,9,7)
          1140 M1=SEG(A1,30,7)
          1150 L1=REF(M1,18,7)
          1160 M1=SEG(A1,35,7)
          1170 IF M1=NA THEN 1190
          1180 M1=00
          1190 L1=REF(M1,27,7)

```

```

1200 M=SEG(A$,62,7)
1210 IF M<>'NA' THEN 1230
1220 M= NA
1230 L=REP(M$,35,7)
1240 M=SEG(A$,69,7)
1250 IF M<>'NA' THEN 1270
1260 M= NA
1270 L=REP(M$,44,7)
1280 M=SEG(A$,76,7)
1290 IF M<>'NA' THEN 1310
1300 M= NA
1310 L=REP(M$,53,7)
1320 M=SEG(A$,83,4)
1330 IF M<>'NA' THEN 1350
1340 M= NA
1350 L=REP(M$,62,4)
1360 M=SEG(A$,87,3)
1370 L=REP(M$,69,3)
1380 M= NA
1390 IF Z=2 THEN 2410
1400 PRINT P41:L:U$
1410 GO TO 680

```

```

1420 REM
1430 REM ***** LAB DATA COORDINATOR SHEET *****

```

```

1440 IF J2=0 THEN 1460
1450 GO TO 1660
1460 E$='LAB DATA COORDINATOR WORK SHEET'
1470 PRINT P41:L
1480 PRINT P41:
1490 PRINT P41:
1500 G=SEG(A$,10,2)
1510 M=SEG(A$,12,2)
1520 I=SEG(A$,14,2)
1530 J=SEG(A$,16,2)
1540 K=SEG(A$,18,2)
1550 E$='DAY NO YR'
1560 F$=

```

COMPUTER PAGE 103 SET TYPE 1F8

```

1570 PRINT P41:E$
1580 E$=
1590 PRINT P41: 'H$' 'I$' 'J$' 'K$' 'L$' 'M$' 'N$' 'O$' 'P$' 'Q$' 'R$' 'S$' 'T$' 'U$' 'V$' 'W$' 'X$' 'Y$' 'Z$'
1600 PRINT P41: USING '71T,13A:' '-REALNY818'-'
1610 E$='CONTROL'
1620 PRINT P41:E$:CONC
1630 E$='NUMBER AGT LOC PURP STRT STOP'
1640 PRINT P41:E$:NEARS AIR HEARS AIR
1650 J2=1

```

```

1660 E$=SEG(A$,10,2)
1670 IF E$>G$ THEN 1460
1680 E$=SEG(A$,12,2)
1690 IF E$>H$ THEN 1460
1700 E$=SEG(A$,14,2)
1710 IF E$>I$ THEN 1460
1720 E$=SEG(A$,16,2)
1730 IF E$>J$ THEN 1460
1740 E$=SEG(A$,18,2)
1750 IF E$>K$ THEN 1460
1760 IF C$=2 THEN 680
1770 IF C$=3 THEN 2120

```

AGENT ID#

```

1780 L1=011
1790 M1=SEG(A1,21,6)
1800 L1=REP(M1,1,6)
1810 M1=SEG(A1,18,2)
1820 L1=REP(M1,9,2)
1830 M1=SEG(A1,116,2)
1840 L1=REP(M1,13,2)
1850 M1=SEG(A1,118,2)
1860 L1=REP(M1,18,2)
1870 M1=SEG(A1,120,4)
1880 L1=REP(M1,22,4)
1890 M1=SEG(A1,124,4)
1900 L1=REP(M1,27,4)
1910 M1=SEG(A1,90,7)
1920 IF M1<>'NA' THEN 1940
1930 M1= NA
1940 L1=REP(M1,32,7)
1950 M1=SEG(A1,97,6)
1960 IF M1<>'NA' THEN 1980
1970 M1= NA
1980 L1=REP(M1,41,6)
1990 M1=SEG(A1,76,7)
2000 IF M1<>'NA' THEN 2020
2010 M1= NA
2020 L1=REP(M1,49,7)
2030 M1=SEG(A1,101,9)
2040 IF M1<>'NA' THEN 2060
2050 M1= NA
2060 L1=REP(M1,58,9)
2070 L1=REP(
    ,67,17)
2080 REM
2090 GO TO 2800
2100 MEH
2110 REM ***** REANALYSIS DATA *****
2120 L1=011
2130 M1=SEG(A1,21,6)
2140 L1=REP(M1,1,6)
2150 M1=SEG(A1,18,2)
2160 L1=REP(M1,9,2)
2170 M1=SEG(A1,116,2)
2180 L1=REP(M1,13,2)
2190 M1=SEG(A1,118,2)
2200 L1=REP(M1,18,2)
2210 M1=SEG(A1,120,4)
2220 L1=REP(M1,22,4)
2230 M1=SEG(A1,124,4)
2240 L1=REP(M1,27,4)
2250 M1=SEG(A1,90,7)
2260 IF M1<>'NA' THEN 2280
2270 M1= NA
2280 L1=REP(M1,32,7)
2290 L1=REP(
    ,49,18)
2300 M1=SEG(A1,76,7)
2310 IF M1<>'NA' THEN 2330
2320 M1= NA
2330 L1=REP(M1,69,7)

```

2340 M=SEG(A,103,9)
2350 IF M<<NA THEN 2370
2360 M=NA
2370 L=REP(M,77,9)
2380 GO TO 2800

+++++

2390 REM
2400 REM ***** ANALYST COMMENTS *****

2410 Z6=0
2420 IF Z6<>2 THEN 2470
2430 INPUT @U1:A\$
2440 Z6=1
2450 INPUT @U1:G:Z0

+++++

2460 REM IF Z6<>2 THEN 150

2470 B=SEG(A,6,2)
2480 O=VAL(B\$)
2490 IF O>20 OR O>29 THEN 2530
2500 IF O>24 THEN 2560
2510 U=SEG(A,34,58)
2520 GO TO 2650
2530 PRINT @41:L\$
2540 IF Z6<>2 AND Z6<>1 THEN 540
2550 GO TO 620
2560 PRINT @41:L\$
2570 IF Z6<>2 THEN 540
2580 INPUT @U1:A\$
2590 INPUT @U1:G:Z0
2600 B=SEG(A,6,2)
2610 O=VAL(B\$)
2620 IF O>25 OR O>29 THEN 620
2630 GO TO 2570

+++++

2640 REM

2650 PRINT @41:L\$;U\$
2660 IF Z6<>2 THEN 540
2670 INPUT @U1:A\$
2680 INPUT @U1:G:Z0
2690 B=SEG(A,6,2)
2700 O=VAL(B\$)
2710 IF O>20 THEN 620
2720 IF O>29 THEN 620
2730 IF O>24 THEN 2660
2740 U=SEG(A,34,58)
2750 PRINT @41: USING '75T,58A':U\$
2760 IF Z6<>2 THEN 540
2770 GO TO 2660

+++++

+++++

+++++

+++++

2640 REM

2650 PRINT @41:L\$;U\$
2660 IF Z6<>2 THEN 540
2670 INPUT @U1:A\$
2680 INPUT @U1:G:Z0
2690 B=SEG(A,6,2)
2700 O=VAL(B\$)
2710 IF O>20 THEN 620
2720 IF O>29 THEN 620
2730 IF O>24 THEN 2660
2740 U=SEG(A,34,58)
2750 PRINT @41: USING '75T,58A':U\$
2760 IF Z6<>2 THEN 540
2770 GO TO 2660

+++++

+++++

2780 REM
2790 REM ***** LAB DATA COORDINATOR COMMENTS *****

2800 Z6=0
2810 IF Z6<>2 THEN 2860
2820 INPUT @U1:A\$
2830 Z6=1
2840 INPUT @U1:G:Z0

+++++

2850 REM IF Z0<>2 THEN 150

+++1+++

2860 B\$=SEG(A\$,6,2)
2870 Q9=VAL(B\$)
2880 IF Q9<20 OR Q9>29 THEN 2940
2890 IF Q9<25 AND Z0<>2 THEN 2940
2900 IF Z0<>2 AND Z6<>1 THEN 540
2910 IF Q9<25 THEN 2000
2920 H\$=SEG(A\$,34,45)
2930 GO TO 2980
2940 PRINT Q41L\$
2950 IF Z0<>2 AND Z6<>1 THEN 540
2960 GO TO 620

+++2+++

2970 REM

+++1+++ 2980 PRINT Q41L\$IM\$

+++2+++ 2990 IF Z0<>2 THEN 540

3000 INPUT U011A\$

3010 INPUT Q01:Z0

3020 B\$=SEG(A\$,6,2)

3030 Q9=VAL(B\$)

3040 IF Q9<20 OR Q9>29 THEN 620

3050 IF Q9<25 THEN 2990

3060 H\$=SEG(A\$,34,45)

3070 PRINT Q41: USING 'B7T:45A'IM\$

3080 IF Z0<>2 THEN 540

3090 GO TO 2990

3100 REM

3110 REM ***** I\$ (1A) - AGENTS *****

3120 DATA 'H CNDP8T L GBL'

3130 REM ***** END OF PROGRAM *****

10 REM MIRAN PRINT PROGRAM
 20 REM Computer Sciences Corporation
 30 REM Isaac William Traxler
 40 REM 4 - 27 - 82

```

100 INIT
110 GOSUB 1000
120 H$=FL.
130 FOR I=1 TO 6
140 S=SEG(Z$,I,1)
150 GOSUB 2000
160 NEXT I
170 H$=QL.
180 FOR I=1 TO 6
190 S=SEG(Z$,I,1)
200 GOSUB 2000
210 NEXT I
220 PRINT Q4:LL.
230 PRINT Q3:**** NORMAL END OF PROGRAM ****.
240 END
****
300 PRINT Q3:GMRGGBNUGG GDBAGTGG GTGAGPQEG.
310 PRINT Q3:**** ABNORMAL END OF PROGRAM ****.
320 END
    
```

999 REM ROUTINE TO INITIALIZE ARRAYS AND PROMPT USER FOR DATA TAPE

```

-----
1000 PAGE
1010 U1=33
1020 U2=11
1030 U3=32
1040 U4=41
1050 PRINT Q4:
1060 DIM H$(2),S$(1),Z$(6)
1070 DIM I$(110),F$(111),B$(110)
1080 DIM L(4,3)
1090 PRINT Q3:JINSERT DATA TAPE INTO EXTERNAL TAPE DRIVE.
1100 PRINT Q3:CR.
1110 Z$=123456.
1120 T$=.
1130 B$=T$
1140 FOR I=1 TO 10
1150 B$=B$T$
1160 NEXT I
1170 FOR I=1 TO 9
1180 READ L(I,1),L(I,2),L(I,3)
1190 NEXT I
1200 RETURN
1300 DATA 37,7,20
1310 DATA 49,7,30
1320 DATA 59,7,49
1330 DATA 61,7,59
1340 DATA 71,7,78
1350 DATA 78,7,88
1360 DATA 51,3,41
1370 DATA 68,3,70
    
```


1580 DATA 05.3.99

1999 REM ROUTINE PRINT RECORD

```
---2---
2000 FIND @U211
2010 INPUT @U211$
2020 I$=SEG(I$,1,5)
2030 IF I$<>'RMA09' THEN 300
2040 C1=0
2050 F0=0
+++3+++
2100 INPUT @U2161E1,E2
2110 IF E1<>2 THEN 2240
2120 INPUT @U211$
2125 REM CHECK PURPOSE
2130 I$=SEG(I$,22,2)
2140 IF I$<>'H$ THEN 2100
2145 REM CHECK SERIAL NUMBER
2150 I$=SEG(I$,24,1)
2160 IF I$<>'5$ THEN 2100
2165 REM GET PAGE NUMBER
2170 I$=SEG(I$,8,2)
2180 P1=VAL(I$)
2190 IF P1<0 AND P1>=1 THEN 2220
2200 P0=P1
2210 GOSUB 3000
2220 GOSUB 4000
2230 GO TO 2100
+++1+++
+++1+++
2999 REM ROUTINE TO PRINT HEADING AT TOP OF EACH SHEET
```

```
---1---
3000 PRINT @U4:'L'
3010 PRINT @U4: USING '45X,21A,/' :ANALYTICAL DATA SHEET'
3020 PRINT @U4: USING '52X,8A':MIRAN 80.
3030 I$=SEG(I$,20,2)
3040 PRINT @U4: USING 'L,51X,9A,2A':LOCATION,T$
3043 I$=MIRAN SERIAL NO.
3046 U$=SET TYPE.
3050 PRINT @U4: USING 'L,33X,16A,21A,8A':DAY MO YR,T$,U$
3060 I$=SEG(I$,12,6)
3070 I$=REF(' ',3,0)
3080 I$=REF(' ',4,0)
3090 U1=REF(' ',2,0)
3100 PRINT @U4: USING '34X,8A,15X,6A,14X,5A':I$,S$,U$
3110 PRINT @U4: USING 'L,53X,13A':PARTS/MILLION.
3130 PRINT @U4: USING '2L,20T,24A,S':-----CHLOROPICRIN-----
3155 PRINT @U4: USING '5X,24A,S':-----PHOSGENE-----
3140 PRINT @U USING '5X,26A':-----CHLOROFORM-----
3146 U1=SET TYPE.
```

```

3150 IF H<>'FL' THEN 3190
3160 PRINT QUA; USING 3170: 'PUR', 'TIME',
3170 IMAGE 3A:5X:11A:3('1 HR AVG PEAK INIT '),/
3180 GO TO 3210
+++1+++
3190 PRINT QUA; USING 3200: 'PUR', 'TIME',
3200 IMAGE 3A:5X:11A:3(' TARGET FOUND INIT '),/
3210 RETURN
+++1+++
3999 REM ROUTINE TO PRINT OUT DATA AND COMMENT RECORDS

```

```

-----1-----
4000 T$=SEG(I$,6,1)
4010 IF T$='1' THEN 4150

```

4020 REM COMMENT RECORD

```

4030 P$=B$
4040 T$=SEG(I$,29,8)
4050 T$=REP('...',5,0)
4060 P$=REP(T$,7,9)
4070 T$=SEG(I$,37,68)
4080 P$=REP(T$,22,68)
4090 IF C1=1 THEN 4110
4100 P$=REP('J',1,0)
+++1+++
4110 PRINT QUA:P$
4120 C1=1
4130 RETURN

```

4140 REM DATA RECORD

```

+++1+++
4150 P$=B$
4160 T$=SEG(I$,22,2)
4170 P$=REP(T$,1,2)
4180 T$=SEG(I$,29,8)
4190 T$=REP('...',5,0)
4200 P$=REP(T$,7,9)
4210 FOR I=1 TO 9
4220 T$=SEG(I$,L(I,1),L(I,2))
4230 P$=REP(T$,L(I,3),L(I,2))
4240 NEXT I
4250 IF C1<>1 THEN 4280
4260 P$=REP('J',1,0)
4270 C1=0
+++1+++
4280 PRINT QUA:P$
4290 RETURN

```

100 REM ****
 110 REM PRINT PROGRAM FOR DATA SHEET #10 ****
 120 REM BLDG 1611 RECEIPT INSPECTION DATA
 130 REM VERSION B - 06/08/81
 140 REM BY: STEAKNS-ROBER, INC.
 150 REM M. R. HERBERT/M. E. MARTIN ****

160 INIT
 170 PAGE
 180 DIM H\$(2),D\$(2),M\$(2),Y\$(2),J\$(2),K\$(40),P\$(80),R\$(70),T\$(2)
 190 PRINT "PROGRAM TO PRINT"
 200 PRINT "BLDG 1611 RECEIPT INSPECTION DATA"

210 REM "REMOVE PROGRAMMED TAPE FROM UNIT"

220 PRINT "INSERT DATA TAPE IN UNIT 4924"
 230 PRINT "JMO YOU WANT TO USE THE HARD COPIERT"

240 PRINT "ENTER (Y OR N)";

250 INPUT A\$

260 M=54

270 DIM A\$(1)

280 IF A\$<>"Y" THEN 310

290 M=34

300 PRINT "JMAKE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE"

310 PRINT "JENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE";

320 INPUT U

330 FIND @U:1

340 PAGE

350 P=0

360 L=0

370 N\$=""

380 P\$=""

390 R\$=""

400 OR EOF (0) THEN 1110

410 IF U=33 THEN 440

420 INPUT @U,6:11

430 IF T1=1 THEN 1110

440 INPUT @U,13:R\$

450 IF U=33 THEN 480

460 INPUT @U,6:11

470 IF T1=1 THEN 1110

480 INPUT @U,13:R\$

490 J\$=SEG(R\$,8:2)

500 Y\$=SEG(R\$,4:2)

510 IF Y\$<>"10" THEN 1200

520 IF R\$<>" " THEN 550

530 R\$=J\$

540 GO TO 560

550 IF J\$=0\$ THEN 570

560 COSUR @U

570 P\$=R\$+M\$

580 REM *** FORMAT DETAIL LINE AND PRINT ***

590 U\$=SEG(P\$,18:1)

600 P\$=REP(U\$,1:1)

610 U\$=SEG(R\$,19:3)

```

620 P1=REP(U1,3,3)
630 U1=SEG(R1,22,4)
640 P1=REP(U1,7,4)
650 I1=SEG(R1,6,1)
660 IF I1<>'1' THEN 710
670 U1=SEG(R1,26,1)
680 I1=REP(U1,10,4)
690 U1=SEG(R1,27,1)
700 P1=REP(U1,29,1)
710 U1=SEG(R1,28,43)
720 P1=REP(U1,37,43)
730 IF L1<M THEN 770
740 IF A1<>'Y' THEN 760
750 GOSUB 1140
760 GOSUB 820
770 PRINT @A1:P1
780 IF A1<>'Y' THEN 800
790 PRINT @32:P1
800 L=L+1
810 GO TO 450

```

```

---2--- 820 REM *** HEADING SUB-ROUTINE ***

```

```

830 Y1=SEG(R1,16,2)
840 M1=SEG(R1,14,2)
850 U1=SEG(R1,12,2)
860 IF U1=J1 THEN 890
870 P=0
880 U1=J1
890 P=P+1
900 A=41
910 PRINT @A1:L
920 GOSUB 980
930 IF A1<>'Y' THEN 1090
940 PAGE
950 A=32
960 GOSUB 980
970 GO TO 1090

```

```

---2--- 980 PRINT @A: USING '16X,28A':DLDG 1611 RECEIPT INSPECTION*
990 PRINT @A:

```

```

1000 PRINT @A: USING '52A,5A,20':DAY MO YR',PAGE',P
1010 PRINT @A: USING '1X,3A,3A,36A,14A,2A,1D$,M$,Y$','COMPUTER PAGE',J1
1020 PRINT @A: J1
1030 PRINT @A: USING '2X,31A':SERIAL
1040 PRINT @A: USING 1050:'NUMBER','DESTROYED' RETURNED COMMENTS
1050 IMAGE 2X,11A,31A
1060 PRINT @A:
1070 L=Y
1080 RETURN
1090 RETURN

```

```

+++2+++ 1100 REM *** SET EOF INDICATOR ***

```

```

---3--- 1110 E=1

```

1120 REM *** PRINT HARD COPY ***

1130 IF A<>'Y' THEN 1250

1140 PRINT @32,26:3

1150 MOVE 0,0

1160 PRINT

1170 PRINT @32,26:0

1180 IF E-1 THEN 1250

1190 RETURN

+++++ 1200 REM *** ERROR - WRONG RECORD TYPE ***

1210 PRINT "RECORD TYPE! *IT*

1220 PRINT "DATA IS NOT **BLDG 1611 RECEIPT INSPECTION** DATA"

1230 PRINT "*** ABNORMAL PROGRAM END ***"

1240 GO TO 1260

+++++ 1250 PRINT "J*** NORMAL END OF PROGRAM ***"

+++++ 1260 END

FILE 0 5

```
100 REM **** PRINT PROGRAM FOR DATA SHEET #11
110 REM **** PROCESS DATA FROM DISASSEMBLY ROOM
120 REM **** VERSION 7 - 3/12/81

130 INIT
140 PAGE
150 DIM R$(2),D$(2),M$(2),Y$(2),R$(70),P$(40),J$(2),K$(30)
160 PRINT "PROGRAM TO PRINT."
170 PRINT "PROCESS DATA SHEET - DISASSEMBLY ROOM"

180 REM "REMOVE PROGRAMMED TAPE FROM UNIT"

190 PRINT "INSERT DATA TAPE IN UNIT 4924"
200 PRINT "JDO YOU WANT TO USE THE HARD COPIER?"
210 PRINT "ENTER (Y OR N) "
220 INPUT A$
230 M=54
240 DIM A$(11)
250 IF A$="Y" THEN 280
260 M=34
270 PRINT "MAKE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE"
280 PRINT "ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
290 INPUT U
300 FIND @U:2
310 PAGE
320 P=0
330 E=0
340 N$=""
350 M$=""
360 ON EOF (0) THEN 990
370 IF U=33 THEN 400
380 INPUT @U:2:11
390 IF 11=1 THEN 990
400 INPUT @U:13:R$
410 IF U=33 THEN 440
420 INPUT @U:6:11
430 IF 11=1 THEN 990
440 INPUT @U:13:R$
450 J$=SIG(R$(R$))
460 IF 11=11 THEN 1090
470 IF M$="" THEN 510
480 R$=J$
490 GOSUB 1010
500 GO TO 530
510 IF J$=R$ THEN 540
520 GOSUB 1010
530 GOSUB 470
540 IF 11=11 THEN 510
550 U$=SIG(R$(R$))
560 R$=R$(U$)
570 U$=SIG(R$(R$))
580 R$=R$(U$)
590 IF L M THEN 620
600 GOSUB 1010
610 GOSUB 470
620 PRINT @U:11:R$
630 IF A$="Y" THEN 650
```

440 PRINT @32:P@
450 L=L+1
460 GO TO 410

2--- 670 REM *** HEADING SUB-ROUTING ***

690 Y@=SEG(R@,14,2)
690 M@=SEG(R@,14,2)
700 O@=SEG(R@,12,2)
710 G@=SEG(R@,10,1)
720 M@=SEG(R@,10,3)
730 IF R@=J@ THEN 760

750 R@=J@
760 F=F+1
770 A=A+1

780 PRINT @A:L*

790 GOSUB 850

800 IF A<>Y* THEN 980

810 PAGE

820 A=52

830 GOSUB 850

840 GO TO 980

2--- 850 PRINT @A: USING "10X,40A,20,1"PROCESS DATA SHEET,*,PAGE*,P

860 PRINT @A: USING 870:"DISASSEMBLY ROOM",*COMPUTER PAGE*,J@

870 IMAGE 11X,30A,14A,2A

880 PRINT @A:

890 PRINT @A: USING "3X,19A,11A,1"DAY MO YR,*,TYPE OF GET*

900 PRINT @A: USING 910:DS,MS,YS,OS,*,*,H@

910 IMAGE 47,2A,3A,15A,11A,1A,3A

920 PRINT @A:

930 PRINT @A:"STATION"

940 PRINT @A:" NUMBER EVENT/ACTION TAKEN"

950 PRINT @A:

960 L=L+1

970 RETURN

980 RETURN

3--- 990 REM *** SET EOF INDICATOR ***

1000 E=1

2--- 1010 REM *** PRINT HARD COPY ***

1020 IF R@=Y* THEN 1070

1030 PRINT @12:R@:5:3

1040 GOSUB 900

1050 PRINT

1060 PRINT @10:R@:6:0

1070 IF R@=J@ THEN 1140

1080 RETURN

+++1111 1090 KEM *** ERROR - WRONG TYPE RECORD ***

1100 PRINT "RECORD TYPE: "IT1

1110 PRINT "DATA IS NOT **PROCESS DATA SHEET-DISASSEMBLY ROOM** DATA"

1120 PRINT "*** ABNORMAL END OF PROGRAM ***"

1130 GO TO 1150

+++1111 1140 PRINT "J** NORMAL END OF PROGRAM ***"

+++1111 1150 END

FILE 6 4

```
100 REM *** PRINT PROGRAM FOR DATA SHEET #12
110 REM *** PROCESS DATA FROM RESIDUE AREA (PIGS)
120 REM *** VERSION 7 - 3/12/81

130 GUNIT
140 PAGE
150 DIM H$(2), D$(2), M$(2), Y$(2), P$(25), R$(31), J$(2), T$(2), K$(25)
160 PRINT "PROGRAM TO PRINT"
170 PRINT "PROCESS DATA SHEET - DECONNED PIO CONTROL"

180 REM *REMOVE PROGRAMMED TAPE FROM UNIT*

190 PRINT "INSERT DATA TAPE IN UNIT 4924"
200 PRINT "JDO YOU WANT TO USE THE HARD COPY?"
210 PRINT "ENTER (Y OR N) "
220 INPUT A$
230 M=54
240 DIM A$(1)
250 IF A$<>"Y" THEN 280
260 M=34
270 PRINT "JHAKE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE"
280 PRINT "ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
290 INPUT U
300 FIND RUI3
310 F=0
320 E=0
330 K$=""
340 B$=""
350 ON EOF (0) THEN 1100
360 IF U=33 THEN 390
370 INPUT QU:G:YI
380 IF I1=1 THEN 1100
390 INPUT QU:J3:R$
400 IF U=33 THEN 430
410 INPUT QU:G:YI
420 IF I1=1 THEN 1100
430 INPUT QU:J3:R$
440 J$=SEG(R$,0,2)
450 I$=SEG(R$,4,2)
460 IF I$<>"12" THEN 1320
470 IF B$<>" " THEN 500
480 G$=J$
490 GO TO 520
500 IF J$=R$ THEN 530
510 GOSUB 1120
520 GOSUB 790

530 REM *** FORMAT DETAIL LINE AND PRINT ***
540 I1=R$
550 U1=SEG(R$,10,1)
560 I2=REF(U1,5,1)
570 U2=SEG(R$,19,3)
580 I3=REF(U2,7,3)
590 U3=SEG(R$,22,4)
600 I4=REF(U3,11,4)
610 U4=SEG(R$,26,4)
```

```

620 FOR I=1 TO 3
630 V1=SEG(U$,I,1)
640 IF V1<>'0' THEN 680
650 V1=' '
660 U1=REP(U$,I,1)
670 NEXT I
680 F1=REF(U$,22,4)
690 X1=SEG(R$,30,2)
700 IF L&M THEN 740
710 IF A1<>'Y' THEN 730
720 GOSUB 1240
730 GOSUB 790
740 PRINT @A1:P$
750 IF A1<>'Y' THEN 770
760 PRINT @S2:P$
770 L=L+1
780 GO TO 400

```

---3--- 790 REM *** HEADING SUB-ROUTINE ***

```

800 Y1=SEG(R$,16,2)
810 H1=SEG(R$,14,2)
820 D1=SEG(R$,12,2)
830 IF R1=J1 THEN 060
840 F=0
850 I1=J1
860 F=F+1
870 A=41
880 PRINT @A1:L
890 GOSUB 950
900 IF A1<>'Y' THEN 1090
910 F=AGE
920 A=32
930 GOSUB 950
940 GO TO 1090

```

```

---2--- 950 PRINT @A: USING 960:PROCESS DATA SHEET',PAGE',P
960 IMAGE 3X,10A,10X,5A,20
970 PRINT @A: USING 980:'RESIDUE AREA',COMPUTER PAGE',J1
980 IMAGE 4X,12A,12X,14A,2A
990 PRINT @A:
1000 PRINT @A: USING '7X,9A,1'DAY MO YR'
1010 PRINT @A: USING '8X,3(3A)';D$,H$,Y$
1020 PRINT @A:
1030 PRINT @A: DECONNED PIG CONTROL'
1040 PRINT @A:
1050 PRINT @A:PIG CONTROL NUMBER SKID'
1060 PRINT @A:
1070 L=L+1
1080 RETURN
1090 RETURN

```

---3--- 1100 REM *** SET EOF INDICATOR ***

1110 E=1

---1--- 1120 REM *** PRINT LAST LINE OF DATA SHEET ***

1130 IF L<M THEN 1150
1140 GOSUB 790
1150 V1=SEG(X\$,1,1)
1160 IF V1<>'0' THEN 1190
1170 V1=''
1180 X1=REF(V1,1,1)
1190 Z1="TOTAL PIGS DECONNED"
1200 PRINT Q411
1210 PRINT Q411;Z1;X1

1220 REM *** PRINT HARD COPY ***

1230 IF A<>'Y' THEN 1300
1240 PRINT
1250 PRINT Z1;X1

---1--- 1260 PRINT Q32,2613

1270 MOVE 0,0

1280 PRINT

1290 PRINT Q32,2610

1300 IF E=1 THEN 1390

1310 RETURN

1320 REM *** ERROR -- WRONG RECORD TYPE ***

1330 PAGE

1340 PRINT "RECORD TYPE: "IT1

1350 PRINT "DATA IS NOT --PROCESS DATA SHEET-DECONNED PIG CONTROL--"

1360 PRINT "*** ABNORMAL PROGRAM END ***"

1370 GO TO 1430

1380 PAGE

1390 PRINT "*** NORMAL END OF PROGRAM ***"

1400 END

```

100 REM *** PRINT PROGRAM FOR DATA SHEET #13
110 REM *** PROCESS DATA FROM RESIDUE AREA (DRUMS)
120 REM *** VERSION 7 - 2/12/81

130 INIT
140 PAGE
150 DIM B$(2),D$(2),J$(2),K$(36),M$(2),P$(36),R$(27),T$(2),X$(2)
160 PRINT "PROGRAM TO PRINT."
170 PRINT "PROCESS DATA SHEET - FURNACE RESIDUE CONTROL"
180 REM "JREMOVE PROGRAMMED TAPE FROM UNIT"

190 PRINT "INSERT DATA TAPE IN UNIT 4924."
200 PRINT "JDO YOU WANT TO USE THE HARD COPIERT ."
210 PRINT "ENTER (Y OR N) ."
220 INPUT A$
230 DIM A$(1)
240 IF A$ <> "Y" THEN 260
250 PRINT "JMAKE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE."
260 PRINT "JENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE. "
270 INPUT U
280 FIND QU:4
290 PAGE
300 E=0
310 B1=0
320 N1=0
330 E1=0
340 F1=0
350 O1=0
360 U1="FURNACE RESIDUE CONTROL"
370 L1="DRUM"
380 L1="WEIGHT"
390 N1="DRUM NUMBER (FOUNDS)"
400 O1="TOTAL DRUMS FURNACE RESIDUE"
410 ON EOF (0) THEN 1050
420 IF U=33 THEN 450
430 INPUT @U,6:11
440 IF 11=1 THEN 1050
450 INPUT @U,13:R$
460 IF U=33 THEN 490
470 INPUT @U,6:11
480 IF 11=1 THEN 1050
490 INPUT @U,13:R$
500 J1=SEG(R$,8:2)
510 T1=SEG(R$,4:2)
520 IF 11=13 THEN 1220
530 IF 11=13 THEN 560
540 B1=J1
550 GO TO 560
560 IF J1=B1 THEN 590
570 COSUB 1060
580 P1=K1
590 P1=SEG(R$,10:1)
600 P1=REP(U1,4:1)
610 J1=SEG(R$,19:4)
620 J1=SEG(R$,19:4)
630 P1=REP(U1,6:4)

```

```
640 U$=SEG(R$,23,3)
650 FOR I=1 TO 2
660 V$=SEG(U$,I,1)
670 IF V$<>'0' THEN 710
680 V$=' '
690 U$=REP(U$,I,1)
700 NEXT I
+++1+++
710 P$=REP(U$,10,3)
720 X$=SEG(R$,26,2)
730 PRINT QAI1P$
740 IF A$<>'Y' THEN 460
750 PRINT Q321P$
760 GO TO 460
```

```
---1--- 770 REM *** HEADING SUB-ROUTINE ***
```

```
780 Y$=SEG(R$,16,2)
790 M$=SEG(R$,14,2)
800 B$=SEG(R$,12,2)
810 B$='J'
820 A='1'
830 PRINT QAI'L'
840 GOSUB 900
850 IF A$<>'Y' THEN 1030
860 PADE
870 A='32'
880 GOSUB 900
890 GO TO 1030
```

```
---2--- 900 PRINT QAI$J$
910 PRINT QAI$F$
920 PRINT QAI
930 PRINT QAI$G$
940 PRINT QAI USING "BX,3(3A):ID$M$Y$
950 PRINT QAI
960 PRINT QAIH$
970 PRINT QAI:
980 PRINT QAI$
990 PRINT QAI$
1000 PRINT QAI$N$
1010 PRINT QAI:
1020 RETURN
+++2+++ 1030 RETURN
```

```
1040 REM *** SET EOF INDICATOR ***
```

```
---3--- 1050 E=1
```

```
---1--- 1060 REM *** PRINT LAST LINE OF DATA SHEET ***
```

```
1070 V$=SEG(X$,1,1)
1080 IF V$<>'0' THEN 1110
1090 V$=' '
```

```
1100 *S=REP(U%1,1)
+++1111
1110 PRINT @41:
1120 PRINT @41:0$;G$
1130 IF A$<>'Y' THEN 1200
1140 PRINT
1150 PRINT 0$;X$
1160 PRINT @32;26;3
1170 MOVE 0,0
1180 PRINT
1190 PRINT @32;26;0
1200 IF E=1 THEN 1270
1210 RETURN
+++1111
1220 REM *** ERROR - WRONG RECORD TYPE ***
1230 PRINT "RECORD TYPE: "IT$
1240 PRINT "DATA IS NOT "FURNACE RESIDUE CONTROL" DATA
1250 PRINT " *** ABNORMAL PROGRAM END ***"
1260 GO TO 1290
+++1111
1270 PAGE
1280 PRINT " *** NORMAL END OF PROGRAM ***"
+++1111
1290 END
```

```

100 REM **** PRINT PROGRAM FOR DATA SHEET #14
110 REM **** PROCESS DATA - SPRAY DRYER
120 REM **** VERSION 7 - 3/12/81

130 INIT
140 PAGE
150 DIM B$(2), D$(2), J$(2), K$(36), M$(2), P$(36), R$(27), T$(2), X$(2)
160 PRINT "PROGRAM TO PRINT"
170 PRINT "PROCESS DATA SHEET - SPRAY DRYER"
180 REM *REMOVE PROGRAMMED TAPE FROM UNIT*

190 PRINT "INSERT DATA TAPE IN UNIT 4924"
200 PRINT "JUD YOU WANT TO USE THE HARD COPIER?"
210 PRINT "ENTER (Y OR N) "
220 INPUT A$
230 DIM A$(1)
240 IF A$ <> "Y" THEN 260
250 PRINT "JHAKE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE"
260 PRINT "ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
270 INPUT U
280 FINU OUTS
290 PAGE
300 E=0
310 R$=""
320 N$=""
330 E$=""
340 F$=""
350 G$=""
360 H$=""
370 L$=""
380 L$=""
390 N$=""
400 O$=""
410 ON EOF (0) THEN 1050
420 IF U=33 THEN 450
430 INPUT @U,6:Y1
440 IF T1=1 THEN 1050
450 INPUT @U,13:R$
460 IF U=33 THEN 490
470 INPUT @U,6:Y1
480 IF T1=1 THEN 1050
490 INPUT @U,13:R$
500 J1=SEG(R$,8:2)
510 T1=SEG(R$,4:2)
520 IF T1 <> "14" THEN 1220
530 IF O1 <> " " THEN 560
540 R$=J1
550 GO TO 580
560 IF J1=R$ THEN 590
570 GOSUB 1050
580 PRINT
590 PRINT
600 U1=SEG(R$,18:1)
610 F1=REP(U1,4:1)
620 U1=SEG(R$,19:4)
630 F1=REP(U1,6:4)

```

+++++

+++++

+++++

+++++

+++++

+++++

PAGE

PROCESS DATA SHEET
 SPRAY DRYER
 DAY MO YR
 SPRAY DRIED SALT CONTROL
 DRUM
 WEIGHT
 DRUM NUMBER (POUNDS)
 TOTAL DRUMS SALT

```
640 U$=SEG(R$,23,3)
650 FOR I=1 TO 2
660 V$=SEG(U$,I,1)
670 IF V$<>'0' THEN 710
680 U$=.
690 U$=REF(V$,I,1)
700 NEXT I
+++++++
710 P$=REP(U$,10,3)
720 X$=SEG(R$,26,2)
730 PRINT Q$1:P$
740 IF A$<>'Y' THEN 460
750 PRINT Q$2:P$
760 GO TO 460
```

---1--- 770 REM *** HEADING SUB-ROUTINE ***

```
780 Y$=SEG(R$,14,2)
790 M$=SEG(R$,14,2)
800 I$=SEG(R$,12,2)
810 R$=J$
820 A=41
830 PRINT Q$1:L*
840 GOSUB 900
850 IF A$<>'Y' THEN 1030
860 PAGE
870 A=32
880 GOSUB 900
890 GO TO 1030
```

---2---

```
900 PRINT Q$E$;J$
910 PRINT Q$1:F$
920 PRINT Q$1
930 PRINT Q$1:G$
940 PRINT Q$1: USING *8X,3(3A)*10$,H$,Y$
950 PRINT Q$1
960 PRINT Q$1:H$
970 PRINT Q$1
980 PRINT Q$1:I$
990 PRINT Q$1:L$
1000 PRINT Q$1:N$
1010 PRINT Q$1
1020 RETURN
+++++++
1030 RETURN
```

1040 REM *** SET EOF INDICATOR ***

---3--- 1050 E=1

---1--- 1060 REM *** PRINT LAST LINE OF DATA SHEET ***

```
1070 V$=SEG(X$,1,1)
1080 IF V$<>'0' THEN 1110
1090 V$=.
1100
```



```
+++  
1100 X$=REP(V$1,1)  
1110 PRINT @A1:  
1120 PRINT @A10$IX$  
1130 IF A$<>'Y' THEN 1200  
1140 PRINT  
1150 PRINT @SIX$  
1160 PRINT @32,2613  
1170 MOVE 0,0  
1180 PRINT  
1190 PRINT @32,2610  
1200 IF E=1 THEN 1270  
1210 RETURN  
+++  
1220 REM *** ERROR - WRONG RECORD TYPE ***  
1230 PRINT "RECORD TYPE: "IT$  
1240 PRINT "DATA IS NOT "SPRAY DRYER" DATA"  
1250 PRINT "*** ABNORMAL PROGRAM END ***"  
1260 GO TO 1290  
+++  
1270 PAGE  
+++  
1280 PRINT "*** NORMAL END OF PROGRAM ***"  
1290 END  
+++
```

```

100 REM **** PRINT PROGRAM FOR DATA SHEET #15
110 REM **** PROCESS DATA - ELECTROSTATIC PRECIPITATOR
120 REM **** VERSION 7 -3/12/81

130 INIT
140 PAGE
150 DIM D$(2),U$(2),J$(2),K$(36),M$(2),P$(36),R$(27),T$(2),X$(2)
160 PRINT "PROGRAM TO PRINT"
170 PRINT "PROCESS DATA SHEET - ELECTROSTATIC PRECIPITATOR"
180 REM "REMOVE PROGRAMMED TAPE FROM UNIT"

190 PRINT "INSERT DATA TAPE IN UNIT 4924"
200 PRINT "JDO YOU WANT TO USE THE HARD COPIERT"
210 PRINT "ENTER (Y OR N) "
220 INPUT A$
230 DIM A$(1)
240 IF A$<>"Y" THEN 260
250 PRINT "JHANE SURE UNIT IS ON AND IS AT OPERATING TEMPERATURE"
260 PRINT "ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
270 INPUT U
280 FIND @U:G
290 PAGE
300 E=0
310 F$=""
320 K$=""
330 E$=""
340 F$="ELECTROSTATIC PRECIPITATOR"
350 U$=""
360 H$=""
370 I$=""
380 L$=""
390 N$="DRUM NUMBER (POUNDS)"
400 O$=""
410 ON EOF (0) THEN 1050
420 IF U=33 THEN 450
430 INPUT @U:G:11
440 IF T1=1 THEN 1050
450 INPUT @U:13:R$
460 IF U=33 THEN 490
470 INPUT @U:6:11
480 IF T1=1 THEN 1050
490 INPUT @U:13:K$
500 J$=SEG(R$;8;2)
510 T$=SEG(R$;4;2)
520 IF T$<>"15" THEN 1220
530 IF R$<>" " THEN 560
540 R$=J$
550 G9 TO 580
560 IF J$=R$ THEN 590
570 GOSUB 1060
580 GOSUB 770
590 F$=K$
600 U$=SEG(R$;10;1)
610 P$=REF(U$;4;1)
620 U$=SEG(R$;19;4)
630 P$=REF(U$;6;4)

```

+++1+++

+++1+++
+++2+++

+++1+++

+++1+++

+++1+++
+++1+++

```
640 US=SEG(K$,23,3)
650 FOR I=1 TO 2
660 VS=SEG(U$,I,1)
670 IF VS<>'0' THEN 710
680 VS=' '
690 US=REP(V$,I,1)
700 NEXT I
+++
710 F$=REP(U$,18,3)
720 X$=SEG(F$,26,2)
730 PRINT @A13:
740 IF A$<>'Y' THEN 460
750 PRINT @J2:
760 GO TO 460
```

---1--- 770 REM *** HEADING SUB-ROUTINE ***

```
780 Y$=SEG(K$,16,2)
790 M$=SEG(C$,14,2)
800 G$=SEG(R$,12,2)
810 B$=J$
820 A=41
830 PRINT @A1:L'
840 GOSUB 900
850 IF A$<>'Y' THEN 1030
860 PAGE
870 A=32
880 GOSUB 900
890 GO TO 1030
```

---2--- 900 PRINT @A:G\$J\$
910 PRINT @A:Y\$
920 PRINT @A:
930 PRINT @A:G\$
940 PRINT @A: USING "0X.J(3A)"ID\$,M\$,Y\$
950 PRINT @A:
960 PRINT @A:G\$
970 PRINT @A:
980 PRINT @A:Y\$
990 PRINT @A:G\$
1000 PRINT @A:G\$
1010 PRINT @A:
1020 RETURN
+++
1040 REM *** SET EOF INDICATOR ***

---3--- 1050 E=1

---1--- 1060 REM *** PRINT LAST LINE OF DATA SHEET ***

```
1070 VS=SEG(U$,1,1)
1080 IF VS<>'0' THEN 1110
1090 VS=' '
1100
```

```
1100 X=REP(V8,1,1)
1110 PRINT PALL
1120 PRINT WALTUSIX$
1130 IF A=0 THEN 1200
1140 PRINT
1150 PRINT DSIX$
1160 PRINT @12,26:3
1170 MOVE 0,0
1180 PRINT
1190 PRINT @12,26:0
1200 IF E=1 THEN 1270
1210 RETURN
1220 KEY *** ERROR - WRONG RECORD TYPE ***
1230 PRINT "RECORD TYPE: "IT$
1240 PRINT "DATA IS NOT "ELECTROSTATIC PRECIPITATOR" DATA"
1250 PRINT "*** ABNORMAL PROGRAM END ***"
1260 GO TO 1290
1270 PAGE
1280 PRINT "*** NORMAL END OF PROGRAM ***"
1290 END
```

FILE # 10

100 REM **** PRINT PROGRAM FOR DATA SHEET #14 ****
110 REM DOWNTIME DATA - KEYS AND/OR CORRESPONDING NAMES
120 REM *****
130 REM VERSION B - 5/20/81

140 REM BY: STEARNS-ROGER, INC.
150 REM ***** M. R. HERBERT/M. E. MARTIN *****

160 INIT
170 DIM P(26,2),P\$(370),O\$(9,2),O\$(840),R(40,2),R\$(290),O\$(126)
180 DIM S(37,2),S\$(320),T(16,2),T\$(190),U(6,2),U\$(90),L\$(132),M\$(101)
190 G\$=""

200 G\$=G\$IG\$
210 READ F
220 READ H\$
230 FOR I=1 TO 6

240 READ Y\$
250 F\$=F\$Y\$
260 NEXT I
270 DELETE Y\$

280 READ Q
290 READ O\$
300 FOR I=1 TO 15

310 READ Y\$
320 OI=O\$Y\$
330 NEXT I
340 DELETE Y\$

350 READ H
360 READ K\$
370 FOR I=1 TO 5

380 READ Y\$
390 R\$=R\$Y\$
400 NEXT I
410 DELETE Y\$

420 READ S
430 READ S\$
440 FOR I=1 TO 5

450 READ Y\$
460 S\$=S\$Y\$
470 NEXT I
480 DELETE Y\$

490 READ T
500 READ T\$
510 FOR I=1 TO 3

520 READ Y\$
530 T\$=T\$Y\$
540 NEXT I
550 DELETE Y\$

560 READ U
570 READ U\$
580 READ Y\$
590 OI=O\$Y\$
600 DELETE Y\$

710 PAGE
620 PRINT "DO YOU WANT TO LIST?"
630 PRINT " 1 - DOWNTIME DATA"
640 PRINT " 2 - NAMES CORRESPONDING TO DOWNTIME KEYS"
650 PRINT "ENTER 1 OR 2: "

```

+++++++ 640 INPUT A
570 IF A=2 THEN 1900
580 IF A=1 THEN 710
690 PRINT "INVALID RESPONSE - ENTER 1 OR 2 ."
700 GO TO 640

+++++++ 710 REM "REMOVE PROGRAMMED TAPE FROM UNIT."

720 PRINT "INSERT DATA TAPE IN UNIT 492A."
730 PRINT "ENTER UNIT NUMBER YOU ARE USING FOR THE DATA TAPE ."
740 INPUT U1
750 FIND QUI:1
760 AS=
770 ON EOF (0) THEN 1850
780 IF U1=33 THEN 810
790 INPUT QUI:6:TI
800 IF TI=1 THEN 1850
+++++++ 810 INPUT QUI:13:MS
820 IF U1=33 THEN 850
830 INPUT QUI:6:TI
840 IF TI=1 THEN 1850
+++++++ 850 INPUT QUI:13:MS
860 AS=SEGMS:4:2)
870 IF LXX>16 THEN 1870
000 PRINT Q41:'.L.'
890 PRINT Q41: USING "52X,27A":ID SETS PLANT DOWNTIME DATA"
900 PRINT Q41:
910 PRINT Q41: USING "41X,9A":1'DAY MO YR."
920 C=SEGMS:16:2)
930 AS=SEGMS:14:2)
940 AS=SEGMS:12:2)
950 PRINT Q41: USING ".62X,J(3A)":AS,BB,C$
960 PRINT Q41:
970 AS=SEGMS:6:2)
980 IF AS>40 THEN 1020
990 PRINT Q41:
+++++++ 1000 PRINT Q41: USING "55X,30A":NO PLANT DOWNTIME DATA"
1010 GO TO 1050
1020 PRINT Q41: USING 1030: TIME:'.PRIMARY & SECONDARY:'.CORRECTIVE"
1030 IMAGE 36A:59A,10A
1040 PRINT Q41: USING "41A:5":START STOP SIM SUBSYSTEM"
1050 PRINT Q41: USING 1060:COMPONENTS:'.DESCRIPTIVE:'.FAILURE"
1070 PRINT Q41:ACTION EFFECT"
1080 PRINT Q41:'.J:'.G$
1090 GO TO 1150
+++++++ 1100 PRINT Q41:'.J:'.G$
1110 IF U1=33 THEN 1140
1120 INPUT QUI:6:TI
1130 IF TI=1 THEN 1850
+++++++ 1140 INPUT QUI:13:MS
1150 LF=ASIN$
1160 LF=LF$IN$
1170 LF=LF$IN$
1180 AS=SEG(MS:18:4)
1190 LF=LF$(AS:1:4)
1200 AS=SEG(MS:22:4)
1210 LF=LF$(AS:7:4)
1220 AS=SEG(MS:26:1)
1230 LF=LF$(AS:13:1)

```

1240 REM *** FORMAT SUBSYSTEM ***

1250 A\$=SEG(M\$,27,2)
1260 I=VAL(A\$)
1270 IF I>1 AND I<=25 THEN 1300
1280 IF I<>99 THEN 1330
1290 I=26
1300 B\$=SLG(F\$,P(I,1),P(I,2))
1310 L\$=REP(B\$,16,P(I,2))

1320 REM *** FORMAT PRIMARY COMP ***

1330 A\$=SEG(M\$,29,2)
1340 I=VAL(A\$)
1350 B\$=SEG(U\$,O(I,1),O(I,2))
1360 L\$=REP(B\$,37,O(I,2))

1370 REM *** FORMAT DESCRIPTIVE ***

1380 A\$=SEG(M\$,33,2)
1390 I=VAL(A\$)
1400 IF I>1 AND I<=39 THEN 1430
1410 IF I<>99 THEN 1460
1420 I=40
1430 B\$=SEG(R\$,R(I,1),R(I,2))
1440 L\$=REP(B\$,58,R(I,2))

1450 REM *** FORMAT FAILURE ***

1460 A\$=SEG(M\$,35,2)
1470 I=VAL(A\$)
1480 IF I>1 AND I<=36 THEN 1510
1490 IF I<>99 THEN 1540
1500 I=37
1510 B\$=SEG(S\$,S(I,1),S(I,2))
1520 L\$=REP(B\$,77,S(I,2))

1530 REM *** FORMAT CORRECTIVE ACTION ***

1540 A\$=SEG(M\$,37,2)
1550 I=VAL(A\$)
1560 IF I>1 AND I<=14 THEN 1620
1570 IF I<>98 THEN 1600
1580 I=15
1590 GO TO 1620
1600 IF I<>99 THEN 1650
1610 I=16
1620 B\$=SEG(T\$,T(I,1),T(I,2))
1630 L\$=REP(B\$,96,T(I,2))

1640 REM *** FORMAT EFFECT ON OPERATION ***

1650 A\$=SEG(M\$,39,2)
1660 I=VAL(A\$)
1670 IF I=1 OR I=3 THEN 1700
1680 B\$=SEG(U\$,U(I,1),U(I,2))
1690 L\$=REP(B\$,115,U(I,2))

1700 REM *** PRINT DETAIL LINE ***

1710 PRINT L\$

```
1710 PRINT @1:1$
1720 REM *** PRINT SECONDARY COMP ***
1730 A$=SEG(M$,31,2)
1740 IF A$=00 THEN 1790
1750 I=VAL(A$)
1760 B$=SEG(O$,0(I,1),0(I,2))
1770 PRINT @41: USING "36X,20A:18$
1780 REM *** PRINT COMMENT ***
+++1+++ 1790 B$=SEG(M$,45,57)
1800 C$=SEG(B$,1,5)
1810 IF C$=
1820 PRINT @41: THEN 1100
1830 PRINT @41: USING "17A:57A:1$ COMMENT: ".B$
1840 GO TO 1100
```

```
-----S----- *** NORMAL END OF PROGRAM ***
1850 PRINT
1860 GO TO 2500
+++1+++ 1870 PRINT: *** NOT DOWNTIME DATA SHEET 16 ***
1880 PRINT: *** ABNORMAL PROGRAM END ***.
+++1+++ 1890 GO TO 2500
1900 PRINT @41:LSUBSYSTEMSJ$
1910 FOR I=1 TO 25
1920 X$=SEG(P$,P(I,1),P(I,2))
1930 PRINT @41:I,X$
1940 DELETE X$
1950 NEXT I
1960 PRINT @41:
1970 X$=SEG(F$,F(26,1),F(26,2))
1980 I=99
1990 PRINT @41:I,X$
2000 DELETE X$
2010 PRINT @41:LCOMPONENTSJ$
2020 FOR I=1 TO 99
2030 X$=SEG(G$,G(I,1),G(I,2))
2040 PRINT @41:I,X$
2050 DELETE X$
2060 NEXT I
2070 PRINT @41:LDESCRIPTIVE ACTIONJJ$
2080 FOR I=1 TO 39
2090 X$=SEG(R$,R(I,1),R(I,2))
2100 PRINT @41:I,X$
2110 DELETE X$
2120 NEXT I
2130 PRINT @41:
2140 X$=SEG(K$,K(40,1),K(40,2))
2150 I=97
2160 PRINT @41:I,X$
2170 DELETE X$
2180 PRINT @41:LFAILURE MODESJ$
2190 FOR I=1 TO 36
2200 X$=SEG(S$,S(I,1),S(I,2))
2210 PRINT @41:I,X$
2220 DELETE X$
2230 NEXT I
```



```

2240 PRINT Q411
2250 X$=SEG(S$,S(37,1),S(37,2))
2260 I=99
2270 PRINT Q41:I,X$
2280 DELETE X$
2290 PRINT Q41:"LCCORRECTIVE ACTIONJJ"
2300 FOR I=1 TO 14
2310 X$=SEG(T$,T(I,1),T(I,2))
2320 PRINT Q41:I,X$
2330 DELETE X$
2340 NEXT I
2350 PRINT Q41:
2360 FOR I=15 TO 16
2370 X$=SEG(T$,T(I,1),T(I,2))
2380 N=I*83
2390 PRINT Q41:K,X$
2400 DELETE X$
2410 NEXT I
2420 PRINT Q41:"LEFFECT ON OPERATIONJJ"
2430 FOR I=1 TO 6
2440 X$=SEG(U$,U(I,1),U(I,2))
2450 PRINT Q41:I,X$
2460 DELETE X$
2470 NEXT I

```

```

2480 REM

```

```

2490 CLOSE
2500 END

```

```

+++2+++

```

```

2510 REM
2520 REM ***** P ARRAY (26,2) *****

```

```

2530 DATA 1,18,20,11,32,13,45,20,66,8,75,13,89,5,94,15,110,4,115,20
2540 DATA 142,9,151,12,164,13,178,13,192,12,204,15,220,6,227,11
2550 DATA 239,20,261,9,271,12,284,8,293,16,309,17,327,17,352,14

```

```

2560 REM ***** F$ ARRAY (370) - SUBSYSTEM *****

```

```

2580 DATA "POWER DISTRIBUTION-SERVICE AIR-POTABLE WATER"
2590 DATA "STEAM AND CONDENSATE-FUEL OIL-PROCESS WASTE-DOORS"
2600 DATA "FIRE PROTECTION-HVAC-ELECTROSTATIC PRECIP-----SCRUBBERS"
2610 DATA "CONTROL ROOM-REACT FURNACE-DECON FURNACE-AFTER BURNER"
2620 DATA "EMERGENCY POWER-QUENCH-SPRAY DRYER-RECEIVING & HANDLING---"
2630 DATA "GLOVE BOX-DECON MODULE-BOX FEED-RESIDUE HANDLING"
2640 DATA "SET MOVEMENT(1SY)-ENVIRO MONITORING-----ADMINISTRATIVE"

```

```

2650 REM ***** Q ARRAY (99,2) *****

```

```

2670 DATA 1,15,17,5,23,4,28,5,34,4,39,4,44,5,50,5,55,8,64,7,72,8
2680 DATA 81,14,96,5,102,7,109,4,114,15,130,6,137,6,144,6,151,10
2690 DATA 161,12,174,6,181,10,192,19,211,19,231,19,251,5,257,4
2700 DATA 261,11,273,10,284,8,293,4,298,6,305,8,313,11,325,12,330,4
2710 DATA 343,5,349,4,354,6,361,4,365,4,376,5,382,10,393,14
2720 DATA 409,6,415,6,421,5,427,6,434,4,439,4,444,6,451,4,456,4
2730 DATA 461,4,468,6,474,8,483,20,507,7,515,6,522,3
2740 DATA 525,8,534,6,541,9,551,6,558,10,569,5,574,20,596,13
2750 DATA 610,10,621,8,629,15,645,1,647,5,653,8,662,14,677,5

```

2760 DATA 602,7,690,7,698,20,719,8,728,3,731,5,737,5,743,7,751,8,760,6
2770 DATA 767,4,772,6,779,5,784,4,789,5,795,3,799,7,807,9,817,6
2780 DATA 824,4,829,5

2790 REM
2800 REM ***** O\$ ARRAY (840) - COMPONENTS *****

2810 DATA *ACTUATOR,FEELER-MOTOR-PUMP-VALVE-BELT-SEAL-SHAFT-CHAIN*
2820 DATA *SPRCKET-GEARING-CYLINDER-VALVE,SOLENOID-RELAY-CONTACT*
2830 DATA *FUZE-CIRCUIT BREAKER-WIRING-SWITCH-CAMERA-CONTROLLER*
2840 DATA *FAN AND YILI-DARPER-POSITIONER-AIR HANDLING UNIT 1*
2850 DATA *AIR HANDLING UNIT 2-AIR HANDLING UNIT 3-TINER-HOSE*
2860 DATA *TRASHMILLER-SPRAY TREE-CONVEYOR-GEAR-WINDOW-HOT SHOE*
2870 DATA *INSIDE CART-OUTSIDE CART-DOOR-GAUGE-TANK-HOPPER-TRAY*
2880 DATA *KACK-HOIST-CABLE-BLOCK/HOOK-LIFTING DEVICE-PALLET-BURNER*
2890 DATA *PILOT-FIREYE-SURP-PIPE-BOILER-COIL-TRAP-HEATER-FILTER*
2900 DATA *SINKNER-THEKHOUSTAT/THERMOCOU---LINKAGE-BLOWER-FAN*
2910 DATA *OVERPACK-GLOVES-SPHINCTER-WRENCH-COMPRESSOR-DRYER*
2920 DATA *HEAT EXCHANGE/COOLER--CONTROL PANEL-TV MONITOR-CART TOP*
2930 DATA *CIRCUIT BREAKER- LIGHT-MIRAN 80-BUBBLER/FILTER-TABLE*
2940 DATA *PIG SET-BOX SET-CONNECTOR/ATTACHMENT-LINK/TAB-PIN*
2950 DATA *ALAKH-STAGE-STATION-VIBRATOR-RAPPER-GRID-SAMPLE-WHEEL*
2960 DATA *BAND-STACK-SKI-BATTERY-REGULATOR-BRIDGE-IRIS-OTHER*

2970 REM
2980 REM ***** R ARRAY (40,2) *****

2990 DATA 1,5,7,5,13,4,18,4,23,3,27,3,31,3,35,3,39,3,43,5,49,5
3000 DATA 54,9,64,9,74,11,86,8,95,5,101,4,105,8,114,5,120,5,126,5
3010 DATA 132,10,143,11,154,8,163,9,173,3,177,5,183,6,190,7,198,7
3020 DATA 205,6,212,9,222,8,231,6,238,8,247,5,252,7,260,7,268,8,277,5

3030 REM
3040 REM ***** R\$ ARRAY (290) - DESCRIPTIVE *****

3050 DATA *NORTH-SOUTH-EAST-WEST-N01-N02-N03-N04-N05-UPPER-LOWER*
3060 DATA *HYDRAULIC-PNEUMATIC-TEMPERATURE-PRESSURE-LEVEL-FLOW*
3070 DATA *POSITION-FLAME-BRINE-STEAM-CONDENSATE-NATURAL GAS*
3080 DATA *FUEL OIL-LUBRICANT-AIR-WATER-BYPASS-CONTROL-SHUTOFF*
3090 DATA *SUPPLY-ISOLATION-SOLENOID-RELIEF-TRANSFER-AGENT*
3100 DATA *PIG SET-BOX SET-OVERSIZE-OTHER*

3110 REM
3120 REM ***** S ARRAY (37,2) *****

3130 DATA 1,7,9,19,7,27,6,34,4,39,4,44,8,53,4,57,6,64,17,82,8
3140 DATA 91,3,95,2,98,5,104,11,115,6,122,5,128,17,152,5,158,12
3150 DATA 170,11,182,13,196,6,203,10,214,9,223,6,230,11,242,11
3160 DATA 254,10,265,4,270,3,273,6,280,7,288,4,293,6,300,5,306,5

3170 REM
3180 REM ***** S\$ ARRAY (320) - FAILURE MODES *****

3190 DATA *MISSING-NOT READY-WAITING-BURNED-LEAK-MADE-NOT MADE-BENT*
3200 DATA *BROKEN-OUT OF ADJUSTMENT-FLAME-OFF-ON-LOOSE-AIR IN LINE*
3210 DATA *JAMMED-STUCK-FALSE SIGNAL/READ-----EMPTY-OUT OF STOCK*
3220 DATA *HUMAN ERROR-CAUSE UNKNOWN-FEGGED-INSPECTION-OFF TRACK*
3230 DATA *REBURN-DROPPED PIG-CHANGE TEST-INCOMPLETE-HIGH-LOW*
3240 DATA *WARPED-FLUGGED-FULL-FROZEN-DIRTY-OTHER*

```
3250 REM
3260 REM ***** I ARRAY (16,2) *****
3270 DATA 1,11,13,6,20,9,30,15,46,5,51,18,73,7,81,14
3280 DATA 95,7,103,18,127,18,146,15,162,7,170,8,179,4,184,5
3290 REM
3300 REM ***** I* ARRAY (190) - CORRECTIVE ACTION *****
3310 DATA "INVESTIGATE-ADJUST-LUBRICATE-REPAIR IN PLACE-RESET"
3320 DATA "REMOVE/REPAIR/REPL----INSTALL-REMOVE/REPLACE"
3330 DATA "RESTART-START BACKUP/STDBY-----PROBLEM DISAPPEARED--"
3340 DATA "ACTION DEFERRED-CLEANED-UNJAMMED-NONE-OTHER"
3350 REM
3360 REM ***** U ARRAY (6,2) *****
3370 DATA 1,12,14,17,34,6,41,13,54,12,67,15
3380 REM
3390 REM ***** U$ ARRAY (90) - EFFECT ON OPERATION *****
3400 DATA "DISCONTINUED-INTERRUPT/RESUMED---SLOWED-DELAYED START"
3410 DATA "NOT AFFECTED-CRUSED OVERTIME"
3420 REM
3430 REM ***** END OF PROGRAM *****
```

FILE # 1

1 GO TO 100
4 GO TO 310
8 GO TO 310

+++++ 100 REM ***
110 REM ***
120 INIT
130 PAGE

140 SET KEY

150 PRINT *

160 PRINT *

170 PRINT *JJ

180 PRINT *

190 PRINT *

200 PRINT *

210 PRINT *J

230 REM

240 PRINT *JJJ

250 INPUT F

260 IF F > 2 THEN 290

270 FIND F+1

280 OLD

290 PRINT *INVALID KEY NUMBER - REENTER *

300 GO TO 250

310 PRINT *END OF PROGRAM*

370 END

DIRECTORY FOR HERBE PROGRAMS,
VERSION 3 - 07/31/81

DIRECTORY FOR PROGRAMS TO HERBE DATA*
FOR TRANSMISSION TO, THE UNIVAC 1108*
KEY PROGRAM*

1 MIRAN 80 DATA (DATA SHEET 9)*
2 INVENTORY DATA (DATA SHEETS 10-15)*

ENTER KEY FROM THE ABOVE LIST! *)

***** END OF PROGRAM *****

```

1 GO TO 100
4 GO TO 250
8 GO TO 1420

+++++ 100 REM ****
      PROGRAM TO PREPARE MIRAN 80 DATA FOR
      THE SYSTEM 2000 DATA BASE PROGRAM
      VERSION 3 - 8/14/81
      BY: STEARNS-ROGER, INC.
      M. E. MARTIN
      ****

160 INIT
170 SET KEY
180 DIM A$(1),U$(18),V$(24),X$(104),Y$(445),Z$(106),R(54),Q(5)
190 READ R,U,V

200 REM

210 T=0
220 N$=""
230 I$=""
240 U$=""
250 PAGE
260 PRINT "MERGE PROGRAM FOR MIRAN 80 DATA"

270 REM
280 REM ***** MOUNT INPUT DATA TAPE AND CHECK LABEL*****

+++++ 290 PRINT "JINSERT MIRAN INPUT DATA TAPE INTO CONSOLE"
300 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
310 INPUT T$
320 T$=SEG(T$,1,3)
330 FIND 1
340 INPUT Q$;I$;X$
350 S$=SEG(Q$,4,2)
360 B$=SEG(X$,8,3)
370 C$=SEG(X$,8,9)
380 IF S$="09" AND B$=T$ THEN 440
390 PRINT "THIS IS THE WRONG INPUT DATA TAPE"
400 PRINT "THIS TAPE IS FOR DATA SHEET #";S$; " FOR #";C$
410 GO TO 290

420 REM
430 REM ***** PREPARE OUTPUT DATA TAPE *****

+++++ 440 PRINT "JINSERT OUTPUT TAPE INTO UNIT 4924"
450 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE"
460 INPUT U
470 FIND @U;1
480 PRINT "DO YOU NEED TO LABEL THIS TAPE? (ENTER Y OR N)"
490 INPUT A$
500 IF A$="Y" THEN 500
510 PRINT "HOW MUCH SPACE DO YOU NEED?"
520 INPUT F
530 MARK @U;1;F
540 FIND @U;1
550 Z$="(RMA5500";C$
560 PRINT @U;1;Z$

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```

+++1+++
570 GO TO 680
580 INPUT @U, I3I2$
590 S$=SEG(Z$,4,2)
600 R$=SEG(Z$,8,3)
610 C$=SEG(Z$,8,9)
620 IF S$='SS' AND B$='T' THEN 680
630 PRINT 'THIS IS THE WRONG OUTPUT TAPE.'
640 PRINT 'THIS TAPE IS FOR #'S$. FOR 'IC$
650 GO TO 440

```

```

660 REM
670 REM ***** PROCESS MIRAN DATA *****

```

```

+++2+++
680 PRINT @41:'L',I2$
+++1+++
690 INPUT @33IX$
700 KI=0
710 PRINT @41:
+++1+++
720 Y$=X$
730 IF TYP(0)=1 THEN 840
740 INPUT @33: X$
750 R$=SEG(X$,6,1)
760 IF R$='1' THEN 870
770 L=LEN(X$)
780 L=L-36
790 KI=KI+1
800 @$=SEG(X$,37,L)
810 Y$=Y$@R$
820 Q(KI)=L
830 GO TO 730
+++1+++
840 I=1

```

```

850 REM
860 REM ***** NUMERICAL DATA *****

```

```

+++1+++
870 Z$=W$@H$
880 I1=1
890 FOR I=1 TO 6
900 R$=SEG(Y$,R(I1),R(I1+2))
910 Z$=REP(R$,R(I1+1),R(I1+2))
920 I1=I1+3
930 NEXT I
940 D$=SEG(Z$,29,2)
950 IF D$='FL' THEN 1030
960 Z$=REP('X' X ,31,8)
970 J1=4
980 J2=4
990 N1=7
1000 N2=19
1010 I1=46
1020 GO TO 1070
+++1+++
1030 J1=1
1040 J2=3
1050 N1=1
1060 N2=1
+++1+++
1070 FOR J=J1 TO J2
1080 FOR I=1 TO 3
1090 K$=SEG(Y$,R(I1),R(I1+2))
1100 Z$=REP(K$,R(I1+1),R(I1+2))
1110 I1=I1+3
1120 NEXT I

```

```

1130 R:=SEG(U$,N1,2)
1140 Z:=REP(R$,4,2)
1150 R:=SEG(V$,N2,6)
1160 Z:=REP(R$,20,6)
1170 PRINT @A1Z$
1180 PRINT @U,12,Z$
1190 N1=N1+2
1200 N2=N2+6
1210 IF K1=0 THEN 1360
1220 REM
1230 REM ***** COMMENTB *****
1240 L1=105
1250 FOR K=1 TO K1
1260 L7=0(K)
1270 Z:=SEG(Z$,1,38)
1280 N:=SEG(U$,2*K+7,2)
1290 Z:=REP(N$,6,2)
1300 Q:=SEG(Y$,L1,L2)
1310 Z:=Z&Q$
1320 PRINT @A1Z$
1330 PRINT @U,12,Z$
1340 L1=L1+L2
1350 NEXT K
+++++++
1360 Z:=SEG(Z$,1,39)
1370 Z:=REP("10",6,2)
1380 Z:=Z&R1$
1390 NEXT J
1400 IF T=0 THEN 700
1410 GO TO 1440
+++++++
1420 PRINT "J**** ABNORMAL PROGRAM END ****"
1430 GO TO 1450
+++++++
1440 PRINT "JNORMAL PROGRAM END"
1450 PRINT @U,2:
1460 END
1470 REM
1480 REM ***** R ARRAY (54) *****
1490 DATA 8,8,2,12,10,6,20,27,4,24,26,1,25,16,4,29,31,8
1500 DATA 27,39,7,44,46,7,51,60,3
1510 DATA 54,39,7,61,46,7,68,60,3
1520 DATA 71,39,7,78,46,7,85,60,3
1530 DATA 88,53,7,95,39,7,102,60,3
1540 REM
1550 REM ***** U$ (18) *****
1560 DATA "55565758201222224"
1570 REM
1580 REM ***** V$ (24) *****
1590 DATA "PS CG CHEL3 CHALNS"
1600 REM
1610 REM ***** END OF PROGRAM *****

```

```

1 GO TO 100
4 GO TO 1190
8 GO TO 1190

+++1+++
100 REM ****
110 REM      PROGRAM TO MERGE INVENTORY DATA      ****
120 REM      ALL INVENTORY DATA FOR A GIVEN DAY ARE WRITTEN TO ONE
130 REM      FILE WHICH WILL BE SUBMITTED TO THE UNIVAC 1108.
140 REM      VERSION 3 - 06/08/81
150 REM
160 REM      B71 STEARNS-ROGER, INC.
170 REM      M. E. MARTIN
170 PAGE
180 INIT
190 SET KEY
200 DIM D(12),W(6),A$(1),U$(6),X$(70),Z$(65)
210 READ D,U$,W
220 G$=
230 C=0
240 PRINT "JND YOU WANT TO MERGE INVENTORY DATA? (ENTER Y OR N) "
250 INPUT A$
260 IF A$<>"N" THEN 290
270 PRINT "JYOU ARE USING THE WRONG PROGRAM"
280 GO TO 1190
290 PRINT "JINSERT THE INPUT DATA TAPE INTO THE CONSOLE."
300 PRINT "JENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK: "
310 INPUT T$
320 T$=SEG(T$,1,3)
330 FIND 1
340 INPUT Q33:X$
350 S$=SEG(X$,4,2)
360 B$=SEG(X$,6,3)
370 C$=SEG(X$,8,9)
380 IF S$="10" AND B$=T$ THEN 440
390 PRINT "JTHIS IS THE WRONG INPUT DATA TAPE"
400 PRINT "JTHIS TAPE IS FOR DATA SHEET #";S$; FOR "IC$
410 GO TO 1190
420 REM
430 REM ***** PREPARE OUTPUT DATA TAPE *****
+++2+++
440 PRINT "JINSERT OUTPUT TAPE INTO UNIT 4924"
450 PRINT "JENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE: "
460 INPUT U
470 FIND 0U1
480 PRINT "JDO YOU NEED TO LABEL THIS TAPE? (ENTER Y OR N) "
490 INPUT A$
500 IF A$<>"Y" THEN 600
510 PRINT "JHOW MUCH SPACE DO YOU NEED? "
520 INPUT F
530 MARK 0U1:F
540 FIND 0U1
550 Z$=Z$&F$
560 PRINT 0U1:Z$
570 PRINT 0U:12:Z$
580 GO TO 700
590 GO TO 700
+++1+++
600 INPUT 0U:13:Z$

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610 S=SEG(Z9,A,2)
620 B=SEG(Z9,B,3)
630 C=SEG(Z9,B,9)
640 IF S#*60 AND B#1 THEN 700
650 PRINT "THIS IS THE WRONG OUTPUT TAPE"
660 PRINT "THIS TAPE IS FOR 9199" FOR *ID#
670 GO TO 440

680 REM
690 REM ***** PROCESS INVENTORY DATA *****

+++2+++
700 FOR I=1 TO 6
710 ON EOF (0) THEN 950
720 IF I=1 THEN 770
730 FIND I
740 INPUT @3,13:*

750 KLM
760 REM ***** PROCESS INPUT FILE I *****

+++2+++
770 INPUT @3,13:*

780 IF C<>0 THEN 810
790 GOSUB 1020
800 M=IRMA6010*IE#
810 F4=SEG(A9,5,3)
820 M=REP(F4,5,3)
830 X1=REP(M9,1,17)
840 NI=4(1)
850 F4=REP(G9,1,11)
860 Z4=X437#
870 Z=LN(Z4)
880 IF Z<5 THEN 920
890 FOR N=Z+1 TO 65
900 Z4=Z4#*
910 NEXT N
920 PRINT @41:Z#
930 PRINT @9,12:Z#
940 GO TO 770

950 PRINT @41:J#
960 PRINT @41:END OF FILE *DI
970 PRINT @41:
980 NEXT I
990 GO TO 1210

1000 REM
1010 REM ***** SUBROUTINE 1 - CHARGE DATE TO JULIAN FORM *

1020 B4=SEG(O9,12,6)
1030 E4=SEG(O9,5,2)
1040 F4=SEG(O9,600)
1050 G4=SEG(O9,3,2)
1060 H4=REP(O9)
1070 H4=REP(O9,1,2)
1080 H4=REP(O9)
1090 H4=REP(O9)
1100 H4=REP(O9)

```
1110 N1=LEN(MS)-1
1120 M1=SEF(MS,2,M1)
1130 M2=6-M1
1140 E1=REP(M1,M2,M1)
1150 C=1
1160 RETURN

1170 REM ***** END OF SUPROUTINE 1 *****
1180 REM

+++
1190 PRINT "J*** ABNORMAL PROGRAM END ***"
1200 GO TO 1220
+++
1210 PRINT "JNORMAL PROGRAM END"
+++
1220 PRINT @U,2;
1230 END

1240 REM
1250 REM ***** D ARRAY (12) *****
1260 DATA 0,31,59,70,120,131,181,212,243,273,304,334
1270 REM
1280 REM ***** US ARRAY (4) *****
1290 DATA *012345*

1300 REM
1310 REM ***** M ARRAY (6) *****
1320 DATA 0,0,39,43,43,43
1330 REM
1340 REM ***** END OF PROGRAM *****
```

FILE 01

1 GO TO 100
4 GO TO 420
8 GO TO 400

DIRECTORY FOR TOTALS PROGRAMS *****
VERSION 4 - 5/12/81

BY: STEARNS-ROGER INC.
H.E. MARTIN

100 REM *****
110 REM
120 REM
130 REM
140 REM
150 REM *****

160 TRET
170 TAGE

180 SET KEY

190 PRINT *

200 PRINT *

210 PRINT "JJ"

220 PRINT "KEY

230 PRINT *

240 PRINT *

250 PRINT *

260 PRINT *

270 PRINT *

280 PRINT *

290 PRINT *

300 PRINT *

310 PRINT *

320 PRINT *

330 PRINT *

340 REM *****

350 REM *****

360 REM *****

370 REM *****

380 REM *****

390 REM *****

400 REM *****

410 REM *****

420 REM *****

430 REM *****

440 REM *****

450 REM *****

460 REM *****

470 REM *****

480 REM *****

490 REM *****

500 REM *****

510 REM *****

520 REM *****

530 REM *****

540 REM *****

550 REM *****

560 REM *****

570 REM *****

580 REM *****

590 REM *****

600 REM *****

610 REM *****

620 REM *****

630 REM *****

640 REM *****

650 REM *****

660 REM *****

670 REM *****

680 REM *****

DIRECTORY FOR TOTALS PROGRAMS TO UPDATE*
P10 AND DRUM TOTALS AND PRINT REPORTS*

PROGRAM*

P1 - UPDATE PROCESSED ID SET TOTALS AND PRINT*
A DAILY REPORT*

P2 - READ ID SET TOTALS TAPE (P1 OUTPUT) AND*
PRINT REPORTS FOR ANY PERIOD OF TIME*

P3 - UPDATE DRUM TOTALS AND PRINT A DAILY REPORT*
P4 - READ DRUM TOTALS TAPE (D1 OUTPUT) AND PRINT*
REPORTS FOR ANY PERIOD OF TIME*

P5 - UPDATE DOWNTIME TOTALS*
P6 - READ DOWNTIME TOTALS TAPE (T1 OUTPUT) AND*
PRINT REPORTS FOR ANY PERIOD OF TIME*

P7 - UPDATE PROCESSED ID SET TOTALS AND PRINT*
A DAILY REPORT*

P8 - READ ID SET TOTALS TAPE (P7 OUTPUT) AND*
PRINT REPORTS FOR ANY PERIOD OF TIME*

P9 - UPDATE DRUM TOTALS AND PRINT A DAILY REPORT*
P10 - READ DRUM TOTALS TAPE (D1 OUTPUT) AND PRINT*
REPORTS FOR ANY PERIOD OF TIME*

P11 - UPDATE DOWNTIME TOTALS*
P12 - READ DOWNTIME TOTALS TAPE (T1 OUTPUT) AND*
PRINT REPORTS FOR ANY PERIOD OF TIME*

***** LIST DIRECTORY PROGRAM *****

1 GO TO 100
4 GO TO 2500
8 GO TO 2500

100 REM ****
110 REM
120 REM
130 REM THIS PROGRAM KEEPS A RUNNING COUNT OF THE ID SETS
140 REM IN THE INVENTORY. INPUT DATA ARE FROM DATA SHEET
150 REM #10 - BUILDING 1411 RECEIPT INSPECTION DATA.
160 REM THE DAILY OUTPUT RECORD CONTAINS THE NUMBER OF EACH
170 REM TYPE OF SET PROCESSED THAT DAY AND THE ACCUMULATED
180 REM TOTAL OF SETS DESTROYED TO DATE.
190 FFH
200 REM
210 REM ****

BY: STEAKNS-ROGER, INC.
M.E.MARTIN

220 PAGE
230 INIT
240 SET KEY
250 DIM C(7,3),T(7),K(9),M(3)
260 DIM A\$(1),N\$(32),L\$(70),U\$(36),X\$(69),Y\$(20),Z\$(70)
270 PRINT "JDO YOU WANT TO UPDATE ID SET TOTALST (ENTER Y OR N) *"
280 INPUT A\$
290 IF A\$ <> "N" THEN 320
300 PRINT "YOU ARE USING THE WRONG TOTALS PROGRAM"
310 GO TO 2500
320 FEED T.N.E.L.S
330 READ Y\$
340 L\$=L\$+Y\$
350 READ M\$
360 FOR I=1 TO 9
370 K(I)=0
380 NEXT I
390 H\$=""
400 G\$="RM50"
410 PRINT "JDO YOU HAVE DATA TO ENTER (ENTER Y OR N) *"
420 INPUT A\$
430 A\$=I
440 IF A\$ <> "N" THEN 540
450 A\$=0
460 PRINT "ENTER TODAY'S DATE (DDMMYY) *"
470 INPUT Y\$
480 I1=LEFT(Y\$,2)
490 IF I1 < 6 THEN 520
500 PRINT "YOUR DATE MUST HAVE 6 CHARACTERS"
510 GO TO 420
520 IF 540
530 GO TO 1650
540 PRINT "INSERT THE INVENTORY DATA TAPE INTO THE CONSOLE"
550 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
560 L1=""
570 L1=L1+Y\$
580 IF L1 < "AAA" THEN 540
590 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK *"
600 L1=L1+Y\$
610 RE-GO(74,8,3)
620 G\$=G\$(74,8,9)

430 IF S#<>'10' AND B#<>'1' THEN 690
 640 PRINT "THIS IS THE WORKING INPUT DATA TAPE."
 650 PRINT "THIS TAPE IS FOR DATA SHEET #15551 FOR IC#
 660 GO TO 2500

670 REM ***** PROCESS INPUT DATA TOTALS *****

690 INPUT @331Z\$
 700 I\$=SEG(Z\$,12,6)
 710 I#-C#I\$
 720 GO TO 760
 730 PRINT
 740 IF IYP(0)=1 THEN 930
 750 INPUT @331Z\$

760 S#-SEG(Z\$,26,1)
 770 IF S#<>'X' THEN 740
 780 S#-SEG(Z\$,10,1)
 790 IF S#<>'X' THEN 820
 800 N(9)=N(9)+1
 810 GO TO 740
 820 S#-SEG(Z\$,18,4)
 830 N4=1
 840 FOR I=1 TO 8
 850 I#-SEG(N#,K4,4)

860 IF S#<>'1' THEN 890
 870 K(I)=K(I)+1
 880 GO TO 740
 890 N4=N4+1
 900 NEXT I
 910 PRINT "J'P'S# IS NOT A VALID ID SET AND CANNOT BE COUNTED."
 920 GO TO 740
 930 C(1,1)=K(1)+K(2)
 940 C(2,1)=K(3)
 950 C(3,1)=K(4)+K(5)
 960 C(4,1)=K(6)+K(7)
 970 C(5,1)=K(8)
 980 C(6,1)=K(9)
 990 C(7,1)=0

1000 FOR I=1 TO 6
 1010 C(7,1)=C(7,1)+C(I,1)
 1020 NEXT I
 1030 REM
 1040 REM ***** PREPARE OUTPUT TAPE *****

1050 PRINT "INSERT OUTPUT DATA TAPE (ID SET TOTALS) INTO UNIT 4924."
 1060 PRI "ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE."
 1070 INPUT U
 1080 PRINT "DO YOU NEED TO INITIALIZE THIS TAPE (ENTER Y OR N) "
 1090 INPUT A\$
 1100 FOR BU=1
 1110 IF A\$<>'Y' THEN 1420
 1120 PRINT "HOW MUCH SPACE DO YOU NEED? "
 1130 INPUT F
 1140 MARK BU:1,F
 1150 FIND BU:1
 1160 PRINT "DO YOU NEED TO ENTER CUMULATIVE TOTALS? (ENTER Y OR N) "
 1170 INPUT A\$
 1180 IF A\$<>'Y' THEN 1360

1030 REM
 1040 REM ***** PREPARE OUTPUT TAPE *****

1050 PRINT "INSERT OUTPUT DATA TAPE (ID SET TOTALS) INTO UNIT 4924."
 1060 PRI "ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE."
 1070 INPUT U
 1080 PRINT "DO YOU NEED TO INITIALIZE THIS TAPE (ENTER Y OR N) "
 1090 INPUT A\$
 1100 FOR BU=1
 1110 IF A\$<>'Y' THEN 1420
 1120 PRINT "HOW MUCH SPACE DO YOU NEED? "
 1130 INPUT F
 1140 MARK BU:1,F
 1150 FIND BU:1
 1160 PRINT "DO YOU NEED TO ENTER CUMULATIVE TOTALS? (ENTER Y OR N) "
 1170 INPUT A\$
 1180 IF A\$<>'Y' THEN 1360

```

+++++ 1190 PRINT "J"
1200 X$=I$M$
1210 FOR I=1 TO 7
1220 PRINT "ENTER CUMULATIVE TOTAL NO. "I;"
1230 INPUT U$
1240 A=LEN(U$)
1250 IF A=5 THEN 1290
1260 FOR J=A+1 TO 5
1270 U$=" "U$
1280 NEXT J
1290 X$=X$U$
1300 NEXT I
1310 A=LEN(X$)
1320 IF A=69 THEN 1380
1330 PRINT "CUMULATIVE TOTALS CANNOT HAVE MORE THAN 5 DIGITS"
1340 PRINT "REENTER DATA FROM THE BEGINNING"
1350 GO TO 1190
+++++ 1360 X$=I$M$
1370 X$=X$
1380 PRINT "0 0 0 0 0 0"
+++++ 1390 GO TO 1460
+++++ 1400 INPUT "Q,6:"F
1410 IF F=1 THEN 1460
+++++ 1420 INPUT "Q,13:"X$
1430 GO TO 1400
1440 REM
1450 REM ***** UPDATE WITH A ZERO RECORD *****
+++++ 1460 IF A=1 THEN 1710
1470 X$=REP("0",6)
1480 X$=REP("H",14,21)
1490 PRINT "Q,12:"X$
1500 Q$=X$
1510 X$=""
1520 K2=35
1530 FOR I=1 TO 7
1540 R$=REG("R",K2,5)
1550 N=T(I)-VAL(R$)
1560 R$=STR(R)
1570 R=LEN(R$)
1580 IF R=5 THEN 1650
1590 IF R>5 THEN 1640
1600 FOR J=R+1 TO 5
1610 R$=" "R$
1620 NEXT J
1630 GO TO 1650
+++++ 1640 R$=REP("R",R-4,5)
+++++ 1650 X$=X$R$
1660 K2=K2+5
1670 NEXT I
1680 GO TO 1650
1690 REM
1700 REM ***** UPDATE LAST RECORD *****
+++++ 1710 K2=35
1720 FOR I=1 TO 7
1730 F$=REP("X",K2,5)
1740 G(I,2)=VAL(F$)G(I,1)

```

1750 C(I,3)=I(I)-C(I,2)

1760 REM **** C(I,1) IS DAILY TOTAL; C(I,2) IS ACCUMULATIVE TOTAL

1770 REM **** C(I,3) IS NUMBER OF ID SETS REMAINING

1780 K2=N2+S

1790 NEXT I

1800 X\$=I\$

1810 M(1)=3

1820 M(2)=5

1830 M(3)=5

1840 FOR N=1 TO 3

1850 M1=M(N)

1860 FOR I=1 TO 7

1870 K\$=STR(C(I,N))

1880 R=LEN(R\$)

1890 IF R=M1 THEN 1960

1900 IF R>M1 THEN 1950

1910 FOR J=R+1 TO M1

1920 K\$=K\$+R\$

1930 NEXT J

1940 GO TO 1960

1950 K\$=SEG(R\$,R-M1+1,M1)

1960 X\$=X\$+K\$

1970 NEXT I

1980 GO TO N OF 2020,1990,2050

1990 PRINT @U:12:1\$

2000 O\$=X\$

2010 X\$=""

2020 NEXT N

2030 REM

2040 REM ***** PROCESS DATE *****

2050 E\$=SEG(I\$,8,2)

2060 F\$=SEG(I\$,10,2)

2070 H\$=SEG(I\$,12,2)

2080 F=VAL(F\$)

2090 F=34F-2

2100 F\$=SEG(W\$,F,3)

2110 I\$=""

2120 I\$=REF(E\$,1,2)

2130 H\$=REF(F\$,4,3)

2140 H\$=REF(H\$,8,2)

2150 REM

2160 REM ***** PRINT DAILY REPORT *****

2170 A=41

2180 GOSUB 2540

2190 K1=1

2200 N2=14

2210 N3=35

2220 N4=1

2230 FOR I=1 TO 7

2240 E\$=SEG(L\$,K1,10)

2250 F\$=SEG(O1,N2,3)

2260 H\$=SEG(O1,N3,5)

2270 S\$=SEG(X1,N4,5)

2280 PRINT @A: USING *6X,10A,3A,8X,10A,3A,8X,10A,5A*1E\$,F\$,E\$,H\$,E\$,S\$

```

2290 K1=K1+10
2300 K2=K2+3
2310 K3=K3+5
2320 K4=K4+5
2330 NEXT I
2340 GOSUB 2750
2350 IF A=32 THEN 2430
2360 PRINT "JDD YOU WANT A HARD COPY? (ENTER Y OR N) "
2370 INPUT A$
2380 IF A$ <> "Y" THEN 2470
2390 PAGE
2400 MOVE 0,100
2410 A=32
2420 GO TO 2180
2430 PRINT @A:26;3
+++++
2440 MOVE 0,0
2450 PRINT
2460 PRINT @A:26;0
2470 PRINT "NORMAL END OF PROGRAM"
2480 PRINT @U:2;
2490 GO TO 3110
+++++
2500 PRINT "J***** ABNORMAL END OF PROGRAM *****"
2510 GO TO 3110
2520 REM
2530 REM ***** SUBROUTINE 1 - PRINT PAGE HEADING *****

```

```

-----1-----
2540 IF A=32 THEN 2620
2550 PRINT @A:L
2560 PRINT @A: USING "BA,49X,6A,9A": "DRXTH-SE", "DATE": "JD$
2570 PRINT @A: "JJ"
2580 PRINT @A: USING "39A,S": "MEMORANDUM FOR COLONEL JOHN D. SPENCE, "
2590 PRINT @A: USING "BA": "USATHANA"
2600 PRINT @A: "J"
2610 GO TO 2670
+++++
2620 PRINT @A: USING "BA,49X,6A,9A": "DRXTH-SE", "DATE": "JD$
2630 PRINT @A:
2640 PRINT @A: USING "39A,S": "MEMORANDUM FOR COLONEL JOHN D. SPENCE, "
2650 PRINT @A: USING "BA": "USATHANA"
2660 PRINT @A:
2670 PRINT @A: USING "41A": "SUBJECT: ID SETS DAILY OPERATIONS REPORT"
+++++
2680 PRINT @A: USING "6X,34A,S": "-----TYPES AND TOTALS OF ID "
2700 PRINT @A: USING "25A": "SETS PROCESSED-----"
2710 PRINT @A: USING "6X,13A,8X,15A,S": "-----TODAY-----", "-SINCE STARTUP--"
2720 PRINT @A: USING "8X,15A": "-----REMAINING-----"
2730 PRINT @A:
2740 RETURN
2750 GEM ***** END OF SUBROUTINE 1 *****
2760 REM
2770 REM ***** SUBROUTINE 2 - PRINT END OF PAGE *****
-----1-----
2780 N$=" "
2790 M$=" "
2792 PRINT @A: "JJJJJJJJJJJJJJJJJJJJJJJJ"

```


2795 GO TO 3060

2798 REM ***** SKIP PART OF OUTPUT

2800 IF A=32 THEN 2840

2810 N=3

2820 PRINT @A:JJ*

2830 GO TO 2860

+++1+++

2840 N=2

2850 PRINT @A: OPERATIONAL REMARKS!*

2860 PRINT @A:

2880 PRINT @A: USING *2X,35A,S*1. PROBLEMS/SOLUTIONS!*

2890 PRINT @A: USING *30A,15A*IN\$,M\$

2900 FOR I=1 TO N

2910 PRINT @A:

2920 PRINT @A: USING 2930:IN\$,N\$,*-----*

2930 IMAGE 2X,30A,30A,10A

2940 NEXT I

2950 PRINT @A:

2970 PRINT @A: USING *2X,37A,S*2. EXPOSURES/EMISSIONS/EXPLOSIONS!*

2970 PRINT @A: USING *30A,3A*IN\$,*-----*

2980 FOR I=1 TO N

2990 PRINT @A:

3000 PRINT @A: USING 2930:IN\$,N\$,*-----*

3010 NEXT I

3020 IF A=32 THEN 3050

3030 PRINT @A:JJJ*

3040 GO TO 3060

3050 PRINT @A:JJ*

+++1+++

3055 REM ***** END OF SKIPPED OUTPUT

3060 PRINT @A: USING *2X,12A,1A,12X,15A,12X,15A*IN\$,*M\$,M\$

3070 PRINT @A: USING 3080:SUBMITTED BY*, REVIEWED BY*, APPROVED BY*

3080 IMAGE 4X,12A,16X,11A,16X,11A

3090 RETURN

3100 REM ***** END OF SUBROUTINE 2 *****

+++2+++

3110 END

3120 REM

3130 REM ***** I ARRAY (7) - NUMBER OF ID SETS. *****

3140 DATA 806,1335,10799,497,94,6166,19697

3150 REM

3160 REM ***** K\$ ARRAY (32) *****

3170 DATA *K941N942K945K951N952K953K954K955*

3180 REM

3190 REM ***** L\$ ARRAY (70) *****

3200 DATA *K941/942 K945 K951/952 K953/954 K955

3210 DATA *X-TYPE TOTAL

3220 REM

3230 REM ***** U\$ ARRAY (36) *****

3240 DATA *JANFEDHARAFRMYJUNJULAU08EPOCTNOVDEC*

3250 REM

3260 REM ***** END OF PROGRAM *****

1 GO TO 100
4 FIND QU:1
5 INPUT QU,13:Z\$
6 GO TO 480
8 GO TO 1930

TOTALS - P2

VERSION 7 - 10/20/81
THIS PROGRAM PRINTS AN OPERATIONS REPORT OF TOTAL ID
SETS PROCESSED OVER A SPECIFIED PERIOD OF TIME.
INPUT DATA ARE FROM THE 'ID SET TOTALS' TAPE CREATED BY
THE P1 PROGRAM FOR DLDO 1611 RECEIPT INSP. DATA.(#10).

BY: STEARNS-ROGER, INC.
H.E.MARTIN

+++1+++ 100 REM ***
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM ***

200 PAGE
210 INIT
220 SET KEY
230 DIM C(7,4),T(7),A\$(1),K\$(32),L\$(70),W\$(36),Y\$(69),Z\$(49)
240 PRINT "DO YOU WANT TO PRINT ID SET TOTALS? (ENTER Y OR N) "
250 INPUT A\$
260 IF A\$="Y" THEN 290
270 PRINT "YOU ARE USING THE WRONG TOTALS PROGRAM"
280 GO TO 1930
290 READ T,K,L\$
300 READ P\$
310 L\$=L\$P\$
320 READ W\$
330 PRINT "INSERT THE INPUT DATA TAPE (ID SET TOTALS) INTO UNIT 4924"
340 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE "
350 INPUT U\$

+++1+++ 360 FIND QU:1
370 INPUT QU,13:Z\$
380 S\$=SEG(Z\$,4:2)
390 T\$=SEG(Z\$,8:6)
400 U\$=SEG(T\$,3:2)
410 V\$=SEG(T\$,1:2)
420 I\$=SEG(T\$,5:2)
430 T\$=T\$R0\$
440 T\$=T\$R0\$
450 IF S\$="50" THEN 480
460 PRINT "THIS IS THE WRONG INPUT DATA TAPE"
470 GO TO 1930
480 PRINT "ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDMMYY) "
490 INPUT B\$

+++4+++ 500 L6=LEN(B\$)
510 IF L6=6 THEN 540
520 PRINT "WRONG LENGTH ON BEGINNING DATE - REENTER"
530 GO TO 480
+++1+++ 540 U\$=SEG(U\$,3:2)
550 V\$=SEG(U\$,1:2)
560 R\$=SEG(U\$,5:2)
570 R\$=R\$R0\$
580 R\$=R\$R0\$
+++1+++ 590 PRINT "ENTER THE ENDING DATE OF THE REPORT PERIOD (DDMMYY) "
600 INPUT C\$

```

610 L6=LEN(C$)
620 IF L6=6 THEN 650
630 PRINT "JMKRONG LENGTH ON ENDING DATE - REENTER"
640 GO TO 590
+++1+++
650 U$=SEG(C$,3,2)
660 V$=SEG(C$,1,2)
670 C$=SEG(C$,5,2)
680 C$=C$AU$
690 C$=C$IV$
700 IF U$<C$ THEN 740
710 PRINT "ENDING DATE MUST BE LATER THAN BEGINNING DATE"
720 PRINT "JKO YOU WANT TO TRY AGAIN? (ENTER Y OR N) "
730 GO TO 1860
+++1+++
740 IF C$<T$ THEN 1350

```

```

750 REM ***** PROCESS INPUT DATA TOTALS *****
760 REM *****

```

```

770 E$=B$
780 F1=0
+++2+++
790 INPUT G0,6:L
800 IF L=1 THEN 970
810 INPUT G0,13:Z$
820 I$=SEG(Z$,8,6)
830 U$=SEG(I$,3,2)
840 V$=SEG(I$,1,2)
850 I$=SEG(I$,5,2)
860 I$=I$RU$
870 I$=I$RV$
880 IF I$<E$ THEN 790
890 IF F1=1 THEN 990
900 S$=SEG(Z$,14,56)
910 F1=1

```

```

920 E$=C$
930 IF B$<C$ THEN 790
940 IF I$<B$ THEN 1350
950 I$=S$
960 GO TO 1000
+++1+++
970 IF F1=0 THEN 1350
980 I$=C$
990 I$=SEG(Z$,14,56)
+++1+++
1000 R$=S$

```

```

1010 FOR J=1 TO 3 STEP 2
1020 K1=1
1030 N2=22
1040 FOR I=1 TO 7
1050 E$=SEG(R$,K1,3)
1060 F$=SEG(R$,K2,5)
1070 C(I,J)=VAL(E$)
1080 C(I,J+1)=VAL(F$)
1090 K1=K1+3
1100 K2=K2+5
1110 NEXT I
1120 IF B$<C$ THEN 1300
1130 K1=14
1140 NEXT J

```

```

1150 REM ***** TOTALS FOR MORE THAN ONE DAY *****
1160 REM *****

```

```
1170 FOR I=1 TO 7
1160 C(I,2)=C(I,2)-C(I,1)
1190 IF I=C THEN 1210
1200 C(I,4)=C(I,4)-C(I,3)
1210 C(I,1)=C(I,4)-C(I,2)
1220 C(I,3)=I(I)-C(I,4)
1230 NEXT I
1240 GO TO 1400
```

+++++

```
1250 REM
1260 REM **** C(I,1) IS TOTAL FOR PERIOD; C(I,4) IS ACCUMULATIVE TOTAL
1270 REM *** C(I,3) IS NO. OF REMAINING SETS
1280 REM
1290 REM ***** TOTALS FOR ONLY ONE DAY *****
```

+++++

```
1300 FOR I=1 TO 7
1310 C(I,4)=C(I,2)
1320 C(I,3)=I(I)-C(I,4)
1330 NEXT I
1340 GO TO 1400
```

+++3+++

```
1350 PRINT "PROGRAM IS UNABLE TO FIND DATE"
1360 PRINT "DO YOU WANT TO TRY AGAIN? (ENTER Y OR N) "
1370 GO TO 1860
```

+++2+++

```
1380 REM
1390 REM ***** PROCESS REPORT DATES *****
```

```
1400 F=B$
1410 GOSUB 2620
1420 X=F$
1430 F=C$
1440 GOSUB 2620
1450 Y=B$
```

+++++

```
1460 REM
1470 REM ***** PRINT REPORT *****
```

```
1480 A=41
1490 GOSUB 1970
1500 N1=1
```

+++++

```
1510 FOR I=1 TO 7
1520 E=SEG(L$;K1,10)
1530 FOR J=1 TO 4
1540 GO TO J OF 1550,1680,1550,1550
```

+++3+++

```
1550 R=STR$(C(I,J))
1560 R=LEN(R$)
1570 IF R=5 THEN 1640
1580 IF R>5 THEN 1630
1590 FOR K=N1 TO 5
1600 K$=" "R$
1610 NEXT K
```

+++++

```
1620 GO TO 1640
```

+++++

```
1630 R=SEG(R$;R-4,5)
```

+++++

```
1640 GO TO J OF 1650,1680,1670,1680
```

+++++

```
1650 F=R$
```

+++++

```
1660 GO TO 1680
```

+++++

```
1670 H=R$
```

+++++

```
1680 NEXT J
```

```
1690 PRINT "A: USING *A,10A,5A,BX,10A,5A,BX,10A,5A,1E,F,E,R,E,H$
```

```
1700 K1=N1+10
```

```

1710 NEXT I
1720 GOSUB 2210
1730 IF A=32 THEN 1810
1740 PRINT "JOO YOU WANT A HARD COPY? (ENTER Y OR N) ."
1750 INPUT A$
1760 IF A$ <> "Y" THEN 1850
1770 PAGE
1780 MOVE 0:100
1790 A=32
1800 GO TO 1490
1810 PRINT CA;26:3
1820 MOVE 0:0
1830 PRINT
1840 PRINT CA;26:0
1850 PRINT "JOO YOU WANT TO PRINT ANOTHER REPORT? (ENTER Y OR N) ."
1860 INPUT A$
1870 IF A$ <> "Y" THEN 1910
1880 FIND QD:1
1890 INPUT QD;13:Z$
1900 GO TO 480
1910 PRINT "NORMAL END OF PROGRAM"
1920 GO TO 2760
1930 PRINT "JAXXX ABNORMAL END OF PROGRAM ***"
1940 GO TO 2760

```

1950 REM ***** SUBROUTINE 1 - PRINT PAGE HEADING *****

```

1970 IF A=32 THEN 2050
1980 PRINT CA;"L"
1990 PRINT CA: USING "8A": "DRXTH-SE"
2000 PRINT CA;"JJ"
2010 PRINT CA: USING "39A,S": "MEMORANDUM FOR COLONEL JOHN D. SPENCE"
2020 PRINT CA: USING "8A": "USATHAMA"
2030 PRINT CA;"J"
2040 GO TO 2080
2050 PRINT CA: USING "39A,S": "MEMORANDUM FOR COLONEL JOHN J. SPENCE"
2060 PRINT CA: USING "8A,12X,8A": "USATHAMA", "DRXTH-SE"
2070 PRINT CA:
2080 PRINT CA: USING "35A": "SUBJECT: ID SETS OPERATIONS REPORT"
2090 PRINT CA:
2100 PRINT CA: USING "14A,5X,9A,3A,9A": "REPORT PERIOD: ", X$, " - ", Y$
2110 PRINT CA:
2120 PRINT CA: USING "6X,35A,S": "-----TYPES AND TOTALS OF ID"
2130 PRINT CA: USING "26A": "SETS PROCESSED-----"
2140 PRINT CA: USING "6X,15A,8X,7A,S": "-----FEK100-----"
2150 PRINT CA: USING "6A,0X,15A": "STARTUP-", "-----REMAINING-----"
2160 PRINT CA:
2170 RETURN

```

2180 REM ***** END OF SUBROUTINE 1 *****

2190 REM ***** SUBROUTINE 2 - PRINT END OF PAGE *****

2230 PRINT @A:'JJJJJJJJJJJJJJJJJJJJJJJJJJJJJJ'
2240 GO TO 2560

2250 REM ***** SKIP PART OF OUTPUT

2260 IF A=32 THEN 2330

2270 N=3

2280 PRINT @A:'JJ'

2290 GO TO 2350

2300 IF A=32 THEN 2330

2310 PRINT @A:'JJJ'

2320 GO TO 2340

2330 N=2

2340 PRINT @A:

2350 PRINT @A:'OPERATIONAL REMARKS:'

2360 PRINT @A:

2370 PRINT @A: USING '2X,25A,S'1'. PROBLEMS/SOLUTIONS!

2380 PRINT @A: USING '30A,15A'INS,H\$

2390 FOR I=1 TO N

2400 PRINT @A:

2410 PRINT @A: USING 2420:INS,H\$,'-----'

2420 IMAGE 2X,30A,30A,10A

2430 NEXT I

2440 PRINT @A:

2450 PRINT @A: USING '2X,37A,S'2. EXPOSURES/EMISSIONS/EXPLOSIONS!

2460 PRINT @A: USING '30A,3A'INS,'-----'

2470 FOR I=1 TO N

2480 PRINT @A:

2490 PRINT @A: USING 2420:INS,H\$,'-----'

2500 NEXT I

2510 IF A=32 THEN 2540

2520 PRINT @A:'JJJ'

2530 GO TO 2560

2540 PRINT @A:'JJ'

2550 REM ***** END OF SKIPPED OUTPUT

2560 PRINT @A: USING '2X,15A,1A,12X,15A,12X,15A'INS,'_','H\$,H\$

2570 PRINT @A: USING 2580:'SUBMITTED BY','REVIEWED BY','APPROVED BY'

2580 IMAGE 4X,12A,16X,11A,16X,11A

2590 RETURN

2600 REM ***** END OF SUBROUTINE 2 *****

2610 REM

-----2----- 2620 REM ***** SUBROUTINE 3 - CONVERT DATE *****

2630 E=SEG(F\$+2)

2640 F=SEG(F\$+3,2)

2650 H=SEG(F\$+1,2)

2660 F=VAL(F\$)

2670 F=31F-2

2680 F=SEG(H\$+F,3)

2690 O\$=

2700 O\$=REP(C\$+1,2)

2710 O\$=REP(F\$+4,3)

2720 O\$=REP(H\$+8,2)

2730 RETURN

```
2740 RE: ***** END OF SUBROUTINE 3 *****
2750 REM
+++2+++ 2760 END
2770 REM
2780 REM ***** T ARRAY (7) - NUMBER OF ID SETS *****
2790 DATA 806,1335,10799,497,94,6166,19697
2800 REM
2810 REM ***** K$ ARRAY (32) *****
2820 DATA 'N941K942N945K951N952K953K954K955'
2830 REM
2840 REM ***** L$ ARRAY (70) *****
2850 DATA 'N941/942 K945 K951/952 K953/954 K955'
2860 DATA 'X-TYPE TOTAL'
2870 REM
2880 REM ***** U$ ARRAY (36) *****
2890 DATA 'JANFEBMARAPRKMAYJUNJULAUAGSEPOCTNOVDEC'
2900 REM
2910 REM ***** END OF PROGRAM *****
```


1 GO TO 100
4 GO TO 2100
8 GO TO 2100

100 REM *****
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM
200 REM
210 REM
220 REM *****
230 REM *****
240 REM

TOTALS - D1
VERSION 4 - 5/24/81

THIS PROGRAM KEEPS A RUNNING COUNT OF THE DRUMS
IN THE INVENTORY. INPUT DATA ARE FROM DATA SHEETS
#13 - PROCESS DATA RESIDUE AREA,
#14 - PROCESS DATA, SPRAY DRYER,
#15 - PROCESS DATA, ELECTROSTATIC PRECIPITATOR.
THE DAILY OUTPUT RECORD CONTAINS THE NUMBER OF
EACH TYPE OF DRUM PROCESSED THAT DAY AND THE
CUMULATIVE TOTALS.

BY: STEARNS-ROGER, INC
M E MARTIN

250 PAGE
260 INIT
270 SET KEY

280 DIM C(4,2),M(2),A\$(1),L\$(40),M\$(36),X\$(45),Z\$(27)
290 PRINT "JUG YOU WANT TO UPDATE DRUM TOTALS? (ENTER Y OR N) ";
300 INPUT A\$

310 IF A\$ <> "N" THEN 340

320 PRINT "YOU ARE USING THE WRONG TOTALS PROGRAM"

330 GO TO 2100

340 READ L\$,M\$

350 FOR I=1 TO 4

360 C(I,1)=0

370 NEXT I

380 M\$=" 0 0 0 0"

390 G\$="RMA51"

400 PRINT "JUG YOU HAVE DATA TO ENTER? (ENTER Y OR N) ";

410 INPUT A\$

420 A\$=1

430 IF A\$ <> "N" THEN 530

440 A\$=0

450 PRINT "ENTER TODAY'S DATE (DDMMYY) ";

460 INPUT U\$

470 L1=LEN(U\$)

480 IF L1=6 THEN 510

490 PRINT "THE DATE MUST HAVE 6 CHARACTERS"

500 GO TO 450

510 I\$=U\$(1)

520 GO TO 490

530 N=1

540 M1=I\$

550 PRINT "INSERT THE INVENTORY DATA TAPE INTO THE CONSOLE"

560 PRINT "ENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK";

570 P\$="T"

580 I1=SEG(I\$,1,3)

590 P1=I1

600 INPUT Q\$;Z\$

610 S\$=SEG(Z\$,4,2)

620 S=VAL(S\$)

```
630 B#-SEG(Z#,8,3)
640 C#-SEG(Z#,8,9)
650 IF S=N1 AND R#-1# THEN 710
660 PRINT "THIS IS THE WRONG INPUT DATA TAPE"
670 PRINT "THIS TAPE IS FOR DATA SHEET #188" FOR "IC"
680 GO TO 2100
```

```
690 REM
700 REM ***** PROCESS INPUT DATA TOTALS *****
```

```
+++++ 710 IF TYP(O)=1 THEN 800
720 INPUT Q33:Z#
730 I#-SEG(Z#,12,6)
740 I#-G#I#
750 GO TO 780
+++++ 760 IF TYP(O)=1 THEN 800
770 INPUT Q33:Z#
+++++ 780 C(O,1)=C(N,1)+1
790 GO TO 750
+++++ 800 IF N=3 THEN 840
810 N=N+1
820 NI=N+1
830 GO TO 590
+++++ 840 FOR I=1 TO 3
850 C(4,I)=C(4,I)+C(I,1)
860 NEXT I
```

```
870 REM
880 REM ***** PREPARE OUTPUT TAPE *****
```

```
+++++ 890 PRINT "JJINSERT OUTPUT DATA TAPE (KRM TOTALS) INTO UNIT 4924"
900 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE OUTPUT TAPE"
910 INPUT U
920 PRINT "DO YOU NEED TO INITIALIZE THIS TAPE (ENTER Y OR N)"
930 INPUT A#
940 FING PUI
950 IF A#<>"Y" THEN 1260
960 PRINT "HOW MUCH SPACE DO YOU NEED?"
970 INPUT F
980 MARK QO:1,F
990 FING PUI
1000 PRINT "DO YOU NEED TO ENTER CUMULATIVE TOTALS? (ENTER Y OR N)"
1010 INPUT A#
1020 IF A#<>"Y" THEN 1200
1030 PRINT "J"
1040 X#-I#N#
1050 FOR I=1 TO 4
1060 PRINT "ENTER CUMULATIVE TOTAL NO. #11"
1070 INPUT U#
1080 G-LENG(U#)
1090 IF A#<>"5" THEN 1130
1100 FOR J=N1 TO 5
1110 U#=" "
1120 NEXT J
1130 NEXT I
1140 NEXT I
1150 G-LENG(U#)
1160 IF A#<>"5" THEN 1220
1170 PRINT "CUMULATIVE TOTALS CANNOT HAVE MORE THAN 5 DIGITS"
1180 PRINT "REENTER DATA FROM THE BEGINNING"
```

```
1190 NEXT I
```

1190 GO TO 1030

1200 X=154M

1210 X=X

1220 PRINT @,12:*

1230 GO TO 1300

1240 INPUT @,6:F

1250 IF F=1 THEN 1300

1260 INPUT @,13:*

1270 GO TO 1240

1280 REM

1290 REM ***** UPDATE WITH A ZERO RECORD *****

1300 IF A6=1 THEN 1370

1310 X=REP(V,8,6)

1320 X=REP(M,14,12)

1330 PRINT @,12:*

1340 GO TO 1650

1350 REM

1360 REM ***** UPDATE LAST RECORD *****

1370 N2=26

1380 FOR I=1 TO 4

1390 F=SEG(X,N2,5)

1400 C(I,2)=VAL(F)+C(I,1)

1410 REM *** C(I,1) IS DAILY TOTAL C(I,2) IS ACCUMULATIVE TOTAL

1420 N2=N2+5

1430 NEXT I

1440 X=X+1

1450 M(1)=3

1460 M(2)=5

1470 FOR N=1 TO 2

1480 M1=M(N)

1490 FOR I=1 TO 4

1500 R=STR(C(I,N))

1510 R=LEN(R)

1520 IF R=M1 THEN 1590

1530 IF R=M1 THEN 1590

1540 FOR J=R+1 TO M1

1550 R=R+1

1560 NEXT J

1570 GO TO 1590

1580 R=SEG(R,R-M1+1,M1)

1590 X=X+R

1600 NEXT I

1610 NEXT N

1620 PRINT @,12:*

1630 REM

1640 REM ***** PROCESS DATE *****

1650 F=SEG(I,8,2)

1660 F=SEG(I,10,2)

1670 M=SEG(I,12,2)

1680 F=VAL(F)

1690 F=34F-2

1700 F=SEG(M,F,3)

```

1710 D$=
1720 D$=REF(E$,1,2)
1730 D$=REP(F$,4,3)
1740 D$=REP(H$,8,2)

1750 REM
1760 REM ***** PRINT DAILY REPORT *****
1770 A=41
1780 GOSUB 2140
1790 K1=1
1800 N2=14
1810 N3=26
1820 N4=1
1830 FOR I=1 TO 4
1840 E$=SEG(L$,K1,15)
1850 F$=SEG(X$,K2,3)
1860 H$=SEG(X$,K3,5)
1870 PRINT BA: USING '9X,15A,3A,13X,15A,5A'IE$,F$,E$,H$
1880 N1=N1+15
1890 N2=N2+3
1900 N3=N3+5
1910 IF I<>4 THEN 1930
1920 PRINT
1930 NEXT I

1940 GOSUB 2380
1950 IF A=32 THEN 2030
1960 PRINT 'JOB YOU WANT A HARD COPY? (ENTER Y OR N) '
1970 INPUT A$
1980 IF A$<>'Y' THEN 2070
2000 MOVE 0,100
2010 A=32
2020 GO TO 1780
2030 PRINT BA:26:3
2040 MOVE 0,0
2050 PRINT
2060 PRINT BA:26:0
2070 PRINT 'NORMAL END OF PROGRAM'
2080 PRINT 00:2:
2090 GO TO 2710
2100 PRINT 'J*** ABNORMAL END OF PROGRAM ****'
2110 GO TO 2710

2120 REM
2130 REM ***** SUBROUTINE 1 - PRINT PAGE HEADING *****

```

```

2140 IF A=32 THEN 2220
2150 PRINT BA:L
2160 PRINT BA: USING 'BA,49X,6A,9A'::DRXTH-SE',DATE: ',D$
2170 PRINT BA:JJ
2180 PRINT BA: USING '39A:5'::MEMORANDUM FOR COLONEL JOHN D. SPENCE,
2190 PRINT BA: USING 'BA'::USATHAMA
2200 PRINT 5A:J
2210 GO TO 2270
2220 PRINT BA: USING 'BA,49X,6A,9A'::DRXTH-SE',DATE: ',D$
2230 PRINT BA:
2240 PRINT BA: USING '39A:5'::MEMORANDUM FOR COLONEL JOHN D. SPENCE,

```

2250 PRINT @A: USING 'BA':USATHAMA*
2260 PRINT @A:
2270 PRINT @A: USING '41A':SUBJECT: ID SETS DAILY OPERATIONS REPORT*
2280 PRINT @A:
2290 PRINT @A: USING '9X,28A,S':-----TYPES AND TOTALS OF *
2300 PRINT @A: USING '23A':DRUMS PROCESSED-----
2310 PRINT @A: USING '9X,10A,13X,S':-----TODAY-----
2320 PRINT @A: USING '20A':-----SINCE STARTUP-----
2330 PRINT @A:
2340 RETURN

2350 REM ***** END OF SUBROUTINE 1 *****
2360 REM
2370 REM ***** SUBROUTINE 2 - PRINT END OF PAGE *****

2380 N#=#
2390 M#=#
2400 IF A=32 THEN 2440

2410 N#3
2420 PRINT @A:'JJ'
2430 GO TO 2460
2440 N#2

2450 PRINT @A:OPERATIONAL REMARKS:
2470 PRINT @A:
2480 PRINT @A: USING '2X,25A,S':1. PROBLEMS/SOLUTIONS!
2490 PRINT @A: USING '30A,15A:IN\$,M\$

2500 FOR I=1 TO 3
2510 PRINT @A:
2520 PRINT @A: USING 2530:IN\$,N\$,#*
2530 IMAGE 2X,30A,30A,10A
2540 NEXT I

2550 PRINT @A:
2560 PRINT @A: USING '2X,37A,S':2. EXPOSURES/EMISSIONS/EXPLOSIONS!
2570 PRINT @A: USING '30A,3A:IN\$,#*
2580 FOR I=1 TO N

2590 PRINT @A:
2600 PRINT @A: USING 2530:IN\$,N\$,#*
2610 NEXT I
2620 IF A=32 THEN 2650

2630 PRINT @A:'JJ'
2640 GO TO 2660
2650 PRINT @A:'JJ'
2660 PRINT @A: USING '2X,15A,1A,12X,15A,12X,15A:IN\$,#* ,M\$,M\$

2670 PRINT @A: USING 2680:'SUBMITTED BY',REVIEWED BY',APPROVED BY'
2680 IMAGE 4X,12A,16X,11A,16X,11A
2690 RETURN

2700 REM ***** END OF SUBROUTINE 2 *****
2710 END

2720 REM
2730 REM ***** L\$ ARRAY (60) *****
2740 DATA 'RESIDUE AREA' SPRAY DRYER ELEC. PRECIP. TOTAL
2750 REM

2760 REM ***** W\$ ARRAY (36) *****

2770 DATA *JANFEBMAYJUNJULAUGSEPOCTNOVDEC*

2780 REM

2790 REM ***** END OF PROGRAM *****

2800 REM

1 GO TO 100
4 FIND GU:1
5 INPUT GU,131Z\$
6 GO TO 450
8 GO TO 1860

++++
100 REM ****
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM ****

TOTALS - DZ
VERSION 4 - 5/12/81
THIS PROGRAM PRINTS AN OPERATIONS REPORT OF TOTAL
DRUMS IN THE INVENTORY FOR A SPECIFIED PERIOD OF TIME.
INPUT DATA ARE FROM THE 'DRUM TOTALS' TAPE CREATED BY
THE D1 PROGRAM FOR DATA SHEETS 13, 14, AND 15.

BY: STEARNS-ROGER, INC.
H.E. MARTIN

200 PAGE
210 INIT
220 SET KEY
230 DIM C(4,4),A\$(1),L\$(60),W\$(36),Y\$(45),Z\$(45)
240 PRINT "JOO YOU WANT TO PRINT DRUM TOTALS? (ENTER Y OR N) :"
250 INPUT A\$

260 IF A\$="Y" THEN 290
270 PRINT "YOU ARE USING THE WRONG TOTALS PROGRAM."
280 GO TO 1860
290 READ L\$,W\$

300 PRINT "INSERT THE INPUT DATA TAPE (DRUM TOTALS) INTO UNIT 4924."
310 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE :"
320 INPUT U

330 FIND GU:1
340 INPUT GU,131Z\$
350 S\$=SEG(Z\$,4,2)
360 T\$=SEG(Z\$,0,6)
370 U\$=SEG(T\$,3,2)
380 V\$=SEG(T\$,1,2)
390 T\$=SEG(T\$,5,2)
400 I\$=T\$XU\$

410 T\$=T\$XV\$
420 IF S\$="51" THEN 450
430 PRINT "THIS IS THE WRONG INPUT DATA TAPE."
440 GO TO 1860

++++
450 PRINT "ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDHHYY) :"
460 INPUT B\$
470 L6=LEN(B\$)
480 IF L6=6 THEN 510
490 PRINT "WRONG LENGTH ON BEGINNING DATE - REENTER."
500 GO TO 450

510 U\$=SEG(B\$,3,2)
520 V\$=SEG(B\$,1,2)
530 S\$=SEG(B\$,5,2)
540 R\$=B\$XU\$
550 U\$=B\$XV\$

++++
560 PRINT "ENTER THE ENDING DATE OF THE REPORT PERIOD (DDHHYY) :"
570 INPUT C\$
580 L6=LEN(C\$)
590 IF L6=6 THEN 620
600 PRINT "WRONG LENGTH ON ENDING DATE - REENTER."

```

610 GO TO 560
+++1+++ 620 U$=SEG(C$,3,2)
630 V$=SEG(C$,1,2)
640 C$=SEG(C$,5,2)
650 C$=C#U$
660 C$=C#V$
670 IF B#<C$ THEN 710
680 PRINT "ENDING DATE MUST BE LATER THAN BEGINNING DATE."
690 PRINT "JJD YOU WANT TO TRY AGAIN? (ENTER Y OR N) ."
700 GO TO 1790
+++1+++ 710 IF C$<T$ THEN 1310

720 REM
730 REM ***** PROCESS INPUT DATA TOTALS *****
740 E$=H$
750 F1=0
+++2+++ 760 INPUT @U,4:L
770 IF L=1 THEN 940
780 INPUT @U,13:Z$
790 I$=SEG(Z$,8,6)
800 U$=SEG(I$,3,2)
810 V$=SEG(I$,1,2)
820 I$=SEG(I$,5,2)
830 I$=I#U$
840 I$=I#V$
850 IF I$<E$ THEN 760
860 IF F1=1 THEN 960
870 S$=SEG(Z$,14,32)
880 F1=1
890 E$=C$
900 IF I$<C$ THEN 760
910 IF I$<H$ THEN 1310
920 T#=#$
930 GO TO 970
+++1+++ 940 IF F1=0 THEN 1310
+++1+++ 950 I$=C$
+++1+++ 960 T$=SEG(Z$,14,32)
970 R$=#$
980 FOR J=1 TO 3 STEP 2
990 K1=1
1000 K2=13
1010 FOR I=1 TO 4
1020 E$=SEG(R$,K1,3)
1030 F$=SEG(R$,K2,5)
1040 C(I,J)=VAL(E$)
1050 C(I,J+1)=VAL(F$)
1060 K1=K1+3
1070 K2=K2+5
1080 NEXT I
1090 REM ** BEGIN DATE: C(I,1) IS DAILY TOTAL; C(I,2) IS ACCUM. TOTAL
1100 REM ** END DATE: C(I,3) IS DAILY TOTAL; C(I,4) IS ACCUM. TOTAL
1110 IF H#<C# THEN 1270
1120 R$=T$
1130 NEXT J
1140 REM
1150 REM ***** TOTALS FOR MORE THAN ONE DAY *****

```



```

1160 FOR I=1 TO 4
1170 C(I,2)=C(I,2)-C(I,1)
1180 IF I=C THEN 1200
1190 C(I,4)=C(I,4)-C(I,3)
1200 C(I,1)=C(I,4)-C(I,2)
1210 NEXT I
1220 GO TO 1360

++++1+++
1240 REM
1240 REM *** C(I,1) IS TOTAL FOR PERIOD) C(I,4) IS ACCUMULATIVE TOTAL
1250 REM
1260 REM ***** TOTALS FOR ONLY ONE DAY *****
++++1+++
1270 FOR I=1 TO 4
1280 C(I,4)=C(I,2)
1290 NEXT I
1300 GO TO 1360
++++3+++
1310 PRINT "PROGRAM IS UNABLE TO FIND DATE."
1320 PRINT "JMO YOU WANT TO TRY AGAIN? (ENTER Y OR N) ."
1330 GO TO 1790

1340 REM
1250 REM ***** PROCESS REPORT DATES *****
++++2+++
1360 P=B$
1370 GOSUB 2440
1380 X=D$
1390 F=C$
1400 GOSUB 2440
1410 Y=B$

1420 REM
1430 REM ***** PRINT REPORT *****
++++1+++
1440 A=41
1450 GOSUB 1900
1460 K1=1
1470 FOR I=1 TO 4
1480 E=SEG(I,K1,15)
1490 FOR J=1 TO 4 STEP 3
1500 R=STR(C(I,J))
1510 R=LEN(R$)
1520 IF R=5 THEN 1590
1530 IF R=5 THEN 1580
1540 FOR N=R+1 TO 5
1550 R=R$+"R"
1560 NEXT N
1570 GO TO 1590
1580 R=SEG(R,R-4,5)
1590 IF J=4 THEN 1620
1600 F=F$+R$
1610 NEXT J
++++1+++
1620 PRINT GA: USING "9X,15A,5A,11X,15A,5A,1E$,F$,E$,R$"
1630 N1=N1+15
1640 NEXT I
1650 GOSUB 2140
1660 IF A=32 THEN 1740
1670 PRINT "JMO YOU WANT A HARD COPY? (ENTER Y OR N) ."
1680 INPUT A$

```

```

1690 IF A<>Y THEN 1780
1700 PAGE
1710 MOVE 0,100
1720 A=32
1730 GO TO 1450
1740 PRINT @A,26:3
1750 MOVE 0,0
1760 PRINT
1770 PRINT @A,26:0
1780 PRINT 'JED YOU WANT TO PRINT ANOTHER REPORT (ENTER Y OR N)'
1790 INPUT A$
1800 IF A<>Y THEN 1840
1810 FIND @U:1
1820 INPUT @U,13:Z$
1830 GO TO 450
1840 PRINT 'JNORMAL END OF PROGRAM'
1850 GO TO 2570
1860 PRINT 'J*** ABNORMAL END OF PROGRAM ****'
1870 GO TO 2570

```

```

1880 REM
1890 REM ***** SUBROUTINE 1 - PRINT PAGE HEADING *****

```

```

1900 IF A=32 THEN 1980
1910 PRINT @A:'L'
1920 PRINT @A: USING '8A': 'DRXTH-SE'
1930 PRINT @A: 'JJ'
1940 PRINT @A: USING '39A,S': 'MEMORANDUM FOR COLONEL JOHN D. SPENCE,'
1950 PRINT @A: USING '8A': 'USATHAMA'
1960 PRINT @A: 'J'
1970 GO TO 2010
1980 PRINT @A: USING '39A,S': 'MEMORANDUM FOR COLONEL JOHN D. SPENCE,'
1990 PRINT @A: USING '8A,12X,8A': 'USATHAMA', 'DRXTH-SE'
2000 PRINT @A:
2010 PRINT @A: USING '35A': 'SUBJECT: ID SETS OPERATIONS REPORT'
2020 PRINT @A:
2030 PRINT @A: USING '14A,5X,9A,3A,9A': 'REPORT PERIOD:', X$, ' - ', Y$
2040 PRINT @A:
2050 PRINT @A: USING '9X,28A,S': '-----TYPES AND TOTALS OF'
2060 PRINT @A: USING '2JA': 'DUMS PROCESSED-----'
2070 PRINT @A: USING '9X,20A,11X,S': '-----PERIOD-----'
2080 PRINT @A: USING '20A': '-----SINCE STARTUP-----'
2090 PRINT @A:
2100 RETURN
2110 REM ***** END OF SUBROUTINE 1 *****
2120 REM
2130 REM ***** SUBROUTINE 2 - PRINT END OF PAGE *****

```

```

2140 REM
2150 REM
2160 PRINT @A:
2170 IF A=32 THEN 2200
2180 H=3
2190 GO TO 2210
2200 H=2

```

```

+++++ 2310 PRINT GA: OPERATIONAL REMARKS:
2320 PRINT GA:
2330 PRINT GA: USING *2X,25A:8:1, PROBLEMS/SOLUTIONS:
2340 PRINT GA: USING *30A,15A:N,M$
2350 FOR I=1 TO 3
2360 PRINT GA:
2370 PRINT GA: USING 2280:IN$,N$,
2380 IMAGE 2X,30A,30A,10A
2390 NEXT I
2400 PRINT GA:
2410 PRINT GA: USING *2X,37A:6:2, EXPOSURES/EMISSIONS/EXPLOSIONS:
2420 PRINT GA: USING *30A,3A:IN$,
2430 FOR I=1 TO N
2440 PRINT GA:
2450 PRINT GA: USING 2280:IN$,N$,
2460 NEXT I
2470 PRINT GA: "JJJ"
2480 PRINT GA: USING *2X,15A:1A,12X,15A:12X,15A:1M$,
2490 PRINT GA: USING 2400: "SUBMITTED BY", "REVIEWED BY", "APPROVED BY"
2500 IMAGE 4X,12A:16X,11A,16X,11A
2510 RETURN
2520 REM ***** END OF SUBROUTINE 2 *****
2530 REM

```

```

-----2----- SUBROUTINE 3 - CONVERT DATE *****

```

```

2540 E$=SEG(P$,5,2)
2550 F$=SEG(P$,3,2)
2560 H$=SEG(P$,1,2)
2570 F=VAL(F$)
2580 F=3*F-2
2590 F$=SEG(W$,F,3)
2600 H$=
2610 H$=REP(F$,1,2)
2620 H$=REP(F$,4,3)
2630 H$=REP(H$,8,2)
2640 RETURN
2650 REM ***** END OF SUBROUTINE 3 *****

```

```

+++++ 2580 REM ***** L$ ARRAY (60) *****
2590 REM ***** RESIDUE AREA SPRAY DRYER ELEC. PRECIP. TOTAL *****
2600 DATA *RESIDUE AREA SPRAY DRYER ELEC. PRECIP. TOTAL
2610 REM ***** U$ ARRAY (36) *****
2620 REM ***** JAHFERHARAPRAPHAYJUNJULAUJGSEPOCTNOVDEC *****
2630 DATA *JAHFERHARAPRAPHAYJUNJULAUJGSEPOCTNOVDEC*
2640 REM ***** END OF PROGRAM *****
2650 REM

```

1 GO TO 100
4 GO TO 690
8 GO TO 690

+++++
100 REM ***
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM ***

TOTALS - T1 *****

VERSION 4 - 5/20/81

THIS PROGRAM KEEPS A RECORD OF ALL DOWNTIME DATA
ON A 'DOWNTIME TOTALS' TAPE. THIS TAPE WILL BE
UPDATED DAILY.

BY: STEARNS-ROGER, INC.
H.E. MARTIN *****

180 PAGE
190 INIT
200 SET KEY
210 DIM A\$(1),X\$(97),Z\$(101)
220 PRINT "JMO YOU WANT TO UPDATE DOWNTIME TOTALS? (ENTER Y OR N) "
230 INPUT A\$
240 IF A\$="Y" THEN 270
250 PRINT "JYOU ARE USING THE WRONG PROGRAM"
260 GO TO 690
270 G\$="RMA52"

TOTALS? (ENTER Y OR N) *****

+++++

280 PRINT "JINSERT THE DOWNTIME DATA TAPE INTO THE CONSOLE"
290 PRINT "JENTER THE FIRST 3 LETTERS OF THE DAY OF THE WEEK"
300 INPUT T\$
310 I\$=SEG(T\$,1,3)
320 FIND I
330 INPUT Q33;Z\$
340 S1=SEG(Z\$,4,2)
350 R1=SEG(Z\$,8,3)
360 C1=SEG(Z\$,8,9)
370 IF S1="16" AND R1="T" THEN 430
380 PRINT "JTHIS IS THE WRONG INPUT DATA TAPE"
390 PRINT "JTHIS TAPE IS FOR DATA SHEET #19\$". FOR "JC\$"
400 GO TO 690

410 REM
420 REM ***** PREPARE OUTPUT TAPE *****

***** PREPARE OUTPUT TAPE *****

+++++

430 PRINT "JINSERT OUTPUT DATA TAPE (DOWNTIME TOTALS) INTO UNIT 4924"
450 INPUT U
460 PRINT "JDO YOU NEED TO INITIALIZE THIS TAPE? (ENTER Y OR N) "
470 INPUT A1
480 FIND 60;1
490 IF A1="Y" THEN 560
510 MARK 00;1,300000
520 FIND 00;1
530 GO TO 600
540 INPUT 00;4;F
550 U=1 THEN 600
570 INPUT 00;13;X\$
580 GO TO 530

+++++

+++++

590 REM
600 REM ***** ADD NEW DOWNTIME RECORDS TO OUTPUT TAPE *****

***** ADD NEW DOWNTIME RECORDS TO OUTPUT TAPE *****

```
1113111 600 IF YPF(0)-1 THEN 660
610 INPUT P33:Z5
620 Z1=REF (**,11,11)
630 X1=G5:Z5
640 PRINT BU:12:XS
650 GO TO 600
1114111 660 PRINT "ABNORMAL END OF PROGRAM"
670 PRINT BU:2:
680 GO TO 700
1115111 690 PRINT "J**** ABNORMAL END OF PROGRAM ****"
700 END
```

```
710 REM ***** END OF PROGRAM *****
```

FILE # 7

1 GO TO 100
4 FIND QUIT
5 INPUT Q0,13,Z\$
6 GO TO 590
8 GO TO 2990

+++++ 100 REM ****
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM ****
TOTALS - T2
VERSION 5 - 2/4/82
THIS PROGRAM PRINTS VARIOUS REPORTS OF DOWNTIME
DATA ACCUMULATED OVER ANY PERIOD OF TIME.
INPUT DATA ARE FROM THE 'DOWNTIME TOTALS' TAPE
CREATED BY THE T1 PROGRAM.

BY: STEAKS-ROGER, INC.
M.E. MARTIN

190 PAGE
200 INIT
210 SET KEY
220 DIM H(26,2),M\$(370),N(99,2),N\$(840),H\$(500),S(500)
230 DIM A\$(1),M\$(36),X\$(9),Y\$(97),Z\$(97)
240 PRINT "J60 YOU WANT TO PRINT DOWNTIME REPORTS Y (ENTER Y OR N) *"
250 INPUT A\$

260 IF A1=Y THEN 290
270 PRINT "YOU ARE USING THE WRONG TOTALS PROGRAM"
280 GO TO 2990

+++++ 290 READ M
300 READ H\$
310 FOR I=1 TO 6
320 READ Y\$
330 M=M*Y\$
340 NEXT I
350 BELLIE Y\$
360 READ N
370 READ H\$
380 FOR I=1 TO 15
390 READ Y\$
400 M=M*Y\$
410 NEXT I
420 BELLIE Y\$
430 READ M\$
440 PRINT "INSERT THE INPUT DATA TAPE (DOWNTIME TOTALS) INTO UNIT 4924"
450 PRINT "ENTER THE UNIT NUMBER YOU ARE USING FOR THE DATA TAPE *"
460 INPUT U
470 FIND QUIT
480 INPUT Q0,13,Z\$
490 M=M*(Z1+4+2)
500 M=M*(Z2+3+2)
510 M=M*(Z3+1+2)
520 M=M*(Z4+3+2)
530 M=M*(Z5+1+2)
540 M=M*(Z6+1+2)
550 M=M*(Z7+1+2)
560 PRINT "THIS IS THE WRONG INPUT DATA TAPE"
570 GO TO 2990

+++++ 590 PRINT "ENTER THE BEGINNING DATE OF THE REPORT PERIOD (DDMMYY) *"

```

610 L6=LEN(B*)
850 IF L6=6 THEN 850
630 PRINT "JMKONG LENGTH ON BEGINNING DATE - REENTER"
640 GO TO 590
650 V1=SEG(B*,1,2)
660 U1=SEG(C*,3,2)
670 B1=SEG(R*,5,2)
680 B1=B1U1
690 B1=B1U1
700 PRINT "ENTER THE ENDING DATE OF THE REPORT PERIOD (DDMMYY)!"
710 INPUT C$
720 L6=LEN(C$)
730 IF L6=6 THEN 760
740 PRINT "JMKONG LENGTH ON ENDING DATE - REENTER"
750 GO TO 700
760 V1=SEG(C*,1,2)
770 U1=SEG(C*,3,2)
780 C1=SEG(C*,5,2)
790 C1=C1U1
800 C1=C1U1
810 IF B1=C1 THEN 850
820 PRINT "ENDING DATE MUST BE LATER THAN BEGINNING DATE"
830 PRINT "JMO YOU WANT TO TRY AGAIN? (ENTER Y OR N)!"
840 GO TO 2890
850 IF C1=7 THEN 910
860 PRINT "PROGRAM IS UNABLE TO FIND DATE"
870 PRINT "JMO YOU WANT TO TRY AGAIN? (ENTER Y OR N)!"
880 GO TO 2890

```

690 REM ***** REPORT DIRECTORY *****

```

910 PAGE
920 PRINT " DIRECTORY FOR DOWNTIME REPORTS"
930 PRINT "JJ KEY PROGRAM"
940 PRINT "-----"
950 PRINT "J 1 ALL DOWNTIME LISTED BY SUBSYSTEM"
960 PRINT "J 2 CHARGEABLE DOWNTIME LISTED BY SUBSYSTEM"
970 PRINT "J 3 NON-CHARGEABLE DOWNTIME LISTED BY SUBSYSTEM"
980 PRINT "J 4 ALL DOWNTIME TOTALLED BY SUBSYSTEM"
990 PRINT "J 5 DOWNTIME LISTED BY PRIMARY COMPONENT"

```

1000 REM ***** PROCESS REPORT DATES *****

```

1010 PRINT "JJJ ENTER KEY FROM THE ABOVE LIST:!"
1020 INPUT K
1030 IF K=6 THEN 1080
1040 PRINT "INVALID KEY NUMBER - REENTER:!"
1050 GO TO 1020

```

1060 REM *****

```

1060 F5=B*
1090 GROUP 1260
1100 X5=B*
1110 P5=C*
1120 GOSUB 1260
1130 Y4=U*
1140 J=0

```

```

1150 Y=0
1160 J=SUBSYSTEM
1170 GO TO K OF 1180,1200,1220,1710,2010
1180 H$="ALL"
1190 GO TO 1390
1200 H$="CHARGEABLE"
1210 GO TO 1390
1220 H$="NON-CHARGEABLE"
1230 GO TO 1390
1240 REM
1250 REM *** SUBROUTINE 1 - SET UP PRINT DATE

```

```

-----2-----
1260 E$=SEG(P$,5,2)
1270 F$=SEG(Q$,3,2)
1280 G$=SEG(R$,1,2)
1290 F=VAL(F$)
1300 F=34F-2
1310 F$=SEG(W$,F,3)
1320 R$=
1330 G$=REF(E$,1,2)
1340 H$=REF(F$,4,3)
1350 G$=REF(G$,8,2)
1360 RETURN

```

```

1370 REM
1380 REM ***** PREPARE REPORTS 1, 2, AND 3 *****

```

```

1390 V$=SEG(Z$,0,2)
1400 U$=SEG(Z$,10,2)
1410 I$=SEG(Z$,12,2)
1420 I$=I$2V$
1430 I$=I$2V$
1440 IF I$=I$ THEN 1620
1450 IF I$=C$ THEN 1660
1460 K$=SEG(Z$,35,2)
1470 GO TO K OF 1520,1480,1500
1480 IF K$=O$ THEN 1520
1490 IF K$=O$ THEN 1520
1500 IF K$=O$ THEN 1520
1510 GO TO 1620
1520 K$=SEG(Z$,37,4)
1530 R=VAL(R$)/100
1540 IF R=0 THEN 1620
1550 J=J+1
1560 IF J=500 THEN 1680
1570 H(O)=R
1580 I=I+R
1590 K$=SEG(W$,23,2)
1600 R=VAL(R$)
1610 S(O)=R

```

```

1620 PRINT PU,4:1
1630 IF I=1 THEN 1660
1640 PRINT PU,13:23
1650 GO TO 1590
1660 IF J=0 THEN 860
1670 GO TO 2050
1680 PRINT "THIS PROGRAM CANNOT HANDLE MORE THAN 500 RECORDS"

```


1690 GO TO 2990

1700 REM ***** PREPARE REPORT #4 *****

```
1710 FOR I=1 TO 26
1720 S(I)=I
1730 H(I)=0
1740 NEXT I
1750 S(26)=99
1760 U=-SEG(Z$,8,2)
1770 U=-SEG(Z$,10,2)
1780 I=-I+U
1800 I=-I+U
1810 IF I<0 THEN 1930
1820 IF I>0 THEN 1970
1830 R=-SEG(Z$,37,4)
1840 R=VAL(R$)/100
1850 IF R=0 THEN 1930
1860 J=J+1
1870 K=-SEG(Z$,23,2)
1880 I=VAL(K$)
1890 IF I<99 THEN 1910
1900 I=26
1910 H(I)=H(I)+R
1920 I=I+R
1930 INPUT @U,61L
1940 IF L=1 THEN 1970
1950 INPUT @U,13:Z$
1960 GO TO 1760
1970 IF J=0 THEN 860
1980 J=26
1990 GO TO 2250
```

2000 REM ***** PREPARE REPORT #5 *****

```
2010 J=- PRIMARY COMPONENT
2020 V=-SEG(Z$,8,2)
2030 U=-SEG(Z$,10,2)
2040 I=-I+U
2050 I=-I+U
2060 I=-I+U
2070 IF I<0 THEN 2190
2080 IF I>0 THEN 2230
2090 R=-SEG(Z$,37,4)
2100 R=VAL(R$)/100
2110 IF R=0 THEN 2190
2120 J=J+1
2130 IF J>500 THEN 1680
2140 H(J)=R
2150 I=I+R
2160 K=-SEG(Z$,25,2)
2170 K=VAL(K$)
2180 S(J)=K
2190 INPUT @U,61L
2200 IF L=1 THEN 2230
2210 INPUT @U,13:Z$
2220 GO TO 2020
2230 IF J=0 THEN 860
```

2240 REM ***** PRINT REPORT *****

2250 A=41
2260 JJ=57
2270 PRINT GA:L SUBJECT: DOWNTIME REPORT NUMBER *JK
2280 GO TO N OF 2290,2290,2310,2330
2290 PRINT GA:L *JHS* DOWNTIME LISTED BY SUBSYSTEM*

2300 GO TO 2340
2310 PRINT GA:L ALL DOWNTIME TOTALLED BY SUBSYSTEM*
2320 GO TO 2340 LISTED BY PRIMARY COMPONENT*
2330 PRINT GA:L
2340 PRINT GA:L REPORT PERIOD: *JX* - *JY*

2350 N=SEG(JA,1,9)
2360 PRINT GA:L
2370 PRINT GA:L USING *10X,9A,18X,5A,7X,7A*IK*,*HOURS*,*PERCENT*
2380 N=SEG(JJ,10,9)
2390 PRINT GA:L USING *10X,9A,16X,8A,5X,8A*IK*,*DOWNTIME*,*DOWNTIME*
2400 PRINT GA:L

2410 JI=1
2420 JJ=JJ-B
2430 IF J2<J THEN 2450

2440 J2=J
2450 FOR I=JI TO J2
2460 P=100*(I)/J

2470 S1=S(I)
2480 IF N=5 THEN 2520
2490 IF S1<>9 THEN 2540
2500 S1=26

2510 GO TO 2540
2520 K=SEG(N),N(S1,1),N(S1,2)
2530 GO TO 2550

2540 K=SEG(M),M(S1,1),M(S1,2)
2550 R1=LEN(K)
2560 FOR I1=R1+1 TO 20
2570 K1=GA(K,I1)

2580 NEXT I1
2590 PRINT GA:L USING *6X,2D,2X,21A,3X,5D,2D,8X,3D*!S(I),R,H(I),P
2600 NEXT I

2610 IF J2=J THEN 2660
2620 PRINT GA:L
2630 PRINT GA:L USING *10X,20A,4X,5D,2D*!TOTAL HOURS DOWNTIME*,T
2640 IF A=41 THEN 2770

2650 GO TO 2840
2660 IF A=41 THEN 2710
2670 PRINT GA:L,26:3
2680 MOVE 0,0

2690 PRINT
2700 PRINT GA:L,26:0
2710 JJ=J+1
2720 JJ=J+J3
2730 PRINT GA:L

2740 GO TO 2430
2750 REM
2760 REM ***** END OF REPORT *****

2770 PRINT *DO YOU WANT A HARD COPY? (ENTER Y OR N) *
2780 END OF AS
2790 IF A=41 THEN 2800
2800 MOVE 0,100

```

2010 A=32
2020 J=50
2030 GO TO 2270
+++
2040 PRINT "A:26:3
2050 MOVE 0,0
2060 PRINT "A:26:0
+++
2080 PRINT "DO YOU WANT TO PRINT ANOTHER REPORT? (ENTER Y OR N) *
2090 INPUT A$
+++
2100 IF A$="Y" THEN 2970
2110 FIND CUI1
2120 INPUT CUI1:Z1
2130 PRINT "SAME BEGINNING AND ENDING DATES? (ENTER Y OR N) *
2140 INPUT A$
2150 IF A$="N" THEN 590
2160 GO TO 910
2170 PRINT "JOURNAL END OF PROGRAM"
2180 GO TO 3000
+++
2190 PRINT "J*** ABNORMAL END OF PROGRAM ***"
+++
3010 REM.
3020 REM ***** M ARRAY (26,2) *****
3030 DATA 1,18,20,11,32,13,45,20,66,8,75,13,89,5,94,15,110,4,115,20
3040 DATA 142,9,151,12,164,13,178,13,192,12,204,15,220,6,227,11
3050 DATA 239,20,261,9,271,12,284,8,293,16,309,17,327,17,352,14
3060 REM ***** M$ ARRAY (370) - SUBSYSTEMS *****
3070 REM ***** N ARRAY (99,2) *****
3080 DATA "POWER DISTRIBUTION-SERVICE AIR-POTABLE WATER"
3090 DATA "STEAM AND CONDENSATE-FUEL OIL-PROCESS WASTE-DOORS"
3100 DATA "FIRE PROTECTION-HVAC-ELECTROSTATIC PRECIP-----SCRUBBERS"
3110 DATA "CONTROL ROOM-DEACT FURNACE-DECON FURNACE-AFTER BURNER"
3120 DATA "EMERGENCY POWER-QUENCH-SFRAY DRYER-RECEIVING & HANDLING--"
3130 DATA "GLOVE BOX-DECON MODULE-BOX FEED-RESIDUE HANDLING"
3140 DATA "SET MOVEMENT(TSY)-ENVIRO MONITORING-----ADMINISTRATIVE"
3150 REM ***** N ARRAY (99,2) *****
3160 DATA 1,15,17,5,23,4,28,5,34,4,39,4,44,5,50,5,55,8,64,7,72,8
3170 DATA 81,14,96,5,102,7,109,4,114,15,130,6,137,6,144,6,151,10
3180 DATA 161,12,174,6,181,10,192,19,211,19,231,19,251,5,257,4
3190 DATA 261,11,273,10,284,8,293,4,298,6,305,8,313,11,325,12,338,4
3200 DATA 343,5,349,4,354,6,361,4,365,4,370,5,376,5,382,10,393,14
3210 DATA 408,6,415,6,421,5,427,6,434,4,439,4,444,6,451,4,456,4
3220 DATA 461,6,468,6,474,8,483,20,507,7,515,6,522,3
3230 DATA 525,8,524,6,541,9,551,6,558,10,569,5,574,20,596,13
3240 DATA 610,10,621,8,629,15,645,1,647,5,653,8,662,14,677,5
3250 DATA 682,7,690,7,698,20,719,8,728,3,731,5,737,5,743,7,751,8,760,6
3260 DATA 767,4,772,6,779,5,784,4,789,5,795,3,799,7,807,9,817,6
3270 DATA 824,4,829,5
3280 REM ***** N$ ARRAY (840) *****
3290 REM *****
3300 REM *****
3310 DATA "ACTUATOR,FEELER-MOTOR-PUMP-VALVE-BELT-SEAL-SHAFT-CHAIN"
3320 DATA "SF-KOCKET-BEARING-CYLINDER-VALVE,SOLENOID-RELAY-CONTACT"

```

3330 DATA *FUSE-CIRCUIT BREAKER-WIRING-SWITCH-CAMERA-CONTROLLER*
3340 DATA *FAN AND TILT-DAMPER-POSITIONER-AIR HANDLING UNIT 1*
3350 DATA *AIR HANDLING UNIT 2-AIR HANDLING UNIT 3-TIMER-HOSE*
3360 DATA *TRANSMITTER-SPRAY TREE-CONVEYOR-GEAR-WINDOW-HOT SHOE*
3370 DATA *INSIDE CART-OUTSIDE CART-DOOR-GAUGE-TANK-HOPPER-TRAY*
3380 DATA *RACK-HOIST-CABLE-BLOCK/HOOK-LIFTING DEVICE-PALLET-BURNER*
3390 DATA *PILOT-FIREYE-SUMP-PIPE-BOILER-COIL-TRAP-HEATER-FILTER*
3400 DATA *STRAINER-THERMOSTAT/THERMOCL---LINKAGE-BLOWER-FAN*
3410 DATA *OVERPACK-GLOVES *PUMP/INTER-WRENCH-COMPRESSOR-DRYER*
3420 DATA *HEAT EXCHANGE/COOLER--CONTROL PANEL-TV MONITOR-CART TDP*
3430 DATA *CIRCUIT BREAKER- -LIGHT-MIRAN 80-BUBBLER/FILTER-TABLE*
3440 DATA *FIG SUT-VOX SET-CONNECTOR/ATTACHMENT-LINK/TAB-PIN*
3450 DATA *ALARM-STAGE-STATION-VIBRATOR-KAPPER-GRID-SAMPLE-WHEEL*
3460 DATA *BAND-STACK-SAI-BATTERY-REGULATOR-BRIDGE-IRIS-OTHER*

3470 REM

3480 REM ***** ** * US ARRAY (36) ***** ** *****

3490 DATA *JANFEI/MKAPR/MAY/JUN/JUL/AUG/SEP/OCT/NOV/DEC**

3500 REM

3510 REM ***** ** ***** END OF PROGRAM ***** ** *****

APPENDIX C

APPENDIX C OPERATION OF THE STATISTICAL PROGRAMS

The ID Sets statistical programs are designed to analyze plant air monitoring data, lab quality control data and check the calibration of the lab analyst's machines. There is a separate statistical program and corresponding history tape for each type of agent destroyed. These programs were written for the Tektronix 4051 and 4052 micro-computers along with the 4924 external tape drive, the 4631 hard copy unit and the 4662 plotter. Refer to the glossary of Tektronix hardware terms found in Appendix A.

The computer operator starts by inserting the program tape into the internal tape drive of the 4051 or 4052 computer, and presses the "AUTO LOAD" key. This automatically loads the first program file on the statistics program tape into memory and then executes the program. The directory in Figure C-1 appears on the screen and the computer awaits the operator's choice. Option one creates a new IDS history tape. This tape, when new, contains only information concerning quality control boundaries. After it has been used in conjunction with the statistics program, it will hold the previous day's quality control results (a month at a time) along with the daily lab data. After the tape has been created the program returns to the directory in Figure C-1.

Option two is a program that is used to refresh the history tape and its files between each daily run. It removes the files that contain the daily lab data and leaves intact the files containing the previous day's quality control results. After this option is entered, the instructions in Figure C-2 are displayed. The "HOME PAGE" key is located on the upper left-hand corner of the keyboard. When completed, the program returns to the directory shown in Figure C-1.

When option three is entered the computer screen clears and the message in Figure C-3 appears.

After the user, user-ID and date have been entered the operator must follow the instructions in Figure C-4.

After a brief period of time the message in Figure C-5 appears. The statistics program tape must be removed before this can be done.

The programs for some of the other agents destroyed request additional information concerning lab analyst's initials and the machine number used for the analysis. At this time the daily data tape is read and the data is stored on the IDS history tape. After this process is completed a small flashing "F" is seen in the upper left-hand corner of the CRT screen. This indicates that the "HOME PAGE" key must be pressed. The screen will flash and the actual data (plant air monitoring results) for the day are displayed. After a hard copy is made the "HOME PAGE" key must be pressed to continue. The message in Figure C-6 follows.

Next the statistics program produces a calibration graph based on some of the daily data from the history tape. After a hard copy is produced the "HOME PAGE" key is pressed. The message in Figure C-7 is displayed. At this time the computer operator has a chance to reproduce the same graph but on a larger scale than the hard copy

unit. If the answer is no, the program then calculates the accuracy and precision values for the day. The accuracy and precision results for the day are used to update the monthly history file. From this history file a graph of the month's accuracy values is displayed on the screen. A hard copy is made and the "HOME PAGE" key is pressed to continue. The operator has the choice presented in Figure C-7. Next the graph which shows lab precision values for the month is drawn on the screen. A hard copy is made, the "HOME PAGE" key is pressed and the message in Figure C-7 is again displayed. For some of the agents demilitarized, this is the last graph. For others two more graphs similar to the lab accuracy and precision graphs are produced. The only difference is that they show plant quality control instead of lab quality control. The same procedures are followed for these graphs. When the statistics program is completed the directory in Figure C-1 is displayed and option 4 is chosen.

STATISTICS PROGRAM DIRECTORY

OPTION

FUNCTION

1	CREATE A NEW HISTORY TAPE
2	REFRESH HISTORY TAPE
3	RUN STATISTICS PROGRAMS
4	STOP

WHICH OPTION> (1,2,3,4)

FIGURE C-1

BEGIN PROGRAM TO UPDATE HISTORY TAPE
INSERT HISTORY TAPE INTO INTERNAL TAPE DRIVE
MAKE SURE WRITE PROTECT IS NOT ON SAFE
PRESS HOME PAGE TO START PROGRAM

FIGURE C-2

ID SETS MANAGEMENT

Programmed by
Computer Sciences Corporation
Data Systems Laboratory
NATIONAL SPACE TECHNOLOGY LABORATORY
NSTL Station, Mississippi 39529

Version 7.8
FEBPUARY 18, 1981

PRESS 'RETURN' TO CONTINUE
ENTER USER-ID

ENTER DATE MM/DD/YY

FIGURE C-3

C-3

INSERT IDS HISTORY TAPE IN EXTERNAL TAPE UNIT # 4924

*** ENTER EXTERNAL LABEL ON HISTORY TAPE

FIGURE C-4

INSERT RMA TAPE IN 4051

ENTER THE LABEL ON THE RMA DATA TAPE

FIGURE C-5

INSERT PROGRAM TAPE IN 4051
PRESS 'HOME PAGE' TO CONTINUE

FIGURE C-6

DO YOU WANT A 4662 PLOT? (Y/N)

FIGURE C-7

APPENDIX D

APPENDIX D

LISTING OF THE STATISTICAL PROGRAMS

L

FILE # 1

```

+++++ 100 TRIT
110 U3-32
120 PRINT Q03,26:0
130 PAGE
140 PRINT *JJ*
150 PAI *
160 FSI *
170 PRINT *JJOPTION
180 IFPRINT *
190 PRINT *J 1 CREATE A NEW HISTORY TAPE*
200 PRINT * 2 CANCEL HISTORY TAPE*
210 PRINT * 3 RUN STATISTICS PROGRAMS*
220 PRINT * 4 STOP*
230 PRINT *JJJJ WHICH OPTION> (1,2,3,4)*
240 INPUT A1
250 IF A1=1 THEN 240
260 A=VAL(A1)
270 IF A=1 OR A=4 THEN 160
280 A=13:G0
290 G0 TO # OF 300,400,500,600
300 PRINT 0
310 PRINT 5
320 END
+++++ 400 F00 0
410 F00 7
420 END
+++++ 500 F100 C
510 F100 5
520 END
+++++ 600 F20
610 F20

```

```

100 INIT
110 REM MAKE SURE SCREEN DOES NOT AUTOMATICALLY PAGE WHEN FULL
120 PRINT @32,26:0
130 REM ASSIGN DEVICE NUMBERS: FIND FILE 2 OF HISTORY TAPE: SKIP RECORD
140 U1=33
150 U2=11
160 FIND @U2:0
170 FIND @U2:2
180 INPUT @U2:0:G$
190 DIM Z$(20),A$(20),C$(2),F$(10),E$(72),T$(127),B$(127)
200 DIM M$(6),Y$(30),X$(30),R$(2),A$(6),N$(1),S$(1),W$(7)
210 R$=""
220 DIM X1(32),Y1(32),X2(32),Y2(32),N2(32),G6(32),N0(B),P(34),O7(32)
230 DIM S(8),M(8),H7(8),M9(8),P0(34)
240 DIM T7(40)
250 DATA 12.706,4.307,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.228
260 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
270 DATA 2.074,2.069,2.064,2.06,2.056,2.052,2.049,2.046,2.043,2.04
280 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
290 READ T7
300 E$=""
310 FOR I=1 TO 71
320 E$=E$+T7
330 NEXT I
340 REM*
350 REM* INITIALIZE PLOTFILES
360 REM*
370 F$="PLOTFILES:"
380 REM CHECK HISTORY TAPE HEADER AND GET N9
390 GOSUB 60000
400 FIND @U2:M9
410 PRINT @U2:F$
420 PRINT @U2:Z:
430 REM* INITIALIZE PLOT FILES
440 F$="PLOTSRC:"
450 GOSUB 60000
460 FIND @U2:M9
470 PRINT @U2:F$
480 PRINT @U2:Z:
490 PRINT "*****"
500 PRINT "INSERT KMA TAPE IN 4051."
510 PRINT "CHECKER THE LABEL ON THE KMA DATA TAPE."
520 DR 24 Z$
530 FIND @U1:1
540 A=IY(70)
550 IF A=1 THEN 500
560 INPUT @U1:Y$
570 IF LEN(Y$) < 13 THEN 410

```

```

580 DIM Z$(13),Y$(13)
590 IF Y$=Z$ THEN 640
600 PRINT "LABEL ON TAPE IS "Y$
610 PRINT "WRONG RMA TAPE OR WRONG LABEL SGGGGGGGGGGGGGGGGGGGGGGGG"
620 PAGE
630 GO TO 500
640 INPUT QUI1$
650 M$=SEG$(M$,18,2)
660 PRINT "DATA IS BEING PROCESSED"
670 GOSUB 1000
675 PRINT "OKJ"
680 PRINT "GGGGGGG"
690 PRINT "INSERT PROGRAM TAPE IN 4051"
700 PRINT "OKJ"
710 FIND QUI1$
720 OLD

```

```

---1--- 1000 DIM M$(2)

```

```

1010 REM M$ is used to hold name of agent
1020 M$="L"
1030 PRINT "This Program Processes agent 'M$'. ONLY"
1040 PRINT "Enter serial number (n)"
1050 INPUT N$
1060 PRINT "Enter the analyst's initials (aaa)"
1070 INPUT V$
1080 PRINT "TRANSFORM OPTIONS FOR CALIBRATION"

```

```

1082 REM DEFAULT TRANSFORM FOR AS

```

```

1084 00=2
1086 GO TO 1152
1090 PRINT " 1 X = ln(X)"
1100 PRINT " 2 Y = ln(Y)"
1110 PRINT " 3 no transform"
1120 PRINT "J ENTER OPTION (1,2,3)"
1130 INPUT O$
1140 IF O$<1 OR O$>3 THEN 1080

```

```

1150 REM Process Calibration Data

```

```

1152 P=0
1154 P(3)=0
1155 GO TO 00 OF 1156,1158,1170
1156 P(32)=1
1157 GO TO 1170
1158 P(31)=2

```

```

1160 REM .PIP header record

```

```

1170 FIND QUI1$
1180 INPUT QUI1$

```

```

1190 REM use N to count records

```

```

1200 N=0

```

```

1210 REM check for end of file

```

```

+++1111 1220 A=Y*(O)
1230 IF A<2 THEN 1370
1240 INPUT B(1):B#
1250 GOSUB 5000
1260 IF A<1 THEN 1220
1265 I4=B#
1270 X4=SEG(B#,27,7)
1280 C4=SEG(X#,1,2)
1290 IF C4="NA" THEN 1220
1300 N=I4+N
1310 REM Load calibration data into X2 and Y2
1320 X2(N)=VAL(X#)
1330 X4=SEG(B#,48,7)
1340 Y2(N)=VAL(X#)
1350 GO TO 1220
1360 REM now load transformed data into X1,Y1
1370 B#=I4
1380 GO TO 00 OF 1400,1500,1600
1390 REM X=ln(X) transform
+++1111 1400 FOR I=1 TO N
1410 Y1(I)=Y2(I)+P(32)
1420 X1(I)=LOG(X2(I)+P(32))
1470 NEXT I
1480 GO TO 1660
1490 REM Y=ln(Y)
+++1111 1500 FOR I=1 TO N
1510 X1(I)=X2(I)+P(32)
1520 Y1(I)=LOG(-Y2(I)+P(31))
1570 NEXT I
1580 GO TO 1660
1590 REM no transformation
+++1111 1600 FOR I=1 TO N
1610 X1(I)=X2(I)+P(32)
1620 Y1(I)=Y2(I)+P(31)
1630 NEXT I
1640 REM end of load routine
1650 REM Process Calibration Data
+++1111 1660 PRINT "Processing Calibration Data for *I#*
1670 GOSUB 7000
1680 GOSUB 25000
1690 GOSUB 25000
1700 F(13)=CB
1710 F(14)=O1
1720 M1=0
1730 M2=0
1740 M3=0
1750 M4=0

```

```

1780 M5=0
1790 P(8)=N
1800 FOR I=1 TO N
1810 M1=M1*XI(I)
1820 M2=M2*Y1(I)
1830 M3=M3*XI(I)*XI(I)
1840 M4=M4*Y1(I)*Y1(I)
1850 M5=M5*XI(I)*Y1(I)
1860 NEXT I
1870 C=F(8)*M1-M1*M1
1880 P(10)=P(8)/C
1890 P(11)=M1/C
1900 P(12)=M3/C
1910 P(2)=(P(8)*M5-M1*M2)/(P(8)*M3-M1*M1)
1920 P(1)=(M2-P(2)*M1)/P(8)
1930 P(4)=P(1)
1940 P(5)=P(2)
1950 H=0
1960 FOR I=1 TO P(8)
1970 H=H+(Y1(I)-P(1)-P(2)*XI(I))^2
1980 NEXT I
1990 P(23)=1-H/(M4-M2*M2/P(8))
2010 P(6)=DZ/(P(8)-2)
2020 P(9)=1
2030 P(29)=1
2040 P(27)=P(6)
2050 L$="Calibration of Instrument Response *IV$
2060 L$=L$& "
2070 L$=L$& "
2080 DIM Y$(30)
2090 X$="CONCENTRATION"
2100 Y$="INSTRUMENT RESPONSE"
2110 B$=SEG(H$,14,2)
2120 B$=B$&"/"
2130 M$=SEG(H$,12,2)
2140 B$=B$&M$
2150 B$=B$&"/"
2160 M$=SEG(H$,12,2)
2170 B$=B$&M$
2180 GOSUB 61000
2190 P(3)=P
2192 REM GET PARAMETERS FOR Y vs F
2194 F$="HR*8M$
2196 GOSUB 60000
2198 I$="UT EUZ:B$;P
2204 P(31)=0
2206 P(32)=0
2208 P(33)=3
2210 REM Process OL & OP data
2220 GOSUB 16500
2230 O1="OL"
2240 C=0.288
2245 O2=0.945
2250 GOSUB 7000
2260 GOSUB 3500
2270 GOSUB 3750

```



```

2275 Q*='OP'
2280 C=0.200
2295 07=0.93
2290 GOSUB 7000
2300 GOSUB 3500
2310 GOSUB 3750

2420 REM Input Actual Data
2430 N=0
2440 FIND CUI:1
2450 INPUT QUI:1$
++3+++
2455 A=1/(C)
2470 IF A<2 THEN 2460
2480 INPUT QUI:1$
2490 GOSUB 5000
2400 IF A<1 THEN 2360
2405 I+=I$
2410 Y+=SEG(H$)+118.2)
2420 IF Y<*.FL THEN 2360
2430 N=1+1
2440 GOSUB 10000
2450 GO TO 2360
+++++
2460 B+=1$
2470 RETURN

```

2997 REM Determine Groups

```

---2---
3000 K=0
3010 R2=0
++2+++
3020 FOR J1=1 TO N
3030 IF N2(J1)=0 THEN 3180
3040 NEXT J1
+++++
3050 R2=0
3060 FOR J=1 TO N
3070 IF R2(J)=-1 THEN 3090
3080 R2=N7+1
+++++
3090 NEXT J

```

3100 REM Determine number in each group

```

3110 N0=0
3120 IF N=0 THEN 3170
3130 FOR J=1 TO N
3140 IF N2(J)=-1 THEN 3160
3150 N0(N2(J))=1+N0(N2(J))
3160 NEXT J
+++++
3170 RETURN
+++++
3180 IF J1<N THEN 3210
3190 R2(N)=-1
3200 GO TO 3050
+++++
3210 N=N+1
3220 N2(J1)=N
3230 J2=1
3240 J3=Y1(J1)
3250 J4=J3+J3
3260 FOR J=J1+1 TO N
3270 IF N2(J)<>0 OR X1(J)<>X1(J1) THEN 3410

```

```
3200 N2(J)=K
3290 J2=1+J2
3300 J3=J3+Y1(J)
3400 J4=J4+Y1(J)*Y1(J)
+++++
3410 NEXT J
3420 J5=J4-J3*J3/J2
3430 IF J2<1 AND J5<>0 THEN 3020
3440 FOR J=1 TO N
3450 IF H2(J)OK THEN 3470
3460 N2(J)=1
3470 NEXT J
+++++
3480 N=N-1
3490 GO TO 3020
3498 REM OC
3499 REH X1(N2(I)) P(25)*P(26)
```

```
---2---
3500 S1=0
3510 S2=0
3520 J=0
3530 IF N=0 THEN 3580
3540 P(25)=0
3550 P(26)=0
3560 P(28)=0
3570 GO TO 3660
+++++
3580 FOR I=1 TO N
3590 J=1+J
```

```
3593 REM ADJUSTMENT FOR CALCULATED RECOVERY
3595 X1(I)=X1(I)/O7
3600 S1=S1+X1(I)
3610 S2=S2+X1(I)*X1(I)
3620 REHT I
3630 P(25)=S1/J
3640 P(28)=J
3650 P(26)=SOR(S2/J-P(25))*P(25)
+++++
3660 RETURN
```

```
3749 REM update FLOT50C
```

```
---2---
3750 F4=FLOT50C*
3760 GOSUB 6000
3770 INPUT #02,6:A
3780 IF A<2 THEN 3810
3790 INPUT #02,E4
3800 GO TO 3770
3810 E4=0.405
3820 F4=E4*.298*
3830 PRINT #02,E4
3840 PRINT #02,E4
3850 PRINT #02,E4
3860 PRINT #02,E4*P(25)+P(26)+P(28)
3870 PRINT #02,E4
3880 RETURN
```

4999 REM check for accountabl record

5000 A=1
5010 X\$=SEG(R\$,6,1)
5020 REM see if it is data or comment record
5030 IF X\$<>'1' AND X\$<>'3' THEN 5130
5040 X\$=SEG(R\$,18,2)
5050 REM check agent code
5060 IF X\$<>M\$ THEN 5130
5070 X\$=SEG(R\$,20,1)
5080 REM check serial number
5090 IF X\$<>N\$ THEN 5130
5100 X\$=SEG(R\$,87,3)

5110 REM check analyst's initials

5120 IF X\$=V\$ THEN 5140
5130 A=0
5140 RETURN

5299 REM GROUP MOVEMENTS

6000 N7=0
6010 H6=0
6020 N7=0
6030 H9=0
6040 N9=0
6050 FOR I=1 TO N
6060 IF N2(I)<1 THEN 6130
6070 N7=N7+1
6090 H6(N2(I))=H6(N2(I))+X1(I)
6100 N7(N2(I))=N7(N2(I))+Y1(I)
6110 M8(N2(I))=M8(N2(I))+X1(I)*X1(I)
6120 M9(N2(I))=M9(N2(I))+Y1(I)*Y1(I)
6130 NEXT I
6140 RETURN

6999 REM Get data for UL & OP

7000 H=0
7010 FIRB QUI:0
7020 FIRB QUI:1
7030 INPUT QUI:1\$
7040 G=TYPE(0)
7050 IF A<>2 THEN 7410
7060 INPUT QUI:1\$
7070 GOSUB 5000
7080 IF A<>1 THEN 7040

```

7090 W$=SEG(B$,118,2)
7110 IF W$>0$ THEN 7040
71 0 REMcheck for control concentration
7130 Y$=SEG(B$,97,7)
7140 IF C=0 THEN 7160
7150 IF VAL(Y$)<>C THEN 7040
7160 Y$=SEG(B$,48,7)
7170 Y=VAL(Y$)
7175 REM Calibrate OC Data
7180 GO TO 00 OF 7260,7190,7290
7190 Y=LOG(-Y+P0(31))
7210 X=(Y-F0(1))/F0(2)-P0(32)
7240 GO TO 7310
7250 REM case 1
7260 X=EXP((Y-F0(1)+P(31))/F0(2))-F0(32)
7270 GO TO 7310
7280 REM case 3 no transform
7290 X=(Y-F0(1)+P(31))/F0(2)-F0(32)
7300 REM end of case statement based on transformation
7310 W$=SEG(B$,62,7)
7315 IF W$=NA THEN 7040
7320 X=X*VAL(W$)
7322 W$=SEG(B$,69,7)
7325 IF W$=NA THEN 7040
7327 X=X*VAL(W$)/10
7330 Y$=SEG(B$,97,7)
7340 Y=VAL(Y$)
7350 N=11H
7360 X1(R)=X
7370 X2(R)=X
7380 Y1(R)=Y
7390 Y2(R)=Y
7400 GO TO 7040
7410 RETURN
9998 REM get actual data from B$
9999 REM Peak Heights

```

```

10000 Y1=SEG(B$,48,7)
10010 Y0=VAL(Y$)
10020 GO TO 00 OF 10120,10040,10150
10030 REM case 2 Y=ln(Y)
10040 Y=LOG(-Y0+P0(31))
10050 X0=(Y0-F0(1))/F0(2)-F0(32)
10100 GO TO 10170

```

```

10110 REM case 1 X=ln(X)
+++++ 10120 X0=EXP((Y0/P0(31))-P0(1))/P0(2))-P0(32)
10130 GO TO 10170
10140 REM case 3 no transform
+++++ 10150 X0=(Y0/P0(31)-P0(1))/P0(2))-P0(32)
10160 REM end of case statement on 00
+++++ 10170 Y0=X0
10172 X0=(X0-F(1))/P(2)
10173 REM ADJUSTMENT FOR CALCULATED RECOVERY
10175 X0=X0/0.945
10180 GOSUB 15000
10190 X#=SEG(H$,62,7)
10200 U0=VAL(X#)
10210 X#=SEG(U$,69,7)
10220 U0=U0*VAL(X#)
10230 REM Get Time
10240 X#=SEG(H$,126,2)
10250 Y#=SEG(H$,122,2)
10260 X=VAL(X#)
10270 Y=VAL(Y#)
10280 Z=X-Y
10290 X#=SEG(H$,124,2)
10300 Y#=SEG(H$,120,2)
10310 X=VAL(X#)
10320 Y=VAL(Y#)
10330 Z=(X-Y)*604Z
10340 REM Get Airflow
10350 Y#=SEG(H$,90,7)
10360 Y=VAL(Y#)
10370 X0=X0/H0/(Y#Z)
10380 L0=L0*H0/(Y#Z)
10390 U0=U0*H0/(Y#Z)
10400 REM Print out actual Data
10410 T#=B#
10420 IF INT((N-1)/20)*20<N-1 THEN 10630
10430 B#=#
10440 B#REF("Actual Data for ",24,14)
10450 B#REF(H$,40,2)
10460 B#REF("Date:",52,5)
10470 B#REF(H$,58,8)
10480 PRINT "TJ"
10490 PRINT "J":B#
10500 B#=#
10510 B#REF("Asent Concentration",29,19)
10520 PRINT "JJ":B#
10530 B#=#
10540 B#REF("-----",24,29)

```

```
10550 PRINT B$
10560 B1=E1
10570 B1=REF("Sample Location",5,15)
10580 B1=REF("True",25,4)
10590 B1=REF("Lower 95%",32,9)
10600 B1=REF("Upper 95%",44,9)
10605 B1=REF("TIME",59,4)
10510 PRINT B$
```

```
10620 REM Print Data
```

```
+++++
10630 B1=E1
10640 X1=SEG(I$,21,6)
10650 B1=REF(X$,5,6)
10660 X1=SEG(I$,116,2)
10670 B1=REF(X$,15,2)
10680 L1=STR(X0)
10690 GOSUB 58000
10700 IF X0>1.0E-3 THEN 10730
10710 L1=L1$*
```

```
10720 B0=1+X0
+++++
10730 B1=REF(L$,24,00)
10740 IF X0<0.00115 THEN 10822
10750 L1=STR(U0)
10760 GOSUB 58000
10770 U0SUB 14000
10780 B1=REF(L$,34,00)
10790 L1=STR(L0)
10800 GOSUB 58000
10810 G0SUB 14000
10820 B1=REF(L$,46,00)
10830 L1=SEG(I$,120,4)
1083A B1=REF(L$,56,4)
10826 L1=SEG(I$,124,4)
1083B B1=REF(L$,62,4)
10830 PRINT B$
10840 RETURN
```

```
13999 REM check if data is from location 'DR','OR','RA','LA'
```

```
-----
14000 Y1=SEG(I$,116,2)
14010 IF Y1="DR" OR "CR"=Y$ OR Y1="RA" OR Y1="LA" THEN 14030
14020 L1=SEG(E$,1,00)
+++++++
14030 RETURN
```

```
14995 REM Solve Linear Regression in Reverse
14996 REM for Upper and Lower Confidence Limits
14997 REM Y0,X0 L0,U0
14998 REM T-VALUES L=0.025 U=0.975
```

```
-----
15000 X7=X0
15010 U0=0
```

```
15020 REM Transform Y0
```

```
15030 Y0=(Y0+P(31))*F(29)
```

```

15040 Y7=YO
15042 IF P(B)≠42 THEN 15050
15044 T3=3.8416*P(6)
15046 GO TO 15060
+++1+++
15050 T3=17*(F(10)-2)*P(6)
+++1+++
15060 A1=F(2)*P(2)-F(10)*T3
15070 B1=F(2)*Y7-F(11)-F(11)*T3
15080 A9=(X7IP(30))^P(7)
15090 B3=0
15100 A2=A94P(12)
15110 B2=Y7-P(1)
15120 A3=T3*(F(11)^2-P(10)*A2)+P(2)*P(2)*A2+B2*(P(10)*B2-2*P(2)*P(11))
15125 IF A3=0 THEN 15190
15127 IF P(10)≠42 THEN 15134
15130 B3=T7*(F(8)-2)*SQR(A3*P(6))
15132 GO TO 15140
+++1+++
15134 B3=1.96*SQR(A3*P(6))
+++1+++
15140 X7=(B1+B3)/A1
15150 L0=X7-P(32)
15160 X7=(B1-B3)/A1
15170 U0=X7-P(32)
15180 RETURN
+++1+++
15190 PRINT "IMAGINARY ROOTS"
15200 L0=10000
15210 X7=10000
15220 U0=10000
15230 RETURN

```

---1--- 16000 PRINT "Processing Q1 & QF data for 'JHS"

```

16010 C=0
16020 Q4=
16030 GOSUB 7000
16040 IF N=0 THEN 16570
16050 F=0
16060 F(3)=Z
16070 GOSUB 3000
16080 GOSUB 20000
16090 GOSUB 25000
16100 F(13)=CB
16110 F(14)=A1
16120 M1=0
16130 M2=0
16140 M3=0
16150 M4=0
16160 M5=0
16170 F(10)=N
16180 FOR I=1 TO F(8)
16190 M1=M1+X1(I)
16200 M2=M2+Y1(I)
16210 M3=M3+X1(I)*X1(I)
16220 M4=M4+Y1(I)*Y1(I)
16230 M5=M5+X1(I)*Y1(I)
16240 NEXT I
16250 C=P(8)*M3-M1*M1
16260 F(10)=F(8)/C
16270 F(11)=M1/C
16280 F(12)=M3/C
16290 F(2)=(F(8)*M5-M1*M2)/(F(8)*M3-M1*M1)
16300 F(1)=(M2-F(2)*M1)/F(8)

```

```

16310 P(4)=P(1)
16320 P(5)=P(2)
16330 U=0
16340 FOR I=1 TO P(8)
16350 U=U+(Y1(I)-F(1))-F(2)*X1(I))^2
16360 NEXT I
16370 B(23)=1-D/(H4-N2*N2/P(8))
16390 P(6)=B/P(8)-2
16400 P(9)=1
16410 P(29)=1
16420 P(27)=P(6)
16430 L$="Found vs Target *10$
16440 L$=L$+ " "
16450 L$=L$+$
16460 DIM Y$(30)
16470 X$="Found"
16480 Y$="Target"
16490 D$=SEG$(B$,14,2)
16500 B$=B$*"/"
16510 U$=SEG$(H$,12,2)
16520 U$=U$*"/"
16530 H$=H$*"/"
16540 M$=SEG$(H$,16,2)
16550 B$=B$*M$
16560 GOSUB 61000
16570 RETURN

```

```
+++++
```

```

19995 REM
19996 REM Perform BARTLETT'S TEST for homogeneity
19997 REM F(6),P(7),Y2(J),X2(N0(J)),K1C8,M1
19998 REM find variance for each level
19999 REM

```

```

----2---
20000 DIM SIZE THEN 20370
20010 C0=-1
20020 IF N=0 THEN 20370
20030 S3=1
20040 S=0
20050 GOSUB 6000
20060 S=0
20070 FOR J=1 TO N
20080 S(N2(J))=S(N2(J))+Y1(J)-H7(N2(J))/N0(N2(J))^2
20090 NEXT J
20100 NEXT J
20110 FOR J=1 TO K
20120 S(J)=S(J)/N0(J)-1
20130 S(J)=S(J)/N0(J)-1
20140 IF S(J)=0 THEN 20370
20150 NEXT J

```

```
+++++
```

```

20160 REM find pooled variance
20170 A=0
20180 S2=1
20190 FOR J=1 TO K
20200 A=(N0(J)-1)*S(J)/53+A
20210 NEXT J
20220 SA=A/(N7-K)

```


20330 SEM FREQ CORRECTION FACTOR

20331 A=0
20332 FOR J=1 TO N
20333 A=SQRT(ABS(CJ-10)*A
20334 NEXT J
20335 C=1/A*(SUM(CJ))

20336 REM FREQ CHI-SQUARE

20337 A=0
20338 FOR J=1 TO N
20339 A=SQRT(CJ)*LOG(S(CJ)/S3)^(1/4
20340 NEXT J
20341 C=1/(SUM(A)*LOG(S4)-A)/C
20342 IF C=0 THEN 20340

20343 PRINT "BARLETT'S TEST NOT DEFINED FOR DATA SET #1HS

20344
20345 REM K=1
20346 OFF SIZE
20347 RETURN

20348 REM CHI-SQUARE DISTRIBUTION

20349 IF C=0 THEN 20350
20350 REM
20351 A=0
20352 FOR J=1 TO N
20353 A=SQRT(CJ)
20354 NEXT J
20355 IF A=0 THEN 20350
20356 C=1/(SUM(A)*LOG(S4)-A)
20357 A=1/(SUM(A)*LOG(S4)-A)
20358 RETURN

20359 IF A=100 THEN 20360

20360 A1=1
20361 A2=1
20362 B=1
20363 IF U=1 THEN 20360
20364 B=0
20365 FOR I=1 TO A
20366 A1=1
20367 A2=1
20368 B=1
20369 IF A=100 THEN 20360

20370 IF A=100 THEN 20370
20371 A1=1
20372 A2=1
20373 B=1
20374 IF A=100 THEN 20370
20375 A1=1
20376 A2=1
20377 B=1
20378 IF A=100 THEN 20370
20379 A1=1
20380 A2=1
20381 B=1
20382 IF A=100 THEN 20370

```

25300 AI-C9*EXP(F2-A1)
25310 RETURN
25320 BI-1/A
25330 AI-1/U
25340 C2*1/A
25350 A2-C9*AI*10*82
25360 B2-C9*BI*10*82
25370 AI-C9*A2/A2-(A1)808A1
25380 BI-C9*B2/B2-(A1)808B1
25390 I-1/I
25400 IF A2/(B2-A1/B1)>1.0E-8 THEN 25340
25410 C9-B1/A1
25420 X-A1
25430 GUSUB 25470
25440 AI-A*LOG(U)-U-A1
25450 AI-1-C9*EXP(A1)
25460 RETURN

```

```

-----
25470 IF X.10 THEN 25500
25480 GOSUB 25600
25490 RETURN
25500 A2=10-INT(X)
25510 BI=1
25520 FOR I=0 TO A2-1
25530 BI-BI*(X+1)
25540 NEXT I
25550 X=X/A2
25560 GOSUB 25600
25570 X=X/2
25580 AI-A1-LOG(B1)
25590 RETURN

```

```

-----
25600 AI-(X-0.5)*(LOG(X)-X+0.5+LOG(2*PI))
25610 AI-A1/(1+X)-1/(3+X*X*X)+1/(12+X*X*X*X*X)
25620 RETURN
25630 AI-0.5
25640 BI-0.1/3-A-0.02/A
25650 X-A1/U
25660 C9=0
25670 IF X=0 OR X=1 THEN 25690
25680 C9=(1-X*X)*LOG(X)/(1-X)*8(1-X)
25690 C9-BI*508(1+C9)/U
25700 IF A1(C9) THEN 25780
25710 I=1/(1+0.2316419*A1S(C9))
25720 AI-1*(0.3197131*BI-0.354563782+1.78147793781*I)
25730 AI-A1*BI*BI*BI-1.821255978+1.3302744298*I
25740 AI-508(1/(2+I))*C9(-C9+C9/2)8A1
25750 IF U=0 THEN 25770
25760 AI-1/A1
25770 RETURN
25780 AI=0
25790 GO TO 25750

```

```

25800 GUN ROUTINE TO PRINT NUMBERS TO 3 DECIMAL PLACES
25810 GUN USED IN CONTAINING NUMBER IN CHARACTER FORM THAT
25820 GUN IS TO BE PRINTED OUT TO 3 DECIMAL PLACES
25830 GUN RESULTANT STRING IS PASSED BACK IN L4
25840 GUN FORMAT OF RESULT SD.000 WITH LENGTH OF 6

```

---3---
58000 N*-SEG(L*,2,1)
58010 IF N*- THEN 58120
58020 00=POS(L*,E*,1)
58030 IF 00=0 THEN 58070
58040 L*-SEG(L*,1,6)
58050 00=5
58060 RETURN

||||| 58070 REM NUMBER IS IN SCIENTIFIC NOTATION

58080 N*-SEG(L*,001,4)
58090 00=VAL(N*)
58100 IF 00=0 THEN 58260
58110 IF 00=-4 THEN 58150
||||| 58120 L*=-0.000*
58130 00=6
58140 RETURN
||||| 58150 N*-SEG(L*,1,1)
58160 N*-N*0.
58170 00 TO -00 OF 58200,58190,58180
||||| 58180 N*-N*0.
||||| 58190 N*-N*0.
||||| 58200 00=6-LEN(N*)
58210 L*-SEG(L*,2,0011)
58220 L*-N*E*(*,2,1)
58230 L*-N*E*
58240 00=6
58250 RETURN

||||| 58260 REM SECTION TO PRINT OUT >>>

58270 L*-SEG(L*,1,5)
58280 L*-L*E*
58290 L*-L*E*
58300 00=LEN(L*)
58310 RETURN

58320 REM FIRD / OFEN
58330 REM F* M9

---5--- 60000 FIRD 00210
60010 FIRD 00211
60020 13=OF 0021E*
60030 J*-SEG(L*,1,3)
60040 IF J*=-1E* THEN 60300
60050 INPUT 002161A
60060 IF N*1 THEN 60140
60070 13=OF 0021E*
60080 DIM J*(10)
60090 J*=SEG(L*,5,10)
60100 J*=J*(J*)
60110 DIM J*(F)
60120 IF J*-J* THEN 60170
60130 00 TO 60050
||||| 60140 PRINT "ENOK *** FILE *F* NOT FOUND"

```

60150 PRINT Q2;2;
60170 END
60170 JS=SEG(B$,1,3)
60180 NY=VAL(JS)
60190 FIND Q2;0
60200 FIND Q2;N9
60210 INPUT Q2;B$
60230 JS=SEG(B$,1,F)
60240 IF JS F$ THEN 60260
60250 RETURN
60255 PRINT *File does not match internal name*
60270 PRINT *Index name= 'I$'; *Internal name= 'IJS'
60280 PRINT Q2;2;
60290 END
60300 PRINT *Tape in external drive is not a IDS Data Tape*
60310 GO TO 60280
60978 REM Define and Write Plot File
60999 REM M$,L$,X$,Y$,D$,F$,F6

```

```

61000 DIM F$(3)
61010 F$=000*
61020 FIND Q2;0
61030 FIND Q2;1
61040 INPUT Q2;A$
61050 IF A$=2 THEN 61120
61060 INPUT Q2;H$
61070 A$=SEG(H$,4,6)
61080 O$=F$+A$
61090 IF O$=0$ THEN 61040
61100 F$=SEG(O$,10,2)
61110 GO TO 61040
61120 L$=VAL(F$)
61130 L3=10+L$
61140 F$=S$(L3)
61150 F$=F$+H$
61170 F$=F$+F$
61170 REM update index

```

```

61180 A$=SEG(O$,1,3)
61190 T3=VAL(A$)
61200 T3=10+T3
61210 T$= .
61220 PRINT Q2; USING 61230;I3,F$,T$,T$,I$
61230 IMGL 30;10A;1A;20A
61240 PRINT Q2;2;
61250 FIND Q2;0
61250 FIND Q2;13
61260 MCR Q2;1;2500
61270 FIND Q2;0
61280 FIND Q2;13
61290 MCR Q2;1;2500
61300 PRINT Q2; USING 61310;F$,D$,U$
61310 IMGR 10A;8A;8A
61320 PRINT Q2;L$
61330 PRINT Q2;X$
61340 PRINT Q2;Y$
61350 PRINT Q2;H$

```

```
61360 PRINT #U2104
61370 PRINT #U211F
61380 DIM X2(F(8)),Y2(F(8))
61390 PRINT #U21K2,Y2
61400 PRINT #U2121
61405 BELIE X2,Y2
61407 DIM X2(J2),Y2(J2)
```

```
61410 REM update #lotfiles
```

```
61420 F1="PLUFILES"
```

```
61430 GOSUB 60000
```

```
61440 INPUT #U216:A
```

```
61450 IF A=2 THEN 61480
```

```
61460 INPUT #U2114
```

```
61470 GO TO 61440
```

```
61480 PRINT #U2113
```

```
61490 PRINT #U2121
```

```
61500 RETURN
```

```
+++++
```

```
+++++
```

```

100 INIT
110 DATA 33,11,32
120 READ U1,U2,U3
130 DIM N$(8),U$(8)
140 DIM Y(40)
150 DATA 12.706,4.303,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.228
160 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
170 DATA 2.074,2.069,2.064,2.06,2.056,2.052,2.049,2.046,2.043,2.04
180 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
190 READ I7
200 FIND U2:0
210 FIND U2:2
220 INPUT Q2:6:A
230 IF A=1 THEN 2050
240 INPUT Q2:0:U$,U$
250 DIM N1(20),I1(20),T$(40),X$(30),Y$(30),P(34),L$(60),A$(3)
260 PRINT Q2,174
270 REM*
280 REM* SET LIST OF FILES TO BE PLOTTED
290 REM*
300 F$="PLOTFILES"
310 GOSUB 3620
320 I=0
330 I=111
340 INPUT Q2:6:A
350 IF I=1 AND A=1 THEN 2060
360 INPUT Q2:N1(I)
370 INPUT Q2:S11(2)
380 IF I(2)=2 THEN 330
390 I(1)=I
400 REM*
410 REM* START FLOT LOOP
420 REM*
430 FOR I9=1 TO Y1(1)
440 FIND Q2:0
450 FIND Q2:N1(I9)
460 INPUT Q2:Z$
470 INPUT Q2:IL$
480 INPUT Q2:IX$
490 INPUT Q2:Y$
500 INPUT Q2:IO$
510 INPUT Q2:HO$
520 INPUT Q2:IF
530 IF I9=1 THEN 530
535 OO=P(2)
540 IF P(8)=0 THEN 2040
550 PRINT X,Y
560 DIM X(F(8)),Y(F(8))
570 N=F(8)
580 INPUT Q2:IX,Y
590 REM*
600 REM* SET DEFAULT PLOT PARAMETER

```

600 REM T(4)=MIN X VALUE OF GRAPH T(5)=LENGTH OF X AXIS
610 REM T(14)=MIN Y VALUE T(15)=LENGTH OF Y AXIS

620 VIEWPORT 0,150,0,100
630 WINDOW 0,150,0,100
640 T=0
650 T(1)=P(8)
660 T(2)=2
670 T(3)=4
680 T(4)=10
690 T(5)=70
700 T(8)=1
710 T(9)=1
720 T(14)=25
730 T(15)=70
740 T(18)=1
750 T(19)=1

760 KEY LABEL PLOT
770 KEY TITLE GRAPH

780 X0=T(5)/2+T(4)-LEN(L\$)*7/8
790 Y0=97
800 PAGE
810 MOVE CUS: X0,Y0
820 PRINT CUS:L\$

830 KEY RUMF X AXIS TITLE

840 X0=T(5)/2+T(4)-LEN(X\$)*7/8
850 Y0=T(14)-10
860 MOVE CUS: X0,Y0
870 PRINT CUS:X\$

880 KEY RUMF Y AXIS LABEL

890 X0=3
900 Y0=T(15)/2+T(14)+LEN(Y\$)*10/7
910 MOVE CUS: X0,Y0
920 PRINT CUS:Y\$
930 FOR Z=1 TO LEN(Y\$)
940 Z=SUB(Y,Z,1)
950 PRINT CUS:Z\$
960 NEXT Z

970 KEY DISPLAY INFO ON RIGHT SIDE OF PLOT

980 X0=T(4)+T(5)+5
990 Y0=T(14)+T(15)-2
1000 MOVE CUS: X0,Y0
1010 PRINT CUS: "ABERT: "A\$
1020 Y0=Y0-5
1030 MOVE CUS: X0,Y0
1040 PRINT CUS: "DATE: "D\$
1050 Y0=Y0-5
1060 MOVE CUS: X0,Y0
1070 PRINT CUS: "STATISTICS"
1080 MOVE CUS: X0,Y0-0.5
1090 PRINT CUS: "-----"
1100 Y0=Y0-4

```

1110 19=2
1120 IMAGE FA,20,30,FA,S
1130 YO=YO-3
1140 MOVE @U3;X0,Y0
1150 PRINT @U3;BARTLETTIS;
1160 YO=YO-3
1170 MOVE @U3;X0+19,Y0
1180 PRINT @U3; USING 1120;P(14);
1190 IF F(20)=0 THEN 1210
1200 PRINT @U3; USING 1120;P(20);
1210 YO=YO-3
1220 IMAGE FA,20,30
1230 MOVE @U3;X0,Y0
1240 PRINT @U3;R-SQUARED;
1250 YO=YO-3
1260 MOVE @U3;X0+19,Y0
1270 PRINT @U3; USING 1220;P(23);
1280 IMAGE FA,3E
1290 YO=YO-3
1300 MOVE @U3;X0,Y0
1310 PRINT @U3;MSE;
1320 YO=YO-3
1330 MOVE @U3;X0+19,Y0
1340 PRINT @U3; USING 1280;P(27);
1350 YO=YO-6
1360 MOVE @U3;X0,Y0
1370 PRINT @U3;PARAMETERS;
1380 MOVE @U3;X0,Y0-0.5
1390 PRINT @U3;
1400 YO=YO-4
1410 IMAGE FA,30,20,FA,20,30,FA,S
1420 MOVE @U3;X0,Y0
1430 GO TO F(3) OF 1480,1450,1510

1440 REM case 2 Y=ln(Y)
1450 PRINT @U3;ln(Y)=a+bX;
1460 GO TO 1520

1470 REM case 1 X=ln(X)
1480 PRINT @U3;Y=a+b ln(X);
1490 GO TO 1520

1500 REM case 3 no transform
1510 PRINT @U3;Y=a+bX;
1520 YO=YO-3
1530 MOVE @U3;X0+19,Y0
1540 PRINT @U3; USING 1280;a=,P(4);
1550 YO=YO-3
1560 MOVE @U3;X0+19,Y0
1570 PRINT @U3; USING 1280;b=,P(5);
1580 IF F(7)=0 THEN 1720
1590 YO=YO-3
1600 MOVE @U3;X0,Y0
1610 MOVE @U3;X0,Y0
1620 PRINT @U3;5(X) = c(X + e)^d;
1630 YO=YO-3
1640 MOVE @U3;X0+19,Y0

```



```

1650 PRINT #3: USING 1280: "c = ", P(6)
1660 Y0=Y0-3
1670 MOVE #3: X0+19, Y0
1680 PRINT #3: USING 1280: "d = ", P(7)
1690 Y0=Y0-3
1700 MOVE #3: X0+19, Y0
1710 PRINT #3: USING 1280: "e = ", P(30)
1720 Y0=Y0-3
1730 MOVE #3: X0, Y0
1740 IF P(3) < 2 THEN 1740
1750 PRINT #3: "Y' = f - Y"
1760 GO TO 1750
1770 PRINT #3: "Y' = (Y + f) ^ 3"
1780 Y0=Y0-3
1790 MOVE #3: X0, Y0
1800 PRINT #3: "X' = X + h"
1810 Y0=Y0-3
1820 MOVE #3: X0+19, Y0
1830 IF P(3) < 2 THEN 1850
1840 PRINT #3: USING 1280: "f = ", P(29)
1850 Y0=Y0-3
1860 MOVE #3: X0+19, Y0
1870 PRINT #3: USING 1280: "h = ", P(32)
1880 MOVE #3: (4) * P(14)
1890 DRAW #3: (4) * P(14) * P(15)
1900 DRAW #3: (4) * P(14) * P(15)
1910 IF U3 = 1 THEN 1980
1920 PRINT "RBJ"
1930 PRINT "DO YOU WANT A PLOTTER PLOT OF THIS PLOT (Y/N)"
1940 INPUT B1
1950 IF B1 = "Y" THEN 1980
1960 U3=10
1970 GO TO 620
1980 U3=32
1990 GO TO 2000
2000 NEXT I9

```

2010 REM

2020 FIND 4

2030 OLD

2040 PRINT "NO DATA SETS FOUND ON THIS TAPE"

2050 END

2060 PRINT "THERE ARE NO PLOT FILES CURRENTLY QUEUED TO BE PRINTED"

2070 END

2080 PLYK

2090 SORTK PLOT SUBROUTINES

2100 REAK

2110 RUM1

2120 U9=4

2130 GOSUB 3160

2140 U9=14

```

2150 GOSUB 3160
2160 U0=4
2170 Y0=Y0-5
2180 MOVE Q03;X0,Y0
2190 PRINT Q03;SCALE FACTORS!*I
2200 MOVE Q03;X0,Y0-0.5
2210 PRINT Q03;
2220 Y0=Y0-4
2230 MOVE Q03;X0,Y0
2240 PRINT Q03;X axis: 10**jX2
2250 Y0=Y0-3
2260 MOVE Q03;X0,Y0
2270 PRINT Q03;Y axis: 10**jY2
2280 VIEWPORT T(4),T(4)+T(5),T(14),T(14)+T(15)
2290 WINDOW T(6),T(6)+T(7),T(16),T(16)+T(17)
2300 AXIS Q03;T(8),T(18)
2310 J=1
2320 R2=T(18)/(T(17)/T(15))
2330 R3=T(14)
2340 U3=5*RT(16)+(J-1)*T(18)
2350 PRINT Q03;21:0 MAX T(4)-(LEN(U3)+1)*1.78*R3-0.89
2360 PRINT Q03;U3
2370 IF J>1(19) THEN 2410
2380 R3=R3+R2
2390 J=1+J
2400 GO TO 2340
2410 R2=T(8)/(T(7)/T(5))
2420 R3=T(4)
2430 J=1
2440 U3=5*RT(6)+(J-1)*T(8)
2450 PRINT Q03;21:0 MAX R3-(LEN(U3)+1)*1.78*0.5*T(14)-4
2460 PRINT Q03;U3
2470 IF J>1(9) THEN 2510
2480 R3=R3+R2
2490 J=1+J
2500 GO TO 2440
2510 FOR J=1 TO T(1)
2520 IF T(2)<0.1 THEN 2540
2530 IF J>1 THEN 2560
2540 MOVE Q03;X(J),Y(J)
2550 GO TO 2570
2560 DRAW Q03;X(J),Y(J)
2570 GOSUB 2600
2580 NEXT J
2590 RETURN
-----
2600 S2=T(14)*3/T(14)+1)*0.75
2610 S1=T(4)*3/T(4)+1)*0.75
2620 GO TO T(3) OF 2910,2640,2700,2770,2840
2630 GO TO 2910
2640 DRAW Q03;0,S2
2650 DRAW Q03;S1,-2*S2
2660 DRAW Q03;-2*S1,0
2670 DRAW Q03;S1,2*S2
2680 DRAW Q03;0,-S2
2690 RETURN
2700 DRAW Q03;0,S2
2710 DRAW Q03;0,-2*S2
2720 DRAW Q03;0,S2

```

2730 KRWAW P031-S1,0
2740 KRWAW P031-24S1,0
2750 KRWAW P031-S1,0
2760 RETURN
2770 KMOVE P031-S1,S2
2780 KRWAW P031,0,-24S2
2790 KRWAW P031-24S1,0
2800 KRWAW P031,0,24S2
2810 KRWAW P031-24S1,0
2820 KMOVE P031-S1,-S2
2830 RETURN
2840 KMOVE P031,0,S2
2850 KRWAW P031-S1,-S2
2860 KRWAW P031-S1,-S2
2870 KRWAW P031-S1,S2
2880 KRWAW P031-S1,S2
2890 KMOVE P031,0,-S2
2900 RETURN
2910 IF T(2)=1 THEN 2930
2920 KRWAW P031,0,0
2930 RETURN

2940 Y2=0
2950 T(16)=10^39
2960 T(17)=-T(22)
2970 FOR J=1 TO T(1)
2980 T(16)=T(16) MIN Y(J)
2990 T(17)=T(17) MAX Y(J)
3000 NEXT J
3010 T(17)=T(17)-T(16)
3020 T(17)=T(17)*10^0+T(19=0)
3030 IF T(17) THEN 5300
3040 RETURN

3050 X2=0
3060 T(6)=10^39
3070 T(7)=-T(12)
3080 FOR J=1 TO T(1)
3090 T(6)=T(6) MIN X(J)
3100 T(7)=T(7) MAX X(J)
3110 NEXT J
3120 T(7)=T(7)-T(6)
3130 T(7)=T(7)*10^0+T(19=0)
3140 IF T(7) THEN 5350
3150 RETURN

3160 HIM S0(5)
3170 S0(3)=INT((U911)/15)
3180 S0(3)=1(U913)/S0(3)
3190 S0(4)=INT(ABS(LG(S0(3))))*SGN(LGT(S0(3)))
3200 S0(4)=INT(10^S0(4)+1.0E-4)
3210 IF S0(4) THEN 3250
3220 S0(3)=1
3230 S0(4)=1
3240 GO TO 3130
3250 S0(5)=S0(3)/S0(4)
3260 S0(3)=S0(4)*10

```

3270 IF S0(5) >= 10 THEN 3290
3280 S0(3) = S0(4) * 5
3290 IF S0(5) >= 25 THEN 3310
3300 S0(3) = S0(4) * 2
3310 IF S0(5) >= 22 THEN 3330
3320 S0(3) = S0(4)
3330 S0(5) = I(U912) / S0(3)
3340 IF S0(5) >= 0 THEN 3360
3350 S0(5) = S0(5) - 0.9999
3360 S0(1) = S0(2) * (INT(ABS(S0(5))) * SGN(S0(5)))
3370 S0(5) = (I(U913) + I(U912)) / S0(3)
3380 IF S0(5) < 0 THEN 3400
3390 S0(5) = S0(5) * 10.9999
3400 S0(2) = S0(2) * (INT(ABS(S0(5))) * SGN(S0(5)))
3410 S0(5) = S0(2) - S0(1)
3420 S0(4) = INT(INT(ABS(S0(5))) * SGN(S0(5))) / S0(3)
3430 IF S0(5) >= 1 THEN 3460
3440 S0(3) = S0(5)
3450 S0(4) = 1
3460 IF S0(3) = -1 THEN 3490
3470 S0(3) = S0(5)
3480 S0(4) = 1
3490 T(U912) = S0(1)
3500 T(U913) = S0(2) - S0(1)
3510 T(U914) = S0(3)
3520 T(U915) = S0(4)
3530 T(U916) = 1.75 * T(U913) / T(U911)
3540 RETURN

```

```

-----1-----
3620 REM      FIND/OPEN
3630 REM* (F$,N9)
3640 FIND Q02:10
3650 FIND Q02:11
3660 INPUT Q02:10$
3670 J# = SEG(Q02,1,3)
3680 IF J# <= 10$ THEN 3970
3690 INPUT Q02:6:1A
3700 IS A=1 THEN 3780
3710 INPUT Q02:1R$
3720 DIM J$(10)
3730 J# = SEG(Q02,4,10)
3740 F = LER(F$)
3750 DIM J$(F)
3760 IF J# = 1$ THEN 3820
3770 GO TO 3690

```

```

3780 REM$
3790 PRINT "ERROR **** FILE *F$* NOT FOUND*"
3800 CLOSE
3810 END
3820 J# = SEG(Q02,1,3)
3830 IF J# <= 10$ THEN
3840 FIND Q02:10
3850 FIND Q02:11
3860 INPUT Q02:10$
3870 DIM J$(10)

```

3900 34-SIG(09),1,10)

3970 F-1(10)S)

3990 DIM(100)

3910 IF 14 F# THEN 3930

3920 RETURN

3930 PRINT "FILE BOLS NOT MATCH INTERNAL NAME"

3940 PRINT "INDEX NAME =";I;" INTERNAL NAME =";J;

3950 GOTO 3910

3960 END

3970 PRINT "DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A IDS DATA TAPE"

3980 PRINT "GO";

3990 END

4000 REMS FLUT DATA, CURVE AND CONFIDENCE LIMITS

4010 COSUR 2940

4020 COSUR 3070

4030 REMS ADJUST X RANGE

4050 I(6)=I(6)-0.018I(7)

4070 I(6)=I(6) MAX 0.018I(7)

4090 I(7)=I(7)+1.2

4070 REMS ADJUST Y-RANGE

4100 I(16)=I(16)-0.058I(17)

4110 I(16)=I(16) MAX 0.018I(17)

4130 I(17)=I(17)+1.1

4130 REMS FLUT OBSERVED DATA

4140 BUNGS 2110

4150 TEMF

4160 REMS READ SUBROUTER AND LOWER CONFIDENCE LIMITS

4170 BUNF

4180 REM I(16)=I(16)+0.018I(17)

4190 Y0=I(15)

4200 COSUR 4970

4210 CURV COSUR(10)=Y2-I(16)*10^-Y2

4230 FOR Y5=I(16) TO I(16)+I(17) STEP I(17)/100

4240 Y0=Y5

4250 CURV 4520

4260 CURV CURV(10)=Y2-Y5+Y5*10^-Y2

4270 NEXT Y5

4280 TO I(16)

4290 FOR Y6=0

4300 TO I(15)

4310 Y6=Y6+1

4320 CURV 4950

4330 CURV CURV(10)=I(16)-Y2+I(16)*10^-Y2

4340 NEXT Y6

4350 TO I(15)

4360 FOR Y5=I(16)-I(17) TO I(16)+I(17) STEP I(17)/100

4370 IF I(15)=2 AND I(15)=I(15) THEN 4470

4380 GO TO

```

4400 GOSUB 4920
4410 Y0=Y5
4420 GOSUB 4950
4430 BRAW W0310*107-X2*Y5*107-Y2
4440 IF L0=0 THEN 4470
4450 B8=00
4460 NEXT Y5
4470 Y0=Y0+1
4480 GOSUB 4920
4490 Y0=Y0+1
4500 GOSUB 4950
4510 MOVE W0310*107-X2*Y(16)107-Y2
4520 FOR Y5=(Y(16))-1(17))8D7 TO (Y(16)+Y(17))8D7 STEP .Y(17)/100*8D7
4530 IF Y(3)2 AND Y5<=F(31) THEN 4620
4540 Y0=Y5
4570 GOSUB 4920
4580 Y0=Y5
4590 GOSUB 4950
4600 BRAW W0310*107-X2*Y5*107-Y2
4620 NEXT Y5
4630 T4=10000
4640 FOR T5=1 TO N
4650 IF X(T5) >=0 THEN 4670
4660 T4=T4-MIN X(T5)107X2
4670 NEXT T5
4680 IF INT T4 THEN 4700
4690 GOTO 4
4700 WILFOFT 0.130*0.100
4710 WINDOW 0*130*0.100
4720 REMB X8-DETECTION LIMIT IS .
4730 REMB IF 08010000 THEN 4730
1225 X8 . . .
4725 REMB88 X8-WARNING - Detection Limit EGRGR00R*
4728 TO 10 4770
4730 Y8-STR(8)
4740 Y0=F05(18)*.1
4750 Y2=F06(18*.1*Y0+2)
4760 Y8=X8Y5
4770 Y2=1000/2*Y(4)-(LEN(X8))87/8
4780 TO 1(14)*14
4790 MOVE W0310*Y5
4800 PRINT W0314
4810 Y0=Y0+2
4820 Y8-STR(00)
4830 X8-DETECTION Curve 8 *Y5
4840 Y2=F05(18)*.1-(4)-(LEN(X8))87/8
4850 MOVE W0310*Y5
4860 Y8-STR(00)
4870 Y8-STR(00)
4880 Y8-STR(00)
4890 Y8-STR(00)

```

4900 Y8-STR(00)
 4910 Y8-STR(00)
 4920 Y8-STR(00)
 4930 Y8-STR(00)

4925 IF P(3)=2 AND Y0=0F(3) THEN 4932

4930 GO TO 0F(3)F(3)F(3)

4935 IF P(3)=3 THEN 4970

4940 GO TO 0F(3)F(3)F(3)

4945 GO TO 0F(3)F(3)F(3)

4950 IF P(3)=1 THEN 4920

4955 GO TO 0F(3)

4960 GO TO 0F(3)

4965 GO TO 0F(3)

4970 GO TO 0F(3)

4975 GO TO 0F(3)

4980 REM

4985 REM

4990 REM

4995 REM

5000 REM

5005 REM

5010 REM

5015 REM

5020 REM

5025 REM

5030 REM

5035 REM

5040 REM

5045 REM

5050 REM

5055 REM

5060 REM

5065 REM

5070 REM

5075 REM

5080 REM

5085 REM

5090 REM

5095 REM

5100 REM

5105 REM

5110 REM

5115 REM

5120 REM

5125 REM

5130 REM

5135 REM

5140 REM

5145 REM

5150 REM

5155 REM

5160 REM

5165 REM

5170 REM

5175 REM

5180 REM

5185 REM

5190 REM

5195 REM

5200 REM

5205 REM

5210 REM

5215 REM

5220 REM

5225 REM

5230 REM

5235 REM

SOLVE LINEAR REGRESSION IN REVERSE FOR
UPPER AND LOWER CONFIDENCE LIMITS

Y=CO(B,5) L=0.025 U=1.975

4991 REM U is the lower curve if slope is positive

4992 REM U is the upper curve if slope is positive

4993 REM U is the upper curve if slope is negative

4994 REM U is the lower curve if slope is negative

5000 REM

5005 REM

5010 REM Power Transforms

5015 REM

5020 REM Functional Transforms

5025 REM

5030 REM

5035 REM

5040 REM

5045 REM

5050 REM

5055 REM

5060 REM

5065 REM

5070 REM

5075 REM

5080 REM

5085 REM

5090 REM

5095 REM

5100 REM

5105 REM

5110 REM

5115 REM

5120 REM

5125 REM

5130 REM

5135 REM

5140 REM

5145 REM

5150 REM

5155 REM

5160 REM

5165 REM

5170 REM

5175 REM

5180 REM

Execution halted

Inverse Functional Transforms

```
+++++ 5100 I0=X0-F(32)
5190 X0=(B1-B3)/A1
5200 REM4 Inverse Functional transform
5210 IF P(3) > 1 THEN 5230
5220 X0=EXP(X0)
+++++ 5230 L0=X0-F(32)
5230 RETURN

+++++ 5290 FEM scale X & Y for plot
5300 FOR J=1 TO I(1)
5310 Y(J)=10*(J)
5320 NEXT J
5330 Y2=Y2-1
5340 GO TO 2950
+++++ 5350 FOR J=1 TO I(1)
5360 X(J)=10*(J)
5370 NEXT J
5380 X2=X2-1
5390 GO TO 3060
```



```

208 INPUT Q02:04
210 INPUT Q02:C,P(25),F(26),P(28)
220 N2=N2+1
310 IF N9-N2 THEN 321
320 GO TO 270
321 F5=0
322 IF P(28)=4 THEN 330
323 PRINT "IS THIS THE FIRST STAT RUN FOR TODAY? (Y/N):"
324 INPUT A$
325 IF A$="Y" THEN 330
326 F5=1

++1++
330 REM* SET X LABEL
350 N$=SEG(I0$,4,2)
355 REM* SET X LABEL
360 A$=SEG(I0$,1,2)
361 A=VAL(A$)
362 A=(A-1)*9+1
363 X$=SEG(C0$,A,9)
370 REM* GET HISTORY Q
372 RESTORE J01
375 I$="H0" I#
380 GOSUB 40$5
381 DATA 0,0,0,0
382 READ F1,F2,F3,F4
390 INPUT Q02:K1,D7,X9,Y9,M9,U9,L9,Y8,M8,U8,L8
395 INPUT Q02:W8,W9,F1,F2,F3,F4
400 FOR I=1 TO 31
401 X(I)=I
420 NEXT I
430 W=VAL(W8)
415 N1=F(28) F5*N1
416 F1=0
417 F3=0
420 REM* M9(D8)=(M9(D7))*(K-1)+P(25))/K
430 REM* W8(D3)=(W8(D7))*(K-1)+P(26))/K
440 Y9(U8)=P(25) F5*Y9(D8)
450 Y8(D8)=P(26) F5*Y8(D8)
460 IF N1=4 THEN 551
461 PRINT "NO QC PLOT WILL BE PRODUCED FOR 'M9' AT LEVEL 'F5'."
462 PRINT "SINCE FOUR QC DATA POINTS ARE NOT YET AVAILABLE."
463 GO TO 1080
465 GO TO 551
470 U2=M9(D8) A1(K1)*M8(D8)
480 U3=M9(D8) A1(K1)*M8(D8)
490 W8(D3)=A1(K1)*W8(D8)
500 U8=D3 A1(K1)*M8(D8)
510 U9=L9
520 U9=L9
530 U2(D8)=M9(D8) U3(D8) U3/SOR(K1)*M8(D8)
540 U4(D8)=M9(D8) U4/SOR(K1)*M8(D8)
550 U8(D8)=(U3/SOR(K1))*M8(D8)
560 U9(D8)=(U4/SOR(K1))*M8(D8)

```

```

+++++ 551 REM* SET WARNING FLAGS
552 IF NOT(Y9(D8)>09(D8) OR Y9(D8)<L9(D8)) THEN 554
553 F1=1
+++++ 554 IF NOT(Y8(D8)/U9(D8) OR Y8(D8)<L8(D8)) THEN 556
555 F3=1
+++++ 556 REM* ZERO OUT DATA FROM D7 TO D8
557 IF D7=D8 THEN 573
558 I=67
559 IF D8=D7 THEN 562
561 I=0
562 I=I+1
563 IF I=D8 THEN 573
564 Y(I)=-1
565 Y(I)=1
566 GO TO 562
+++++ 573 REM*
620 REM* UPDATE WARNING
631 F2=0
632 F3=0
633 FOR I=5 TO 1 STEP -1
634 280(I)=WB(I)
635 W9(I+1)=W9(I)
636 NEXT I
637 IF Y9(D8)>H9(D8) THEN 690
638 W9(I)=-1
639 GO TO 700
+++++ 690 W9(I)=1
+++++ 700 IF Y8(D8)=MB(D8) THEN 730
710 WB(I)=1
720 GO TO 740
730 WB(I)=1
+++++ 740 FOR I=1 TO 7
750 F2=F2+W9(I)
760 FA=F4+WB(I)
770 NEXT I
771 F3=ABS(F2)
772 FA=ABS(FA)
780 REM* PLOT QC CHARTS
790 E1=ACCURACY CONTROL CHART FOR *1M*
810 Y1=
820 W5=
900 Y1=L9
910 Y2=M9
920 Y3=U9
931 X=X9
932 Y=Y9
933 D=D8
934 IF NOT(F1=1 OR F2=7) THEN 950
940 W1=WARNING - PROCESS IS OUT OF CONTROL*
+++++ 950 REM* GO SUB PLOT
955 GO SUB 1775

```

```

956 PRINT "CNJ"
960 IF U3=10 THEN 967
961 PRINT "DO YOU WANT A 4662 PLOT? (Y/N)"
962 INPUT B$
963 A$=SEG(B$,1,1)
964 IF A$<>"Y" THEN 967
965 U3=10
966 GOSUB 1775
967 U3=32
970 U4="PRECISION CONTROL CHART FOR "
971 U4=U4+M$
972 Y=YB
1000 Y1=LB
1010 Y2=HB
1020 Y3=UB
1025 U=UB
1030 IF NOT(FJ=1) THEN 1050
1040 M$="WARNING - PROCESS IS OUT OF CONTROL"

```

```

+++++
1050 REM# GOSUB PLOT

```

```

1055 GOSUB 1775
1056 PRINT "CNJ"
1060 IF U3=10 THEN 1067
1061 PRINT "DO YOU WANT A 4662 PLOT? (Y/N)"
1062 INPUT B$
1063 A$=SEG(B$,1,1)
1064 IF A$<>"Y" THEN 1067
1065 U3=10
1066 GOSUB 1775
1067 U3=32

```

```

+++++
1070 REM# UPDATE HISTORY 0 FILE

```

```

1080 F$="HQ"
1090 GOSUB 4845
1095 PRINT Q2:K,L,0,0,X9,Y9,M9,U9,L9,Y8,M8,UB,LB
1100 PRINT Q2:UB,M9,F1,F2,F3,F4
1105 PRINT Q2:2;
1110 GO TO 230

```

```

1755 REM#
1760 REM# QC PLOT ROUTINES
1765 REM#

```

```

---4---
1775 DIM M$(60),J$(60)
1785 DIM X$(31),Y$(31),Y3(31),Y3(31),T(24)
1790 PAGE

```

```

1805 REM# HEIGHT OF SPACE
1810 HG=2.82

```

```

1820 REM# HEIGHT OF CHARACTER
1825 HC=1.88

```

```

1830 REM# WIDTH OF SPACE

```

2005 H2=1.79
2095 REM WIDTH OF CHARACTER
2105 H3=1.55
2115 REM HEIGHT OF TIC MARK
2125 H4=1
2135 REM WIDTH OF TIC MARK
2145 H5=2
2155 VIEWPORT 0,130,0,100
2165 WINDOW 0,130,0,100
2175 REM X MIN
2185 Y(4)=15
2195 REM X DOMAIN
2205 Y(5)=105
2215 REM Y MIN
2225 Y(14)=10
2235 REM Y RANGE
2245 Y(15)=75
2255 REM BOX GRAPH
2265 MOVE @U3:Y(4),Y(14)
2275 DRAW @U3:Y(4),Y(14)+Y(15)
2285 DRAW @U3:Y(4)+Y(5),Y(14)+Y(15)
2295 DRAW @U3:Y(4)+Y(5),Y(14)
2305 DRAW @U3:Y(4),Y(14)
2315 REM NAME TIC MARKS ON X AXIS
2325 FOR I=0 TO 34 STEP 2
2335 MOVE @U3:Y(4)+I*3,Y(14)+H4/2
2345 DRAW @U3:0,-H4
2355 REM LABEL THE MARK
2365 REMOVE @U3:Y(2)-H0
2370 IF I=0 OR I=31 THEN 2405
2375 IF I=10 THEN 2395
2380 REMOVE @U3:Y(2)+0
2385 PRINT @U3:Y
2390 NEXT I
2405 REM PRINT OUT WARNING
2420 A=LEN(U3)
2421 Y0=96

```

2423 IF .ACC THEN 2535
2425 X0=(I(4)+(T(5)-LEN(W$)*H2)/2
2435 Y0=96
2445 MOVE @U3:0,Y0
2455 PRINT @U3:W$
2465 REM DRAW @U3:BOX AROUND WARNING
2475 MOVE @U3:X0-H2/2,Y0-H0/3
2485 RDRAW @U3:0,5*H0/3
2495 RDRAW @U3:(LEN(W$)+1)*H2,0
2505 RDRAW @U3:0,-5*H0/3
2515 RDRAW @U3:(LEN(W$)+1)*H2,0
2525 REM WRITE TITLE
11111111
2535 Y0=Y0-5
2545 X0=(I(4)+(T(5)-LEN(E$)*H2)/2
2555 MOVE @U3:X0,Y0
2565 PRINT @U3:E$
2575 Y0=Y0-3
2585 X0=(I(4)+(T(5)-LEN(J$)*H2)/2
2595 MOVE @U3:X0,Y0
2605 PRINT @U3:J$
2615 REM PRINT X AXIS LABEL
2625 Y0=(I(14))-3*H0
2635 X0=(I(4)+(T(5)-LEN(X$)*H2)/2
2645 MOVE @U3:X0,Y0
2655 PRINT @U3:X$
2665 REM Y AXIS LABEL
2675 X0=3
2685 Y0=(I(14)+(T(15)+LEN(Y$)*H0)/2
2695 MOVE @U3:X0,Y0
2705 FOR I=1 TO LEN(Y$) STEP 1
2715  Z$=SEG(Y$,I,1)
2725 PRINT @U3:Z$;JH$
2735 NEXT I
2745 REM END OF PRELIMINARIES NOW DO PLOTS
2746 Y4=Y1(1)
2747 Y5=Y3(1)
2748 I=(Y5-Y4)/2
2749 O0=Y4-I
2750 O1=Y5+I
2751 GO TO 2780
2755 REM SET UP STUFF
2756 Y4=100000
2757 Y5=-100000
2758 FOR I=1 TO 31
2759 IF Y(I)=0 THEN 2761
2760 Y4=Y4 MIN Y(I)
2761 IF Y(I)<0 THEN 2763
2762 Y4=Y4 MIN Y(I)

```

+++++ 2763 Y5=Y5 MAX Y(I)
2764 Y5=Y5 MAX Y3(I)
2765 NEXT I

2770 REM IN HERE GOES CODE TO PICK NEAT ENDPOINTS FOR Y-AXIS

+++++ 2780 VIEWPORT T(4),T(4)+T(5),T(14),T(14)+T(15)
2781 WINDOW 0,35,00,01
3015 FOR I=1 TO N STEP 1
3820 IF Y(I)<0 THEN 3045
3821 IF Y(I)>01 THEN 9400
3822 IF Y(I)<00 THEN 9500
3823 MOVE P03:Y(I),Y(I)
3825 GOSUB 3185

+++++ 3842 VIEWPORT T(4),T(4)+T(5),0,T(15)
2847 WINDOW 0,35,00,01
2848 G3-SEG(E3:Y1,3)
2849 MOVE P03:0,0
2850 PRINT P03:04; = *Y(D);
2851 VIEWPORT T(4),T(4)+T(5),T(14),T(14)+T(15)
2852 WINDOW 0,35,00,01
2855 GOSUB 3000

2856 MOVE P03:0,Y1(I)
2857 DRAW P03:35,Y1(I)
2859 MOVE P03:35,Y3(I)
2859 DRAW P03:0,Y3(I)
2860 MOVE P03:0,Y2(I)
2861 DRAW P03:35,Y2(I)
2862 RETURN
2863 MOVE P03:0,Y1(I)
2865 FOR I=1 TO 0-1 STEP 1
2880 IF Y(I)<0 THEN 2900
2885 DRAW P03:X(I),Y1(I)
2895 DRAW P03:0,Y1(I+1)-Y1(I)
2898 GO TO 2905
2900 MOVE P03:X(I+1),Y1(I+1)
2905 NEXT I

+++++ 2915 DRAW P03:X(0),Y1(0)
2925 FOR I=1 TO 4
2935 MOVE P03:0.5,0
2945 DRAW P03:0.5,0
2955 NEXT I

2965 REM DO Y3

2975 MOVE P03:0,Y3(I)
2985 FOR I=1 TO 0-1 STEP 1
2990 IF Y(I)<0 THEN 3015
2995 DRAW P03:X(I),Y3(I)
3005 DRAW P03:0,Y3(I+1)-Y3(I)
3010 GO TO 3020
3015 MOVE P03:X(I+1),Y3(I+1)
3020 NEXT I

+++++ 3035 DRAW P03:X(0),Y3(0)
3035 FOR I=1 TO 4 STEP 1
3045 MOVE P03:0.5,0
3055 DRAW P03:0.5,0
3065 NEXT I

3075 REM Y2

3085 MOVE @U310,Y2(I)
3095 FOR I=1 TO 6-1 STEP 1
3100 IF Y2(I)<0 THEN 3125
3105 DRAW @U310,S*0
3115 MOVE @U310,S*Y2(I+1)-Y2(I)
3120 GO TO 3130
3125 MOVE @U31X(I+1),Y2(I+1)
3130 NEXT I
3135 FOR I=1 TO 5
3145 DRAW @U310,S*0
3155 MOVE @U310,S*0
3165 NEXT I
3175 RETURN

++++
++++

---1--- 3185 REM THIS CENTERS DIAMONDS

3200 MOVE @U310,-0.01*(01-00)
3205 DRAW @U310,35*0.01*(01-00)
3210 DRAW @U31-0.35*0.01*(01-00)
3215 DRAW @U31-0.35,-0.01*(01-00)
3220 DRAW @U310,35,-0.01*(01-00)
3225 RETURN
3235 DRAW @U31X(0),Y(0)

---3--- 4845 REM FIND/OPEN
4855 REM (F#,N9)

4860 FIND @U210
4865 FIND @U211
4875 INPUT @U218
4885 J1=SEG@U218
4895 IF J1<108 THEN 5175
4905 INPUT @U216A
4915 IF A=1 THEN 4995
4925 INPUT @U218
4935 DIM J\$(15)
4945 J1=SEG@U218
4955 F=LEN(F#)
4965 DIM J\$(F)
4975 IF J1=F THEN 5035
4985 GO TO 4905

++++

++++

5095 PRINT "ERROR *** FILE '#F#':NOT FOUND"

5015 CLOSE
5025 F100=1
5035 DIM
5045 J1=SEG@U218
5050 FIND @U210
5055 FIND @U218
5065 INPUT @U218
5075 DIM J\$(10)

++++


```

5085 I=SEG(B$,1,10)
5095 I=LEN(F$)
5105 DIM J$(F)
5115 IF J$(F) THEN 5135
5125 RETURN
5135 PRINT "FILE DOES NOT MATCH INTERNAL NAME"
5145 PRINT "INDEX NAME =";F$;"INTERNAL NAME =";I$
5155 PRINT QUS;2;
5165 FLOW 1
5175 OLD
5185 PRINT "DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A IDS DATA TAPE"
5195 PRINT QUS;2;
5195 FIND 1
5196 OLD

5205 MEM$ FLOT OBSERVED DATA
5215 GOSUB 3395
6715 REMARK MU
6720 SET DEGREES
6730 VIEWFURT 0,130,0,100
6740 WINDOW 0,130,0,100
6750 REMHO - PRINTED LINE HEIGHT
6760 REHH1 - PRINTED CHARACTER HEIGHT
6770 REPH2 - WIDTH OF SPACE
6780 REPH3 - WIDTH OF A CHARACTER
6790 S0=15
6800 H0=2.02
6810 H1=1.88
6820 H2=1.79
6830 H3=1.55
6840 MOVE QUS;X0+H0/20,Y0+H2/20
6850 RORAM QUS;H3/50,H1*5/50
6860 FOR I=1 TO 50/2
6870 RORAM QUS;0,H1/50
6880 NEXT I
6890 FOR I=1 TO 50/2
6900 RORAM QUS;0,-H1/50
6910 NEXT I
6920 FOR I=0 TO 100 STEP 50*3/2
6930 ROTATE I+270
6940 RORAM QUS;1/50,0
6950 NEXT I
6960 FOR I=1 TO 50/2
6970 RORAM QUS;H1/50,0
6980 NEXT I
6990 FOR I=1 TO 50/2
7000 RORAM QUS;-H1/50,0
7010 NEXT I
7020 FOR I=270 TO 360 STEP 50/2*3
7030 ROTATE I
7040 RORAM QUS;H1/50,0
7050 NEXT I
7060 MOVE QUS;X0+H2*1.1,Y0+0.1*H0
7070 RETURN

```

```

7999 KCM*DRAW KMO
8000 SET DEGREES
8010 VIEWPORT 0,130,0,0,100
8020 WINDOW 0,130,0,0,100
8030 REM*H0 - PRINTED LINE HEIGHT
8040 REM*H1 - PRINTED CHARACTER HEIGHT
8050 REM*H2 - WIDTH OF SPACE
8060 REM*H3 - WIDTH OF A CHARACTER.
8070 MOVE @U3:10-H1/2,Y0
8080 FOR I=-95 TO 265 STEP 15
8090 ROTATE I
8100 DRAW @U3:H3/50*1.3,0,
8110 NEXT I
8120 ROTATE -5
8130 DRAW @U3:0,-10*H3/50
8140 MOVE @U3:H3,0
8150 RETURN

```

```

8999 REM ROUTINE TO LABEL Y AXIS

```

```

9000 REM

```

```

9070 L$=STR(Y1/I)
9080 GOSUB 61600
9090 MOVE @U3:0,Y1(I)
9100 FOR I=1 TO 0041
9110 PRINT @U3:"H";
9120 NEXT I
9130 PRINT @U3:L$;
9140 L$=STR(Y2/I)
9150 GOSUB 61600
9160 MOVE @U3:0,Y2(I)
9170 FOR I=1 TO 0041
9180 PRINT @U3:"H";
9190 NEXT I
9200 PRINT @U3:L$;
9210 L$=STR(Y3/I)
9220 GOSUB 61600
9230 MOVE @U3:0,Y3(I)
9240 FOR I=1 TO 0041
9250 PRINT @U3:"H";
9260 NEXT I
9270 PRINT @U3:L$;
9360 RETURN

```

```

9400 REM ROUTINE TO DRAW ARROW POINTING UP

```

```

9410 MOVE @U3:X(I),01
9420 PRINT @U3:"J";
9430 GO TO 2045

```

```

9500 REM ROUTINE TO DRAW UPSIDE DOWN ARROW

```

```

9510 MOVE @U3:X(I),00
9520 L$=CHR(127)
9530 PRINT @U3:L$;

```

9550 GO TO 2045
10100 PRINT 'NO CC FLOIS ARE AVAILABLE FOR PLOTTING'
10250 FEND 1
10300 GOTO 10100
10400 GOTO 10100
10500 PRINT 'LEADER WITH HISTORY TAPE FILE NUMBER 2'
10600 FEND 1
10700 GOTO 10100

---J--- 61600 REM ROUTINE TO PRINT NUMBERS TO 3 DECIMAL PLACES
61710 REM LEFT PASSED IN CONTAINING NUMBER IN CHARACTER FORM THAT
61800 REM IS TO BE PRINTED OUT TO 3 DECIMAL PLACES
61930 REM RESULTANT STRING IS PASSED BACK IN L4
61940 REM FORMAT OF RESULT IS 50.000 WITH LENGTH OF 6

61650 DD=FOSCL*E*11
61700 IF DD<0 THEN 61700
61750 L4=SECL*176
61800 DD
61850 GOTO 61900

+++++ 61700 REM NUMBER IS IN SCIENTIFIC NOTATION

61710 K=SECL*101174
61720 RC=VAL(K)
61730 IF DD<0 THEN 61880
61740 IF DD<0 THEN 61780
61750 L4=' 0.000'
61760 GOTO 61800

+++++ 61700 REM NUMBER IS IN SCIENTIFIC NOTATION
61710 K=SECL*101174
61720 RC=VAL(K)
61730 IF DD<0 THEN 61880
61740 IF DD<0 THEN 61780
61750 L4=' 0.000'
61760 GOTO 61800

+++++ 61920 REM SECTION TO PRINT OUT 600

61930 L4=SECL*176
61940 DD
61950 GOTO 61900
61960 GOTO 61900

THE FOLLOWING LINE NUMBERS ARE BRANCHED TO BUT DO NOT EXIST IN THIS TAPE FILE (6 4)
61970 GOTO 61900
61980 GOTO 61900
61990 GOTO 61900
62000 GOTO 61900

ID SETS MANAGEMENT

Computer Sciences Corporation
Data Systems Laboratory
NATIONAL SPACE TECHNOLOGY LABORATORY
NSL Station, Mississippi 39529

Programmed by:

Version: L - Production

March 10, 1982

10 DIM X(4)
110 PAGE
120 PRINT
130 PRINT
140 PRINT
150 PRINT
160 PRINT
170 PRINT
180 PRINT
190 PRINT
200 PRINT
210 PRINT
220 PRINT
230 PRINT
240 PRINT
250 PRINT
260 PRINT
270 PRINT
280 PRINT
290 PRINT
300 PRINT
310 PRINT
320 PRINT
330 PRINT
340 PRINT
350 PRINT
360 PRINT
370 PRINT
380 PRINT
390 PRINT
400 PRINT
410 PRINT
420 PRINT
430 PRINT
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790 PRINT
800 PRINT
810 PRINT
820 PRINT
830 PRINT
840 PRINT
850 PRINT
860 PRINT
870 PRINT
880 PRINT
890 PRINT
900 PRINT
910 PRINT
920 PRINT
930 PRINT
940 PRINT
950 PRINT
960 PRINT
970 PRINT
980 PRINT
990 PRINT
1000 PRINT

'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

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'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

'PRESS 'RETURN' TO CONTINUE '

'EXTERNAL LABEL' IS NOT EQUAL TO TAPE LABEL

'WOULD YOU LIKE TO STOP? (Y/N)

'IF 'Y' THEN 2100

'ELSE

'PRINT

'GOTO 2100

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

'PRINT

INSERT :S HISTORY TAPE IN EXTERNAL TAPE UNIT # 4924

ENTER EXTERNAL LABEL ON HISTORY TAPE

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

PRINT

2370 ULD

100 U2=11
110 DATA 4B
120 DATA 0.308,0.35
130 DATA 0.317,0.35
140 DATA 0.31,0.35
150 DATA 0.401,0.46
160 DATA 0.408,0.46
170 DATA 0.408,0.46
180 DATA 0.042,0.04
190 DATA 0.037,0.04
200 DATA 0.04,0.04
210 DATA 0.231,0.29
220 DATA 0.225,0.29
230 DATA 0.238,0.29
240 DATA -0.008,0
250 DATA -0.006,0
260 DATA -0.005,0
270 DATA 0.001,0.58
280 DATA 0.465,0.58
290 DATA 0.479,0.58
300 DATA 0.207,0.23
310 DATA 0.190,0.23
320 DATA 0.193,0.23
330 DATA 0.11,0.12
340 DATA 0.107,0.12
350 DATA 0.109,0.12
360 DATA 0.332,0.35
370 DATA 0.313,0.35
380 DATA 0.305,0.35
390 DATA 0.42,0.46
400 DATA 0.406,0.46
410 DATA 0.4,0.46
420 DATA 0.042,0.04
430 DATA 0.038,0.04
440 DATA 0.039,0.04
450 DATA 0.261,0.29
460 DATA 0.262,0.29
470 DATA 0.254,0.29
480 DATA 0.003,0
490 DATA 1.0E-3,0
500 DATA 0
510 DATA 0.235,0.58
520 DATA 0.536,0.58
530 DATA 0.523,0.58
540 DATA 0.226,0.23
550 DATA 0.212,0.23
560 DATA 0.216,0.23
570 DATA 0.117,0.12
580 DATA 0.113,0.12
590 DATA 0.116,0.12
600 PRINT ENTER DATE (mm/dd/yy)
610 PRINT \$
620 PRINT
630 PRINT *ENTER HISTORY LABEL (IDSxxx..x)*
640 PRINT \$
650 DATA 0
660 DATA 0
670 DATA 0

00(31),00(31),01(31),02(31),03(31)

```
680 F(29)=1
670 W=0
700 Z=0
710 B7=1
720 N=0
720 X=0
730 PRINT "INSERT NEW HISTORY TAPE IN UNIT *J02
750 PRINT "PRESS 'RETURN' TO CONTINUE."
760 INPUT Z
770 FIND Q02:0
780 MARK Q02:1,3000
790 FIND Q02:1
800 G4=C,1K5
810 PRINT Q02:C$
820 PRINT Q02:"002SYSTEM*****"
830 PRINT Q02:"003PLOTFILES*"
840 PRINT Q02:"004PLOTSUC*****"
850 PRINT Q02:"007HRL *****"
860 PRINT Q02:"002HRL Q1.288F"
870 PRINT Q02:"007HRL Q1.288F"
880 PRINT Q02:2
890 FIND Q02:2
900 MARK Q02:1,1000
910 FIND Q02:2
920 PRINT Q02:"SYSTEM*****"
930 FIND Q02:3
940 MARK Q02:1,5000
950 FIND Q02:3
960 PRINT Q02:"PLOTFILES*"
970 FIND Q02:4
980 MARK Q02:1,5000
990 FIND Q02:4
1000 PRINT Q02:"PLOTSUC*****"
1010 FIND Q02:5
1020 MARK Q02:1,5000
1030 FIND Q02:5
1040 PRINT Q02:"HRL *****"
1050 PRINT Q02:18/F
1060 PRINT Q02:2:
1070 DIM X(400),Y(400)
1080 NCH PRINT "ENTER TRUE VS FOUND DATA FOR A:"
1090 F=0
1100 M1=0
1110 F(7)=0
1120 READ P(8)
1130 DIM X(F(8)),Y(F(8))
1150 FOR I=1 TO F(8)
1160 F160=Y(I),X(I)
1170 NEXT I
1180 M1=0
1190 M1=0
1200 M1=0
1210 M1=0
1220 M1=0
1230 M1=0
1240 M1=0
1250 M1=0
1260 FOR I=1 TO F(8)
1270 M1-M1+X(I)*Y(I)
```

```

1270 M2=M2+Y(I)*W0
1280 M3=M3+X(I)*X(I)*W0
1290 M4=M4+Y(I)*Y(I)*W0
1300 M5=M5+Y(I)*X(I)*W0
1310 W1=W1+W0
1320 NEXT I
1330 C=W1*M3-H1*M1
1340 F(10)=W1/C
1350 F(11)=W1/C
1360 F(12)=M3/C
1370 F(2)=(W1*M5-H1*M2)/(W1*M3-H1*M1)
1380 F(1)=(M2-P(2)*M1)/W1
1390 F(4)=F(1)
1400 F(5)=F(2)
1410 B=0
1420 FOR I=1 TO P(8)
1430 G=H(Y(I)-F(1)-P(2)*X(I))^2
1440 NEXT I
1450 F(23)=I-D/(H1-M2*M2/F(8))
1460 F(3)=2
1470 F(6)=D/(F(8)-2)
1480 F(9)=1
1490 P(29)=1
1500 F(27)=P(6)
1510 FIND Q2:5
1520 PRINT Q2:5:HL *****
1530 PRINT Q2:6:P
1540 PRINT Q2:2:
1550 FIND Q2:6

1560 REM PRINT "ENTER Q1 HISTORY FOR .288"
1570 REM PRINT "ENTER MEAN(OR CENTRAL STANDARD) FOR .288"
1580 M1=0.288

1590 REM PRINT "ENTER S.D.(OR STANDARD) FOR .288"
1600 M2=0.013

1610 REM PRINT "ENTER LOWER LIMIT FOR ACCURACY"
1620 I=C.264
1630 Q0=I

1640 REM PRINT "ENTER UPPER LIMIT FOR ACCURACY"
1650 I=0.312
1660 Q1=I

1670 REM PRINT "ENTER LOWER LIMIT FOR PRECISION"
1680 I=0
1690 Q2=I

1700 REM PRINT "ENTER UPPER LIMIT FOR PRECISION"
1710 I=0.029
1720 Q3=I
1730 B7=31
1740 N=0

```



```
1750 X0=0
1760 M=0
1770 Z=0
1780 M9=M1
1790 M8=M2
1800 PRINT @U2: *HQL @L.288*
1810 PRINT @U2:K;D7,X0,X0,M9,01,00,X0,H8,03,02,W,W,K,K,K,K
1820 FIND @U2:7

1850 REM*** PRINT *ENTER OP HISTORY S .289*.
1860 REM*** PRINT *ENTER MEAN (OR STANDARD) FOR .288*.
1850 M1=0.288

1860 REM*** PRINT *ENTER S.D.(OR STANDARD) FOR .288*.
1870 M2=0.017

1890 REM*** PRINT *ENTER LOWER LIMIT FOR ACCURACY*.
1890 I=0.254
1900 O0=I

1910 REM*** PRINT *ENTER UPPER LIMIT FOR ACCURACY*.
1920 I=0.32
1930 O1=I

1940 REM*** PRINT *ENTER LOWER LIMIT FOR PRECISION*.
1950 I=0
1960 O2=I

1970 REM*** PRINT *ENTER UPPER LIMIT FOR PRECISION*.
1980 I=0.039
1990 O3=I
2000 M9=M1
2010 M8=M2
2020 PRINT @U2: *HQL OP.288*
2030 PRINT @U2:K;D7,X0,X0,M9,01,00,X0,H8,03,02,W,W,K,K,K,K
2040 PRINT @U2:7
2050 CLOSE
2060 FIND I
2070 OLD

2080 REM END OF PROGRAM
```

```

100 INIT
110 PRINT @32,26:0

120 REM
130 REM THIS PROGRAM IS SUPPOSED TO UPDATE THE HISTORY FILE BETWEEN
140 REM EACH DAILY RUN. IT IS SUPPOSED TO LEAVE IN THE INFORMATION
150 REM ABOUT PREVIOUS DAYS SO THAT THE OC PLOTB WILL SHOW DAILY
160 REM PROGRESS. IT IS SUPPOSED TO REMOVE THE INDIVIDUAL PLOT FILES
170 REM SO THAT A "FRESH" HISTORY TAPE EACH DAY.
180 REM
190 REM DATE: 05/04/81
200 REM AUTHOR: COMPUTER SCIENCES CORPORATION
210 REM ISAAC WILLY TRAXLER
220 REM NSIL STATION, MS
230 REM
240 REM
250 REM DO SOME PRELIMINARIES

260 UI=33
270 PAGE
280 PRINT * BEGIN PROGRAM TO UPDATE HISTORY TAPE*
290 PRINT * INSERT HISTORY TAPE INTO INTERNAL TAPE DRIVE*
300 PRINT * MAKE SURE WRITE PROTECT IS NOT ON SAFE*
310 PRINT *PRESS HOME PAGE TO START PROGRAM*
320 PRINT *OK*
330 PRINT * BEGIN PROCESSING*

340 REM UI - DEVICE NUMBER OF INTERNAL TAPE DRIVE
350 REM A$ - LINE 1 OF FILE 1
360 REM B$ - LINE 2 OF FILE 1
370 REM C$ - LINE 3 OF FILE 1
380 REM D$ - LINE 4 OF FILE 1
390 REM E$ - LINE 5 OF FILE 1
400 REM F$ - LINE 6 OF FILE 1
410 REM G$ - LINE 7 OF FILE 1
420 REM I - USED AS A TEMPORARY INDEX VARIABLE
430 REM
440 REM *** SECTION TO UPDATE FILE 1 ***

450 FIND 1
460 INPUT QUI:A$
470 INPUT QUI:B$
480 INPUT QUI:C$
490 INPUT QUI:D$
500 INPUT QUI:E$
510 INPUT QUI:F$
520 INPUT QUI:G$
530 CLOSE
540 FIND 1
550 PRINT QUI:A$
560 PRINT QUI:B$
570 PRINT QUI:C$
580 PRINT QUI:D$
590 PRINT QUI:E$
600 PRINT QUI:F$
610 PRINT QUI:G$
620 CLOSE

```

```
630 REM END OF FILE 1 SECTION
640 REM PUT TAPE AT BEGINNING OF FILE
650 FIND 0
660 REM *** SECTION FOR FILE 2 ***
670 FIND 2
680 PRINT @U1:"SYSTEM***"
690 CLOSE
700 REM *** END OF FILE 2 SECTION ***
710 REM FIND BEGINNING OF TAPE
720 FIND 0
730 REM *** SECTION FOR FILE 3 ***
740 FIND 3
750 PRINT @U1:"PLOTFILES*"
760 CLOSE
770 REM *** END OF SECTION FOR FILE 3 ***
780 REM FIND BEGINNING OF TAPE
790 FIND 0
800 REM *** SECTION FOR FILE 4 ***
810 FIND 4
820 PRINT @U1:"PLOTSOC***"
830 CLOSE
840 PRINT
850 PRINT
860 PRINT
870 PRINT
880 PRINT
890 PRINT
900 PRINT
910 PRINT
920 PRINT
930 PRINT
940 PRINT
950 PRINT
960 FIND 1
970 OLD
980 REM END OF PROGRAM
```

TAPE PROCESSING FINISHED

YOU MAY REMOVE THE TAPE NOW

INSERT STATISTICS PROGRAM TAPE INTO INTERNAL TAPE DRIVE

PRESS HOME PAGE TO CONTINUE

OKJ

```

100 INIT
110 DATA 33,11,32
120 READ U1,U2,U3
130 DIM U$(8),U$(8)
140 DIM I7(40)
150 DATA 12.706,4.303,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.228
160 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
170 DATA 2.074,2.069,2.064,2.06,2.056,2.052,2.049,2.046,2.043,2.04
180 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
190 READ I7
200 FIND U2:0
210 FIND U2:2
220 INPUT U2:6:A
230 IF A=1 THEN 2050
240 INPUT U2:9:H$
250 DIM N1(30),I1(20),T(24),T$(40),X$(30),Y$(30),P(34),L$(60),A$(3)
260 PRINT U2,17:A
270 REM*
280 REM* GET LIST OF FILES TO BE PLOTTED
290 REM*
300 F$="PLOTFILES"
310 GOSUB 3620
320 I=0
+++1+++
330 I=I+1
340 INPUT U2:6:A
350 IF I=1 AND A=1 THEN 2060
360 INPUT U2:N1(I)
370 INPUT U2:6:I1(2)
380 IF I1(2)=2 THEN 330
390 I1(1)=1
400 REM*
410 REM* START PLOT LOOP
420 REM*
430 FOR I9=1 TO I1(1)
440 FIND U2:0
450 FIND U2:N1(I9)
460 INPUT U2:Z4
470 INPUT U2:I4$
480 INPUT U2:IX$
490 INPUT U2:Y$
500 INPUT U2:IA$
510 INPUT U2:IB$
520 INPUT U2:IP
523 IF I9=1 THEN 530
526 00=F(3)
530 IF F(0)=0 THEN 2040
535 DELETE X,Y
540 DIM X(F(8)),Y(F(8))
550 N=F(8)
560 INPUT U2:IX,Y
570 REM*
580 REM* SET DEFAULT PLOT PARAMETER
590 REM*

```

```

600 REM T(4)-MIN X VALUE OF GRAPH      T(5)-LENGTH OF X AXIS
610 REM T(14)-MIN Y VALUE            T(15)-LENGTH OF Y AXIS

I+I+I+I+
620 VIEWPORT 0,130,0,100
630 WINDOW 0,130,0,100
640 I=0
650 T(1)=F(B)
660 T(2)=2
670 T(3)=4
680 T(4)=10
690 T(5)=70
700 T(8)=1
710 T(9)=1
720 T(14)=25
730 T(15)=70
740 T(18)=1
750 T(19)=1

760 REM LABEL PLOT
770 REM TITLE GRAPH

780 X0=T(5)/2+T(4)-LEN(L$)*7/8
790 Y0=-97
800 PAGE
810 MOVE CUS:X0,Y0
820 PRINT CUS:L$

830 REM DUMP X AXIS TITLE

840 X0=T(5)/2+T(4)-LEN(X$)*7/8
850 Y0=T(14)-10
860 MOVE CUS:X0,Y0
870 PRINT CUS:X$

880 REM DUMP Y AXIS LABEL

890 X0=3
900 Y0=T(15)/2+T(14)+LEN(Y$)*10/7
910 MOVE CUS:X0,Y0
920 PRINT CUS:Y$
930 FOR Z=1 TO LEN(Y$)
940 Z$=SEG(Y$,Z,1)
950 PRINT CUS:Z$
960 NEXT Z

970 REM DISPLAY INFO ON RIGHT SIDE OF PLOT

980 X0=T(4)+T(5)+5
990 Y0=T(14)+T(15)-2
1000 MOVE CUS:X0,Y0
1010 PRINT CUS:AGENT: *PA$
1020 Y0=Y0-2
1030 MOVE CUS:X0,Y0
1040 PRINT CUS:DATE: *PD$
1050 Y0=Y0-6
1060 MOVE CUS:X0,Y0
1070 PRINT CUS:STATISTICS*
1080 MOVE CUS:X0,Y0-0.5
1090 PRINT CUS:-----
1100 Y0=Y0-4

```

```

1110 T9=2
1120 IMAGE FA,2D,3D,FA,S
1130 YO-YO-3
1140 MOVE EU3:X0,Y0
1150 PRINT EU3:'BARKLETTIS:'
1160 YO-YO-3
1170 MOVE EU3:X0+T9,Y0
1180 PRINT EU3: USING 1120: 'P(14)!'
1190 IF F(20)=0 THEN 1210
1200 PRINT EU3: USING 1120: 'P(20)!'
1210 YO-YO-3
1220 IMAGE FA,2D,3D
1230 MOVE EU3:X0,Y0
1240 PRINT EU3:'K-SQUARED!'
1250 YO-YO-3
1260 MOVE EU3:X0+T9,Y0
1270 PRINT EU3: USING 1220: 'P(23)'
1280 IMAGE FA,3E
1290 YO-YO-3
1300 MOVE EU3:X0,Y0
1310 PRINT EU3:'MSE:'
1320 YO-YO-3
1330 MOVE EU3:X0+T9,Y0
1340 PRINT EU3: USING 1280: 'P(27)'
1350 YO-YO-6
1360 MOVE EU3:X0,Y0
1370 PRINT EU3:'PARAMETERS'
1380 MOVE EU3:X0,Y0-0.5
1390 PRINT EU3: '-----'
1400 YO-YO-4
1410 IMAGE FA,3D,2D,FA,2D,3D,FA,S
1420 MOVE EU3:X0,Y0
1430 GO TO P(3) OF 1480,1450,1510
1440 REM case 2 Y=ln(Y)
1450 PRINT EU3:'ln(Y)=atbx'
1460 GO TO 1520
1470 REM case 1 X=ln(X)
1480 PRINT EU3:'Y=atb ln(X)'
1490 GO TO 1520
1500 REM case 3 no transform
1510 PRINT EU3:'Y=atbx'
1520 YO-YO-3
1530 MOVE EU3:X0+T9,Y0
1540 PRINT EU3: USING 1280: 'b= ',P(4)
1550 YO-YO-3
1560 MOVE EU3:X0+T9,Y0
1570 PRINT EU3: USING 1280: 'b= ',P(5)
1580 IF F(7)=0 THEN 1720
1590 YO-YO-3
1600 MOVE EU3:X0+T9,Y0
1610 MOVE EU3:X0,Y0
1620 PRINT EU3:'S(X) = c(X + e)^d'
1630 YO-YO-3
1640 MOVE EU3:X0+T9,Y0

```

```

1650 PRINT GU3: USING 1280: "e = ", P(6)
1660 YO=YO-3
1670 MOVE GU3: X0+T9, YO
1680 PRINT GU3: USING 1280: "d = ", P(7)
1690 YO=YO-3
1700 MOVE GU3: X0+T9, YO
1710 PRINT GU3: USING 1280: "e = ", P(30)
1720 YO=YO-3
1730 MOVE GU3: X0, YO
1740 IF P(3) < 2 THEN 1740
1750 PRINT GU3: "Y' = f - Y."
1760 GO TO 1750
1770 PRINT GU3: "Y' = (Y + f) * 5."
1780 YO=YO-3
1790 MOVE GU3: X0, YO
1800 PRINT GU3: "X' = X + h."
1810 YO=YO-3
1820 MOVE GU3: X0+T9, YO
1830 IF P(3) = 2 THEN 1850
1840 PRINT GU3: USING 1280: "f = ", P(31)
1850 YO=YO-3
1860 MOVE GU3: X0+T9, YO
1870 PRINT GU3: USING 1280: "h = ", P(32)
1880 MOVE GU3: T(4)+T(5), T(14)
1890 MOVE GU3: T(4)+T(5), T(14)+T(15)
1900 MOVE GU3: T(4), T(14)+T(15)
1910 GOSUB 4000
1920 IF U3=1 THEN 1900
1930 PRINT "OKJ."
1940 PRINT "DO YOU WANT A PLOTTER PLOT OF THIS PLOT? (Y/N)."
1950 IF REPLY = "Y" THEN 1980
1960 U3=10
1970 GO TO 420
1980 U3=32
1990 GO TO 2000
2000 NEXT 19
2010 REM
2020 FIND 4
2030 OLD
2040 PRINT "NO DATA SETS FOUND ON THIS TAPE."
2050 END
2060 PRINT "THERE ARE NO PLOT FILES CURRENTLY QUEUED TO BE PRINTED."
2070 END
2080 REM
2090 FORK PLOT SUBROUTINES
2100 REM
2110 REM
2120 U9=4
2130 GOSUB 3160
2140 U9=14

```

```

2150 GOSUB 3160
2160 U0=4
2170 Y0=Y0-5
2180 MOVE @U3:Y0
2190 PRINT @U3:"SCALE FACTORS:":
2200 MOVE @U3:Y0-0.5
2210 PRINT @U3:
2220 Y0=Y0-4
2230 MOVE @U3:Y0
2240 PRINT @U3:"X axis: 10**X2
2250 Y0=Y0-3
2260 MOVE @U3:Y0
2270 PRINT @U3:"Y axis: 10**Y2
2280 VIEWPORT T(4),T(4)+T(5),T(14),T(14)+T(15)
2290 WINDOW T(6),T(6)+T(7),T(16),T(16)+T(17)
2300 AXIS @U3:T(8),T(18)
2310 J=1
2320 K2=T(10)/T(17)/T(15))
2330 K3=T(14)
2340 U4=STR(T(16)+(J-1)*T(18))
2350 PRINT @U3;T(10) MAX T(4)-(LEN(U4)+1)*1.78,K3-0.89
2360 PRINT @U3:U4
2370 IF J>T(19) THEN 2410
2380 K3=K3+K2
2390 J=J+1
2400 GO TO 2340
2410 K2=T(8)/T(7)/T(5))
2420 K3=T(4)
2430 J=1
2440 U4=STR(T(6)+(J-1)*T(8))
2450 PRINT @U3;T(10) MAX K3-(LEN(U4)+1)*1.78,K3-0.5,T(14)-4
2460 PRINT @U3:U4
2470 IF J>T(9) THEN 2510
2480 K3=K3+K2
2490 J=J+1
2500 GO TO 2440
2510 FOR J=1 TO T(1)
2520 IF T(2)<>1 THEN 2540
2530 IF J>1 THEN 2560
2540 MOVE @U3:X(J),Y(J)
2550 GO TO 2570
2560 DRAW @U3:X(J),Y(J)
2570 GOSUB 2600
2580 NEXT J
2590 RETURN
-----
2600 S2=T(14+3)/T(14+1)*0.75
2610 S1=T(4+3)/T(4+1)*0.75
2620 GO TO T(3) OF 2910,2640,2700,2770,2840
2630 GO TO 2910
2640 RNDVE @U3:0,S2
2650 DRAW @U3:S1,-2+S2
2660 DRAW @U3:-2+S1,0
2670 DRAW @U3:S1,2+S2
2680 RNDVE @U3:0,-S2
2690 RETURN
2700 RNDVA @U3:0,S2
2710 DRAW @U3:0,-2+S2
2720 DRAW @U3:0,S2

```



```

2730 KRRAM R03:51:0
2740 KRRAM R03:2451:0
2750 KRRAM R03:51:0
2760 RETURN
2770 KMOVE R03:51:52
2780 KRRAM R03:07:2452
2790 KRRAM R03:2451:0
2800 KRRAM R03:07:4852
2810 KRRAM R03:2451:0
2820 KMOVE R03:51:52
2830 RETURN
2840 KMOVE R03:07:52
2850 KRRAM R03:51:52
2860 KRRAM R03:51:52
2870 KRRAM R03:51:52
2880 KRRAM R03:51:52
2890 KMOVE R03:07:52
2900 RETURN
2910 IF T(2)=1 THEN 2930
2920 KRRAM R03:07:0
2930 RETURN

```

```

---1---
2940 Y2=0
2950 T(16)=T(39)
2960 T(17)=T(22)
2970 FOR J=1 TO T(1)
2980 T(14)=T(16) MIN Y(J)
2990 T(17)=T(17) MAX Y(J)
3000 NEXT J
3010 T(17)=T(17)-T(16)
3020 T(17)=T(17)+T(19)+T(19)=0
3030 IF T(1) THEN 3350
3040 RETURN

```

```

---1---
3050 X2=0
3060 T(6)=T(39)
3070 T(7)=T(12)
3080 FOR J=1 TO T(1)
3090 T(6)=T(6) MIN X(J)
3100 T(7)=T(7) MAX X(J)
3110 NEXT J
3120 T(7)=T(7)-T(6)
3130 T(7)=T(7)+T(19)+T(19)=0
3140 IF T(1) THEN 3350
3150 RETURN

```

```

---2---
3160 DIM S(3)
3170 S(1)=INT(T(10)/1715)
3180 S(2)=T(10)/1715
3190 S(3)=T(10)/1715
3200 S(4)=INT(S(3)/50)
3210 IF S(4)=0 THEN 3350
3220 S(3)=S(3)-S(4)*50
3230 S(4)=S(4)+1
3240 S(4)=S(4)+1
3250 S(4)=S(4)+1
3260 S(3)=S(3)+S(4)*50
3270 S(4)=S(4)+1

```

```

3770 IF S0(5)=-10 THEN 3290
3780 S0(3)=-S0(4)+5
3790 IF S0(2)=-5 THEN 3310
3800 S0(3)=S0(4)+2
3810 IF S0(1)=-2 THEN 3330
3820 S0(3)=-S0(4)
3830 S0(5)=1+(0.972)/S0(3)
3840 IF S0(5)=0 THEN 3360
3850 S0(5)=S0(5)-0.9999
3860 S0(5)=1/(0.972)+1+(0.972)/S0(3)
3870 IF S0(5) < 0 THEN 3400
3880 S0(2)=S0(5)+0.9999
3890 S0(2)=S0(2)*(INT(ABS(S0(5))))*SGN(S0(5)))
3910 S0(5)=S0(2)+S0(1)
3920 S0(5)=S0(2)+S0(1)
3930 S0(4)=INT(INT(ABS(S0(5))))*SGN(S0(5))/S0(3))
3940 IF S0(5)=-1 THEN 3460
3950 S0(3)=S0(5)
3960 S0(4)=1
3970 IF S0(3)=-1 THEN 3490
3980 S0(3)=S0(5)
3990 S0(4)=1
4010 S0(2)=S0(1)
4020 (0.943)-S0(2)-S0(1)
4030 1/(0.943)-S0(3)
4040 1/(0.945)-S0(4)
4050 1/(0.945)=1.75*(0.943)/T(0.941)
4060 RETURN

```

```

4070 IF S0(5)=-10 THEN 3290
4080 S0(3)=-S0(4)+5
4090 IF S0(2)=-5 THEN 3310
4100 S0(3)=S0(4)+2
4110 IF S0(1)=-2 THEN 3330
4120 S0(3)=-S0(4)
4130 S0(5)=1+(0.972)/S0(3)
4140 IF S0(5)=0 THEN 3360
4150 S0(5)=S0(5)-0.9999
4160 S0(5)=1/(0.972)+1+(0.972)/S0(3)
4170 IF S0(5) < 0 THEN 3400
4180 S0(2)=S0(5)+0.9999
4190 S0(2)=S0(2)*(INT(ABS(S0(5))))*SGN(S0(5)))
4210 S0(5)=S0(2)+S0(1)
4220 S0(5)=S0(2)+S0(1)
4230 S0(4)=INT(INT(ABS(S0(5))))*SGN(S0(5))/S0(3))
4240 IF S0(5)=-1 THEN 3460
4250 S0(3)=S0(5)
4260 S0(4)=1
4270 IF S0(3)=-1 THEN 3490
4280 S0(3)=S0(5)
4290 S0(4)=1
4310 S0(2)=S0(1)
4320 (0.943)-S0(2)-S0(1)
4330 1/(0.943)-S0(3)
4340 1/(0.945)-S0(4)
4350 1/(0.945)=1.75*(0.943)/T(0.941)
4360 RETURN

```

```

4370 IF S0(5)=-10 THEN 3290
4380 S0(3)=-S0(4)+5
4390 IF S0(2)=-5 THEN 3310
4400 S0(3)=S0(4)+2
4410 IF S0(1)=-2 THEN 3330
4420 S0(3)=-S0(4)
4430 S0(5)=1+(0.972)/S0(3)
4440 IF S0(5)=0 THEN 3360
4450 S0(5)=S0(5)-0.9999
4460 S0(5)=1/(0.972)+1+(0.972)/S0(3)
4470 IF S0(5) < 0 THEN 3400
4480 S0(2)=S0(5)+0.9999
4490 S0(2)=S0(2)*(INT(ABS(S0(5))))*SGN(S0(5)))
4510 S0(5)=S0(2)+S0(1)
4520 S0(5)=S0(2)+S0(1)
4530 S0(4)=INT(INT(ABS(S0(5))))*SGN(S0(5))/S0(3))
4540 IF S0(5)=-1 THEN 3460
4550 S0(3)=S0(5)
4560 S0(4)=1
4570 IF S0(3)=-1 THEN 3490
4580 S0(3)=S0(5)
4590 S0(4)=1
4610 S0(2)=S0(1)
4620 (0.943)-S0(2)-S0(1)
4630 1/(0.943)-S0(3)
4640 1/(0.945)-S0(4)
4650 1/(0.945)=1.75*(0.943)/T(0.941)
4660 RETURN

```

```

4670 IF S0(5)=-10 THEN 3290
4680 S0(3)=-S0(4)+5
4690 IF S0(2)=-5 THEN 3310
4700 S0(3)=S0(4)+2
4710 IF S0(1)=-2 THEN 3330
4720 S0(3)=-S0(4)
4730 S0(5)=1+(0.972)/S0(3)
4740 IF S0(5)=0 THEN 3360
4750 S0(5)=S0(5)-0.9999
4760 S0(5)=1/(0.972)+1+(0.972)/S0(3)
4770 IF S0(5) < 0 THEN 3400
4780 S0(2)=S0(5)+0.9999
4790 S0(2)=S0(2)*(INT(ABS(S0(5))))*SGN(S0(5)))
4810 S0(5)=S0(2)+S0(1)
4820 S0(5)=S0(2)+S0(1)
4830 S0(4)=INT(INT(ABS(S0(5))))*SGN(S0(5))/S0(3))
4840 IF S0(5)=-1 THEN 3460
4850 S0(3)=S0(5)
4860 S0(4)=1
4870 IF S0(3)=-1 THEN 3490
4880 S0(3)=S0(5)
4890 S0(4)=1
4910 S0(2)=S0(1)
4920 (0.943)-S0(2)-S0(1)
4930 1/(0.943)-S0(3)
4940 1/(0.945)-S0(4)
4950 1/(0.945)=1.75*(0.943)/T(0.941)
4960 RETURN

```

```

3800 JS=SIG(1,10)
3900 F=ERD(1)
3910 DT=15(1)
3920 IF JS=1 THEN 3930
3930 RETURN
3940 PRINT "FILE DOES NOT MATCH INTERNAL NAME"
3950 PRINT "INDEX NAME =";INDEX;INTERNAL NAME =";JS
3960 PRINT P(1,2)
3970 END
3980 PRINT P(1,2)
3990 PRINT P(1,2)
4000 LWR

```

-----1----- 4000 KERN\$ PLOT DATA,CURVE AND CONFIDENCE LIMITS

4010 GOSUB 4020

4020 GOSUB 4030

4030 KERN\$ ADJUST X RANGE

4040 Y(5)=Y(5)-0.1*I(7)

4050 Y(5)=Y(5) MAX 0.01*I(7)

4060 I(7)=I(7)+1.2

4070 KERN\$ ADJUST Y-RANGE

4100 Y(15)=Y(15)-0.05*I(17)

4110 Y(15)=Y(15) MAX 0.01*I(17)

4120 I(17)=I(17)+1.1

4130 KERN\$ PLOT OBSERVED DATA

4140 GOSUB 4110

4150 KERN\$

4160 KERN\$ DRAW G(3):UPPER AND LOWER CONFIDENCE LIMITS

4170 KERN\$

4180 KERN\$ Y(16)=Y(16)+0.01*I(17)

4190 Y(16)=Y(16)

4200 GOSUB 4200

4210 MOVE G(1):X(10)-X(2),Y(16)*10⁷-Y(2)

4220 FOR Y5=Y(16) TO Y(16)+I(17) STEP I(17)/100

4230 Y(16)=Y5

4240 GOSUB 4240

4250 LEAVE G(1):X(10)-X(2),Y5*10⁷-Y(2)

4260 NEXT Y5

4270 Y(16)=Y(16)

4280 GOSUB 4280

4290 MOVE G(1):X(10)-X(2),Y(16)*10⁷-Y(2)

4300 Y(16)=Y(16)

4310 FOR Y5=Y(16) TO Y(16)+I(17) STEP I(17)/100

4320 IF P(3)-2 AND Y5=YP(31) THEN 4470

4330 Y(16)=Y5

4340 Y(16)=Y(16)+I(17) STEP I(17)/100

```

4400 GOSUB 4020
4410 GO TO 4450
4420 GOSUB 4950
4430 BRND RND:LO#10^-X2,Y#10^-Y2
4440 IF L.O THEN 4470
4450 BR=0
4460 NEXT Y
4470 Y0=T(16)
4480 GOSUB 4820
4490 Y0=T(16)
4500 GOSUB 4750
4510 MOVE RND:U0#10^-X2,T(16)#10^-Y2
4520 FOR Y5=T(16)-1(17)*D7 TO (T(16)+1(17))*D7 STEP T(17)/100#D7
4530 IF F(3)-2 AND Y5=>1P(31) THEN 4620
4540 Y0=Y5
4550 GOSUB 4820
4560 Y0=Y5
4570 GOSUB 4950
4580 BRND RND:U0#10^-X2,Y#10^-Y2
4590 R4=10000
4600 FOR I4=1 TO N
4610 IF X(I5)=0 THEN 4670
4620 I4=I4+1
4630 NEXT I4
4640 IF I4=1 THEN 4700
4650 VIEWPORT 0,130,0,100
4660 WINDOW 0,130,0,100
4670 NEXT I5
4680 IF I4=1 THEN 4700
4690 BR=14
4700 VIEWPORT 0,130,0,100
4710 WINDOW 0,130,0,100
4720 REM## X#="DETECTION LIMIT IS ."
4730 REM## IF D8>10000 THEN 4730
4740 X#=""
4750 REM## X#="WARNING - Detection Limit EGRGR00GR."
4760 GO TO 4770
4770 Y#-STR(ND)
4780 Y0=FOS(Y#,".",1)
4790 Y#-SEG(Y#1,Y0+2)
4800 X#-X#Y#
4810 X0=T(5)/2+T(4)-LEN(X#)#7/8
4820 Y0=T(14)-14
4830 MOVE RND:X0,Y0
4840 PRINT RND:X#
4850 Y0=Y0-3
4860 Y#-STR(00)
4870 X#="Calibration Curve # "Y#
4880 X0=T(5)/2+T(4)-LEN(X#)#7/8
4890 MOVE RND:X0,Y0
4900 PRINT RND:X#
4910 RETURN

```

```

---6---
4920 REM# SOLVE LINEAR REGRESSION IN REVERSE FOR X0
4930 REM# (Y0;X0)
4940 REM# TRANSFORM Y0

```

```

4855 IF P(3)=2 AND Y0=>P(31) THEN 4932
4856 Y0=(Y0+P(31))^P(29)
4870 IF P(3)=2 THEN 4890
4880 Y0=LOG(2*P(31)-Y0)
4900 X0=(Y0-P(1))/P(2)
4900 IF P(3)=1 THEN 4920
4710 X0=EXP(X0)
4720 X0=X0-P(32)
4930 RETURN
4732 X0=50
4734 RETURN
4940 REM#

```

```

4950 REM#
4740 REM# SOLVE LINEAR REGRESSION IN REVERSE FOR
4770 REM# UPPER AND LOWER CONFIDENCE LIMITS
4780 REM# (Y0,X0,LO,U0)
4790 REM# T-VALUES L=.025 U=.975
4991 REM# L0 is the lower curve if slope is positive
4792 REM# U0 is the upper curve if slope is positive
4993 REM# L0 is the upper curve if slope is negative
4994 REM# U0 is the lower curve if slope is negative

```

```

5000 T3=0
5010 U9=0

```

```

5020 REM# Power Transform#

```

```

5030 Y0=(Y0+P(31))^P(29)

```

```

5040 REM# Functional Transform#

```

```

5050 IF P(3)=2 THEN 5070
5060 Y0=LOG(2*P(31)-Y0)
5070 L3=17*(N-2)^2*P(6)
5080 M1=P(2)^2-P(10)*T3
5090 M1=P(2)*(Y0-P(1))-P(11)*T3
5100 M2=(X0+P(30))^P(7)+P(12)
5110 M2=Y0-P(1)
5120 M3=13*P(11)^2-13*P(10)*M2+P(10)*M2^2-2*P(2)*P(11)*M2
5121 IF M3=0 THEN 5130

```

```

+++++

```

```

5122 REM ERROR ROUTINE

```

```

5123 U0=100

```

```

5124 L0=100

```

```

5126 RETURN

```

```

5127 REM

```

```

5130 F3=17*(N-2)*SQR(A2*P(6))

```

```

5140 X0=(M1+F3)/M1

```

```

5150 REM Inverse Functional Transform#

```

```

5160 IF P(3)=1 THEN 5180

```

```

5170 X0=EXP(X0)

```

```
+++++ 5100 U0=X0-F(32)
5190 X0=(M1-M3)/A1
5200 REM# Inverse Functional transform
5210 IF F(3)<>1 THEN 5230
5220 X0=EXP(X0)
+++++ 5230 L0=X0-F(32)
5280 RETURN
5290 REM scale X & Y for plot
+++++ 5300 FOR J=1 TO T(1)
5310 Y(J)=10*Y(J)
5320 NEXT J
5330 Y2=Y2-1
5340 GO TO 2950
+++++ 5350 FOR J=1 TO T(1)
5360 X(J)=10*X(J)
5370 NEXT J
5380 X2=X2-1
5390 GO TO 3060
```

H

FILE # 1

```

+++++
100 INIT
110 U3=12
120 PRINT @U3,26:0
130 PAGE
140 FRINT "JJ"
150 FRI " S T A T I S T I C S   P R O G R A M   D I R E C T O R Y "
160 FRI "
170 FRINT "JJOPTION"
180 FRINT "
190 FRINT "J 1 CREATE A NEW HISTORY TAPE"
200 FRINT " 2 REFRESH HISTORY TAPE"
210 FRINT " 3 ROR STATISTICS PROGRAMS"
220 FRINT " 4 STOP"
230 FRINT "JJJJ WHICH OPTION? (1,2,3,4)"
240 IFDI A$
250 IF A$="" THEN 240
260 A=VAL(A$)
270 IF A=1 OR A=4 THEN 100
280 G=INT(A)
290 GO TO G OF 300,400,500,600
300 FIND 0
310 FIND 6
320 OLD
330 OLD
340 FIND 0
350 OLD
360 FIND 0
370 FIND 5
380 OLD
390 END
+++++

```

```
4 INIT
5 PRINT #32,26:0
10 U1=33
11 U2=11
12 FIND Q#2:0
13 FIND Q#2:C
15 INPUT Q#2:Y,D#
27 DIM Z$(25),O$(20),C$(2),F$(10),E$(72),I$(127),B$(127)
28 DIM M$(6),Y$(30),X$(30),R$(2),A$(4),N$(1),S$(1),W$(7)
29 R#=.
160 DIM X1(32),Y1(32),X2(32),Y2(32),M2(32),G6(32),NO(8),P(34),07(32)
110 DIM S(8),M6(8),M7(8),M8(8),M9(8),P0(34)
200 DIM T7(40)
210 DATA 12.706,4.303,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.228
220 DATA 2.201,2.179,2.162,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
230 DATA 2.074,2.069,2.064,2.058,2.052,2.049,2.046,2.043,2.04
240 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
250 READ T7
255 E#=.
260 FOR I=1 TO 71
270 E#-E#*
280 NEXT I
301 REM*
302 REM*INITIALIZE PLOFILES
303 REM*
304 F#="PLOFILES"
305 B#SUB 6000
306 FIND Q#2:W
307 PRINT Q#2:F#
308 PRINT Q#2:2;
309 REM* INITIALIZE PLOT FILES
310 F#="PLOTSOC"
311 GOSUB 6000
313 FIND Q#2:W
314 PRINT Q#2:F#
315 PRINT Q#2:2;
319 PRINT "GGGGGG"
320 PRINT "INSERT RMA TAPE IN 4051"
325 PRINT "JEMEK THE LABEL ON THE RMA DATA TAPE"
330 INPUT Z#
340 FIND Q#1:1
350 A=Y1(0)
360 IF A=1 THEN 320
370 INPUT R#1:Y#
380 IF LEN(Z#)<13 THEN 403
390 DIM Z$(13),Y$(13)
400 IF 14=Z# THEN 410
401 PRINT "LABEL ON TAPE IS "Y#
403 PRINT "WRONG RMA TAPE OK WRONG LABEL .GGGGGGGGGGGGGGGGGGGGGG"
405 PAGE
410 INPUT Q#1:B#
420 M#-SEG(8#18,2)
430 PRINT "DATA IS BEING PROCESSED"
```



```
440 GOSUB 1000
450 PRINT "GGGGGGG"
470 PRINT "INSERT PROGRAM TAPE IN 4051"
480 PRINT "OKJ"
490 FIND QUIT:3
500 QLL
```

```
---]---
1000 REM* PROGRAM FOR H ONLY
1010 REM*
1020 REM*
1030 PRINT "THIS PROGRAM PROCESSES AGENT H ONLY"
1040 M$="H"
1050 REM PRINT "ENTER THE SERIAL NUMBER (N)"
1060 REM INPUT N$
1080 REM PRINT "ENTER THE ANALYST'S INITIALS (AAA)"
1090 REM INPUT V$
1092 N$=""
1094 V$=""
```

```
1110 REM* PROCESS CALIBRATION DATA FIRST
```

```
1120 FIND QUIT:1
1130 INPUT PUI:1$
1135 N=0
++H111111++
1140 A=TYPE(O)
1150 IF A<>2 THEN 1290
1160 INPUT PUI:1$
1170 GOSUB 5000
1180 IF A<>1 THEN 1280
1190 X$=SEB(PUI,27,7)
1200 C$=SEG(X$,1,2)
1210 IF C$="NA" THEN 1280
1215 N=N+1
1220 XI(N)=VAL(X$)
1230 Y$=SEB(PUI,48,7)
1240 YI(N)=VAL(Y$)
1250 GO TO 1140
```

```
++H21111++
1290 REM* END OF DATA FOR CALIBRATION
```

```
++H311111++
1300 PRINT "PROCESSING CALIBRATION DATA FOR H"
```

```
1305 P=0
1310 GOSUB 3000
1315 GOSUB 20000
1320 GOSUB 25000
1330 F(13)=EN
1340 F(14)=61
1350 M1=0
1390 M2=0
1400 M3=0
1410 M4=0
1420 M5=0
1425 F(8)=N
1430 FOR I=1 TO F(8)
1440 M1=M1+X(I)
```

1650 M2=M2*Y1(I)
1660 M3=M3*Y1(I)*X1(I)
1670 M4=M4*Y1(I)*Y1(I)
1680 M5=M5*Y1(I)*X1(I)
1690 NEXT I
1700 C=P(B)*M3-M1^2
1710 F(10)=F(B)/C
1720 F(11)=M1/C
1730 F(12)=M3/C
1740 F(2)=(F(B)*M5-M1*M2)/(P(B)*M3-M1^2)
1750 F(3)=(M2-F(2)*M1)/F(B)
1760 F(4)=F(1)
1770 F(5)=F(2)
1780 B=0
1790 FOR I=1 TO P(B)
1800 B=B+(Y1(I)-P(1)-F(2)*X1(I))^2
1810 NEXT I
1820 F(23)=1-D/(M4-M2^2/F(B))
1830 F(3)=2
1840 F(6)=D/(F(B)-2)
1850 F(9)=1
1860 F(29)=1
1870 P(27)=F(6)
1880 L4="CALIBRATION OF INSTRUMENT RESPONSE *10"
1882 L4=L4\$
1884 L5="L5R\$"
1886 DIN Y4(30)
1890 X4="CONCENTRATION"
1900 Y4="INSTRUMENT RESPONSE"
1910 D4=SEG(R4,14,2)
1920 D4=D4\$
1930 M4=SEG(R4,12,2)
1940 D4=D4\$
1950 D4=D4\$
1960 M4=SEG(R4,16,2)
1970 D4=D4\$
1980 GOSUB 61000
1983 F(1)=0.36022
1986 F(2)=66.48715
1990 F0=F
1992 F4="HRH"
1974 GOSUB 20000
1976 INFUT QUC:R4,P
2000 REM\$ PROCESS QI.XQP DATA
2005 R4="OL"
2010 C=0.216
2015 GOSUB 7000
2020 GOSUB 3500
2025 GOSUB 3625
2000 REM\$ PROCESS ACTUAL DATA
2215 N=0
2240 REM INFUT ACTUAL DATA
2250 FIND QUIT
2260 INFUT QUIT\$

```

1113+++ 2270 A=TYP(O)
2280 IF A<>2 THEN 2900
2290 INPUT GUITH#
2300 GOSUB 5000
2310 IF A<>1 THEN 2270
2315 Y=SEG(B#*118/2)
2316 IF Y<>'FL' THEN 2270
2320 REM PROCESS ACTUAL DATA
2330 N=N+1
2340 GOSUB 10000
2350 GO TO 2270
1114+++ 2900 PRINT 'OKJ'
2905 PRINT 'GIBNGSGGKSG10 GFGKGGGGGGGAGNG 0T0AGP0ED 01GN0 046005610'
2910 PRINT 'PRESS 'HOME PAGE' TO CONTINUE'
2920 PRINT 'OKJ'
2930 FIRD 3
2940 OLU

```

---1--- 3000 REM# DETERMINE GROUPS

```

3005 K=0
3010 N2=0
1112+++ 3020 FOR J1=1 TO N
3030 IF N2(J1)=0 THEN 3045
3040 NEXT J1
1114+++ 3045 IF J1=N THEN 3275
3046 IF J1>N THEN 3200
3050 N=N+1
3060 N2(J1)=K
3065 IF J1=N THEN 3200
3070 J2=1
3080 J3=Y1(J1)
3090 J4=Y1(J1)*2
3100 FOR J=J1+1 TO N
3110 IF N2(J)>0 THEN 3180
3120 IF X1(J1)=X1(J) THEN 3140
3130 GO TO 3180
1115+++ 3140 N2(J)=N
3150 J2=J+1
3160 J3=J3+Y1(J)
3170 J4=J4+Y1(J)*Y1(J)
1116+++ 3180 NEXT J
3190 J5=J4-J3*J3/J2
3200 IF J2=1 OR J5=0 THEN 3220
3210 GO TO 3020
1117+++ 3220 FOR J=1 TO N
3230 IF N2(J)<>K THEN 3250
3240 N2(J)=-1
1118+++ 3250 NEXT J
3260 N=N-1
3270 GO TO 3020
1119+++ 3275 H2(H)=-1
1120+++ 3280 N7=0
3290 FOR J=1 TO N
3300 IF N2(J)=-1 THEN 3320
3310 N7=N7+1

```

```
+++++ 3320 NEXT J
3330 REM* DETERMINE NUMBER IN EACH GROUP & SAVE XBY
3350 NO=0
3355 DIM G6(N),G7(N)
3360 FOR I3=1 TO N
3370 G6(I3)=Y1(I3)
3380 G7(I3)=X1(I3)
3385 IF N2(I3)=-1 THEN 3400
3390 NO(N2(I3))=NO(N2(I3))+1
+++++ 3400 NEXT I3
3410 RETURN
```

```
---I--- 3500 REM* RC
3501 ON SIZE THEN 3503
3502 GO TO 3510
---I--- 3503 FUZZ 15,1.0E-24
3504 OFF SIZE
3505 RETURN
```

```
+++++ 3510 REM*(X1(N2(I)),P(25),P(26))
3530 S1=0
3540 S2=0
3541 J=0
3542 IF N>0 THEN 3550
3544 P(25)=0
3546 P(26)=0
3548 P(28)=0
3549 GO TO 3620
+++++ 3550 FOR I=1 TO N
3555 J=J+1
3570 S1=S1+X1(I)
3580 S2=S2+X1(I)^2
3590 NEXT I
3600 P(25)=S1/J
3605 P(28)=J
3610 P(26)=SOR(S2/J-P(25)^2)
+++++ 3620 RETURN
```

```
---I--- 3625 REM* UPDATE FLOISRC
3630 F3=FLOISRC*
3640 GOSUB 4000
+++++ 3650 INPUT Q2;6:A
3660 IF A<2 THEN 3690
3670 INPUT Q2;E$
3680 GO TO 3650
+++++ 3690 IF N1$*RL.216*
3698 PRINT Q2;E$
3700 PRINT Q2;D$
3710 PRINT Q2;O$
```

3720 PRINT B(21),F(25),F(26),F(28)
3730 RETURN

4000 REM# DETERMINE SCALE SHIFTS FOR X AND Y

4010 P(31)=1
4020 F(32)=0.1
4030 FOR I3=1 TO N
4040 F(31)=F(31) MIN Y1(I3)
4050 F(32)=F(32) MIN X1(I3)
4060 NEXT I3
4062 F(31)=1-F(31)
4064 F(32)=0.1-F(32)
4070 IF Z1<4 THEN 4110
4080 F(31)=F(32)

4100 REM# INITIALIZE P

4110 P(8)=N
4120 F(7)=0.
4130 F(9)=K
4140 P(19)=0
4150 F(20)=0
4160 F(21)=0
4170 F(22)=0
4180 F(23)=0
4190 F(24)=0

4200 REM# INITIAL TRANSFORMATION

4210 FOR I3=1 TO N
4220 Y1(I3)=(G6(I3)+F(31))*P(29)
4230 X1(I3)=G7(I3)+F(32)
4240 NEXT I3
4250 RETURN

-----3--- 5000 REM# CHECK FOR ACCEPTABLE RECORD

5010 A=1
5020 X#=SEG(I#,6,1)
5030 IF NOT(X#="1" OR X#="3") THEN 5110
5040 X#=SEG(H#,18,2)
5050 IF X#<>"H" THEN 5110

5060 REM X#=SEG(I#,20,1)
5070 REM IF X#<>"N" THEN 5110
5080 REM X#=SEG(H#,87,3)
5090 REM IF X#<>"V" THEN 5110

5100 RETURN
5110 A=0
5120 RETURN

-----1--- 6000 REM# GROUP MOMENTS

6005 M7=0

```

6010 H6=0
6020 H7=0
6030 H8=0
6040 H9=0
6050 FOR I=1 TO N
6055 IF H2(I)<1 THEN 6100
6057 H7=N7+1
6060 H6(H2(I))=H6(N2(I))+X1(I)
6070 H7(H2(I))=H7(N2(I))+Y1(I)
6080 H8(H2(I))=H8(N2(I))+X1(I)*X1(I)
6090 H9(H2(I))=H9(N2(I))+Y1(I)*Y1(I)
6100 NEXT I
6110 RETURN

```

```

---1--- 7000 REM$ GET DATA FOR OL $ OP

```

```

7010 N=0
7020 FIND QUIL$
7030 INPUT QUIL$
7040 A=I/P(O)
7050 IF A<2 THEN 7230
7060 INPUT QUIL$
7070 GOSUB 5000
7080 IF A>1 THEN 7220
7090 M$=SEG(QUIL,118,2)
7100 IF M$<="0" THEN 7220

```

```

7102 REM CHECK FOR CONTROL CONCENTRATION

```

```

7104 Y$=SEG(H$,97,7)
7106 IF VAL(Y$)<C THEN 320
7110 Y$=SEG(H$,48,7)
7120 Y=VAL(Y$)
7130 X=(Y-F(1))/F(2)
7140 M$=SEG(H$,62,7)
7150 X=X*VAL(M$)
7160 Y$=SEG(H$,97,7)
7170 Y=VAL(Y$)
7180 N=N+1
7190 X1(N)=X
7200 Y1(N)=Y
7220 GO TO 7040
7230 RETURN

```

```

---1--- 10000 REM$ GET ACTUAL DATA FROM B$
10010 REM* PEAK HIEGHT

```

```

10020 Y$=SEG(B$,40,7)
10030 Y0=VAL(Y$)
10040 Y0=(Y0-F(1))/F(2)
10045 X0=(Y0-F(1))/F(2)
10050 GOSUB 15000
10060 X$=SEG(B$,62,7)
10070 X0=X*VAL(X$)
10080 X$=SEG(B$,62,7)
10090 X0=X*VAL(X$)

```

10140 REM* GET TIME

10150 X1=SEG(0\$,12\$,2)
10160 Y1=SEG(0\$,12\$,2)
10170 X=VAL(X1)
10180 Y=VAL(Y1)
10190 Z=X-Y
10200 X1=SEG(0\$,12\$,2)
10210 Y1=SEG(0\$,12\$,2)
10220 X=VAL(X1)
10230 Y=VAL(Y1)
10240 Z=(X-Y)*60/7

10250 REM* GET AIRFLOW

10260 Y1=SEG(0\$,90\$,7)
10270 Y=VAL(Y1)
10280 XQ=XO*(0.7*(Y*Z)+4.0E-4
10290 LQ=Q*(0.7*(Y*Z)+4.0E-4
10300 UO=UO*(0.7*(Y*Z)+4.0E-4

10400 REM* PRINT OUT ACTUAL DATA

10405 T1=B1
10410 IF INT((N-1)/20)*20<N-1 THEN 11000
10420 B1=B1
10430 B1=REF("ACTUAL DATA FOR W",24,17)
10440 B1=REF("DATE:",52,5)
10450 B1=RLF(0\$,58,8)
10460 PRINT "T1"
10470 PRINT "J",T1
10480 B1=B1
10490 B1=REF("AGENT CONCENTRATION",29,19)
10500 PRINT "JJ",B1
10510 B1=B1
10520 B1=REF("-----",24,29)
10530 PRINT B1
10540 B1=B1
10550 B1=REF("SAMPLE LOCATION TRUE LOWER 95%",5,36)
10560 B1=REF("OFFER 52",44,20)
10570 B1=REF("TIME",59,4)
10580 PRINT B1

+++++ 11000 REM PRINT DATA

11010 B1=B1
11020 X1=SEG(0\$,21\$,6)
11030 Y1=REF(X1,5,6)
11040 X1=SEG(0\$,11\$,2)
11050 Y1=REF(X1,15,2)
11060 L1=5*(X1)
11070 REM 00,00 1,000

11080 REM 00,00 1,000
11090 IF 0\$=1,0,1-3 THEN 11082
11096 L1=L1
11098 00 00,00
11099 11092 X=00

11174 Y4=SEG(S,1,X)
11175 Y4=REF(2,5,4)
11176 IF Z=0.0015 THEN 11172
11177 X4=STR(0)

11110 REM 60SUB 12000

11120 L4=X4

11121 60SUB 61600

11122 X=0

11123 Y4=SEG(S,1,X)

11124 60SUB 14000

11130 Y4=REF(4,3,X)

11140 X4=STR(L0)

11150 REM 60SUB 12000

11160 L4=X4

11161 60SUB 61600

11162 X=0

11163 Y4=SEG(S,1,X)

11164 60SUB 14000

11170 Y4=REF(4,6,X)

+++1111

11172 REM

11177 Z4=SEG(S,120,4)

11178 Y4=REF(2,5,4)

11179 Z4=SEG(S,124,4)

11180 Y4=REF(2,6,2,1)

11185 Y=REF Y4

11189 REF Y4

11190 Y4=REF(2,5,4)

11191 Z4=SEG(S,124,4)

11192 IF Z=0 THEN 12200

11193 Y=REF Y4

11194 Y4=REF(2,5,4)

11195 Y=REF Y4

11196 IF I=0 THEN 12300

11197 FOR J=1 TO -I

11198 Y4=SEG(S,12,1)

11199 Z4=0.145

11200 Y4=REF(2,5,4)

11201 X4=STR Z4

11202 NEXT J

11203 X4=REF(2,5,4)

11204 Y=REF Y4

11205 IF Y=0 THEN 12300

11206 X4=SEG(S,1,1)

11207 RETURN

+++1111

11209 REM

+++1111

11209 RETURN

----- 14000 REMS CHECK IF DATA IF FROM LOCATION 'DK'

14010 Y4=SEG(S,116,2)

14020 IF Y4=CR OR Y4=KA THEN 14050

14030 Z=REF Y4

14040 X4=STR(Z)

14050 RETURN

+++1111

14050 RETURN

15000 REMS
 15010 REMS SOLVE LINEAR REGRESSION IN REVERSE FOR
 15020 REMS UPPER AND LOWER CONFIDENCE LIMITS
 15030 REMS (Y0,X0I0,U0)
 15040 REMS T-VALUES L=.025 U=.975

15050 X7=X0
 15060 U0=0
 15070 REMS TRANSFORM Y0
 15071 IF P(8)>40 THEN 15075
 15072 Y9=I7*(P(8)-2)
 15073 GO TO 15080
 15075 Y9=I.76
 15080 Y0=Y0+P(31)**P(29)
 15090 Y7=Y0
 15100 Y5=Y9**2*(P(6)
 15110 A1=A(1)**2-F(10)*I3
 15120 B1=F(2)*(Y7-P(1))-F(11)*I3
 15130 A7=(0.4342+1.1734*X7)**2-P(7)
 15140 B3=0
 15150 A2=69*(12)
 15160 B2=Y7-F(1)
 15170 A3=I3*(P(11)**2-I3*(P(10)*A2+P(2)**2*(P(2)*P(11))*B2
 15180 B3=I9*(0.8*(A3*(P(6))
 15190 X7=(B1+B3)/A1
 15210 L0=X7-F(32)
 15230 U0=X7+F(32)
 15250 RETURN

20000 REMS
 20010 REMS Performs Bartlett's test for homogeneity
 20020 REMS (P(5),P(7),Y2(J),X2(N0(J)),K(CB,M1)
 20030 REMS Find variance for each level
 20040 REMS

20042 ON SIZE THEN 21000
 20045 CB=-1
 20046 IF K=0 THEN 21000
 20048 S1=1
 20050 S=0
 20060 GOSUB 3000
 20070 S=0
 20080 FOR J=1 TO N
 20090 IF M2(J)=1 THEN 20100
 20100 S=M2(J)**5*(M2(J))+Y1(J)-M7(M2(J))/N0(M2(J))**2
 20110 NEXT J
 20120 S=S/J+10 F
 20130 S(J)=S(J)/100(J)-1
 20140 IF S(J)=0 THEN 21000
 20150 NEXT J

20140 REMS

```

20150 REM#find pooled variance
20160 FIM#
20170 A=0
20180 FOR J=1 TO K
20190 S3=1
20200 A=(NO(J)-1)*S(J)/S3+A
20210 NEXT J
20220 S4=A/(N7-K)
20230 REM#
20240 REM#find correction factor
20250 KEM#
20260 A=0
20270 FOR J=1 TO K
20280 A=1/(NO(J)-1)+A
20290 NEXT J
20300 C=1/A/(3*(K-1))
20310 REM#
20320 REM#find chi-square
20330 KEM#
20340 A=0
20350 FOR J=1 TO K
20360 S3=1
20370 A=(NO(J)-1)*LOG(S(J)/S3)+A
20380 NEXT J
20390 CB=((N7-K)*LOG(S4)-A)/C
20400 MI=N-1
20410 OFF SIZE
20420 RETURN

```

-----4----- BARTLETT'S TEST NOT DEFINED FOR DATA SET *IM*

```

21000 PRINT *BARTLETT'S TEST NOT DEFINED FOR DATA SET *IM*
21010 CB=-1
21011 MI=N-1
21012 OFF SIZE
21020 RETURN

-----1----- 25000 REM#
25001 IF CB=0 THEN 25003
25002 GO TO 25030
25003 AI=-1
25004 RETURN

25010 REM#CHI-SQUARE DISTRIBUTION
25020 REM# (CB,MI,AI,CB)
25030 AI=0
25040 IF CB=100 THEN 25110
25050 A=AI/2
25060 U=CB/2
25070 GUSUB 25120
25080 IF AI=0 THEN 25110

```

25090 A2=10*(5*INT(-LBI(A1)))
25100 A1=INT(A2*(A1+0.5)/A2)
25110 RETURN

|||||

----1----

25120 IF A>100 THEN 25630
25130 A1=1
25140 A2=1
25150 B2=1
25160 I=1
25170 IF U/A THEN 25320
25180 H1=U
25190 B2=H1-A
25200 A1=U*(A2+I)*A1
25210 H1=U*(B2+I)*H1
25220 I=I+1
25230 A2=A1*(I-A)*A2
25240 B2=B1*(I-A)*B2
25250 IF ABS(A1/H1-A2/B2)>1.0E-7 THEN 25200
25260 C9=A2/B2
25270 F2=A1/B1
25280 X=A
25290 GOSUB 25470
25300 A1=C9*EXP(F2-A1)
25310 RETURN
25320 A1=1/A-U
25330 H1=1/A
25340 C9=2/I+R
25350 G2=C9*(A1+U)*A2
25360 B2=C9*(H1+U)*B2
25370 A1=C9*(A2+G2-(A1+U)*A1
25380 H1=C9*(B2+G2-(H1+U)*H1
25390 I=I+1
25400 IF ABS(A2/B2-A1/H1)>1.0E-8 THEN 25340
25410 C9=H1/A1
25420 X=G11
25430 GOSUB 25470
25440 A1=G1*LOG(U)-U-A1
25450 A1=1-C9*EXP(A1)
25460 RETURN

----2----

25470 IF X<10 THEN 25500
25480 GOSUB 25600
25490 RETURN
25500 A1=1
25510 I=1
25520 FOR I=0 TO A2-1
25530 H1=U*(X+I)
25540 H2=I
25550 G2=H1
25560 X=X+H2
25570 A1=U*(H1+G2)
25580 H1=U*(H2+G2)
25590 RETURN
25600 A1=U*(X+G2)*LOG(X)-X+U*(H1+G2)*FI
25610 A1=H1/(12*X)-1/(360*X^3)+1/(1260*X^5)
25620 RETURN

|||||

```

+++++ 25630 AI=A-0.5
25640 W1=U1/5-A-0.02/A
25650 X=A1/U
25660 C9=0
25670 IF X=1 OR X=0 THEN 25690
25680 C9=(1-X)*X2+X4*LOG(X))/((1-X)*(1-X))
25690 C9=BI*5UR((1+C9)/U)
25700 IF ABS(C9)>20 THEN 25780
25710 T=1/(1+0.2316419*ABS(C9))
25720 AI=T*(0.31930153+T*(1-0.356563782+1.781477937*T))
25730 AI=A1+T*(1-1.821255978+1.330274429*T)
25740 AI=5UR(1/(2+FI))*EXP(-C9*U/23341)
25750 IF C9>0 THEN 25770
25760 AI=1-AI
25770 RETURN
25780 AI=0
+++++ 25790 GO TO 25750

```

```

59000 REM*
59010 RHM* GET HISTORY NAME
59020 REM*

```

```

+++++ 59030 GUSUB 60000
59050 UR SRU THEN 59120
59060 INPUT Q2;A:
59070 IF A=1 THEN 59120
59080 INPUT Q2;R;P
59090 IF A=1 THEN 59140
59100 GO TO 59060

```

```
59110 REM*ON SRU
```

```

---2--- 59120 INPUT Q2;30:A
59130 A=1
+++++ 59140 RETURN

```

```

59500 REM*
59510 REM* UPDATE HISTORY FILE
59520 REM* (N*X2;P(7);F(10;P(11);P(12))

```

```

59530 W1=0
59540 W2=0
59550 W3=0
59560 C=0
59570 FOR J=1 TO H
59580 W=1/(P(6)*X2(J)+P(30))*P(7)
59590 W1=W1+W
59600 W2=W2+W*X2(J)
59610 W3=W3+W*X2(J)^2
59620 NEXT J
59630 C=M1*(W2-W3)^2
59640 F(10)=W1/C
59650 F(11)=W2/C
59660 F(12)=W3/C
59670 F3=H-C*W3
59675 IF R3=0 THEN 59680
59675 F3=REP(-R3;5;1)
59675 F3=F3*R3

```

++++ 59680 GOSUB 60000
59690 PRINT Q2;D;F
59695 PRINT Q2;2;
59700 RETURN

---7--- 60000 REM# FIND/OPEN
60010 REM# (F#,N9)
60015 FIND Q2;0
60020 FIND Q2;1
60030 INPUT Q2;H#
60040 J#-SEG(H#,1,3)
60050 IF J#>10 THEN 60330
60060 INPUT Q2;6;A
60070 IF A=1 THEN 60160
60080 INPUT Q2;H#
60090 DIM J\$(10)
60100 J#-SEG(H#,4,10)
60110 F=LEN(F#)
60120 DIM J\$(F)
60130 IF J#>F THEN 60190
60140 GO TO 60060

60150 REM#
++++ 60160 PRINT "ERROR *** FILE 'F#' NOT FOUND."
60170 PRINT Q2;2;
60180 END

++++ 60190 J#-SEG(H#,1,3)
60200 N9=VAL(J#)
60205 FIND Q2;0
60210 FIND Q2;N9
60220 INPUT Q2;H#
60230 DIM J\$(10)
60240 J#-SEG(H#,1,10)
60250 F=LEN(F#)
60260 DIM J\$(F)
60270 IF J#>F THEN 60290
60280 RETURN
60290 PRINT "FILE DOES NOT MATCH INTERNAL NAME"
60300 PRINT "INDEX NAME = 'F#' INTERNAL NAME = 'J#"
60310 PRINT Q2;2;
60320 END

++++ 60330 PRINT "DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A IDS DATA TAPE"
60340 PRINT Q2;2;
60350 END

---1--- 61000 REM#
61010 F#*F
61020 REM# (M#,L#,X#,Y#,D#,F#,F6)
61030 REM#
61040 DIM F\$(3)
61050 F#-000
61055 FIND Q2;0
61060 FIND Q2;1

```

112111 61070 INPUT @U2:61A
61080 IF A<2 THEN 61150
61090 INPUT @U2:1B$
61100 A$=SUBSTR(A,4,6)
61110 @A$=P$*M$
61120 IF A$=0$ THEN 61070
61130 P$=SUBSTR(A,10,2)
61140 GO TO 61070
111111 61150 T3=VAL(P$)
61160 T3=T3+1
61170 P$=STR(T3)
61180 F$=P$*M$
61190 F$=F$*M$

```

UPDATE INDEX

```

61230 A$=SEG$(A$,1,3)
61240 T3=VAL(A$)
61250 T3=T3+1
61260 I$=
61270 PRINT @U2: USING 61280:13,F$,T$,I$
61280 IMAGE 30,10A,1A,20A
61292 PRINT @U2:21
61295 FIND @U2:0
61299 FIND @U2:13
61300 MAKE @U2:11,2500
61305 FIND @U2:0
61310 FIND @U2:13
61320 PRINT @U2: USING 61330:F$,U$,U$
61330 IMAGE 10A,8A/8A
61340 PRINT @U2:15
61350 PRINT @U2:1X$
61360 PRINT @U2:1Y$
61370 PRINT @U2:1M$
61380 PRINT @U2:1H$
61390 PRINT @U2:1F$
61400 DIM G6(8),G7(8)
61410 PRINT @U2:107,66
61420 PRINT @U2:2:

```

UPDATE PLOTFILES

```

61430 REM*
61440 REM*
61450 REM*
61460 F$="PLOTFILES"
61470 @SUB 60000
61480 INPUT @U2:61A
61490 IF A<2 THEN 61520
61500 INPUT @U2:14
61510 GO TO 61460
111111 61520 PRINT @U2:13
61530 PRINT @U2:2:
61540 RETURN

```

61620 REM IS TO BE PRINTED OUT TO 3 DECIMAL PLACES
61630 REM RESULTANT STRING IS PASSED BACK IN L\$
61640 REM FORMAT OF RESULT SD,DDD WITH LENGTH OF 6

61641 N\$=SEG(L\$,2,1)
61642 IF K\$=0 THEN 61750
61650 00=POS(L\$,E,1)
61660 IF 00<0 THEN 61700
61670 L\$=SEG(L\$,1,6)
61680 00=6
61690 RETURN

+++++ 61700 REM NUMBER IS IN SCIENTIFIC NOTATION

61710 N\$=SEG(L\$,00H,4)
61720 00=VAL(N\$)
61730 IF 00>0 THEN 61880
61740 IF 00>-4 THEN 61780
61750 L\$=0.000

+++++ 61760 00=6
61770 RETURN
61780 N\$=SEG(L\$,1,1)
61785 K\$=N\$*0.
61790 GO TO -00 OF 61820,61810,61800

+++++ 61800 N\$=N\$*0.
61810 N\$=N\$*0.
61820 00=6-LEN(N\$)

+++++ 61830 L\$=SEG(L\$,2,00H)
61840 L\$=REP(L\$,2,1)

61850 L\$=N\$*L\$
61860 00=6
61870 RETURN

+++++ 61880 REM SECTION TO PRINT OUT #>>

61890 L1=SEG(L\$,1,5)
61900 L1=L1*E
61910 L2=L1*E
61920 00=6+LEN(N\$)

61930 RETURN

FILE # 3

```
100 INIT
104 DATA 33,11,32
105 READ U1,U2,U3
110 DIM U$(U),U$(0)
111 DIM T(40)
112 DATA 12.706,4.303,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.228
113 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
114 DATA 2.074,2.069,2.064,2.06,2.056,2.052,2.049,2.046,2.043,2.04
115 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
116 READ T
119 FIND @U2:0
120 FIND @U2:2
140 INPUT @U2,6:A
150 IF A=1 THEN 3355
160 INPUT @U2,U$(0)
170 DIM N1(20),T1(20),T(24),T$(40),X$(30),Y$(30),P(34),L$(60),A$(3)
190 PRINT @U3,17:4

195 REM#
196 REM# GET LIST OF FILES TO BE PLOTTE#
197 REM#

270 F$="PLOTFILES"
290 GOSUB 4845
290 I=0
+++1111+
300 I=I+1
304 INPUT @U2,6:A
305 IF I=1 AND A=1 THEN 3360
310 INPUT @U2,N1(I)
320 INPUT @U2,6:T1(2)
330 IF T1(2)=2 THEN 300
340 T1(1)=I

350 REM#
360 REM# START PLOT LOOP
370 REM#

380 FOR I9=1 TO T1(1)
385 FIND @U2:0
390 FIND @U2:N1(I9)
400 INPUT @U2:Z$
410 INPUT @U2:L$
420 INPUT @U2:X$
430 INPUT @U2:Y$
440 INPUT @U2:A$
450 INPUT @U2:ID$
460 INPUT @U2:F
465 IF F(8)=0 THEN 3350
470 DIM X(F(8)),Y(F(8))
475 N=P(F)
480 INPUT @U2:X,Y

390 REM#
500 REM# SET DEFAULT PLOT PARAMETER
510 REM#
520 REM T(4)-MIN X VALUE OF GRAPH T(5)-LENGTH OF X AXIS
530 REM T(14)-MIN Y VALUE T(15)-LENGTH OF Y AXIS
```



```

11111111
540 VIEWPORT 0,130,0,100
550 WINDOW 0,130,0,100
560 T=0
570 T(1)=F(8)
580 T(2)=2
590 T(3)=4
600 T(4)=10
610 T(5)=70
620 T(8)=1
630 T(9)=1
640 T(14)=25
650 T(15)=70
660 T(18)=1
670 T(19)=1

680 REM LABEL PLOT
690 REM TITLE GRAPH

700 X0=T(5)/2+T(4)-LEN(L$)*7/8
710 Y0=97
720 PAGE
730 MOVE @U3: X0,Y0
740 PRINT @U3:L$

750 REM DUMP X AXIS TITLE
760 X0=T(5)/2+T(4)-LEN(X$)*7/8
770 Y0=T(14)-10
780 MOVE @U3: X0,Y0
790 PRINT @U3:X$

800 REM DUMP Y AXIS LABEL
810 X0=3
820 Y0=T(15)/2+T(14)+LEN(Y$)*10/7
830 MOVE @U3: X0,Y0
840 PRINT @U3:Y$
850 FOR Z=1 TO LEN(Y$)
860 Z$=SEG(Y$,Z,1)
870 PRINT @U3:Z$
880 NEXT Z

890 REM DISPLAY INFO ON RIGHT SIDE OF PLOT
900 X0=T(4)+T(5)+5
910 Y0=T(14)+T(15)-2
920 MOVE @U3: X0,Y0
930 PRINT @U3:AGENT: *JA$
940 Y0=Y0-3
950 MOVE @U3: X0,Y0
960 PRINT @U3: DATE: *JD$
970 Y0=Y0-6
980 MOVE @U3: X0,Y0
990 PRINT @U3: STATISTICS*
1000 MOVE @U3: X0,Y0-0.5
1010 PRINT @U3:-----
1020 Y0=Y0-4
1030 Y0=3
1036 GO TO 1110
1038 MOVE @U3: X0,Y0

```

```

1040 IMAGE FA,2D,3D,FA,8
1050 PRINT GUS: "LACK OF FIT:"
1060 YO=YO-3
1070 MOVE GUS:XO,YO
1080 PRINT GUS: USING 1040: "JP(16)!"
1090 IF P(22)=0 THEN 1110
1100 PRINT GUS: USING 1040: "JP(22)!"
1110 YO=YO-3
1120 MOVE GUS:XO,YO
1130 PRINT GUS: "KARTLETTS!"
1140 YO=YO-3
1150 MOVE GUS:XO,YO
1160 PRINT GUS: USING 1040: "JP(14)!"
1170 IF P(20)=0 THEN 1190
1180 PRINT GUS: USING 1040: "JP(20)!"
1190 YO=YO-3
1200 IMAGE FA,2D,3D
1210 MOVE GUS:XO,YO
1220 PRINT GUS: "R-SQUARED!"
1230 YO=YO-3
1240 MOVE GUS:XO,YO
1250 PRINT GUS: "HSE!"
1260 YO=YO-3
1270 MOVE GUS:XO,YO
1280 PRINT GUS: USING 1220: "JP(23)"
1290 IMAGE FA,3E
1300 YO=YO-3
1310 MOVE GUS:XO,YO
1320 PRINT GUS: "PARAMETERS"
1330 MOVE GUS:XO,YO-0.5
1340 PRINT GUS: "-----"
1350 YO=YO-4
1360 IMAGE FA,3D,FA,2D,3D,FA,8
1370 MOVE GUS:XO,YO
1380 PRINT GUS: "Y=a + bX"
1390 GO TO P(3) OF 1381,1385,1390,1410,1430,1450,1470,1490
1400 PRINT GUS: "bX"
1410 GO TO 1494
1420 PRINT GUS: "a + bX"
1430 GO TO 1491
1440 PRINT GUS: "aEXP(bX)"
1450 GO TO 1491
1460 PRINT GUS: "1/(a + bX)"
1470 GO TO 1491
1480 PRINT GUS: "a + b/X"
1490 GO TO 1491
1500 PRINT GUS: "a + bLOG(X)"
1510 GO TO 1491
1520 PRINT GUS: "aX^b"
1530 GO TO 1491
1540 PRINT GUS: "X/(a + bX)"
1550 MOVE GUS:XO,YO
1560 PRINT GUS: USING 1236: "a= JP(4)"
1570 YO=YO-3
1580 MOVE GUS:XO,YO
1590 PRINT GUS: USING 1236: "b= JP(5)"

```

```

1497 IF P(7)=0 THEN 1540
1500 Y0=Y0-3
1501 MOVE R03:Y0+19,Y0
1510 MOVE R03:X0,Y0
1520 PRINT R03:Y0 = C(X + e)D*
1531 Y0=Y0-3
1532 MOVE R03:X0+19,Y0
1533 PRINT R03: USING 1236: "c = ",P(6)
1534 Y0=Y0-3
1535 MOVE R03:X0+19,Y0
1536 PRINT R03: USING 1236: "d = ",P(7)
1537 Y0=Y0-3
1538 MOVE R03:X0+19,Y0
1539 PRINT R03: USING 1236: "e = ",P(30)
1540 Y0=Y0-3
1541 MOVE R03:X0,Y0
1542 PRINT R03: "Y' = (Y + f)D*"
1543 Y0=Y0-3
1544 MOVE R03:X0,Y0
1545 PRINT R03: "X' = X + h*"
1550 Y0=Y0-3
1551 MOVE R03:X0+19,Y0
1552 PRINT R03: USING 1236: "f = ",P(31)
1553 Y0=Y0-3
1554 MOVE R03:X0+19,Y0
1555 PRINT R03: USING 1236: "g = ",P(29)
1556 Y0=Y0-3
1557 MOVE R03:X0+19,Y0
1558 PRINT R03: USING 1236: "h = ",P(32)
1565 MOVE R03: (4)T(5),T(14)
1570 DRAW R03: (4)T(5),T(14)T(15)
1575 DRAW R03: (4),T(14)T(13)
1600 G05: B 5205
1700 IF U3=1 THEN 1770
1710 PRINT "ENDJ"
1720 PRINT "DO YOU WANT A PLOTTER PLOT OF THIS PLOT (Y/N)*"
1730 INPUT B*
1740 IF B<>"Y" THEN 1770
1750 U3=10
1760 G0 TO 540
1770 U3=32
1771 G0 TO 3255
3255 NEXT I9
3265 REM
3335 FIND 4
3245 OLD
3450 PRINT "NO DATA SETS FOUND ON THIS TAPE *
3455 END
3460 PRINT "THERE ARE NO PLOT FILES CURRENTLY QUEUED TO BE PRINTED*
3461 END
3465 REM*
3475 REM* PLOT SUBROUTINES
3485 REM*
-----1----- 3395 REM*

```

```

3405 U9=4
3425 GOSUB 4305
3435 U9=14
3445 GOSUB 4305
3455 U8=4
3465 VIEWPORT T(4),T(4)+T(5),T(14),T(14)+T(15)
3475 WINDOW T(6),T(6)+T(7),T(16),T(16)+T(17)
3485 AXIS 0;3:T(8),T(18)
3495 U1=1
3505 K2=T(10)/T(17)/T(15)
3515 K3=T(14)
3525 U4=STR(T(18)+(U1-1)*T(18))
3535 PRINT 0;3;21:0 MAX T(4)-(LEN(U4)+1)*1.78,K3-0.89
3545 PRINT 0;3;U4;
3555 IF U1>T(19) THEN 3595
3565 K3=K3/K2
3575 U1=U1+1
3585 GO TO 3525
3595 K2=T(8)/T(7)/T(5)
3605 K3=T(4)
3615 U1=1
3625 U4=STR(T(6)+(U1-1)*T(8))
3635 PRINT 0;3;21:0 MAX K3-(LEN(U4)+1)*1.78*0.5,T(14)-4
3645 PRINT 0;3;U4;
3655 IF U1>T(9) THEN 3695
3665 K3=K3/K2
3675 U1=U1+1
3685 GO TO 3625
3695 FOR U1=1 TO T(1)
3705 IF T(2)<>1 THEN 3725
3715 IF U1>1 THEN 3745
3725 MOVE 0;3;X(U1),Y(U1)
3735 GO TO 3755
3745 0;3;X(U1),Y(U1)
3755 GOSUB 3785
3765 NEXT U1
3775 RETURN

```

```

---I---
3785 S2=T(14+3)/T(14+1)*0.75
3795 S1=T(4+3)/T(4+1)*0.75
3805 GO TO T(3) OF 4095,3825,3885,3955,4025
3815 GO TO 4095

```

```

3825 MOVE 0;3;0;S2
3835 KURAW 0;3;S1;-2*S2
3845 KURAW 0;3;-3*S1;0
3855 KURAW 0;3;S1;2*S2
3865 MOVE 0;3;0;-S2
3875 RETURN
3885 KURAW 0;3;0;S2
3895 KURAW 0;3;0;S2

```

```

3905 KURAW 0;3;0;S2
3915 KURAW 0;3;-S1;0
3925 KURAW 0;3;2*S1;0
3935 KURAW 0;3;-S1;0
3945 RETURN
3955 KURAW 0;3;S1;S2
3965 KURAW 0;3;0;-2*S2
3975 KURAW 0;3;-2*S1;0
3985 KURAW 0;3;0;2*S2

```

```

3995 KOKAW P03:2*SI:0
4005 KNOVE P03:SI:52
4015 RETURN
++++
4025 KROVE P03:0:52
4035 KROAM P03:SI:52
4045 KOKAW P03:SI:52
4055 KROAM P03:SI:52
4065 KROAM P03:SI:52
4075 KROVE P03:0:52
4085 RETURN
++++
4095 IF 172)=1 THEN 4115
4105 KROAM P03:0:0
++++
4115 RETURN

```

```

-----
4125 Y(16)=10*39
4135 Y(17)--(122)
4145 FOR UI=1 TO Y(1)
4155 Y(15)=Y(16) MIN Y(UI)
4165 Y(17)=Y(17) MAX Y(UI)
4175 NEXT UI
4185 Y(19)=Y(17)-Y(16)
4195 Y(17)=Y(19)*(Y(19)=0)+(Y(19)=0)
4205 RETURN

```

```

-----
4215 Y(6)=10*39
4225 Y(7)--(112)
4235 FOR UI=1 TO Y(1)
4245 Y(6)=Y(6) MIN X(UI)
4255 Y(7)=Y(7) MAX X(UI)
4265 NEXT UI
4275 Y(17)=Y(7)-Y(6)
4285 Y(17)=Y(17)*(Y(17)=0)+(Y(17)=0)
4295 RETURN

```

```

-----
4305 MIN 50(5)
4315 50(7)-Y(109+1)/15
4325 50(3)-Y(109+1)/50(3)
4335 50(4)-Y(109+1)/50(3))*SGN(LGT(50(3)))#SGN(LGT(50(3)))
4345 50(4) Y(109+1)/50(4)+1.0E-4
4355 IF 50(4) 0 THEN 4375
4365 50(5)-1
4375 50(4)-1
4385 50 TO 4475
4395 50(5)-50(3)/50(4)
4405 50(3)-50(4)*10

```

```

++++
4415 IF 50(3) 10 THEN 4435
4425 50(3)-50(4)*5
4435 50(3)-50(4)*2
4445 50(3)-50(4)*1
4455 50(3)-50(4)*0
4465 IF 50(3) 10 THEN 4495
4475 50(3)-50(4)*1
4485 50(3)-50(4)*0
4495 50(3)-50(4)*0
4505 50(3)-50(4)*0
4515 50(3)-50(4)*0
4525 IF 50(3) 10 THEN 4545

```

```

4825 S0(5) S0(5)+0.9999
4830 S0(2) S0(3)*INT(ABS(S0(5))) SGN(S0(5))
4835 S0(1) S0(2) S0(1)
4840 S0(4) INT(INT(S0(5))) SGN(S0(5)) S0(3)
4845 IF S0(3) = 1 THEN 4805
4850 S0(3) S0(5)
4855 S0(4) = 1
4860 IF S0(3) = 21 THEN 4635
4865 S0(3) S0(5)
4870 S0(4) = 1
4875 S0(4) = 1
4880 S0(1) S0(2) S0(1)
4885 S0(1) S0(2) S0(1)
4890 S0(1) S0(3)
4895 S0(1) S0(4)
4900 S0(1) S0(4) S0(1) S0(4)
4905 RETURN

```

```

4910 X4=X0IF(32)
4915 GO TO F(3) OF 4705,4705,4725,4745,4765,4785,4805,4825
4920 Y0=(F(1)+F(2)*X4)^(1/P(29))-P(31)
4925 RETURN
4930 Y0=(F(4)*EXP(F(5)*X4))^(1/P(29))-P(31)
4935 RETURN
4940 Y0=(1/(F(4)+F(5)*X4))^(1/P(29))-P(31)
4945 RETURN
4950 Y0=(F(4)+F(5)/X4)^(1/P(29))-P(31)
4955 RETURN
4960 Y0=(F(4)+F(5)*LOG(X4))^(1/P(29))-P(31)
4965 RETURN
4970 Y0=(F(4)*X4^P(5))^(1/P(29))-P(31)
4975 RETURN
4980 Y0=(F(4)+F(5)*X4)^(1/P(29))-P(31)
4985 RETURN

```

```

4995 REM FIND/OPEN
5000 REM (F&N9)

```

```

5010 F1=0
5015 F1=0
5020 INPUT PUE1&
5025 J1=SEG(B$+1,2)
5030 IF J1=1 THEN 5175
5035 INPUT PUE2&A
5040 IF A=1 THEN 4995
5045 INPUT PUE1&
5050 B1=J1(10)
5055 J1=SEG(B$+4,10)
5060 J1=J1(1)
5065 B1=J1(1)
5070 IF J1=1 THEN 5035
5075 GO TO 4995

```

```

5080 IF J1=1 THEN 5035
5085 PRINT "ERROR *** FILE IF ** NOT FOUND"
5090 CLOSE
5095 END

```

+++++ 5055 JK-SEG(8),1,3)
5015 NY-VAL(J#)
5050 FIRD (02:10)
5055 FTRG (02:14)
5055 INFUT (02:14)
5075 DEM JK(10)
5095 JK-SEG(8),1,10)
5095 FALLER(14)
5105 DIM JIGF)
5115 IF JK F# THEN 5135
5125 RETURN
+++++ 5135 PRINT *FILE DOES NOT MATCH INTERNAL NAME*
5145 PRINT *INDEX NAME =*,F#,"INTERNAL NAME =*,J#
5155 PRINT (02:22)
5165 END
+++++ 5175 PRINT *DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A 108 DATA TAPE*
5185 PRINT (02:22)
5195 END

-----1----- 5205 REM# FLOT DATA,CURVE AND CONFIDENCE LIMITS

5215 GOSUB 4125
5225 GOSUB 4215
5236 R7-X0
5237 R8-X0
5238 GO TO 5357

5335 REM# ADJUST RANGE OF FIT

5345 X0-T(6)
5355 GOSUB 4495

5265 REM# GET CONFIDENCE LIMITS

5270 GOSUB 5715
5275 GOSUB 6155
5285 LO=LO MAX 0
5295 T(7)=T(7)+T(6)-LO
5295 T(6)=LO
5315 X0-T(6)+T(7)
5325 GOSUB 4495

5335 REM# GET CONFIDENCE LIMITS

5340 GOSUB 5715
5345 GOSUB 6155
5355 T(7)=T(7)+LO-X0

5356 REM# ADJUST X RANGE

+++++ 5377 T(6) T(6)+0.1*(7)
5385 T(6)=T(6) MAX 0.01*(7)
5397 T(7)=T(7)+1.2

5445 REM# ADJUST Y-RANGE

5455 T(15)=T(15)+0.05*(17)
5465 T(16)=T(16) MAX 0.01*(17)

5395 Y(17)-T(17)*1.1

5405 REM# PLOT OBSERVED DATA

5415 GOSUB 3395

5505 REM#

5515 REM# DRAW PUS:UPPER AND LOWER CONFIDENCE LIMITS

5525 REM#

5530 REM T(16)-T(16)+0.01*T(17)

5535 Y0-T(16)

5545 GOSUB 5715

5550 Y0-T(16)

5555 MOVE PUS:X0,Y0

5595 FOR Y0-T(16) TO T(16)+T(17) STEP T(17)/100

5600 Y0-Y0

5605 GOSUB 5715

5610 Y0-Y0

5625 DRAW PUS:X0,Y0

5630 NEXT Y0

5607 REM DELETE NEXT LINE TO GET CONFIDENCE LIMITS AND DEL LIM BACK

5608 GO TO 5708

5609 Y0-T(16)

5610 GOSUB 5715

5612 Y0-T(16)

5614 Y0-T(16)

5615 GOSUB 6155

5620 Y0-T(16)

5625 MOVE PUS:LO,Y0

5630 FOR Y0-T(16) TO T(16)+T(17) STEP T(17)/100

5631 Y0-Y0

5632 GOSUB 5715

5633 Y0-Y0

5634 GOSUB 6155

5635 Y0-Y0

5636 DRAW PUS:LO,Y0

5637 IF 0 THEN 5640

5638 J0=LO

5639 NEXT Y0

5541 GO TO 5078

5642 Y0-T(16)

5645 GOSUB 5715

5646 Y0-T(16)

5650 GOSUB 6155

5652 Y0-T(16)

5655 MOVE PUS:00,Y0

5660 FOR Y0-T(16) TO T(16)+T(17) STEP T(17)/100

5662 Y0-Y0

5665 GOSUB 5715

5666 Y0-Y0

5670 GOSUB 6155

5672 Y0-Y0

5675 DRAW PUS:00,Y0

5680 NEXT Y0

5685 I4=10000

5686 FOR I5=1 TO N

5687 I4=I4 MIN X(I5)

|||||

5600 NEXT IS
5689 IF DB>T4 THEN 5697
5690 DB=T4
5697 VIEWPORT 0,130,0,100
5698 WINDOW 0,130,0,100
5699 X#=#DETECTION LIMIT IS
5700 Y#=#SIRCH0
5701 Y0=#FUS(Y#,#,1)
5702 Y#=#SEBAY#1,Y0+2
5703 X#=#X#Y#
5704 X0=#(5)/2+(4)-LEN(X#)*7/8
5705 Y0=#(14)-14
5706 MOVE G03:X0,Y0
5707 PRINT G03:Y#
5708 RETURN

5715 REM#
5725 REM# SOLVE LINEAR REGRESSION IN REVERSE FOR X0
5735 REM# (Y0;X0)
5745 REM# TRANSFORM Y0
5750 Y0=(Y0+F(31))*F(29)
5775 GOSUB F(3) OF 5025,5845,5865,5885,5905,5925,5945,5965
5785 X7=(Y7-F(1))/F(2)
5795 REM# INVERSE TRANSFORM OF X7

5805 GOSUB F(3) OF 5985,6005,6025,6045,6065,6085,6105,6125
5810 Y0=X0-F(32)
5815 RETURN

5825 Y7=Y0
5835 RETURN

5845 Y7=Y0
5855 RETURN

5865 Y7=L0G(Y0)
5875 RETURN

5885 Y7=L/Y0
5895 RETURN

5905 Y7=Y0
5915 RETURN

5925 Y7=Y0
5935 RETURN

5945 Y7=L0G(Y0)
5955 RETURN

5765 Y7=L/YO
5975 RETURN

5985 X0=X7
5995 RETURN

6005 X0=X7
6015 RETURN

6025 X0=X7
6035 RETURN

6045 X0=X7
6055 RETURN

6065 X0=1/X7
6075 RETURN

6085 X0=EXP(X7)
6095 RETURN

6105 X0=EXP(X7)
6115 RETURN

6125 X0=1/X7
6135 RETURN

6145 REM#

6155 REM# SOLVE LINEAR REGRESSION IN REVERSE FOR
6165 REM# UPPER AND LOWER CONFIDENCE LIMITS
6175 REM# (Y0,X0;L0,U0)
6185 REM# T-VALUES L=.025 U=.975

6205 T3=0
6215 U0=0
6216 IF F(8)>40 THEN 6220
6217 T9=1/(N-2)
6218 G0 TO 6225
6220 T9=1.96

6225 REM# TRANSFORM Y0

6230 Y0=(Y0/F(31))^T/(29)
6235 B050# F(3) OF 6395,6415,6435,6455,6475,6495,6515,6535
6245 T3=19*2#F(6)
6250 B1=F(2)*F(10)*T3
6255 B1=F(2)*(Y7-F(1))-F(11)*T3

6256 A9-(0.4342+1.1734*X7)^2*P(7)
6257 B3=0
6260 A2=A9*P(12)
6265 U2=Y7-F(1)
6275 A3=134*P(11)^2-134*P(10)*A2+P(2)^2*A2+P(10)*B2^2-2*P(2)*P(11)*B2
6305 B3=19*50K(A3*P(6))
6295 X7=(B1+B3)/A1

6305 REM* INVERSE TRANSFORM OF X7
6315 GOSUB F(3) OF 6555,6575,6595,6615,6635,6655,6675,6695
6325 L0=X0-F(32)
6335 X8=(B1-B3)/A1

6345 REM* INVERSE TRANSFORM OF X8
6355 X7=X8
6365 GOSUB F(3) OF 6555,6575,6595,6615,6635,6655,6675,6695
6375 U0=X0-F(32)
6385 RETURN

---1--- 6395 Y7=Y0
6405 RETURN

---1--- 6415 Y7-Y0
6425 RETURN

---1--- 6435 Y7=(0.6(Y0)
6445 RETURN

---1--- 6455 Y7=1/Y0
6465 RETURN

---1--- 6475 Y7=Y0
6485 RETURN

---1--- 6495 Y7=Y0
6505 RETURN

---1--- 6515 Y7=1.06(Y0)
6525 RETURN

---1--- 6535 Y7=1/Y0
6545 RETURN

---2--- 6555 Y9=X7
6565 RETURN

---2--- 6575 X0=X7
6585 RETURN

6595 X0=X7
6605 RETURN

6615 X0=X7
6625 RETURN

6635 X0=L/X7
6645 RETURN

6655 X0=EXP(X7)
6665 RETURN

6675 X0=EXP(X7)
6685 RETURN

6695 X0=L/X7
6705 RETURN

6715 REM*DRAW MU

6720 SET DEGREES

6730 VIEWPORT 0,130,0,100

6740 WINDOW 0,130,0,100

6750 REM*H0 - PRINTED LINE HEIGHT

6760 REM*H1 - PRINTED CHARACTER HEIGHT

6770 REM*H2 - WIDTH OF SPACE

6780 REM*H3 - WIDTH OF A CHARACTER

6790 S0=15

6800 H0=2.02

6810 H1=1.88

6820 H2=1.79

6830 H3=1.55

6840 MOVE @U3:X0+H0/20,Y0+H2/20

6850 DRAW @U3:H3/S0:H1*5/50

6860 FOR I=1 TO S0/2

6870 DRAW @U3:I,H1/50

6880 NEXT I

6890 FOR I=1 TO S0/2

6900 DRAW @U3:I,-H1/50

6910 NEXT I

6920 FOR I=0 TO 180 STEP S0*3/2

6930 ROTATE I+270

6940 DRAW @U3:H1/S0,0

6950 NEXT I

6960 FOR I=1 TO S0/2

6970 DRAW @U3:H1/S0,0

6980 NEXT I

6990 FOR I=1 TO S0/2

7000 DRAW @U3:-H1/S0,0

7010 NEXT I

7020 FOR I=270 TO 360 STEP S0/2*3

```

7030 ROTATE I
7040 KDRAW G03:H1/S0,0
7050 NEXT I
7060 MOVE G03:X0+H2*1.1,Y0+0.1*H0
7070 RETURN
7999 REM**DRAW RHO

8000 SET DEGREES
8010 VIEWPORT 0,130,0,100
8020 WINDOW 0,130,0,100

8030 REM**H0 - PRINTED LINE HEIGHT
8040 REM**H1 - PRINTED CHARACTER HEIGHT
8050 REM**H2 - WIDTH OF SPACE
8060 REM**H3 - WIDTH OF A CHARACTER.

8070 MOVE G03:X0-H1/2,Y0
8080 FOR I=-95 TO 265 STEP 15
8090 ROTATE I
8100 KDRAW G03:H3/S0*1.3,0
8110 NEXT I
8120 ROTATE -5
8130 KDRAW G03:0,-10*H3/S0
8140 RMOVE G03:H3:0
8150 RETURN

```

THE FOLLOWING LINE NUMBERS ARE BRANCHED TO BUT DO NOT EXIST IN THIS TAPE FILE (# 3)
A --* BEFORE THE LINE NUMBER INDICATES IT IS BRANCHED TO AS A SUBROUTINE (VIA A '0060B' OR '0N').


```

288 INPUT @Q2:Q$
290 INPUT @Q2:C:P(25),P(26),P(28)
300 K2=K2+1
310 IF K2=K2 THEN 321
320 GO TO 270
+++1+++
321 F5=0
322 IF F(28)=4 THEN 330
323 PRINT "IS THIS THE FIRST STAT RUN FOR TODAY? (Y/N)"
324 INPUT A$
325 IF A$="Y" THEN 330
326 F5=1
+++2+++
330 REM* SET X LABEL
350 H$=SEQ(D$,A,2)
355 REM* SET X LABEL
360 A$=SEQ(D$,1,2)
361 A=VAL(A$)
362 A=(A-1)*9+1
363 X$=SEQ(C$,A,9)
370 REM$ GET HISTORY 0
372 RESTORE 381
375 F1="NO" & M$
380 GOSUB 4845
381 DATA 0,0,0,0
382 READ F1,F2,F3,F4
390 INPUT @Q2:K1,Q7,X9,Y9,M9,U9,L9,Y8,M8,U8,L8
395 INPUT @Q2:W8,W9,F1,F2,F3,F4
396 FOR I=1 TO 31
397 X9(I)=I
398 NEXT I
400 W8=VAL(N$)
415 K1=F(28)+F5*K1
416 F1=0
417 F5=0
420 REM$ U7(D8)=(M9(D7)*(K-1)+F(25))/K
430 REM$ W8(D8)=(M8(D7)*(K-1)+P(26))/K
440 Y9(D8)=F(25)+F5*Y9(D8)
450 Y8(D8)=F(26)+F5*Y8(D8)
460 IF K1=4 THEN 551
461 PRINT "NO DC POINT WILL BE PRODUCED FOR 'M$' AT LEVEL 'JCI'"
462 PRINT "SINCE FOUR QC DATA POINTS ARE NOT YET AVAILABLE"
463 GO TO 1080
465 GO TO 551
470 U9=M9(D8)+A1(K1)*M8(D8)
480 L9=M8(D8)-A1(K1)*M8(D8)
490 W2=F5*(1-F5*(W8))
500 W3=W2*(1+W2)
510 W4=W3*(1+W3)
520 W5=W4*(1+W4)+3/50*(K1)*M8(D8)
530 L9(D8)=3/5*(W5*(K1)*M8(D8)
540 W6(W8)=(1+3/50*(2*K1))*M8(D8)
550 L8(D8)=(1-3/50*(2*K1))*M8(D8)

```

```

+++++ 551 REM* SET WARNING FLAGS
552 IF NOT(Y9(08)>00) OR Y9(08)<L9(08)) THEN 554
553 F1=1
+++++ 554 IF NOT(Y8(08)>00) OR Y8(08)<L8(08)) THEN 556
555 F3=1
+++++ 555 REM* ZERO OUT DATA FROM D7 TO D8
557 IF D7=D8 THEN 573
558 I=D7
559 IF D8>D7 THEN 562
561 I=0
562 I=I+1
563 IF I=D8 THEN 573
564 Y9(I)=-1
565 Y8(I)=-1
572 GO TO 562
+++++ 573 REM*
650 REM* UPDATE WARNING
651 F2=0
652 F4=0
653 FOR I=6 TO 1 STEP -1
654 W8(I)=W8(I)
655 W9(I)=W9(I)
656 NEXT I
657 IF Y9(08)>W9(08) THEN 690
658 W9(1)=-1
659 GO TO 700
660 W9(2)=-1
661 IF Y8(08)>W8(08) THEN 730
662 W8(1)=-1
663 GO TO 740
664 W8(2)=-1
665 FOR I=1 TO 7
666 F2=F2+W9(I)
667 F4=F4+W8(I)
668 NEXT I
669 F2=ABS(F2)
670 F4=ABS(F4)
780 REM* PLOT QC CHARTS
790 L4=ACCURACY CONTROL CHART FOR *IM*
810 Y4=
820 W4=
900 Y1=L9
910 Y2=W9
920 Y3=W9
931 X=89
932 Y=70
933 W=06
940 IF W8(F1-1) OR F2=7) THEN 950
945 W5=WARNING - PROCESS IS OUT OF CONTROL*
+++++ 950 REM* GOSUB PLOT
955 GOSUB 1775

```


960 IF U3=10 THEN 967
961 PRINT "DO YOU WANT A 4662 PLOTT (Y/N)."
962 INPUT W\$
963 W\$=UCASE\$(W\$),1,1
964 IF A\$>Y THEN 967
965 U3=10
966 GOSUB 1775

+++++
967 U3=32
970 L4="PRECISION CONTROL CHART FOR *EM*"
980 W4="

975 Y=Y8
1000 Y1=L8
1010 Y2=M8
1020 Y3=U8
1025 D=D8
1030 IF ROT(F3=1) THEN 1050
1040 W4="WARNING - PROCESS IS OUT OF CONTROL"

+++++
1050 REM# GOSUB PLOT
1055 GOSUB 1775
1056 PRINT "OKJ"
1060 IF U3=10 THEN 1067
1061 PRINT "DO YOU WANT A 4662 PLOTT (Y/N)."
1062 INPUT W\$

1063 W\$=UCASE\$(W\$),1,1
1064 IF A\$>Y THEN 1067
1065 U3=10
1066 GOSUB 1775
1067 U3=32

+++++
1070 REM# UPDATE HISTORY Q FILE

+++++
1080 F3="HQ*EM*"
1090 GOSUB 4845
1200 PRINT BU2:K1,D0,X9,Y9,M9,U9,L9,Y8,M8,U8,L8
1210 PRINT CU2:U8,W9,F1,F2,F3,F4
1215 PRINT BU2,Z1
1220 GO TO 230

1755 REM#
1760 REM# OC PLOT ROUTINES
1765 REM#

1775 DIM W\$(20),J\$(20)
1785 DIM X9(31),Y9(31),Y3(31),T(24)
2000 PAGE

2005 REM# HEIGHT OF SPACE
2045 H0=2.02
2055 REM# HEIGHT OF CHARACTER
2075 H1=1.53
2075 REM# WIDTH OF SPACE

2005 H2=1.79
2055 KLN WIDTH OF CHARACTER
2105 H3=1.55
2115 REM HEIGHT OF TIC MARK
2125 H4=1
2135 REM WIDTH OF TIC MARK
2145 H5=2
2155 VIEWPORT 0,130,0,100
2165 WINDOW 0,130,0,100
2175 REM X MIN
2185 T(4)=15
2195 REM X DOMAIN
2205 T(5)=105
2215 REM Y MIN
2225 T(14)=10
2235 REM Y RANGE
2245 T(15)=75
2255 PER BOX GRAPH
2265 MOVE PUS1(4),T(14)
2275 DRAW PUS1(4),T(14)+T(15)
2285 DRAW PUS1(4)+T(5),T(14)+T(15)
2295 DRAW PUS1(4)+T(5),T(14)
2305 DRAW PUS1(4),T(14)
2315 REM NAME TIC MARKS ON X AXIS
2325 FOR I=0 TO 34 STEP 2
2335 MOVE PUS1(4)+I*3,T(14)+H4/2
2345 DRAW PUS1(4)+I*3,T(14)+H4/2
2355 REM LABEL THE MARK
2365 MOVE PUS1(4)+I*3,T(14)+H4/2
2375 IF I=0 OR I=31 THEN 2405
2377 IF I=10 THEN 2395
2385 MOVE PUS1(4)+I*3,T(14)+H4/2
2395 PRINT PUS1(4)
2405 NEXT I
2415 REM PRINT OUT WARNING
2420 G-LIN(04)
2421 Y0=96

2423 IF A2Z THEN 2555
2425 X0=T(4)T(C5)-LEN(W\$)*H2)/2
2426 Y0=0
2430 MOVE PUS:0;Y0
2435 PRINT PUS:W\$;
2440
2445 REN DRAW PUS:FOX AROUND WARNING
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```

000000 2763 Y2-Y5 MAX Y(1)
000000 2764 Y2-Y5 MAX Y3(1)
000000 2765 NEXT I

2770 REM IN HERE GOES CODE TO PICK NEAT ENDFPOINTS FOR Y-AXIS

000000 2780 V15=PORT I(4),I(4)+T(S),T(14),T(14)+T(15)
000000 2781 MINROW=0.35*00.01
000000 2782 FOR I=1 TO 4 STEP 1
000000 2783 IF Y(1) = 0 THEN 2845
000000 2784 IF Y(1) = 1 THEN 2900
000000 2785 IF Y(1) = 2 THEN 2900
000000 2786 MOVE PUS:Y(1),Y(1)
000000 2845 GOSUB 3185
000000 2846 NEXT I
000000 2847 GOSUB 9000
000000 2848 MOVE 0,Y(1)
000000 2849 MOVE 35,Y(1)
000000 2850 MOVE 35,Y2(1)
000000 2851 HEAD 0,Y2(1)
000000 2852 MOVE 0,Y2(1)
000000 2853 MOVE 35,Y2(1)
000000 2854 RETURN
000000 2855 MOVE 203,0,Y(1)
000000 2856 FOR I=1 TO 4 STEP 1
000000 2857 IF Y(1) = 0 THEN 2900
000000 2858 MOVE PUS:X(1),Y(1)
000000 2859 MOVE PUS:0,Y(1)+Y(1)
000000 2860 GO TO 2920
000000 2900 MOVE X(1),Y(1)
000000 2901 NEXT I
000000 2902 MOVE 0,Y(1)
000000 2903 FOR I=1 TO 4
000000 2904 MOVE PUS:0,Y(1)
000000 2905 MOVE PUS:0.5*0
000000 2906 MOVE PUS:0.5*0
000000 2907 NEXT I
000000 2908 REM TO Y3
000000 2909 MOVE PUS:0,Y3(1)
000000 2910 FOR I=1 TO 4 STEP 1
000000 2911 IF Y(1) = 0 THEN 3015
000000 2912 MOVE PUS:X(1),Y3(1)
000000 2913 MOVE PUS:0,Y3(1)+Y3(1)
000000 2914 GO TO 3020
000000 3015 MOVE X(1),Y3(1)
000000 3016 NEXT I
000000 3017 MOVE PUS:X(1),Y3(1)
000000 3018 FOR I=1 TO 4 STEP 1
000000 3019 MOVE PUS:0.5*0
000000 3020 MOVE PUS:0.5*0
000000 3021 NEXT I
000000 3022 REM Y2
000000 3023 MOVE PUS:0,Y2(1)
000000 3024 FOR I=1 TO 4 STEP 1
000000 3025 IF Y2(1) = 0 THEN 3125
000000 3026 MOVE PUS:0.5*0
000000 3027 MOVE PUS:0.5*0
000000 3028 NEXT I
000000 3029 MOVE PUS:0.5*Y2(1)+Y2(1)

```

3120 GO TO 3130
3125 MOVE X(I+1),Y2(I+1)
3130 NEXT I
3135 FOR I=1 TO 5
3145 DRAWM PUS:0.5:0
3155 DRAWM PUS:0.5:0
3165 NEXT I
3175 RETURN

3185 REM\$ THIS CIRCLE DIAMOND

3200 MOVE PUS:0:-0.01*(01-00)
3205 DRAWM PUS:0.35:0.01*(01-00)
3210 DRAWM PUS:-0.35:0.01*(01-00)
3215 DRAWM PUS:0.35:-0.01*(01-00)
3220 DRAWM PUS:-0.35:-0.01*(01-00)
3225 RETURN
3235 DRAWM PUS:0.35:Y(D)

4845 REM\$ FIND/OPEN
4855 REM\$ (F\$ N\$)

4860 FIND PUS:0
4865 FIND PUS:1
4875 INPUT PUS:R\$
4885 IF 566(R\$)1,3,
4895 IF J4 *105 THEN 5175
4905 INPUT PUS:Z1A
4915 IF 6-1 THEN 4995
4925 INPUT PUS:R\$
4935 DIM J4(10)
4945 J4=566(R\$,4,10)
4955 F=LENGTH
4965 DIM J\$(F)
4975 IF J4=1 THEN 5035
4985 GO TO 4965

4995 REM\$

5005 PRINT "ERROR #1** FILE #F\$**NOT FOUND"

5015 CLOSE
5025 FIND 1
5035 OPEN
5045 N9=566(J\$,1,3)
5055 FIND PUS:0
5065 FIND PUS:R\$
5075 INPUT PUS:R\$
5085 IF 566(R\$,1,3)
5095 F=LENGTH
5105 DIM J\$(F)
5115 IF J4=1 THEN 5155
5125 GO TO 5065

5135 PRINT "FILE #F\$ NOT MATCH INTERNAL NAME"
5145 PRINT "INDEX NAME =F\$**INTERNAL NAME =FJ\$"

```

6125 PRINT PU2:2:
6135 F100 I
6145 O:0
6155 PRINT PU2:2:
6165 F100 I
6175 O:0
6205 NEM* PLUF OBSERVED DATA
6215 GOSUB 3395
6215 RETURN MU
6220 SET DEGREE B
6230 YLUFORT 0,130,0,100
6240 WINDOW 0,130,0,100
6250 REM*H0 - PRINTED LINE HEIGHT
6260 REM*H1 - PRINTED CHARACTER HEIGHT
6270 REM*H2 - WIDTH OF SPACE
6280 REM*H3 - WIDTH OF A CHARACTER
6290 S0=15
6300 H0=2.82
6310 H1=1.88
6320 H2=1.79
6330 H3=1.55
6340 MOVE PU3:X0H10/20,Y0H2/20
6350 FORN PU3:Y1/50,H1*5/50
6360 FOR I=1 TO 50/2
6370 FORN PU3:0,H1/50
6380 NEXT I
6390 FOR I=1 TO 50/2
6400 FORN PU3:0,-H1/50
6410 NEXT I
6420 FOR I=0 TO 180 STEP 50*1/2
6430 ROTATE I/270
6440 FORN PU3:H1/50,0
6450 NEXT I
6460 FOR I=1 TO 50/2
6470 FORN PU3:H1/50,0
6480 NEXT I
6490 FOR I=1 TO 50/2
6500 FORN PU3:-H1/50,0
6510 NEXT I
6520 FOR I=270 TO 330 STEP 50/2*3
6530 ROTATE I
6540 FORN PU3:H1/50,0
6550 NEXT I
6560 MOVE PU3:X0H2*1.1,Y0+0.1*H0
6570 RETURN
6585 RETURN MU
6590 SET DEGREE B
6600 YLUFORT 0,130,0,100
6610 WINDOW 0,130,0,100
6620 REM*H0 - PRINTED LINE HEIGHT

```

9040 REM#H3 - PRINTED CHARACTER HEIGHT
9050 REM#H2 - WIDTH OF SPACE
9060 REM#H3 - WIDTH OF A CHARACTER

9070 MOVE @U3:K0-H1/2,Y0
9080 FOR I=-95 TO 265 STEP 15
9090 ROTATE I
9100 DRAW @U3:H3/S0*1.3,0
9110 NEXT I
9120 ROTATE -5
9130 DRAW @U3:0,-10#H3/50
9140 MOVE @U3:H3,0
9150 RETURN

9999 REM ROUTINE TO LABEL Y AXIS

9000 REM

9070 L4=STR(Y1(1))
9080 GOSUB 21500
9090 MOVE @U3:0,Y1(1)
9100 FOR I=1 TO 2041
9110 PRINT @U3:"H";
9120 NEXT I
9130 PRINT @U3:L4;
9140 L4=STR(Y2(1))
9150 GOSUB 21600
9160 MOVE @U3:0,Y2(1)
9170 FOR I=1 TO 2041
9180 PRINT @U3:"H";
9190 NEXT I
9200 PRINT @U3:L4;
9210 L4=STR(Y3(1))
9220 GOSUB 21600
9230 MOVE @U3:0,Y3(1)
9240 FOR I=1 TO 2041
9250 PRINT @U3:"H";
9260 NEXT I
9270 PRINT @U3:L4;
9280 RETURN

9999 REM ROUTINE TO DRAW ARROW POINTING UP

9410 MOVE @U3:Y(1),0
9420 PRINT @U3:"J";
9430 GO TO 2045

9999 REM ROUTINE TO DRAW UPSIDE DOWN ARROW

9510 MOVE @U3:Y(1),0
9520 L4=CHR(127)
9530 PRINT @U3:L4;
9540 GO TO 2045

9999 REM ROUTINE TO DRAW ARROW POINTING DOWN

9610 MOVE @U3:Y(1),0
9620 PRINT @U3:"J";
9630 GO TO 2045

9999 REM ROUTINE TO DRAW ARROW POINTING UP

9710 MOVE @U3:Y(1),0
9720 PRINT @U3:"J";
9730 GO TO 2045

9999 REM ROUTINE TO DRAW ARROW POINTING DOWN

9810 MOVE @U3:Y(1),0
9820 PRINT @U3:"J";
9830 GO TO 2045

```

---3--- 61660 REM ROUTINE TO PRINT NUMBERS TO 3 DECIMAL PLACES
61610 REM L*LFASSED IN CONTAINING NUMBER IN CHARACTER FORM THAT
61620 REM IS TO BE PRINTED OUT TO 3 DECIMAL PLACES
61630 ALM RESULTANT STRING IS PASSED BACK IN L*
61640 ALM FORMAT OF RESULT IS 50.000 WITH LENGTH OF 6

```

```

61650 00-FUS(L*,E*,1)
61660 IF 00=0 THEN 61700
61670 L*=SEG(L*,1,6)
61680 00=6
61690 RETURN

```

```

+++++ 61700 REM NUMBER IS IN SCIENTIFIC NOTATION

```

```

61710 K*=SEG(L*,0011,4)
61720 00=VAL(K*)
61730 IF 00=0 THEN 61800
61740 IF 00=-4 THEN 61780
61750 L*=" 0.000"
61760 00=6
61770 RETURN
61780 K*=SEG(L*,1,1)
61790 00 TO -00 OF 61820,61610,61800
61800 K*=K*E*0.
61810 K*=K*E*0.
61820 00=6-LEN(K*)
61830 L*=SEG(L*,2,00+1)
61840 L*=REP(" ",2+1)
61850 00=6
61860 00=6
61870 RETURN

```

```

+++++

```

```

+++++ 61880 REM SECTION TO PRINT OUT #>0

```

```

61890 L*=SEG(L*,1,5)
61900 L*=L*E*E.
61910 L*=L*E*E*
61920 00=6-LEN(K*)
61930 RETURN

```

THE FOLLOWING LINE NUMBERS ARE BRANCHED TO BUT DO NOT EXIST IN THIS TAPE FILE (# 4)
A *-* BEFORE THE LINE NUMBER INDICATES IT IS BRANCHED TO AS A SUBROUTINE (VIA A *GOSUB* OR *ON*)


```

10 DIM X(4)
110 PAGE
120 PRINT
130 PRINT "ID SETS MANAGEMENT"
140 PRINT "JJJJJJJ"
150 PRINT "JJJJJJJ"
160 PRINT "JJJJJJJ"
170 PRINT "JJJJJJJ"
180 PRINT "JJJJJJJ"
190 PRINT "JJJJJJJ"
200 PRINT "JJJJJJJ"
210 PRINT "JJJJJJJ"
220 PRINT "JJJJJJJ"
230 PRINT "JJJJJJJ"
240 PRINT "JJJJJJJ"
250 PRINT "JJJJJJJ"
260 PRINT "JJJJJJJ"
270 PRINT "JJJJJJJ"
280 PRINT "JJJJJJJ"
290 PRINT "JJJJJJJ"
300 PRINT "JJJJJJJ"
310 PRINT USING 315: X$
320 PRINT "JJJJJJJ"
330 PRINT "JJJJJJJ"
340 PRINT "JJJJJJJ"
350 PRINT "JJJJJJJ"
360 PRINT "JJJJJJJ"
370 PRINT "JJJJJJJ"
380 PRINT "JJJJJJJ"
390 PRINT "JJJJJJJ"
400 PRINT "JJJJJJJ"
410 PRINT "JJJJJJJ"
420 PRINT "JJJJJJJ"
430 PRINT "JJJJJJJ"
440 PRINT "JJJJJJJ"
450 PRINT "JJJJJJJ"
460 PRINT "JJJJJJJ"
470 PRINT "JJJJJJJ"
480 PRINT "JJJJJJJ"
490 PRINT "JJJJJJJ"
500 PRINT "JJJJJJJ"
510 PRINT "JJJJJJJ"
520 PRINT "JJJJJJJ"
530 PRINT "JJJJJJJ"
540 PRINT "JJJJJJJ"
550 PRINT "JJJJJJJ"
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590 PRINT "JJJJJJJ"
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630 PRINT "JJJJJJJ"
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670 PRINT "JJJJJJJ"
680 PRINT "JJJJJJJ"
690 PRINT "JJJJJJJ"
700 PRINT "JJJJJJJ"
710 PRINT "JJJJJJJ"
720 PRINT "JJJJJJJ"
730 PRINT "JJJJJJJ"
740 PRINT "JJJJJJJ"
750 PRINT "JJJJJJJ"
760 PRINT "JJJJJJJ"
770 PRINT "JJJJJJJ"
780 PRINT "JJJJJJJ"
790 PRINT "JJJJJJJ"
800 PRINT "JJJJJJJ"
810 PRINT "JJJJJJJ"
820 PRINT "JJJJJJJ"
830 PRINT "JJJJJJJ"
840 PRINT "JJJJJJJ"
850 PRINT "JJJJJJJ"
860 PRINT "JJJJJJJ"
870 PRINT "JJJJJJJ"
880 PRINT "JJJJJJJ"
890 PRINT "JJJJJJJ"
900 PRINT "JJJJJJJ"
910 PRINT "JJJJJJJ"
920 PRINT "JJJJJJJ"
930 PRINT "JJJJJJJ"
940 PRINT "JJJJJJJ"
950 PRINT "JJJJJJJ"
960 PRINT "JJJJJJJ"
970 PRINT "JJJJJJJ"
980 PRINT "JJJJJJJ"
990 PRINT "JJJJJJJ"

```

Programmed by
 Computer Sciences Corporation
 Data Systems Laboratory
 NATIONAL SPACE TECHNOLOGY LABORATORY
 NSIL Station, Mississippi 39529

Version 2x4a
 FEBRUARY 18, 1981

EXTERNAL LABEL: Y\$ IS NOT EQUAL TO TAPE LABEL: IA\$
 WOULD YOU LIKE TO STOP? (Y/N)

** error ** this is not the correct tape
 PRESS RETURN TO CONTINUE

INSERT IDS HISTORY TAPE IN EXTERNAL TAPE UNIT # 4924

ENTER EXTERNAL LABEL ON HISTORY TAPE

DIA Y\$ THEN 2130

2130 CLOSE

2140 FIND 002:10

2150 FIND 002:10

2160 FIND 002:10

2170 FIND 002:10

2180 FIND 002:10

2190 FIND 002:10

2200 FIND 002:10

2210 FIND 002:10

2220 FIND 002:10

2230 FIND 002:10

2240 FIND 002:10

2250 FIND 002:10

2260 FIND 002:10

2270 FIND 002:10

2280 FIND 002:10

2290 FIND 002:10

2300 FIND 002:10

2310 FIND 002:10

2320 FIND 002:10

2330 FIND 002:10

2340 FIND 002:10

2350 FIND 002:10

2360 FIND 002:10

2370 FIND 002:10

2380 FIND 002:10

2390 FIND 002:10

2400 FIND 002:10

2410 FIND 002:10

2420 FIND 002:10

2430 FIND 002:10

2440 FIND 002:10

2450 FIND 002:10

2460 FIND 002:10

2470 FIND 002:10

2480 FIND 002:10

2490 FIND 002:10

2500 FIND 002:10

2510 FIND 002:10

2520 FIND 002:10

2530 FIND 002:10

2540 FIND 002:10

2550 FIND 002:10

2560 FIND 002:10

2570 FIND 002:10

2580 FIND 002:10

2590 FIND 002:10

2600 FIND 002:10

2610 FIND 002:10

2620 FIND 002:10

2630 FIND 002:10

2640 FIND 002:10

2650 FIND 002:10

2660 FIND 002:10

2670 FIND 002:10

2680 FIND 002:10

2690 FIND 002:10

2700 FIND 002:10

2710 FIND 002:10

2720 FIND 002:10

2730 FIND 002:10

2740 FIND 002:10

2750 FIND 002:10

2760 FIND 002:10

2770 FIND 002:10

2780 FIND 002:10

2800 FIND 002:10

2810 FIND 002:10

2820 FIND 002:10

2830 FIND 002:10

2840 FIND 002:10

2850 FIND 002:10

2860 FIND 002:10

2870 FIND 002:10

2880 FIND 002:10

2890 FIND 002:10

2900 FIND 002:10

2910 FIND 002:10

2920 FIND 002:10

2930 FIND 002:10

2940 FIND 002:10

2950 FIND 002:10

2960 FIND 002:10

2970 FIND 002:10

2980 FIND 002:10

2990 FIND 002:10

3000 FIND 002:10

3010 FIND 002:10

3020 FIND 002:10

3030 FIND 002:10

3040 FIND 002:10

3050 FIND 002:10

3060 FIND 002:10

3070 FIND 002:10

3080 FIND 002:10

3090 FIND 002:10

3100 FIND 002:10

3110 FIND 002:10

3120 FIND 002:10

3130 FIND 002:10

3140 FIND 002:10

3150 FIND 002:10

3160 FIND 002:10

3170 FIND 002:10

3180 FIND 002:10

3190 FIND 002:10

3200 FIND 002:10

3210 FIND 002:10

3220 FIND 002:10

3230 FIND 002:10

3240 FIND 002:10

3250 FIND 002:10

3260 FIND 002:10

3270 FIND 002:10

3280 FIND 002:10

3290 FIND 002:10

3300 FIND 002:10

3310 FIND 002:10

3320 FIND 002:10

3330 FIND 002:10

3340 FIND 002:10

3350 FIND 002:10

3360 FIND 002:10

3370 FIND 002:10

3380 FIND 002:10

3390 FIND 002:10

3400 FIND 002:10

3410 FIND 002:10

3420 FIND 002:10

3430 FIND 002:10

3440 FIND 002:10

3450 FIND 002:10

3460 FIND 002:10

3470 FIND 002:10

3480 FIND 002:10

3490 FIND 002:10

3500 FIND 002:10

3510 FIND 002:10

3520 FIND 002:10

3530 FIND 002:10

3540 FIND 002:10

3550 FIND 002:10

3560 FIND 002:10

3570 FIND 002:10

3580 FIND 002:10

3590 FIND 002:10

3600 FIND 002:10

3610 FIND 002:10

3620 FIND 002:10

3630 FIND 002:10

3640 FIND 002:10

3650 FIND 002:10

3660 FIND 002:10

3670 FIND 002:10

3680 FIND 002:10

3690 FIND 002:10

3700 FIND 002:10

3710 FIND 002:10

3720 FIND 002:10

3730 FIND 002:10

3740 FIND 002:10

3750 FIND 002:10

3760 FIND 002:10

3770 FIND 002:10

3780 FIND 002:10

3790 FIND 002:10

3800 FIND 002:10

3810 FIND 002:10

3820 FIND 002:10

3830 FIND 002:10

3840 FIND 002:10

3850 FIND 002:10

3860 FIND 002:10

3870 FIND 002:10

3880 FIND 002:10

3890 FIND 002:10

3900 FIND 002:10

3910 FIND 002:10

3920 FIND 002:10

3930 FIND 002:10

3940 FIND 002:10

3950 FIND 002:10

3960 FIND 002:10

3970 FIND 002:10

3980 FIND 002:10

3990 FIND 002:10

4000 FIND 002:10

4010 FIND 002:10

4020 FIND 002:10

4030 FIND 002:10

4040 FIND 002:10

4050 FIND 002:10

4060 FIND 002:10

4070 FIND 002:10

4080 FIND 002:10

4090 FIND 002:10

4100 FIND 002:10

4110 FIND 002:10

4120 FIND 002:10

4130 FIND 002:10

4140 FIND 002:10

4150 FIND 002:10

4160 FIND 002:10

4170 FIND 002:10

4180 FIND 002:10

4190 FIND 002:10

4200 FIND 002:10

4210 FIND 002:10

4220 FIND 002:10

4230 FIND 002:10

4240 FIND 002:10

4250 FIND 002:10

4260 FIND 002:10

4270 FIND 002:10

2370 0111

```

10 U2=11
100 PRINT *ENTER DATE (mm/dd/yy)*
110 INPUT H$
120 PRINT *ENTER HISTORY LABEL (INSxx...x)*
130 INPUT C$
140 DIM P(31),X(31),W(7),M9(31),M8(31),O0(31),O1(31),O2(31),O3(31)

141 REM PARAMS FOR UNWEIGHTED LEAST SQUARES
142 REM VAR(Y)=N*(AFIX)^2
143 REM WHERE N=FOOLED VARIANCE OF Y

150 P=0
160 F(6)=1
170 F(3)=1
180 F(29)=1
190 W=0
200 Z=0
210 D7=1
220 N=0
230 X4=0
240 PRINT *INSERT NEW HISTORY TAPE IN UNIT #U2
250 PRINT *PRESS 'RETURN' TO CONTINUE *
260 INPUT Z$
270 FIND WU210
280 MARK WU211,3000
290 FIND WU211
300 C1=C*304
310 PRINT WU21C$
320 PRINT WU21:00:SYSTEM****
330 PRINT WU21:00:PLOFILES*P*
340 PRINT WU21:00:PLOTSOC***P*
350 PRINT WU21:00:HIGH *****P*
360 PRINT WU21:00:HIGH QL,0*P*
370 PRINT WU21:00:HIGH QL,216P*
1070 PRINT WU21:2
1010 FIND WU21:2
1020 MARK WU211,1000
1030 FIND WU21:2
1040 PRINT WU21:SYSTEM****
1070 FIND WU21:3
1060 MARK WU211,5000
1070 FIND WU21:3
1090 PRINT WU21:PLOFILES**
1090 FIND WU21:4
1100 MARK WU211,5000
1110 FIND WU21:4
1120 PRINT WU21:PLOTSOC***
2030 FIND WU21:5
2010 MARK WU21:3,5000
2040 FIND WU21:5
2040 DIM X(400),Y(400)
2050 PRINT *ENTER VALUE VS FOUND DATA FOR H*
2055 PRINT *INSERT H DATA TAPE INTO 4052*
2060 INPUT A$
2065 W1=0
2070 PRINT *40-00 N*
2072 F(7)=1

```

```

2074 F(6)=0.01005
2080 INPUT F(8)
2090 DIM X(F(8)),Y(F(8))
2095 FINH 2
2100 FOR I=1 TO F(8)
2110 INPUT #33: X(I),Y(I)
2120 NEXT I
2140 H1=0
2150 H2=0
2160 H3=0
2170 H4=0
2180 H5=0
2185 W=0
2190 FOR I=1 TO F(8)
2195 W0=(0.43428417334*X(I))^2
2200 H1=H1X(I)*W0
2210 H2=H2Y(I)*W0
2220 H3=H3X(I)*X(I)*W0
2230 H4=H4Y(I)*Y(I)*W0
2240 H5=H5Y(I)*X(I)*W0
2245 W1=0.14W0
2250 NEXT I
2260 C=W1*H3-H1*2
2270 F(10)=W1/C
2280 F(11)=H1/C
2290 F(12)=H3/C
2300 F(2)=(W1*H5-H1*H2)/(W1*H3-H1*2)
2310 F(1)=(H2-F(2))*H1/W1
2320 F(4)=F(1)
2330 F(5)=F(2)
2340 W=0
2350 FOR I=1 TO F(8)
2360 B=W(Y(I)-F(1)-F(2))*X(I))^2
2370 NEXT I
2380 F(23)=1-B/(M4-H2*2/F(8))
2390 F(2)=2
2400 F(6)=W/(F(8)-2)
2410 F(9)=1
2420 F(29)=1
2430 F(27)=F(6)
2440 FINH #02:15
2450 PRINT #02:15: "DRH *****"
2460 PRINT #02:15: "P"
2470 PRINT #02:15: "2"
3000 FINH #02:16
3010 PRINT "ENTER QL HISTORY FOR .04"
3020 PRINT "ENTER MEAN(OR CENTRAL STANDARD) FOR .04"
3030 INPUT M1
3040 PRINT "ENTER S.D.(OR STANDARD) FOR .04"
3050 INPUT M2
3060 PRINT "ENTER LOWER LIMIT FOR ACCURACY"
3070 INPUT I
3080 M1=I
3090 PRINT "ENTER UPPER LIMIT FOR ACCURACY"
3100 INPUT I
3110 M2=I
3120 PRINT "ENTER LOWER LIMIT FOR PRECISION"
3130 INPUT I
3140 M3=I
3150 PRINT "ENTER UPPER LIMIT FOR PRECISION"

```

```
3051 INPUT I
3062 O3=I
3065 D7=31
3070 K=0
3080 X0=0
3090 W=0
3100 Z=0
3110 M9=M1
3120 M8=M2
3206 PRINT @U2:"HHH QL,04**"
3210 PRINT @U3:K,D7,X0,M9,01,00,X0,M8,03,02,W,U,K,K,K,K
4000 FIND @U2:7
4010 PRINT "ENTER QL HISTORY FOR .216"
4020 PRINT "ENTER MEAN (OR STANDARD) FOR .216"
4030 INPUT M1
4040 PRINT "ENTER S.D. (OR STANDARD) FOR .216"
4050 INPUT M2
4061 PRINT "ENTER LOWER LIMIT FOR ACCURACY"
4072 INPUT I
4083 00=I
4094 PRINT "ENTER UPPER LIMIT FOR ACCURACY"
4095 INPUT I
4096 01=I
4097 PRINT "ENTER LOWER LIMIT FOR PRECISION"
4098 INPUT I
4099 02=I
4100 PRINT "ENTER UPPER LIMIT FOR PRECISION"
4101 INPUT I
4102 03=I
4105 M9=M1
4107 M8=M2
4200 PRINT @U2:"HHH QL,216**"
4210 PRINT @U3:K,D7,X0,M9,01,00,X0,M8,03,02,W,U,K,K,K,K
10000 PRINT @U3:2;
10010 CLOSE
10015 PRINT "INSERT PROGRAM TAPE INTO 4052"
10016 IN 04
10020 FI. I
10030 OLD
10040 REM END OF PROGRAM
```

```

100 INIT
110 PRINT @32,26:0

120 REM
130 REM THIS PROGRAM IS SUPPOSED TO UPDATE THE HISTORY FILE BETWEEN
140 REM EACH DAILY RUN. IT IS SUPPOSED TO LEAVE IN THE INFORMATION
150 REM ABOUT PREVIOUS DAYS SO THAT THE QC PLOTS WILL SHOW DAILY
160 REM PROGRESS. IT IS SUPPOSED TO REMOVE THE INDIVIDUAL PLOT FILES
170 REM SO THAT A "FRESH" HISTORY TAPE EACH DAY.
180 REM
190 REM DATE: 05/04/81
200 REM AUTHOR: COMPUTER SCIENCES CORPORATION
210 REM ISAAC WILLY THAXLER
220 REM NSL STATION, MS.
230 REM
240 REM
250 REM DO SOME PRELIMINARIES

260 UI=33
270 PAGE
280 FKTHI * BEGIN PROGRAM TO UPDATE HISTORY TAPE*
290 PRINT * INSERT HISTORY TAPE INTO INTERNAL TAPE DRIVE*
300 PRINT * MAKE SURE WRITE PROTECT IS NOT ON SAFE*
310 PRINT * PRESS HOME PAGE TO START PROGRAM*
320 PRINT *OKJ*
330 PRINT * BEGIN PROCESSING*

340 REM UI - DEVICE NUMBER OF INTERNAL TAPE DRIVE
350 REM A$ - LINE 1 OF FILE 1
360 REM B$ - LINE 2 OF FILE 1
370 REM C$ - LINE 3 OF FILE 1
380 REM D$ - LINE 4 OF FILE 1
390 REM E$ - LINE 5 OF FILE 1
400 REM F$ - LINE 6 OF FILE 1
410 REM G$ - LINE 7 OF FILE 1
420 REM I - USED AS A TEMPORARY INDEX VARIABLE
430 REM
440 REM *** SECTION TO UPDATE FILE 1 ***

450 FIND I
460 INPUT @UI:A$
470 INPUT @UI:B$
480 INPUT @UI:C$
490 INPUT @UI:D$
500 INPUT @UI:E$
510 INPUT @UI:F$
520 INPUT @UI:G$
530 CLOSE
540 END I
550 PRINT @UI:A$
560 PRINT @UI:B$
570 PRINT @UI:C$
580 PRINT @UI:D$
590 PRINT @UI:E$
600 PRINT @UI:F$
610 PRINT @UI:G$
620 CLOSE

```

640 REM PUT TAPE AT BEGINNING OF FILE

650 FIND 0

660 REM *** SECTION FOR FILE 2 ***

670 FIND 2

680 PRINT GUL:SYSTEM***

690 CLOSE

700 REM *** END OF FILE 2 SECTION ***

710 REM FIND BEGINNING OF TAPE

720 FIND 0

730 REM *** SECTION FOR FILE 3 ***

740 FIND 3

750 PRINT GUL:PLDFILES*

760 CLOSE

770 REM *** END OF SECTION FOR FILE 3 ***

780 REM FIND BEGINNING OF TAPE

790 FIND 0

800 REM *** SECTION FOR FILE 4 ***

810 FIND 4

820 PRINT GUL:PLDFILES***

830 CLOSE

840 PRINT

850 PRINT

860 PRINT

870 PRINT

880 PRINT

890 PRINT

900 PRINT

910 PRINT

920 PRINT

930 PRINT

940 PRINT

950 PRINT

960 FIND 1

970 OLD

980 REM END OF PROGRAM

TAPE ACCESSING FINISHED

YOU MAY REMOVE THE TAPE NOW

INCLRT STATISTICS PROGRAM TAPE INTO INTERNAL TAPE DRIVE

PRESS HOME PAGE TO CONTINUE

CEJ

100 DIM X(100),Y(100),F(2)
 101 PRINT "INSERT SCRATCH TAPE IN UNIT 11"
 102 FIND @110
 103 MARK @112,50000

110 REM INIT

120 FIND @11:1
 130 FIND @33:2
 140 INPUT @33:8
 210 GOSUB 10000

+++++

220 A=1
 230 I=11
 240 B=01
 250 N=1

260 X(N)=1

270 Y(N)=P0
 300 IF IYF(0)<>2 THEN 1000

+++++

305 INPUT @33:8
 310 GOSUB 10000

320 IF A<>A1 OR I0<>I1 OR D<>D1 THEN 1000

330 H=M1

340 X(N)=1

350 Y(N)=F0

360 GO TO 300

+++++

1000 M1=0
 1010 M2=0
 1020 M3=0

1030 M4=0

1040 M5=0

1050 FOR I=1 TO N

1060 M1=M1X(I)

1070 M2=M2Y(I)

1080 M3=M3X(I)*X(I)

1090 M4=M4Y(I)*Y(I)

1100 M5=M5Y(I)*X(I)

1110 NEXT I

1120 F(1)=(M5-M1*M2)/(M4-M1*2)

1130 F(2)=(M2-F(1)*M1)/N

1140 PRINT @112,10*A,F(1),F(2)

1150 IF IYF(0)=2 THEN 220

1151 REM FARMS FOR 519 AND 520

1152 PRINT @11:519,2,3,0,2956,65.99

1153 PRINT @11:519,4,4,-0.0182,65.83

1154 PRINT @11:520,3,3,-0.1192,65.22

1155 PRINT @11:520,4,4,-0.6725,66.61

1160 FIND 3

1170 OLL

---2--- 10000 REM GET CALIBRATION DATA

10010 D4=SEG(04,4,3)

10020 D1=VAL(D4)

10030 I4=SEG(04,7,1)

10040 I1=VAL(I\$)
10050 A\$=SEG(8\$,27,1)
10050 A1=VAL(A\$)
10070 F\$=SEG(8\$,20,6)
10080 F0=VAL(F\$)
10090 T\$=SEG(8\$,14,6)
10100 T=VAL(T\$)
10200 RETURN

8103263CALH020.04 1,000 1
8103263CALH020.04 2,500 1
8103263CALH030.17 10,500 1
8103263CALH040.24 15,250 1
8103263CALH050.44 27,500 1
8103263CALH060.61 39,000 1
8103263CALH070.97 52,000 1
8103263CALH081.21 80,000 1
8103263CALH010.015 1,000 1
8103263CALH020.04 2,500 1
8103263CALH030.17 10,000 1
8103263CALH040.24 14,000 1
8103263CALH050.44 26,500 1
8103263CALH060.61 37,000 1
8103263CALH070.97 58,000 1
8103263CALH081.21 78,500 1
8103264CALH011.21 68,000 2
8103264CALH020.97 54,500 2
8103264CALH030.61 33,500 2
8103264CALH040.44 27,000 2
8103264CALH050.24 13,000 2
8103264CALH060.17 08,750 2
8103264CALH070.04 03,000 2
8103264CALH080.015 01,750 2
8103264CALH011.21 68,000 2
8103264CALH020.97 54,750 2
8103264CALH030.61 35,000 2
8103264CALH040.44 27,500 2
8103264CALH050.24 13,500 2
8103264CALH060.17 09,250 2
8103264CALH070.04 03,250 2
8103264CALH080.015 02,500 2
8103264CALH010.015 1,300 3
8103264CALH020.04 2,800 3
8103264CALH030.17 11,000 3
8103264CALH040.24 15,400 3
8103264CALH050.44 27,500 3
8103264CALH060.61 34,500 3
8103264CALH070.97 43,500 3
8103264CALH081.21 80,300 3
8103264CALH010.015 1,200 3
8103264CALH020.04 2,400 3
8103264CALH030.17 10,500 3
8103264CALH040.24 15,500 3
8103264CALH050.44 26,400 3
8103264CALH060.61 37,800 3
8103264CALH070.97 62,500 3
8103264CALH081.21 79,800 3
8103263CALH010.015 1,000 4
8103263CALH020.04 2,000 4
8103263CALH030.17 11,000 4
8103263CALH040.24 14,500 4
8103263CALH050.44 27,000 4
8103263CALH060.61 40,000 4
8103263CALH070.97 64,000 4
8103263CALH081.21 81,000 4
8103263CALH010.015 0,750 4
8103263CALH020.04 2,500 4

8103263CALH030.17 10.00 4
8103263CALH040.24 14.25 4
8103263CALH050.44 26.50 4
8103263CALH060.61 39.00 4
8103263CALH070.97 62.750 4
8103263CALH081.21 81.000 4
8103303CALH010.015 1.000 4
8103303CALH020.04 3.250 4
8103303CALH030.17 11.500 4
8103303CALH040.24 15.250 4
8103303CALH050.44 29.500 4
8103303CALH060.61 40.000 4
8103303CALH070.97 64.000 4
8103303CALH081.21 81.50 4
8103303CALH010.015 0.75 4
8103303CALH020.04 2.75 4
8103303CALH030.17 10.500 4
8103303CALH040.24 13.500 4
8103303CALH050.44 25.000 4
8103303CALH060.61 36.500 4
8103303CALH070.97 61.000 4
8103303CALH081.21 79.250 4
8103304CALH010.015 1.200 3
8103304CALH020.04 2.800 3
8103304CALH030.17 11.500 3
8103304CALH040.24 14.000 3
8103304CALH050.44 29.600 3
8103304CALH060.61 40.500 3
8103304CALH070.97 64.000 3
8103304CALH081.21 82.000 3
8103304CALH010.015 1.200 3
8103304CALH020.04 3.200 3
8103304CALH030.17 10.50 3
8103304CALH040.24 14.50 3
8103304CALH050.44 28.80 3
8103304CALH060.61 39.50 3
8103304CALH070.97 63.00 3
8103304CALH081.21 78.00 3
8103304CALH011.21 77.50 2
8103304CALH020.97 59.50 2
8103304CALH030.61 37.50 2
8103304CALH030.44 26.00 2
8103304CALH040.24 13.25 2
8103304CALH050.17 10.00 2
8103304CALH070.04 03.50 2
8103304CALH080.015 00.50 2
8103304CALH011.21 77.00 2
8103304CALH020.97 63.00 2
8103304CALH030.61 40.00 2
8103304CALH040.44 27.00 2
8103304CALH050.24 16.50 2
8103304CALH060.17 13.50 2
8103304CALH070.04 04.50 2
8103304CALH080.015 03.50 2
8103313CALH010.015 1.000 4
8103313CALH020.24 2.500 4
8103313CALH030.17 11.000 4
8103313CALH040.24 15.000 4
8103313CALH050.44 29.000 4
8103313CALH060.61 40.000 4

B103313CALH070.97 44.000 4
P103313CALH081.21 74.000 4
B103313CALH010.015 1.250 4
B103313CALH070.04 2.500 4
B103313CALH010.17 10.000 4
B103313CALH040.24 15.000 4
B103313CALH050.44 29.000 4
B103313CALH060.61 39.000 4
B103313CALH070.97 43.000 4
B103313CALH081.21 77.500 4
B103313CALH010.015 1.00 1
B103313CALH020.04 2.50 1
B103313CALH030.17 11.00 1
B103313CALH040.24 15.00 1
B103313CALH050.44 30.00 1
B103313CALH060.61 40.00 1
B103313CALH070.97 64.00 1
B103313CALH081.21 79.00 1
B103313CALH010.015 1.00 1
B103313CALH020.04 2.50 1
B103313CALH030.17 10.50 1
B103313CALH040.24 15.00 1
B103313CALH050.44 28.00 1
B103313CALH060.61 39.00 1
B103313CALH070.97 64.00 1
B103313CALH081.21 81.00 1
B103314CALH010.015 1.20 3
B103314CALH020.04 2.700 3
B103314CALH030.17 10.90 3
B103314CALH040.24 15.60 3
B103314CALH050.44 29.90 3
B103314CALH060.61 39.20 3
B103314CALH070.97 63.50 3
B103314CALH081.21 77.80 3
B103314CALH010.015 1.600 3
B103314CALH020.04 3.200 3
B103314CALH030.17 10.200 3
B103314CALH040.24 12.600 3
B103314CALH050.44 27.600 3
B103314CALH060.61 36.000 3
B103314CALH070.97 61.50 3
B103314CALH081.21 75.200 3
B103314CALH011.21 76.00 2
B103314CALH020.97 63.50 2
B103314CALH030.61 38.50 2
B103314CALH040.44 28.00 2
B103314CALH050.24 16.00 2
B103314CALH060.17 11.00 2
B103314CALH070.04 04.00 2
B103314CALH080.015 01.75 2
B103314CALH011.21 75.00 2
B103314CALH020.97 61.25 2
B103314CALH030.61 37.50 2
B103314CALH040.44 26.75 2
B103314CALH050.24 14.50 2
B103314CALH060.17 10.00 2
B103314CALH070.04 03.00 2
B103314CALH080.015 01.00 2
B104013CALH010.015 1.500 4
B104013CALH020.04 3.250 4

8104013CALH030.17 10.500 4
8104013CALH040.24 16.500 4
8104013CALH050.44 30.250 4
8104013CALH060.61 42.500 4
8104013CALH070.97 63.75 4
8104013CALH081.21 81.500 4
8104013CALH010.015 1.250 4
8104013CALH020.04 3.000 4
8104013CALH030.17 10.250 4
8104013CALH040.24 15.000 4
8104013CALH050.44 29.000 4
8104013CALH060.61 40.500 4
8104013CALH070.97 66.000 4
8104013CALH081.21 93.500 4
8104013CALH010.015 1.00 1
8104013CALH020.04 2.50 1
8104013CALH030.17 13.00 1
8104013CALH040.24 18.00 1
8104013CALH050.44 35.00 1
8104013CALH060.61 41.00 1
8104013CALH070.97 63.00 1
8104013CALH081.21 90.00 1
8104013CALH010.015 2.00 1
8104013CALH020.04 3.00 1
8104013CALH030.17 13.00 1
8104013CALH040.24 16.00 1
8104013CALH050.44 32.00 1
8104013CALH060.61 43.00 1
8104013CALH070.97 67.00 1
8104013CALH081.21 96.00 1
8104014CALH010.015 1.300 3
8104014CALH020.04 3.000 3
8104014CALH030.17 12.700 3
8104014CALH040.24 15.500 3
8104014CALH050.44 26.200 3
8104014CALH060.61 38.000 3
8104014CALH070.97 64.000 3
8104014CALH081.21 82.000 3
8104014CALH010.015 1.800 3
8104014CALH020.04 4.000 3
8104014CALH030.17 13.200 3
8104014CALH040.24 16.500 3
8104014CALH050.44 26.000 3
8104014CALH060.61 38.700 3
8104014CALH070.97 67.800 3
8104014CALH081.21 81.200 3
8104014CALH011.21 80.00 2
8104014CALH020.97 61.75 2
8104014CALH030.21 50.25 2
8104014CALH040.44 28.00 2
8104014CALH050.24 18.50 2
8104014CALH060.17 10.50 2
8104014CALH070.04 03.00 2
8104014CALH080.015 01.25 2
8104014 CALH011.21 77.50 2
8104014 CALH020.97 64.00 2
8104014CALH030.61 41.00 2
8104014CALH040.44 27.50 2
8104014CALH050.24 15.00 2
8104014CALH060.17 13.25 2

8104014CALH070.04	03.50	2
8104014CALH080.015	02.50	2
8104023CALH010.61	2.50	3
8104023CALH020.24	16.00	3
8104023CALH030.61	38.60	3
8104023CALH040.97	65.00	3
8104023CALH051.21	79.50	3
8104023CALH010.04	3.00	3
8104023CALH020.24	16.00	3
8104023CALH030.61	39.20	3
8104023CALH040.97	64.50	3
8104023CALH051.21	80.40	3
8104023CALH011.21	79.00	2
8104023CALH020.97	62.50	2
8104023CALH030.21	30.75	2
8104023CALH040.24	14.50	2
8104023CALH050.04	04.00	2
8104023CALH011.21	78.50	2
8104023CALH020.97	62.25	2
8104023CALH030.61	41.00	2
8104023CALH040.24	14.00	2
8104023CALH050.04	02.50	2
8104024CALH010.04	3.00	1
8104024CALH020.24	16.00	1
8104024CALH030.61	30.50	1
8104024CALH040.97	62.00	1
8104024CALH051.21	78.50	1
8104024CALH010.04	4.50	1
8104024CALH020.24	17.00	1
8104024CALH030.61	42.00	1
8104024CALH040.97	66.50	1
8104024CALH051.21	85.00	1
8104034CALH010.04	3.000	4
8104034CALH020.24	17.250	4
8104034CALH030.61	43.750	4
8104034CALH040.97	69.750	4
8104034CALH051.21	88.500	4
8104064CALH010.04	3.000	4
8104064CALH020.24	17.000	4
8104064CALH030.61	44.000	4
8104064CALH040.97	70.000	4
8104064CALH051.21	88.750	4
8104064CALH010.04	3.000	1
8104064CALH020.24	16.000	1
8104064CALH030.61	31.000	1
8104064CALH040.97	64.50001	1
8104064CALH051.21	79.50001	1
8104064CALH010.04	2.500	1
8104064CALH020.24	15.500	1
8104064CALH030.61	40.000	1
8104064CALH040.97	63.500	1
8104064CALH051.21	80.500	1
8104063CALH010.04	2.70	3
8104063CALH020.24	16.00	3
8104063CALH030.61	41.80	3
8104063CALH040.97	65.50	3
8104063CALH051.21	81.00	3
8104062CALH010.04	2.300	3
8104062CALH020.24	16.000	3
8104062CALH030.61	42.000	3

8104063CALH040.97 66,000.3
8104063CALH051.21 81,500.3
8104063CALH011.21 81,500.2
8104063CALH020.97 64,500.2
8104063CALH030.61 40,500.2
8104063CALH040.24 15,500.2
8104063CALH050.04 03,000.2
8104063CALH011.21 82,500.2
8104063CALH020.97 66,000.2
8104063CALH030.61 41,000.2
8104063CALH040.24 17,000.2
8104063CALH050.04 04,000.2
8104084CALH010.04 2,750.4
8104084CALH020.24 15,000.4
8104084CALH030.61 40,000.4
8104084CALH040.97 66,000.4
8104084CALH051.21 80,000.4
8104084CALH010.04 03,000.4
8104084CALH020.24 15,500.4
8104084CALH030.61 41,000.4
8104084CALH040.97 66,000.4
8104084CALH051.21 80,000.4
8104084CALH010.04 3,000.1
8104084CALH020.24 15,250.1
8104084CALH030.61 40,250.1
8104084CALH040.97 65,250.1
8104084CALH051.21 81,000.1
8104084CALH010.04 2,500.1
8104084CALH020.24 15,000.1
8104084CALH030.61 40,000.1
8104084CALH040.97 64,000.1
8104084CALH051.21 79,500.1
8104084CALH010.04 3,000.3
8104084CALH020.24 16,000.3
8104084CALH030.61 40,500.3
8104084CALH040.97 64,300.3
8104084CALH051.21 80,800.3
8104084CALH010.04 2,800.3
8104084CALH020.24 16,800.3
8104084CALH030.61 41,500.3
8104084CALH040.97 65,000.3
8104084CALH051.21 83,500.3
8104084CALH011.21 82,000.2
8104084CALH020.97 66,000.2
8104084CALH030.61 42,250.2
8104084CALH040.24 16,000.2
8104084CALH050.04 03,000.2
8104084CALH011.21 83,000.2
8104084CALH020.97 66,000.2
8104084CALH030.61 41,250.2
8104084CALH040.24 16,000.2
8104084CALH050.04 03,250.2
8104094CALH010.04 2,500.4
8104094CALH020.24 15,000.4
8104094CALH030.61 39,000.4
8104094CALH040.97 62,500.4
8104094CALH051.21 76,500.4
8104094CALH010.04 3,000.4
8104094CALH020.24 15,500.4
8104094CALH030.61 40,000.4

810409ACALH040.97 64.000 4
 810409ACALH051.21 79.500 4
 810409ACALH010.04 2.50 1
 810409ACALH020.24 16.500 1
 810409ACALH030.61 39.500 1
 810409ACALH040.97 64.000 1
 810409ACALH051.21 79.500 1
 810409ACALH010.04 4.500 1
 810409ACALH020.24 15.000 1
 810409ACALH030.61 42.500 1
 810409ACALH040.97 64.00 1
 810409ACALH051.21 80.000 1
 810409ACALH010.04 2.800 3
 810409ACALH020.24 15.500 3
 810409ACALH030.61 40.500 3
 810409ACALH040.97 65.500 3
 810409ACALH051.21 83.500 3
 810409ACALH010.04 2.400 3
 810409ACALH020.24 15.000 3
 810409ACALH030.61 40.500 3
 810409ACALH040.97 66.000 3
 810409ACALH051.21 83.500 3
 810409ACALH011.21 80.75 2
 810409ACALH020.97 64.75 2
 810409ACALH030.61 40.50 2
 810409ACALH040.24 15.25 2
 810409ACALH050.04 02.50 2
 810409ACALH011.21 83.00 2
 810409ACALH020.97 69.00 2
 810409ACALH030.61 40.25 2
 810409ACALH040.24 15.75 2
 810409ACALH050.04 02.75 2
 810410ACALH010.04 3.00 3
 810410ACALH020.24 14.000 3
 810410ACALH030.61 39.200 3
 810410ACALH040.97 63.500 3
 810410ACALH051.21 80.000 3
 810410ACALH010.04 2.800 3
 810410ACALH020.24 15.200 3
 810410ACALH030.61 39.000 3
 810410ACALH040.97 63.500 3
 810410ACALH051.21 80.000 3
 810410ACALH011.21 83.50 2
 810410ACALH020.97 67.25 2
 810410ACALH030.61 41.00 2
 810410ACALH040.24 16.00 2
 810410ACALH050.04 02.25 2
 810410ACALH011.21 84.00 2
 81 9 NEU

THE FOLLOWING LINE NUMBERS ARE BRANCHED TO BUT DO NOT EXIST IN THIS TAPE FILE (# 9)
A " - " BEFORE THE LINE NUMBER INDICATES IT IS BRANCHED TO AS A SUBROUTINE (VIA A "GOSUB" OR "ON")

B

6B

FILE # 1

```

+++++ 100 INIT
110 M3=32
120 PRINT Q03,25:0
130 PAGE
140 PRINT "JJ"
150 PRI " "
160 PRI " "
170 PRINT "JJOPTION"
180 PRINT " "
190 PRINT "J" 1 CREATE A NEW HISTORY TAPE
200 PRINT " " 2 REFRESH HISTORY TAPE
210 PRINT " " 3 RUN STATISTICS PROGRAMS
220 PRINT " " 4 STOP
230 PRINT "JJJJ WHICH OPTION> (1,2,3,4)"
+++++ 240 INPUT G$
250 IF A$="" THEN 240
260 A=VAL(A$)
270 IF A=1 OR A=2 THEN 100
280 A=INT(A)
290 GO TO A OF 300,400,500,600
+++++ 300 END 0
310 END 6
+++++ 400 END 0
310 END 7
320 END
+++++ 500 END 0
510 END 8
520 END
+++++ 600 END

```

FILE # 2

```
100 INIT
110 REM MAKE SURE SCREEN DOES NOT AUTOMATICALLY PAGE WHEN FULL
120 PRINT #2;26;0
130 REM ASSIGN DEVICE NUMBERS;FIND FILE 2 OF HISTORY TAPE;KNIP RECORD
140 U1=33
150 U2=11
160 FIND #U2;10
170 FIND #U2;12
180 INPUT #U2;U1;U2
190 DIM Z$(20),C$(2),F$(10),E$(72),I$(127),R$(127)
200 DIM M$(6),Y$(30),X$(30),R$(2),A$(6),N$(1),S$(1),J$(7)
210 K4=.
220 DIM X1(32),Y1(32),Z1(32),Y2(32),N2(32),O6(32),M0(8),P(34),B7(32)
230 DIM S(8),M6(8),M7(5),MB(8),M9(8),F0(34)
240 DIM T7(40)
250 DATA 12.706,4.363,3.182,2.776,2.579,2.451,2.366,2.307,2.262,2.238
260 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
270 DATA 2.074,2.069,2.064,2.056,2.052,2.049,2.046,2.043,2.04
280 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
290 READ T7
300 E4=.
310 FOR I=1 TO 71
320 F4=E43.
330 NEXT I
340 REM#
350 REM#INITIALIZE PLOTFILES
360 REM#
370 F4="PLOTFILES"
380 REM CHECK HISTORY TAPE HEADER AND GET N9
390 GOSUB 60000
400 FIND #U2;N9
410 PRINT #U2;F4
420 PRINT #U2;2;
430 REM# INITIALIZE PLOT FILES
440 F4="PLOT50C"
450 GOSUB 60000
460 FIND #U2;N9
470 PRINT #U2;F4
480 PRINT #U2;2;
490 PRINT "*****"
500 PRINT "*****"
510 PRINT "*****"
520 INPUT Z4
530 INPUT #U2;11
540 IF A=1 THEN 500
550 INPUT #U2;Y4
560 IF LEN(Z4)<13 THEN 610
```

```

500 DIM Z$(13),Y$(13)
590 IF Y8=Z8 THEN G40
600 PRINT "LABEL ON TAPE IS :Y8"
610 PRINT "WRONG RNA TAPE OR WRONG LABEL GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG"
620 PAGE
630 GO TO 500
640 INPUT QUIT:G$
650 M$=SUB(M$,18,2)
660 PRINT "DATA IS BEING PROCESSED"
670 GOSUB 1000
675 PRINT "ENDJ"
680 PRINT "GGGGGGGG"
690 PRINT "INSERT PROGRAM TAPE IN 4051"
700 PRINT "ENDJ"
710 FIND QUIT:G$
720 OLD

```

```

1000 DIM M$(2)

```

```

1010 REM M$ is used to hold name of agent

```

```

1020 M$="GB"
1030 PRINT "This program processes agent 'M$': ONLY"
1040 PRINT "Enter serial number (n)"
1050 INPUT N1
1060 PRINT "Enter the analyst's initials (aaa)"
1070 INPUT V1

```

```

1072 REM DEFAULT TRANSFORM FOR GB

```

```

1074 GO TO 1152
1075 GO TO 1152
1080 PRINT "TRANSFORM OPTIONS FOR CALIBRATION"
1090 PRINT " 1 X = 10(X)"
1100 PRINT " 2 Y = 10(Y)"
1110 PRINT " 3 no transform"
1120 PRINT "J ENTER OPTION (1,2,3)"
1130 INPUT O1
1140 IF O1<1 OR O1>3 THEN 1080

```

```

1150 REM Process Calibration Data

```

```

1152 F=0
1154 F(3)=00
1155 GO TO 00 OF 1156,1158,1170
1156 F(3)=1
1157 GO TO 1170
1158 F(31)=103

```

```

1170 REM skip header record

```

```

1172 FIND QUIT:G$
1180 INPUT QUIT:G$

```

```

1190 REM use H to count records

```

```

1200 H=0

```

```

1210 REM check for end of file

```

```

113111 1220 A=IYF(0)
1230 IF A=2 THEN 1370
1240 INPUT Q(1:84)
1250 GOSUB 5000
1260 IF A=1 THEN 1220
1270 I=I+1
1280 X=SGN(B)+27.7)
1290 C=-LOG(X)+1.2)
1300 IF C>=NA THEN 1220
1310 M=1+I
1310 REM Load calibration data into X2 and Y2
1320 X2(0)=VAL(X#)
1330 X6=5L6(B+40.7)
1340 Y2(M)=VAL(C#)
1350 GO TO 1220
1355 REM now load transformed data into X1,Y1
1370 B=13
1380 GO TO 09 OF 1400,1500,1600
1390 REM X=ln(X) transform
1400 FOR I=1 TO M
1410 Y1(I)=Y2(I)+P(31)
1420 X1(I)=LOG(X2(I)+P(32))
1430 NEXT I
1440 GO TO 1620
1470 REM Y=ln(Y)
1500 FOR I=1 TO M
1510 X1(I)=X2(I)+P(32)
1520 Y1(I)=LOG(Y2(I)+P(31))
1530 NEXT I
1540 GO TO 1620
1570 REM no transformation
1600 FOR I=1 TO M
1610 X1(I)=X2(I)+P(32)
1620 Y1(I)=Y2(I)+P(31)
1630 NEXT I
1640 REM end of load routine
1650 REM Process Calibration Data
1670 REM Processing Calibration Data for RMS
1680 I=0
1690 FOR J=0 TO 1000
1700 I=I+1
1710 I=I+1
1720 I=I+1
1730 I=I+1
1740 I=I+1
1750 I=I+1
1760 I=I+1

```

1730 M5=0
1790 F(8)=M
1800 FOR I=1 TO M
1810 M1=M*(I-1)
1820 M2=M*(I-1)
1830 M3=M*(I-1)*I
1840 M4=M*(I-1)*I*(I-1)
1850 M5=M*(I-1)*I*(I-1)
1860 NEXT I
1870 C=P(8)*M3-M1*M1
1880 F(10)=F(8)/C
1890 F(11)=M1/C
1900 F(12)=M3/C
1910 F(2)=(P(8)*M5-M1*M2)/(P(8)*M3-M1*M1)
1920 F(13)=(M2-F(3)*M1)/F(8)
1930 F(4)=P(1)
1940 F(5)=P(2)
1950 P=0
1960 FOR I=1 TO P(8)
1970 P=H(Y1(I)-P(1))-P(2)*X1(I)**2
1980 NEXT I
1990 F(23)=1-B/(M4-M2*M2/P(8))
2010 F(6)=B/(P(8)-2)
2020 F(9)=1
2030 F(29)=1
2040 F(27)=P(6)
2050 L=1:Calibration of Instrument Response *SV
2060 L=L+1
2070 L=L+1
2080 DIM Y(30)
2090 Y=L*CONCENTRATION*
2100 Y=L*INSTRUMENT RESPONSE*
2110 M=H(Y(14,2))
2120 M=H(Y(14,2))
2130 M=H(Y(14,2))
2140 M=H(Y(14,2))
2150 M=H(Y(14,2))
2160 M=H(Y(14,2))
2170 M=H(Y(14,2))
2180 G=H(Y(14,2))
2190 G=H(Y(14,2))
2192 M= GET PARAMETER FOR T V3 F
2194 F=H(Y(14,2))
2195 G=H(Y(14,2))
2196 H=H(Y(14,2))
2197 I=H(Y(14,2))
2198 J=H(Y(14,2))
2199 K=H(Y(14,2))
2200 L=H(Y(14,2))
2201 M=H(Y(14,2))
2202 N=H(Y(14,2))
2203 O=H(Y(14,2))
2204 P=H(Y(14,2))
2205 Q=H(Y(14,2))
2206 R=H(Y(14,2))
2207 S=H(Y(14,2))
2208 T=H(Y(14,2))
2209 U=H(Y(14,2))
2210 V=H(Y(14,2))
2211 W=H(Y(14,2))
2212 X=H(Y(14,2))
2213 Y=H(Y(14,2))
2214 Z=H(Y(14,2))
2215 AA=H(Y(14,2))
2216 AB=H(Y(14,2))
2217 AC=H(Y(14,2))
2218 AD=H(Y(14,2))
2219 AE=H(Y(14,2))
2220 AF=H(Y(14,2))
2221 AG=H(Y(14,2))
2222 AH=H(Y(14,2))
2223 AI=H(Y(14,2))
2224 AJ=H(Y(14,2))
2225 AK=H(Y(14,2))
2226 AL=H(Y(14,2))
2227 AM=H(Y(14,2))
2228 AN=H(Y(14,2))
2229 AO=H(Y(14,2))
2230 AP=H(Y(14,2))
2231 AQ=H(Y(14,2))
2232 AR=H(Y(14,2))
2233 AS=H(Y(14,2))
2234 AT=H(Y(14,2))
2235 AU=H(Y(14,2))
2236 AV=H(Y(14,2))
2237 AW=H(Y(14,2))
2238 AX=H(Y(14,2))
2239 AY=H(Y(14,2))
2240 AZ=H(Y(14,2))
2241 BA=H(Y(14,2))
2242 BB=H(Y(14,2))
2243 BC=H(Y(14,2))
2244 BD=H(Y(14,2))
2245 BE=H(Y(14,2))
2246 BF=H(Y(14,2))
2247 BG=H(Y(14,2))
2248 BH=H(Y(14,2))
2249 BI=H(Y(14,2))
2250 BJ=H(Y(14,2))
2251 BK=H(Y(14,2))
2252 BL=H(Y(14,2))
2253 BM=H(Y(14,2))
2254 BN=H(Y(14,2))
2255 BO=H(Y(14,2))
2256 BP=H(Y(14,2))
2257 BQ=H(Y(14,2))
2258 BR=H(Y(14,2))
2259 BS=H(Y(14,2))
2260 BT=H(Y(14,2))
2261 BU=H(Y(14,2))
2262 BV=H(Y(14,2))
2263 BW=H(Y(14,2))
2264 BX=H(Y(14,2))
2265 BY=H(Y(14,2))
2266 BZ=H(Y(14,2))
2267 CA=H(Y(14,2))
2268 CB=H(Y(14,2))
2269 CC=H(Y(14,2))
2270 CD=H(Y(14,2))
2271 CE=H(Y(14,2))
2272 CF=H(Y(14,2))
2273 CG=H(Y(14,2))
2274 CH=H(Y(14,2))
2275 CI=H(Y(14,2))
2276 CJ=H(Y(14,2))
2277 CK=H(Y(14,2))
2278 CL=H(Y(14,2))
2279 CM=H(Y(14,2))
2280 CN=H(Y(14,2))
2281 CO=H(Y(14,2))
2282 CP=H(Y(14,2))
2283 CQ=H(Y(14,2))
2284 CR=H(Y(14,2))
2285 CS=H(Y(14,2))
2286 CT=H(Y(14,2))
2287 CU=H(Y(14,2))
2288 CV=H(Y(14,2))
2289 CW=H(Y(14,2))
2290 CX=H(Y(14,2))
2291 CY=H(Y(14,2))
2292 CZ=H(Y(14,2))
2293 DA=H(Y(14,2))
2294 DB=H(Y(14,2))
2295 DC=H(Y(14,2))
2296 DD=H(Y(14,2))
2297 DE=H(Y(14,2))
2298 DF=H(Y(14,2))
2299 DG=H(Y(14,2))
2300 DH=H(Y(14,2))
2301 DI=H(Y(14,2))
2302 DJ=H(Y(14,2))
2303 DK=H(Y(14,2))
2304 DL=H(Y(14,2))
2305 DM=H(Y(14,2))
2306 DN=H(Y(14,2))
2307 DO=H(Y(14,2))
2308 DP=H(Y(14,2))
2309 DQ=H(Y(14,2))
2310 DR=H(Y(14,2))
2311 DS=H(Y(14,2))
2312 DT=H(Y(14,2))
2313 DU=H(Y(14,2))
2314 DV=H(Y(14,2))
2315 DW=H(Y(14,2))
2316 DX=H(Y(14,2))
2317 DY=H(Y(14,2))
2318 DZ=H(Y(14,2))
2319 EA=H(Y(14,2))
2320 EB=H(Y(14,2))
2321 EC=H(Y(14,2))
2322 ED=H(Y(14,2))
2323 EE=H(Y(14,2))
2324 EF=H(Y(14,2))
2325 EG=H(Y(14,2))
2326 EH=H(Y(14,2))
2327 EI=H(Y(14,2))
2328 EJ=H(Y(14,2))
2329 EK=H(Y(14,2))
2330 EL=H(Y(14,2))
2331 EM=H(Y(14,2))
2332 EN=H(Y(14,2))
2333 EO=H(Y(14,2))
2334 EP=H(Y(14,2))
2335 EQ=H(Y(14,2))
2336 ER=H(Y(14,2))
2337 ES=H(Y(14,2))
2338 ET=H(Y(14,2))
2339 EU=H(Y(14,2))
2340 EV=H(Y(14,2))
2341 EW=H(Y(14,2))
2342 EX=H(Y(14,2))
2343 EY=H(Y(14,2))
2344 EZ=H(Y(14,2))
2345 FA=H(Y(14,2))
2346 FB=H(Y(14,2))
2347 FC=H(Y(14,2))
2348 FD=H(Y(14,2))
2349 FE=H(Y(14,2))
2350 FF=H(Y(14,2))
2351 FG=H(Y(14,2))
2352 FH=H(Y(14,2))
2353 FI=H(Y(14,2))
2354 FJ=H(Y(14,2))
2355 FK=H(Y(14,2))
2356 FL=H(Y(14,2))
2357 FM=H(Y(14,2))
2358 FN=H(Y(14,2))
2359 FO=H(Y(14,2))
2360 FP=H(Y(14,2))
2361 FQ=H(Y(14,2))
2362 FR=H(Y(14,2))
2363 FS=H(Y(14,2))
2364 FT=H(Y(14,2))
2365 FU=H(Y(14,2))
2366 FV=H(Y(14,2))
2367 FW=H(Y(14,2))
2368 FX=H(Y(14,2))
2369 FY=H(Y(14,2))
2370 FZ=H(Y(14,2))
2371 GA=H(Y(14,2))
2372 GB=H(Y(14,2))
2373 GC=H(Y(14,2))
2374 GD=H(Y(14,2))
2375 GE=H(Y(14,2))
2376 GF=H(Y(14,2))
2377 GG=H(Y(14,2))
2378 GH=H(Y(14,2))
2379 GI=H(Y(14,2))
2380 GJ=H(Y(14,2))
2381 GK=H(Y(14,2))
2382 GL=H(Y(14,2))
2383 GM=H(Y(14,2))
2384 GN=H(Y(14,2))
2385 GO=H(Y(14,2))
2386 GP=H(Y(14,2))
2387 GQ=H(Y(14,2))
2388 GR=H(Y(14,2))
2389 GS=H(Y(14,2))
2390 GT=H(Y(14,2))
2391 GU=H(Y(14,2))
2392 GV=H(Y(14,2))
2393 GW=H(Y(14,2))
2394 GX=H(Y(14,2))
2395 GY=H(Y(14,2))
2396 GZ=H(Y(14,2))
2397 HA=H(Y(14,2))
2398 HB=H(Y(14,2))
2399 HC=H(Y(14,2))
2400 HD=H(Y(14,2))
2401 HE=H(Y(14,2))
2402 HF=H(Y(14,2))
2403 HG=H(Y(14,2))
2404 HH=H(Y(14,2))
2405 HI=H(Y(14,2))
2406 HJ=H(Y(14,2))
2407 HK=H(Y(14,2))
2408 HL=H(Y(14,2))
2409 HM=H(Y(14,2))
2410 HN=H(Y(14,2))
2411 HO=H(Y(14,2))
2412 HP=H(Y(14,2))
2413 HQ=H(Y(14,2))
2414 HR=H(Y(14,2))
2415 HS=H(Y(14,2))
2416 HT=H(Y(14,2))
2417 HU=H(Y(14,2))
2418 HV=H(Y(14,2))
2419 HW=H(Y(14,2))
2420 HX=H(Y(14,2))
2421 HY=H(Y(14,2))
2422 HZ=H(Y(14,2))
2423 IA=H(Y(14,2))
2424 IB=H(Y(14,2))
2425 IC=H(Y(14,2))
2426 ID=H(Y(14,2))
2427 IE=H(Y(14,2))
2428 IF=H(Y(14,2))
2429 IG=H(Y(14,2))
2430 IH=H(Y(14,2))
2431 II=H(Y(14,2))
2432 IJ=H(Y(14,2))
2433 IK=H(Y(14,2))
2434 IL=H(Y(14,2))
2435 IM=H(Y(14,2))
2436 IN=H(Y(14,2))
2437 IO=H(Y(14,2))
2438 IP=H(Y(14,2))
2439 IQ=H(Y(14,2))
2440 IR=H(Y(14,2))
2441 IS=H(Y(14,2))
2442 IT=H(Y(14,2))
2443 IU=H(Y(14,2))
2444 IV=H(Y(14,2))
2445 IW=H(Y(14,2))
2446 IX=H(Y(14,2))
2447 IY=H(Y(14,2))
2448 IZ=H(Y(14,2))
2449 JA=H(Y(14,2))
2450 JB=H(Y(14,2))
2451 JC=H(Y(14,2))
2452 JD=H(Y(14,2))
2453 JE=H(Y(14,2))
2454 JF=H(Y(14,2))
2455 JG=H(Y(14,2))
2456 JH=H(Y(14,2))
2457 JI=H(Y(14,2))
2458 JJ=H(Y(14,2))
2459 JK=H(Y(14,2))
2460 JL=H(Y(14,2))
2461 JM=H(Y(14,2))
2462 JN=H(Y(14,2))
2463 JO=H(Y(14,2))
2464 JP=H(Y(14,2))
2465 JQ=H(Y(14,2))
2466 JR=H(Y(14,2))
2467 JS=H(Y(14,2))
2468 JT=H(Y(14,2))
2469 JU=H(Y(14,2))
2470 JV=H(Y(14,2))
2471 JW=H(Y(14,2))
2472 JX=H(Y(14,2))
2473 JY=H(Y(14,2))
2474 JZ=H(Y(14,2))
2475 KA=H(Y(14,2))
2476 KB=H(Y(14,2))
2477 KC=H(Y(14,2))
2478 KD=H(Y(14,2))
2479 KE=H(Y(14,2))
2480 KF=H(Y(14,2))
2481 KG=H(Y(14,2))
2482 KH=H(Y(14,2))
2483 KI=H(Y(14,2))
2484 KJ=H(Y(14,2))
2485 KK=H(Y(14,2))
2486 KL=H(Y(14,2))
2487 KM=H(Y(14,2))
2488 KN=H(Y(14,2))
2489 KO=H(Y(14,2))
2490 KP=H(Y(14,2))
2491 KQ=H(Y(14,2))
2492 KR=H(Y(14,2))
2493 KS=H(Y(14,2))
2494 KT=H(Y(14,2))
2495 KU=H(Y(14,2))
2496 KV=H(Y(14,2))
2497 KW=H(Y(14,2))
2498 KX=H(Y(14,2))
2499 KY=H(Y(14,2))
2500 KZ=H(Y(14,2))
2501 LA=H(Y(14,2))
2502 LB=H(Y(14,2))
2503 LC=H(Y(14,2))
2504 LD=H(Y(14,2))
2505 LE=H(Y(14,2))
2506 LF=H(Y(14,2))
2507 LG=H(Y(14,2))
2508 LH=H(Y(14,2))
2509 LI=H(Y(14,2))
2510 LJ=H(Y(14,2))
2511 LK=H(Y(14,2))
2512 LL=H(Y(14,2))
2513 LM=H(Y(14,2))
2514 LN=H(Y(14,2))
2515 LO=H(Y(14,2))
2516 LP=H(Y(14,2))
2517 LQ=H(Y(14,2))
2518 LR=H(Y(14,2))
2519 LS=H(Y(14,2))
2520 LT=H(Y(14,2))
2521 LU=H(Y(14,2))
2522 LV=H(Y(14,2))
2523 LW=H(Y(14,2))
2524 LX=H(Y(14,2))
2525 LY=H(Y(14,2))
2526 LZ=H(Y(14,2))
2527 MA=H(Y(14,2))
2528 MB=H(Y(14,2))
2529 MC=H(Y(14,2))
2530 MD=H(Y(14,2))
2531 ME=H(Y(14,2))
2532 MF=H(Y(14,2))
2533 MG=H(Y(14,2))
2534 MH=H(Y(14,2))
2535 MI=H(Y(14,2))
2536 MJ=H(Y(14,2))
2537 MK=H(Y(14,2))
2538 ML=H(Y(14,2))
2539 MM=H(Y(14,2))
2540 MN=H(Y(14,2))
2541 MO=H(Y(14,2))
2542 MP=H(Y(14,2))
2543 MQ=H(Y(14,2))
2544 MR=H(Y(14,2))
2545 MS=H(Y(14,2))
2546 MT=H(Y(14,2))
2547 MU=H(Y(14,2))
2548 MV=H(Y(14,2))
2549 MW=H(Y(14,2))
2550 MX=H(Y(14,2))
2551 MY=H(Y(14,2))
2552 MZ=H(Y(14,2))
2553 NA=H(Y(14,2))
2554 NB=H(Y(14,2))
2555 NC=H(Y(14,2))
2556 ND=H(Y(14,2))
2557 NE=H(Y(14,2))
2558 NF=H(Y(14,2))
2559 NG=H(Y(14,2))
2560 NH=H(Y(14,2))
2561 NI=H(Y(14,2))
2562 NJ=H(Y(14,2))
2563 NK=H(Y(14,2))
2564 NL=H(Y(14,2))
2565 NM=H(Y(14,2))
2566 NN=H(Y(14,2))
2567 NO=H(Y(14,2))
2568 NP=H(Y(14,2))
2569 NQ=H(Y(14,2))
2570 NR=H(Y(14,2))
2571 NS=H(Y(14,2))
2572 NT=H(Y(14,2))
2573 NU=H(Y(14,2))
2574 NV=H(Y(14,2))
2575 NW=H(Y(14,2))
2576 NX=H(Y(14,2))
2577 NY=H(Y(14,2))
2578 NZ=H(Y(14,2))
2579 OA=H(Y(14,2))
2580 OB=H(Y(14,2))
2581 OC=H(Y(14,2))
2582 OD=H(Y(14,2))
2583 OE=H(Y(14,2))
2584 OF=H(Y(14,2))
2585 OG=H(Y(14,2))
2586 OH=H(Y(14,2))
2587 OI=H(Y(14,2))
2588 OJ=H(Y(14,2))
2589 OK=H(Y(14,2))
2590 OL=H(Y(14,2))
2591 OM=H(Y(14,2))
2592 ON=H(Y(14,2))
2593 OO=H(Y(14,2))
2594 OP=H(Y(14,2))
2595 OQ=H(Y(14,2))
2596 OR=H(Y(14,2))
2597 OS=H(Y(14,2))
2598 OT=H(Y(14,2))
2599 OU=H(Y(14,2))
2600 OV=H(Y(14,2))
2601 OW=H(Y(14,2))
2602 OX=H(Y(14,2))
2603 OY=H(Y(14,2))
2604 OZ=H(Y(14,2))
2605 PA=H(Y(14,2))
2606 PB=H(Y(14,2))
2607 PC=H(Y(14,2))
2608 PD=H(Y(14,2))
2609 PE=H(Y(14,2))
2610 PF=H(Y(14,2))
2611 PG=H(Y(14,2))
2612 PH=H(Y(14,2))
2613 PI=H(Y(14,2))
2614 PJ=H(Y(14,2))
2615 PK=H(Y(14,2))
2616 PL=H(Y(14,2))
2617 PM=H(Y(14,2))
2618 PN=H(Y(14,2))
2619 PO=H(Y(14,2))
2620 PP=H(Y(14,2))
2621 PQ=H(Y(14,2))
2622 PR=H(Y(14,2))
2623 PS=H(Y(14,2))
2624 PT=H(Y(14,2))
2625 PU=H(Y(14,2))
2626 PV=H(Y(14,2))
2627 PW=H(Y(14,2))
2628 PX=H(Y(14,2))
2629 PY=H(Y(14,2))
2630 PZ=H(Y(14,2))
2631 QA=H(Y(14,2))
2632 QB=H(Y(14,2))
2633 QC=H(Y(14,2))
2634 QD=H(Y(14,2))
2635 QE=H(Y(14,2))
2636 QF=H(Y(14,2))
2637 QG=H(Y(14,2))
2638 QH=H(Y(14,2))
2639 QI=H(Y(14,2))
2640 QJ=H(Y(14,2))
2641 QK=H(Y(14,2))
2642 QL=H(Y(14,2))
2643 QM=H(Y(14,2))
2644 QN=H(Y(14,2))
2645 QO=H(Y(14,2))
2646 QP=H(Y(14,2))
2647 QQ=H(Y(14,2))
2648 QR=H(Y(14,2))
2649 QS=H(Y(14,2))
2650 QT=H(Y(14,2))
2651 QU=H(Y(14,2))
2652 QV=H(Y(14,2))
2653 QW=H(Y(14,2))
2654 QX=H(Y(14,2))
2655 QY=H(Y(14,2))
2656 QZ=H(Y(14,2))
2657 RA=H(Y(14,2))
2658 RB=H(Y(14,2))
2659 RC=H(Y(14,2))
2660 RD=H(Y(14,2))
2661 RE=H(Y(14,2))
2662 RF=H(Y(14,2))
2663 RG=H(Y(14,2))
2664 RH=H(Y(14,2))
2665 RI=H(Y(14,2))
2666 RJ=H(Y(14,2))
2667 RK=H(Y(14,2))
2668 RL=H(Y(14,2))
2669 RM=H(Y(14,2))
2670 RN=H(Y(14,2))
2671 RO=H(Y(14,2))
2672 RP=H(Y(14,2))
2673 RQ=H(Y(14,2))
2674 RR=H(Y(14,2))
2675 RS=H(Y(14,2))
2676 RT=H(Y(14,2))
2677 RU=H(Y(14,2))
2678 RV=H(Y(14,2))
2679 RW=H(Y(14,2))
2680 RX=H(Y(14,2))
2681 RY=H(Y(14,2))
2682 RZ=H(Y(14,2))
2683 SA=H(Y(14,2))
2684 SB=H(Y(14,2))
2685 SC=H(Y(14,2))
2686 SD=H(Y(14,2))
2687 SE=H(Y(14,2))
2688 SF=H(Y(14,2))
2689 SG=H(Y(14,2))
2690 SH=H(Y(14,2))
2691 SI=H(Y(14,2))
2692 SJ=H(Y(14,2))
2693 SK=H(Y(14,2))
2694 SL=H(Y(14,2))
2695 SM=H(Y(14,2))
2696 SN=H(Y(14,2))
2697 SO=H(Y(14,2))
2698 SP=H(Y(14,2))
2699 SQ=H(Y(14,2))
2700 SR=H(Y(14,2))
2701 SS=H(Y(14,2))
2702 ST=H(Y(14,2))
2703 SU=H(Y(14,2))
2704 SV=H(Y(14,2))
2705 SW=H(Y(14,2))
2706 SX=H(Y(14,2))
2707 SY=H(Y(14,2))
2708 SZ=H(Y(14,2))
2709 TA=H(Y(14,2))
2710 TB=H(Y(14,2))
2711 TC=H(Y(14,2))
2712 TD=H(Y(14,2))
2713 TE=H(Y(14,2))
2714 TF=H(Y(14,2))
2715 TG=H(Y(14,2))
2716 TH=H(Y(14,2))
2717 TI=H(Y(14,2))
2718 TJ=H(Y(14,2))
2719 TK=H(Y(14,2))
2720 TL=H(Y(14,2))
2721 TM=H(Y(14,2))
2722 TN=H(Y(14,2))
2723 TO=H(Y(14,2))
2724 TP=H(Y(14,2))
2725 TQ=H(Y(14,2))
2726 TR=H(Y(14,2))
2727 TS=H(Y(14,2))
2728 TT=H(Y(14,2))
2729 TU=H(Y(14,2))
2730 TV=H(Y(14,2))
2731 TW=H(Y(14,2))
2732 TX=H(Y(14,2))
2733 TY=H(Y(14,2))
2734 TZ=H(Y(14,2))
2735 UA=H(Y(14,2))
2736 UB=H(Y(14,2))
2737 UC=H(Y(14,2))
2738 UD=H(Y(14,2))
2739 UE=H(Y(14,2))
2740 UF=H(Y(14,2))
2741 UG=H(Y(14,2))
2742 UH=H(Y(14,2))
2743 UI=H(Y(14,2))
2744 UJ=H(Y(14,2))
2745 UK=H(Y(14,2))
2746 UL=H(Y(14,2))
2747 UM=H(Y(14,2))
2748 UN=H(Y(14,2))
2749 UO=H(Y(14,2))
2750 UP=H(Y(14,2))
2751 UQ=H(Y(14,2))
2752 UR=H(Y(14,2))
2753 US=H(Y(14,2))
2754 UT=H(Y(14,2))
2755 UU=H(Y(14,2))
2756 UV=H(Y(14,2))
2757 UW=H(Y(14,2))
2758 UX=H(Y(14,2))
2759 UY=H(Y(14,2))
2760 UZ=H(Y(14,2))
2761 VA=H(Y(14,2))
2762 VB=H(Y(14,2))
2763 VC=H(Y(14,2))
2764 VD=H(Y(14,2))
2765 VE=H(Y(14,2))
2766 VF=H(Y(14,2))
2767 VG=H(Y(14,2))
2768 VH=H(Y(14,2))
2769 VI=H(Y(14,2))
2770 VJ=H(Y(14,2))
2771 VK=H(Y(14,2))
2772 VL=H(Y(14,2))
2773 VM=H(Y(14,2))
2774 VN=H(Y(14,2))
2775 VO=H(Y(14,2))
2776 VP=H(Y(14,2))
2777 VQ=H(Y(14,2))
2778 VR=H(Y(14,2))
2779 VS=H(Y(14,2))
2780 VT=H(Y(14,2))
2781 VU=H(Y(14,2))
2782 VV=H(Y(14,2))
2783 VW=H(Y(14,2))
2784 VX=H(Y(14,2))
2785 VY=H(Y(14,2))
2786 VZ=H(Y(14,2))
2787 WA=H(Y(14,2))
2788 WB=H(Y(14,2))
2789 WC=H(Y(14,2))
2790 WD=H(Y(14,2))
2791 WE=H(Y(14,2))
2792 WF=H(Y(14,2))
2793 WG=H(Y(14,2))
2794 WH=H(Y(14,2))
2795 WI=H(Y(14,2))
2796 WJ=H(Y(14,2))
2797 WK=H(Y(14,2))
2798 WL=H(Y(14,2))
2799 WM=H(Y(14,2))
2800 WN=H(Y(14,2))
2801 WO=H(Y(14,2))
2802 WP=H(Y(14,2))
2803 WQ=H(Y(14,2))
2804 WR=H(Y(14,2))
2805 WS=H(Y(14,2))
2806 WT=H(Y(14,2))
2807 WU=H(Y(14,2))
2808 WV=H(Y(14,2))
2809 WW=H(Y(14,2))
2810 WX=H(Y(14,2))
2811 WY=H(Y(14,2))
2812 WZ=H(Y(14,2))
2813 XA=H(Y(14,2))
2814 XB=H(Y(14,2))
2815 XC=H(Y(14,2))
2816 XD=H(Y(14,2))
2817 XE=H(Y(14,2))
2818 XF=H(Y(14,2))
2819 XG=H(Y(14,2))
2820 XH=H(Y(14,2))
2821 XI=H(Y(14,2))
2822 XJ=H(Y(14,2))
2823 XK=H(Y(14,2))
2824 XL=H(Y(14,2))
2825 XM=H(Y(14,2))
2826 XN=H(Y(14,2))
2827 XO=H(Y(14,2))
2828 XP=H(Y(14,2))
2829 XQ=H(Y(14,2))
2830 XR=H(Y(14,2))
2831 XS=H(Y(14,2))
2832 XT=H(Y(14,2))
2833 XU=H(Y(14,2))
2834 XV=H(Y(14,2))
2835 XW=H(Y(14,2))
2836 XX=H(Y(14,2))
2837 XY=H(Y(14,2))
2838 XZ=H(Y(14,2))
2839 YA=H(Y(14,2))
2840 YB=H(Y(14,2))
2841 YC=H(Y(14,2))
2842 YD=H(Y(14,2))
2843 YE=H(Y(14,2))
2844 YF=H(Y(14,2))
2845 YG=H(Y(14,2))
2846 YH=H(Y(14,2))
2847 YI=H(Y(14,2))
2848 YJ=H(Y(14,2))
2849 YK=H(Y(14,2))
2850 YL=H(Y(14,2))
2851 YM=H(Y(14,2))
2852 YN=H(Y(14,2))
2853 YO=H(Y(14,2))
2854 YP=H(Y(14,2))
2855 YQ=H(Y(14,2))
2856 YR=H(Y(14,2))
2857 YS=H(Y(14,2))
2858 YT=H(Y(14,2))
2859 YU=H(Y(14,2))
2860 YV=H(Y(14,2))
2861 YW=H(Y(14,2))
2862 YX=H(Y(14,2))
2863 YY=H(Y(14,2))
2864 YZ=H(Y(14,2))
2865 ZA=H(Y(14,2))
2866 ZB=H(Y(14,2))
2867 ZC=H(Y(14,2))
2868 ZD=H(Y(14,2))
2869 ZE=H(Y(14,2))
2870 ZF=H(Y(14,2))
2871 ZG=H(Y(14,2))
2872 ZH=H(Y(14,2))
2873 ZI=H(Y(14,2))
2874 ZJ=H(Y(14,2))

```

2280 04=OP*
2285 07=0.9
2290 00SUB 7000
2300 00SUB 3500
2310 00SUB 3750
2320 REM Input Actual Data
2330 M=0
2340 FINE QUIT
2350 INPUT BUI168
2360 A=IY(O)
2370 IF A<2 THEN 2460
2400 INPUT BUI168
2430 00SUB 5000
2440 IF A=1 THEN 2350
2450 18=18
2460 Y8=86(18,118,2)
2470 IF Y8>PL THEN 2360
2480 N=180
2490 00SUB 10000
2500 GO TO 2360
2510 00SUB 50=18
2520 RETURN

```

2599 REM Determine Groups

```

---2---
3000 K=0
3010 N2=0
3020 FOR J=1 TO N
3030 IF N2(J)=0 THEN 3180
3040 NEXT J
3050 FOR J=1 TO N
3060 IF N2(J)=1 THEN 3090
3070 N2=N2+1
3080 NEXT J
3090 NEXT J
3100 REM Determine number in each group
3110 N3=0
3120 IF N=0 THEN 3170
3130 FOR J=1 TO N
3140 IF N2(J)=1 THEN 3160
3150 N3=N3+1
3160 NEXT J
3170 RETURN
3180 IF J1=N THEN 3210
3190 N2(N)=1
3200 NEXT J
3210 NEXT J
3220 00SUB 50=18
3230 00SUB 10000
3240 00SUB 50=18
3250 00SUB 10000
3260 FOR J=1 TO N
3270 IF N2(J)=0 OR N2(J)>X1(J) THEN 3410

```

```

3290 J2=1+J2
3300 J3=J3+Y1(J)
3400 J4=J4+Y1(J)*Y1(J)
3410 NEXT J
3420 J5=J4-J3+J3/J2
3430 IF J2>1 AND J5<>0 THEN 3020
3440 FOR J=1 TO N
3450 IF N2(J)<>K THEN 3470
3460 N2(J)=1
3470 NEXT J
3480 K=K-1
3490 GO TO 3020

3498 REM OC
3499 REM X1(N2(I)) P(25)*P(26)

```

```

---2---
3500 S1=0
3510 S2=0
3520 J=0
3530 IF A>0 THEN 3580
3540 F(25)=0
3550 P(26)=0
3560 F(20)=0
3570 GO TO 3660
3580 FOR I=1 TO N
3590 J=1+J

```

3593 REM ADJUSTMENT FOR CALCULATED RECOVERY

```

3595 X1(I)=X1(I)/O7
3600 S1=O1+X1(I)
3610 S2=S2+X1(I)*X1(I)
3620 NEXT I
3630 F(25)=S1/J
3640 F(26)=J
3645 O6=O2/J-F(25)*P(25)
3654 IF O6<1.0E-6 THEN 3650
3655 P(25)=0
3660 RETURN
3660 RETURN

```

3749 REM update FLOISOC

```

---2---
3750 F1=FLOISOC*
3760 GOSUB 20000
3770 INPUT O2:G1A
3780 IF A=2 THEN 3010
3790 INPUT O2:O6
3800 GO TO 3770
3810 RETURN
3820 G1A=1.60*
3830 PRINT O2:O6
3840 PRINT O2:O6
3850 PRINT O2:O6
3860 PRINT O2:O6
3870 PRINT O2:O6
3880 PRINT O2:O6

```


3090 PRINT (M2,2)
3900 RETURN

4999 REM check for acceptable record

5000 N=1
5010 X\$=SEG(R\$,6,1)
5020 REM see if it is data or comment record
5030 IF X\$<>'1' AND X\$<>'3' THEN 5130
5040 X\$=SEG(R\$,18,2)

5050 REM check agent code
5060 IF X\$<>'M\$ THEN 5130
5070 X\$=SEG(R\$,20,1)

5080 REM check serial number
5090 IF X\$<>'N\$ THEN 5130
5100 X\$=SEG(R\$,87,3)

5110 REM check analyst's initials

5120 IF X\$=0\$ THEN 5140
5130 A=0
5140 RETURN

5999 REM GROUP MOVEMENTS

6000 N7=0
6010 M6=0
6020 M7=0
6030 M8=0
6040 M9=0
6050 FOR I=1 TO N
6060 IF N2(I)<1 THEN 6130
6070 N7=14*7
6090 M6(N2(I))=M6(N2(I))+X1(I)
6100 M7(N2(I))=M7(N2(I))+Y1(I)
6110 M8(N2(I))=M8(N2(I))+X1(I)*X1(I)
6120 M9(N2(I))=M9(N2(I))+Y1(I)*Y1(I)
6130 NEXT I
6140 RETURN

6999 REM Get data for OL & OP

7000 N=0
7010 FIND PUI1:0
7020 FIND PUI1:1
7030 INPUT PUI1:0\$
7040 A=TYPE(O)

```

7060 INPUT #U1:R$
7070 GOSUB 5000
7080 IF A=1 THEN 7040
7090 W$=SEG(U$,118,2)
7100 REM*** IF O$= " " AND (U$="QP" OR W$="OL") THEN 7130
7110 IF W$<>O$ THEN 7040
7120 REMcheck for control concentration
7130 Y$=SEG(B$,97,7)
7140 IF C=0 THEN 7160
7150 IF VAL(Y$)<C THEN 7040
+++1+++ 7160 Y$=SEG(B$,48,7)
7170 Y=VAL(Y$)
7175 NEH Calibrate QC Data
7180 GO TO UO DF 7260,7190,7290
+++1+++ 7190 Y=L*O(-Y#P0(31))
7230 X=(Y-P0(1))/P0(2)-P0(32)
7240 GO TO 7310
7250 REM case 2 X=ln(X)
+++1+++ 7260 X=EXP((Y-P0(1))/P0(2))-P0(32)
7270 GO TO 7310
7280 REM case 3 no transform
+++1+++ 7290 X=(Y-P0(1))/P0(2)-P0(31)
7300 REM end of case statement based on transformation
1:12+++ 7310 W$=SEG(R$,62,7)
7315 IF W$="RA" THEN 7040
7320 X=X#VAL(W$)
7330 Y$=SEG(U$,97,7)
7340 Y=VAL(Y$)
7350 N=1+H
7360 X1(H)=X
7370 X2(H)=X
7380 Y1(H)=Y
7390 Y2(H)=Y
7400 GO TO 7040
+++1+++ 7410 RETURN
9998 REM set actual data from B$
9999 REM Peak Heights
----- 10000 Y$=SEG(B$,48,7)
10010 YO=VAL(Y$)
10020 GO TO UO DF 10120,10040,10150
10030 REM case 1 Y=ln(Y)
+++1+++ 10040 YO=LOG(-YO#P0(31))

```

```

10090 X0=(Y0-F0(1))/F0(2)-F0(32)
10100 GO TO 10170
10110 REM case 2 X=ln(X)
+++++ 10120 X0=EXP((Y0+F0(31))-F0(1))/F0(2))-F0(32)
10130 GO TO 10170
+++++ 10140 REM case 3 no transform
+++++ 10150 X0=(Y0+F0(31))-F0(1))/F0(2))-F0(32)
10160 REM end of case statement on 00
+++++ 10170 Y0=X0
10172 X0=(X0-F(1))/P(2)
10175 X0=X0/0.9
10180 GOSUB 15000
10185 REM GET DILUTION
10190 X1=SEG(B$,62,7)
10200 00=VAL(X1)
10205 REM GET RUBBLER VOLUME
10210 X1=SEG(B$,69,7)
10220 00=00*VAL(X1)
10230 REM Get Time
10240 X1=SEG(B$,126,2)
10250 Y1=SEG(B$,122,2)
10260 X1=VAL(X1)
10270 Y1=VAL(Y1)
10280 Z=X-Y
10290 X1=SEG(B$,124,2)
10300 Y1=SEG(B$,120,2)
10310 X1=VAL(X1)
10320 Y1=VAL(Y1)
10330 IF X1>Y1 THEN 10330
10325 X=X124
10330 Z=(X-Y)*60+Z
+++++
10340 REM Get Airflow
10350 Y1=SEG(B$,90,7)
10360 Y1=VAL(Y1)
10370 X0=X0*00/(Y1*Z)*1.0E-3
10380 L0=L0*00/(Y1*Z)*1.0E-3
10390 U0=U0*00/(Y1*Z)*1.0E-3
10400 REM Print out Actual Data
10410 Y1=B1$
10420 IF INT((N-1)/20)*20<N-1 THEN 10630
10430 B1=B1$
10440 B1=REP("Actual Data for ",24,14)
10450 B1=REP("Date:",40,2)
10460 B1=REP("Date:",52,5)

```

```

10170 B$=REP(D$,58,8)
10400 PRINT 'CKJ.'
10490 PRINT 'J',I$
10500 B$=E$
10510 B$=REP('Absent Concentration',29,19)
10520 PRINT 'JJ',I$
10530 B$=E$
10540 B$=REP('-----',24,29)
10550 PRINT B$
10560 B$=E$
10570 B$=REP('Sample Location',5,15)
10580 B$=REP('Trug',25,4)
10590 B$=REP('Lower 95%',32,9)
10600 B$=REP('Upper 95%',44,9)
10605 B$=REP('TIME',59,4)
10610 PRINT B$

10620 REM Print Data
10630 B$=E$
10640 X$=SEG(T$,21,6)
10650 B$=REP(X$,5,6)
10660 X$=SEG(T$,116,2)
10670 B$=REP(X$,15,2)
10680 L$=STR(X0)
10690 GOSUB 58000
10700 IF X0->1.0E-3 THEN 10730
10710 L$=L$*'*'
10720 00=1:00
10730 B$=REP(L$,24,00)
10740 IF X0<1.0E-4 THEN 10022
10750 L$=STR(00)
10760 GOSUB 58000
10770 GOSUB 14000
10780 B$=REP(L$,34,00)
10790 L$=STR(0)
10800 GOSUB 58000
10810 GOSUB 14000
10820 B$=REP(L$,46,00)
10830 L$=SEG(T$,120,4)
10840 B$=REP(L$,56,4)
10826 L$=SEG(T$,124,4)
10828 B$=REP(L$,62,4)
10830 PRINT B$
10840 RETURN

13999 REM check if data is from location 'DR','CR','RA','LA'

```

```

---2--- 14000 Y$=SEG(T$,116,2)
14010 IF Y$='DR' OR 'CR'=Y$ OR Y$='RA' OR Y$='LA' THEN 14030
14020 L$=SEG(E$,1,00)
14030 RETURN

14995 REM Solve Linear Regression in Reverse
14996 REM for Upper and Lower Confidence Limits
14997 REM Y0,X0 L0,U0
14998 REM T-VALUES L=0.025 U=0.975

```

```

---1--- 15000 X7=X0
15010 U0=0

15020 REM Transforma Y0
15030 Y0=(Y0+P(31))*P(29)
15040 Y7=Y0
15042 IF F(8)<42 THEN 15050
15043 REM I-VALUE

15044 T3=3.8416#P(6)
15046 GO TO 15060
15050 T3=T3*(F(8)-2)**2#P(6)
15056 A1=F(2)*P(2)-P(10)*T3
15070 B1=P(2)*(Y7-F(1))-P(11)*T3
15080 A2=(X7+P(30))*P(7)
15090 B3=0
15100 A2=A9+P(12)
15110 B2=Y7-F(1)
15120 A3=13*(P(11)**2-F(10)*A2)+P(2)*A2+B2*(P(10)*B2-2*P(2)*P(11))
15125 IF A3=0 THEN 15190
15127 IF F(0)>42 THEN 15134
15130 B3=T7*(F(0)-2)*SUR(A3*P(6))
15132 GO TO 15140
15134 B3=1.56850R(A3*P(6))
15140 X7=(B1+B3)/A1
15150 L0=X7-F(32)
15160 X2=(B1-B3)/A1
15170 U0=X7-F(32)
15180 RETURN

15190 REM***PRINT *IMAGINARY ROOTS*

15200 L0=10000
15210 X7=10000
15220 U0=10000
15230 RETURN
15000 PRINT *Processing Q1 & QP Found vs Target data for *IM*
16010 C=0
16020 O1=0
16030 GOSUB 7000
16040 IF N=0 THEN 16570
16050 F=0
16060 F(3)=3
16070 GOSUB 3000
16080 GOSUB 20000
16090 GOSUB 25000
16100 F(13)=C8
16110 F(14)=A1
16120 M1=0
16130 M2=0
16140 M3=0
16150 M4=0
16160 M5=0
16170 F(8)=N
16180 FOR I=1 TO F(8)
16190 M1=M1+X1(I)

```

```

16200 M5=M2+Y1(I)
16210 M3=M3+X1(I)*X1(I)
16220 M4=M4+Y1(I)*Y1(I)
16230 M5=M5+X1(I)*Y1(I)
16240 NEXT I
16250 C=F(8)*M3-M1*M1
16260 P(10)=F(8)/C
16270 P(11)=M1/C
16280 P(12)=M3/C
16290 P(2)=(F(8)*M5-M1*M2)/(P(8)*M3-M1*M1)
16300 P(3)=(M2-F(2)*M1)/P(9)
16310 P(4)=F(1)
16320 P(5)=F(2)
16330 B=0
16340 FOR I=1 TO P(8)
16350 B=D+(Y1(I)-P(1)-P(2)*X1(I))^2
16360 NEXT I
16370 F(23)=1-D/(M4-M2*M2/P(8))
16380 P(9)=1
16390 P(6)=D/(F(8)-2)
16400 P(9)=1
16410 F(29)=1
16420 P(27)=P(6)
16430 L3="Found vs Target *104
16440 L3=L3$
16450 L3=L3$M$
16460 DIM Y$(30)
16470 Y$="Found"
16480 X$="Target"
16490 D$=SEG$(B$,14,2)
16500 D$=D$3*7
16510 M1=SEG$(B$,12,2)
16520 D1=D1$M$
16530 D1=D1$3*7
16540 M1=SEG$(B$,16,2)
16550 D1=D1$M$
16560 GOSUB 61000
16570 RETURN

```

+++++

```

19975 REM
19976 REM Perform BARTLETT'S TEST for homogeneity
19977 REM P(6),P(7),Y2(J),X2(NO(J)),K1CB,M1
19978 REM find variance for each level
19979 REM

```

```

-----2-----
20000 ON SIZE THEN 20370
20010 CB=-1
20020 IF N=0 THEN 20370
20030 G3=1
20040 S=0
20050 COSUB 6000
20060 S=0
20070 FOR J=1 TO N
20080 IF N2(J)=1 THEN 20110
20090 S(N2(J))=S(H(J))+Y1(J)-M7(N2(J))/N0(N2(J))^2
20100 NEXT J
20110 FOR J=1 TO K
20120 S(J)=S(J)/(N0(J)-1)
20130 IF S(J)=0 THEN 20370

```

+++++

```

20150 NEXT J
20160 REM find pooled variance
20170 A=0
20180 S3=1
20190 FOR J=1 TO K
20200 A=(NO(J)-1)*S(J)/S3+A
20210 NEXT J
20220 S4=A/(N7-K)
20230 REM find correction factor
20240 A=0
20250 FOR J=1 TO K
20260 A=1/(NO(J)-1)+A
20270 NEXT J
20280 C=1+A/(3*(K-1))
20290 REM find CHI-SQUARE
20300 A=0
20320 FOR J=1 TO K
20330 A=(NO(J)-1)*LOG(S(J)/S3)+A
20340 NEXT J
20350 CB=((N7-K)*LOG(S4)-A)/C
20360 IF CB>0 THEN 20390

```

---3--- 20370 PRINT 'RAKLETT'S TEST not defined for data set 'JH\$

```

20380 CB=-1
20390 HI=N-1
20400 OFF SIZE
20410 RETURN

```

24999 REM CHI-SQUARE DISTRIBUTION

```

---2--- 25000 IF CB>0 THEN 25030
25010 A1=-1
25020 RETURN
25030 A1=0
25040 IF CB>100 THEN 25020
25050 A=A1/2
25060 U=CB/2
25070 GOSUB 25120
25080 IF A1=0 THEN 25020
25090 A2=10*(5+INT(-LOG(A1)))
25100 A1=INT(A2*A1+.5)/A2
25110 RETURN

```

```

---1--- 25120 IF A>100 THEN 25630
25130 A1=1
25140 A2=1
25150 B2=1
25160 I=1
25170 IF U<A THEN 25330
25180 B1=U

```

```

+++1+++
25190 B2=U+1-A
25200 A1=U+A2+1*A1
25210 B1=U*B2+1*B1
25220 I=I+1
25230 A2=A1+(I-A)*A2
25240 B2=B1+(I-A)*B2
25250 IF ABS(A1/B1-A2/B2)>>1.0E-7 THEN 25200
25260 C9=A2/B2
25270 F2=AVLOG(U)-U
25280 X=A
25290 GOSUB 25470
25300 A1=C9*EXP(F2-A1)
25310 RETURN
+++1+++
25320 B1=1+A
25330 A1=B1-U
25340 C9=2*A1+A
25350 A2=C9*A1+I*U*A2
25360 B2=C9*B1+I*U*B2
25370 A1=C9*A2+A2-(A1*I)*U*A1
25380 B1=C9*B2+B2-(A1*I)*U*B1
25390 I=I+1
25400 IF ABS(A2/B2-A1/B1)>>1.0E-8 THEN 25340
25410 C9=B1/A1
25420 X=A+1
25430 GOSUB 25470
25440 A1=AVLOG(U)-U-A1
25450 A1=1-C9*EXP(A1)
25460 RETURN

```

```

---2---
25470 IF X<10 THEN 25500

```

```

25480 GOSUB 25600
25490 RETURN
+++1+++
25500 A2=10-INT(X)
25510 B1=1
25520 FOR J=0 TO A2-1
25530 B1=B1*(X+I)
25540 NEXT I
25550 X=X+A2
25560 GOSUB 25600
25570 X=X-A2
25580 A1=AVLOG(B1)
25590 RETURN

```

```

---2---
25600 A1=(X-0.5)*LOG(X)-X+0.5*LOG(2*PI)
25610 A1=A1+1/(12*X)-1/(360*X*X*X)+1/(1260*X*X*X*X*X)
25620 RETURN
+++1+++
25630 A1=A-0.5
25640 B1=B+1/3-A-0.02/A
25650 X=A/U
25660 C9=0
25670 IF X=0 OR X=1 THEN 25690
25680 C9=(1-X)*I2*X*LOG(X))/((1-X)*(1-X))
25690 C9=B1*SQR((1+(C9/U)
+++1+++
25700 IF ABS(C9)>20 THEN 25780
25710 I=I/110.2316419*ABS(C9)
25720 A1=1+0.0193615*I*(1-0.366563782+1.781477937*I)
25730 A1=A1+I*I*(1+(-1.821255978+1.330274429*I)
25740 A1=SQR(1/(2*A1))*EXP(-C9*C9/2)*A1

```


++++ 25750 IF C9>0 THEN 25770
25750 A1=1-A1
++++ 25770 RETURN
++++ 25780 A1=0
25790 GO TO 25750

57995 REM ROUTINE TO PRINT NUMBERS TO 3 DECIMAL PLACES
57995 REM L\$(L\$PASSES IN CONTAINING NUMBER IN CHARACTER FORM THAT
57997 REM IS TO BE PRINTED OUT TO 3 DECIMAL PLACES.
57998 REM RESULTANT STRING IS PASSED BACK IN L\$
57999 REM FORMAT OF RESULT \$D.000 WITH LENGTH OF 7

---3--- 58000 K\$=SEG(L\$,2,1)
58010 IF K\$=-. THEN 58120
58020 Q0=POS(L\$,E,1)
58030 IF Q0=0 THEN 58070
58040 L\$=SEG(L\$,1,7)
58050 Q0=7
58060 RETURN

++++ 58070 REM NUMBER IS IN SCIENTIFIC NOTATION

58080 K\$=SEG(L\$,Q0+1,4)
58090 Q0=VAL(K\$)
58100 IF Q0>9 THEN 58260
58110 IF Q0=5 THEN 58150
58120 L\$=0.0000
58130 Q0=7
58140 RETURN
58150 K\$=SEG(L\$,1,1)
58160 K\$=K\$*10.
58170 GO TO -00 OF 58200,58190,58180,58175

++++ 58175 K\$=K\$*3.
++++ 58180 K\$=K\$*2.
++++ 58190 K\$=K\$*0.
++++ 58200 Q0=7-LEN(K\$)
58210 L\$=SEG(L\$,2,Q0+1)
58220 L\$=REP(" ",2,1)
58230 L\$=K\$+L\$
58240 Q0=7
58250 RETURN

++++ 58260 REM SECTION TO PRINT OUT \$>

58270 L\$=SEG(L\$,1,6)
58280 L\$=L\$*E.
58290 L\$=L\$*K\$
58300 Q0=7+LEN(K\$)
58310 RETURN

59990 REM FIND / OPEN
59999 REM F\$ BY

---5--- 60000 FIND Q02:0
60010 FIND Q02:1
60020 INPUT Q02:B\$

```

60030 J$=SEG(H$,1,3)
60040 IF J$<>'IDS' THEN 60300
60050 INPUT Q2;6:A
60060 IF A=1 THEN 60140
60070 INPUT Q2;B$
60080 DIM J$(10)
60090 J$=SEG(B$,4,10)
60100 F=LEN(F$)
60110 DIM J$(F)
60120 IF F$=J$ THEN 60170
60130 GO TO 60050
60140 PRINT "ERROR *** FILE 'IF$' NOT FOUND"
60150 PRINT Q2;2;
60160 END
60170 J$=SEG(H$,1,3)
60180 N9=VAL(J$)
60190 FIND Q2;0
60200 FIND Q2;N9
60210 INPUT Q2;M$
60230 J$=SEG(H$,1,F)
60240 IF J$<>M$ THEN 60260
60250 RETURN
60260 PRINT "File does not match internal name"
60270 PRINT "index name: 'IF$' internal name: 'IJ$"
60280 PRINT Q2;2;
60290 END
60300 PRINT "Tape in external drive is not a IDS Data Tape"
60310 GO TO 60280

```

```

60998 REM Define and Write Plot File
60999 REM M$=L$X$Y$D$F$F6

```

```

-----2-----
61000 DIM F$(3)
61010 F$="000"
61020 FINE Q2;0
61030 FIND Q2;1
61040 INPUT Q2;61A
61050 IF A=2 THEN 61120
61060 INPUT Q2;B$
61070 A$=SEG(B$,4,6)
61080 Q$="P*2M$
61090 IF A$<>Q$ THEN 61040
61100 F$=SEG(B$,10,2)
61110 GO TO 61040
61120 T3=VAL(F$)
61130 T3=1+T3
61140 F$=STR(T3)
61150 F$="F*2M$
61160 F$=F$8P$
61170 REM update index
61180 A$=SEG(B$,1,3)
61190 I3=VAL(A$)
61200 T3=1+I3
61210 I$="
61220 PRINT Q2; USING 61230;T3,F$;T$;I$
61230 IMAGE 30,10A,1A,20A

```

61240 PRINT @U2:2;
61250 FIRD @U2:0
61260 FIRD @U2:13
61270 MARK @U2:1,2500
61280 FIRD @U2:0
61290 FIRD @U2:13
61300 PRINT @U2: USING @1310:1F\$.D\$.U\$
61310 IMAGE 10A:CA:BA
61320 PRINT @U2:13
61330 PRINT @U2:13
61340 PRINT @U2:13
61350 PRINT @U2:13
61360 PRINT @U2:13
61370 PRINT @U2:13
61380 DIM X2(P(8)),Y2(P(8))
61390 PRINT @U2:13,Y2
61400 PRINT @U2:2;
61405 DELETE X2,Y2
61407 DIM X2(33),Y2(32)
61410 REM update Plotfiles
61420 F\$.PLOTFILES*
61430 GO:UB 2000
61440 INPUT @U2:6:A
61450 IF A\$ < 2 THEN 61480
61460 INPUT @U2:13
61470 GO TO 61440
61480 PRINT @U2:13
61490 RETURN

FILE 03

```
100 INIT
110 DATA 33,11,32
120 READ U1,U2,U3
130 DIM B$(8),U$(8)
140 DIM I7(40)
150 DATA 12.706,4.303,3.103,2.776,2.579,2.451,2.344,2.307,2.262,2.228
160 DATA 2.201,2.179,2.16,2.145,2.131,2.12,2.11,2.101,2.093,2.086,2.08
170 DATA 2.074,2.069,2.064,2.06,2.056,2.052,2.049,2.046,2.043,2.04
180 DATA 2.037,2.035,2.033,2.03,2.028,2.027,2.025,2.023,2.022
190 READ I7
200 FIND Q02:0
210 FIND Q02:2
220 INPUT Q02:6:A
230 IF A=1 THEN 2050
240 INPUT Q02:0:U$,I8
250 DIM M(20),I(20),I$(24),I$(40),X$(30),Y$(30),P(34),L$(40),A$(3)
260 PRINT M3,17:4
270 REMS
280 REMS GET LISP OF FILES TO BE PLOTTED
290 REMS
300 F$="PLOTFILES"
310 GOSUB 3620
320 I=0
330 I=I+1
340 INPUT Q02:6:A
350 IF I=1 AND A=1 THEN 2060
360 INPUT Q02:M(I)
370 INPUT Q02:P(I)
380 IF I(2)=2 THEN 330
390 I(I)=I
400 REMS
410 REMS START PLOT LOOP
420 REMS
430 FOR I9=1 TO I(1)
440 FIND Q02:0
450 FIND Q02:M(I9)
460 INPUT Q02:Z4
470 INPUT Q02:IL
480 INPUT Q02:IX
490 INPUT Q02:Y5
500 INPUT Q02:Y6
510 INPUT Q02:Y8
520 INPUT Q02:P
530 IF I9=1 THEN 530
540 Q0-P(3)
550 IF P(8)=0 THEN 2040
560 WRITE X,Y
570 X(P(10)),Y(P(8))
580 H(10)
590 INPUT Q02:Y
600 PENT
610 REMS SET DEFAULT PLOT PARAMETER
620 REMS
```

```

600 REM T(4)-MIN X VALUE OF GRAPH      T(5)-LENGTH OF X AXIS
610 REM T(14)-MIN Y VALUE            T(15)-LENGTH OF Y AXIS

620 VILUFORT 0.130,0.100
630 WINDOW 0.130,0.100
640 T=0
650 T(1)=P(U)
660 T(2)=2
670 T(3)=4
680 T(4)=10
690 T(5)=70
700 T(6)=1
710 T(7)=1
720 T(14)=25
730 T(15)=70
740 T(18)=1
750 T(19)=1

760 REM LABEL PLOT
770 REM TITLE GRAPH

780 XO=T(5)/2+T(4)-LEN(L)87/8
790 YO=97
800 PAGE
810 MOVE QUS:XO,YO
820 PRINT QUS:L$

830 REM DUMP X AXIS TITLE
840 XO=T(5)/2+T(4)-LEN(X)87/8
850 YO=T(14)-10
860 MOVE QUS:XO,YO
870 PRINT QUS:L$

880 REM DUMP Y AXIS LABEL
890 XO=3
900 YO=T(15)/2+T(14)+LEN(Y)810/7
910 MOVE QUS:XO,YO
920 PRINT QUS:L$
930 FOR Z=1 TO LEN(Y$)
940 ZI=SEG(Y$,Z,1)
950 PRINT QUS:Z$
960 NEXT Z

970 REM DISPLAY INFO ON RIGHT SIDE OF PLOT
980 XO=T(4)+T(5)+5
990 YO=T(14)+T(15)-2
1000 MOVE QUS:XO,YO
1010 PRINT QUS:AGENT: *IAS
1020 YO=YO-1
1030 MOVE QUS:ZO,YO
1040 PRINT QUS:DATE: *ID$
1050 YO=YO-2
1060 MOVE QUS:XO,YO
1070 PRINT QUS:STATISTICS*
1080 MOVE QUS:XO,YO-0.5
1090 PRINT QUS:*****
1100

```

```

1110 T9-2
1120 IMAGE FA,20,30,FA,S
1130 Y0-Y0-3
1140 MOVE GU3: X0,Y0
1150 PRINT GU3: "BARTLETT'S"
1160 Y0-Y0-3
1170 MOVE GU3: X0+19,Y0
1180 PRINT GU3: USING 1120: "P(14)"
1190 IF F(20)=0 THEN 1210
1200 PRINT GU3: USING 1120: "P(20)"
1210 Y0-Y0-3
1220 IMAGE FA,20,30
1230 MOVE GU3: X0,Y0
1240 PRINT GU3: "R-SQUARED"
1250 Y0-Y0-3
1260 MOVE GU3: X0+19,Y0
1270 PRINT GU3: USING 1220: "P(23)"
1280 IMAGE FA,3E
1290 Y0-Y0-5
1300 MOVE GU3: X0,Y0
1310 PRINT GU3: "HSE:"
1320 Y0-Y0-3
1330 MOVE GU3: X0+19,Y0
1340 PRINT GU3: USING 1280: "P(27)"
1350 Y0-Y0-6
1360 MOVE GU3: X0,Y0
1370 PRINT GU3: "PARAMETERS"
1380 MOVE GU3: Y0-Y0-0.5
1390 PRINT GU3: "-----"
1400 Y0-Y0-4
1410 IMAGE FA,20,20,FA,20,30,FA,S
1420 MOVE GU3: X0,Y0
1430 GO TO P(3) OF 1490,1450,1510
1440 REM case 2 Y=ln(Y)
1450 PRINT GU3: "ln(Y)=a+bX"
1460 GO TO 1520
1470 REM case 1 X=ln(X)
1480 PRINT GU3: "Y=a+bln(X)"
1490 GO TO 1520
1500 REM case 3 no transform
1510 PRINT GU3: "Y=a+bX"
1520 Y0-Y0-3
1530 MOVE GU3: X0+19,Y0
1540 PRINT GU3: USING 1280: "a=" ,P(4)
1550 Y0-Y0-3
1560 MOVE GU3: X0+19,Y0
1570 PRINT GU3: USING 1280: "b=" ,P(5)
1580 IF F(2)=0 THEN 1730
1590 Y0-Y0-3
1600 MOVE GU3: X0+19,Y0
1610 PRINT GU3: USING 1280: "c(X + w)"
1620 PRINT GU3: "S(X) = c(X + w)"
1630 Y0-Y0-3
1640 MOVE GU3: X0+19,Y0

```

```

1650 PRINT QJ31 USING I2801:c= :P(4)
1660 YO-YO-3
1670 MOVE QJ3:X0+I9,Y0
1680 PRINT QJ3: USING I2801:d= :P(7)
1690 YO-YO-3
1700 MOVE QJ3:XC+I9,Y0
1710 PRINT QJ3: USING I2801:e = :P(30)
1720 YO-YO-3
1730 MOVE QJ3:X0,Y0
1740 PRINT QJ3:Y' = (-Y + f) * d
1750 YO-YO-3
1760 MOVE QJ3:X0,Y0
1770 PRINT QJ3:X' = X + h
1780 YO-YO-3
1790 MOVE QJ3:X0+I9,Y0
1800 PRINT QJ3: USING I2801:f = :P(31)
1810 YO-YO-3
1820 MOVE QJ3:X0+I9,Y0
1830 PRINT QJ3: USING I2801:g = :P(29)
1840 YO-YO-3
1850 MOVE QJ3:X0+I9,Y0
1860 PRINT QJ3: USING I2801:h = :P(32)
1870 MOVE QJ3:(4) * I(5) * I(14)
1880 DRAW QJ3:(4) * I(5) * I(14) * I(15)
1890 DRAW QJ3:(4) * I(14) * I(15)
1900 GOSUB 4030
1910 IF U3=1 THEN 1980
1920 PRINT "TJ"
1930 PRINT "DO YOU WANT A PLOTTER PLOT OF THIS PLOT? (Y/N)"
1940 INPUT B
1950 IF B<>"Y" THEN 1980
1960 U3=10
1970 GO TO 520
1980 U3=72
1990 GO TO 2000
2000 NEXT I9
2010 REM
2020 FIND 4
2030 DLU
2040 PRINT "NO DATA SETS FOUND ON THIS TAPE"
2050 END
2060 PRINT "THERE ARE NO PLOT FILES CURRENTLY QUEUED TO BE PRINTED"
2070 END
2080 REM#
2090 REPA# PLOT SUBROUTINES
2100 REM#
-----
2110 REM#
2120 U9=4
2130 GOSUB 3160
2140 U9=74
2150 GOSUB 3160
2160 U9=4
2170 YO-YO-5
2180 MOVE QJ3:X0,Y0

```

```

2190 PRINT GUS:SCALE FACTORS:
2200 MOVE GUS:X0,Y0-0.5
2210 PRINT GUS:
2220 Y0=Y0-4
2230 MOVE GUS:X0,Y0
2240 PRINT GUS:X AXIS: 10**IX2
2250 Y0=Y0-3
2260 MOVE GUS:X0,Y0
2270 PRINT GUS:Y AXIS: 10**IY2
2280 WILDFORT T(4),T(4)+T(5),T(14),T(14)+T(15)
2290 WINDOW T(6),T(6)+T(7),T(16),T(16)+T(17)
2300 AXIS GUS:T(8),T(18)
2310 J=1
2320 K2=T(18)/(T(17)/T(15))
2330 K3=T(14)
2340 U4=STR(T(16)+J-1)*T(18))
2350 PRINT GUS,21:0 MAX T(4)-(LEN(U4)+1)*1.78,K3-Q.89
2360 PRINT GUS:U4
2370 IF J>T(19) THEN 2410
2380 K3=K3+K2
2390 J=1+J
2400 GO TO 2340
2410 K2=T(8)/(T(7)/T(5))
2420 K3=T(4)
2430 J=1
2440 U3=STR(T(6)+J-1)*T(8))
2450 PRINT GUS,21:0 MAX K3-(LEN(U3)+1)*1.78*0.5,T(14)-4
2460 PRINT GUS:U3
2470 IF J>T(9) THEN 2510
2480 K3=K3+K2
2490 J=1+J
2500 GO TO 2440
2510 FOR J=1 TO T(1)
2520 IF T(2)>1 THEN 2540
2530 IF J=1 THEN 2560
2540 MOVE GUS:X(J),Y(J)
2550 GO TO 2570
2560 DRAW GUS:X(J),Y(J)
2570 GOSUB 2600
2580 NEXT J
2590 RETURN

---I--- 2600 S2=T(14+3)/T(14+1)*0.75
2610 S1=T(4+3)/T(4+1)*0.75
2620 GO TO T(3) OF 2910,2640,2700,2770,2840
2630 GO TO 2910
2640 RMOVE GUS:0,S2
2650 RMOVE GUS:S1,-2*S2
2660 RMOVE GUS:-2*S1,0
2670 RMOVE GUS:S1,2*S2
2680 RMOVE GUS:0,-S2
2690 RETURN
I+I+I+I 2700 RMOVE GUS:0,S2
2710 RMOVE GUS:0,-2*S2
2720 RMOVE GUS:0,S2
2730 RMOVE GUS:-S1,0
2740 RMOVE GUS:2*S1,0
2750 RMOVE GUS:-S1,0
2760 RETURN

```


+++++ 2770 MOVE QJ3:SI-S2
2780 RORAM QJ3:O-2+S2
2790 RORAM QJ3:-2+S1+O
2800 RORAM QJ3:O+2+S2
2810 RORAM QJ3:2+S1+O
2820 MOVE QJ3:-S1-S2
2830 RETURN
+++++ 2840 MOVE QJ3:O-S2
2850 RORAM QJ3:SI-S2
2860 RORAM QJ3:-S1-S2
2870 RORAM QJ3:-S1+S2
2880 RORAM QJ3:SI-S2
2890 MOVE QJ3:O-S2
2900 RETURN
+++++ 2910 IF T(2)=1 THEN 2930
2920 RORAM QJ3:O+O
+++++ 2930 RETURN

---1---
+++++ 2940 Y2=O
2950 T(16)=10*39
2960 T(17)=T(22)
2970 FOR J=1 TO T(11)
2980 T(16)=T(16) MIN Y(J)
2990 T(17)=T(17) MAX Y(J)
3000 NEXT J
3010 T9=T(17)-T(16)
3020 T(17)=T9*(T9<O)+(T9=O)
3030 IF T9=1 THEN 5300
2040 RETURN

---1---
+++++ 3050 X2=O
3060 T(5)=10*39
3070 T(7)=T(12)
3080 FOR J=1 TO T(1)
3090 T(5)=T(5) MIN X(J)
3100 T(7)=T(7) MAX X(J)
3110 NEXT J
3120 T9=T(7)-T(6)
3130 T(7)=T9*(T9<O)+(T9=O)
3140 IF T9=1 THEN 5350
3150 RETURN

---2---
+++++ 3160 WIM 50(5)
3170 50(3)=INT(T(9+1)/15)
3180 50(3)=T(9+3)/50(3)
3190 50(4)=INT(ABS(LGT(50(3))))*SGN(LGT(50(3)))
3200 50(4)=INT(10*50(4)+1.0E-4)
3210 IF 50(4)=O THEN 3250
3220 50(3)=1
3230 50(4)=1
3240 GO TO 3330
+++++ 3250 50(5)=50(3)/50(4)
3260 50(3)=50(4)*10
3270 IF 50(5)=10 THEN 3290
3280 50(3)=50(4)*5
+++++ 3290 IF 50(5)=5 THEN 3310
3300 50(3)=50(4)*2

```

+++1+++ 3310 IF S0(5)>2 THEN 3330
3320 S0(3)=S0(4)
+++2+++ 3330 S0(5)=T(U9+2)/S0(3)
3340 IF S0(5)>0 THEN 3360
3350 S0(5)=S0(5)-0.9999
+++1+++ 3360 S0(1)=S0(3)*(INT(ABS(S0(5))))*SGN(S0(5)))
3370 S0(5)=(T(U9+3)+T(U9+2))/S0(3)
3380 IF S0(5)<0 THEN 3400
3390 S0(5)=S0(5)+0.9999
+++1+++ 3400 S0(2)=S0(3)*(INT(ABS(S0(5))))*SGN(S0(5)))
3410 S0(5)=S0(2)-S0(1)
3420 S0(4)=INT(INT(ABS(S0(5))))*SGN(S0(5))/S0(3)
3430 IF S0(5)>1 THEN 3460
3440 S0(3)=S0(5)
3450 S0(4)=1
+++1+++ 3460 IF S0(3)>1 THEN 3490
3470 S0(3)=S0(5)
3480 S0(4)=1
+++1+++ 3490 T(U9+2)=S0(1)
3500 T(U9+3)=S0(2)-S0(1)
3510 T(U9+4)=S0(3)
3520 T(U9+5)=S0(4)
3530 T(U9+6)=1.75*T(U9+3)/T(U9+1)
3540 RETURN
3550 X4=X0+P(32)
3560 IF P(3)<2 THEN 3580
3570 X4=LOG(X4)
+++1+++ 3580 Y0=(P(1))^(2)*X4^(1/P(29))-P(31)
3590 IF P(3)<1 THEN 3610
3600 Y0=LOG(Y0)
+++1+++ 3610 RETURN

```

```

-----1----- 3620 REM FIND/DFEN
3630 REM* (F*,N9)
3640 FIND E02:0
3650 FIND E02:1
3660 INPUT E02:B4
3670 J4=SEG(B4,1,3)
3680 IF J4<=0 THEN 3970
+++1+++ 3690 INPUT E02,A:A
3700 IF A=1 THEN 3780
3710 INPUT E02:B4
3720 B4=J4*(10)
3730 J4=SEG(B4,4,10)
3740 F=LN(F4)
3750 B4=J4*(F)
3760 IF B4<=0 THEN 3820
3770 GO TO 3690
+++1+++ 3780 REM*
3790 PRINT "ERROR *** FILE;F$;NOT FOUND"
3800 CLOSE
3810 END
+++1+++ 3820 J4=SEG(B4,1,3)
3830 N9=VAL(J4)
3840 FIND E02:0

```

```

3850 FIND @U2:IN9
3860 INPUT @U2:IN$
3870 DIM J$(10)
3880 J$=SEQ(B$+1,10)
3890 F=LEN(F$)
3900 DIM J$(F)
3910 IF J$(F) THEN 3930
3920 RETURN
+++1+++
3930 PRINT "FILE DOES NOT MATCH INTERNAL NAME"
3940 PRINT "INDEX NAME ="F$;"INTERNAL NAME ="J$
3950 PRINT @U2:2;
3960 END
+++1+++
3970 PRINT "DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A IDS DATA TAPE"
3980 PRINT @U2:2;
3990 END

```

```

----1---- 4000 REM$ FLOT DATA:CURVE AND CONFIDENCE LIMITS

```

```

4010 GOSUB 2940
4020 GOSUB 3050
4050 REM$ ADJUST X RANGE
4060 T(6)=T(6)-0.1*T(7)
4070 T(6)=T(6) MAX 0.01*T(7)
4080 T(7)=T(7)*1.2
4090 REM$ ADJUST Y-RANGE
4100 T(16)=T(16)-0.05*T(17)
4110 T(16)=T(16) MAX 0.01*T(17)
4120 T(17)=T(17)*1.1
4130 REM$ FLOT OBSERVED DATA
4140 GOSUB 2110
4150 REM$
4160 REM$ DRAW @U3:UPPER AND LOWER CONFIDENCE LIMITS
4170 REM$
4180 REM T(16)=T(16)+0.01*T(17)
4190 Y0=T(16)
4200 GOSUB 4820
4220 MOVE @U3:X0*10-X2;T(16)*10-Y2
4230 FOR Y5=T(16) TO T(16)+T(17) STEP T(17)/100
4240 Y0=Y5
4250 GOSUB 4820
4270 DRAW @U3:X0*10-X2;Y5*10-Y2
4280 NEXT Y5
4290 Y0=T(16)
4300 GOSUB 4820
4310 Y9=T(16)
4320 L7=T(16)
4330 GOSUB 4950
4350 MOVE @U3:L0*10-X2;T(16)*10-Y2
4360 L7=L0*Y2
4365 @U3:10000

```

```

4370 FOR Y5=(T(16)-T(17))*D7 TO (T(16)+T(17))*D7 STEP Y(17)/100*D7
4380 IF F(3)=2 AND Y5<=-P(31) THEN 4470
4390 Y0=Y5
4400 GOSUB 4820
4410 Y0=Y5
4420 GOSUB 4950
4430 DRAW GUS:LO*10^-X2+Y5*10^-Y2
4450 IF L0>0 THEN 4470
4450 L0=L0
4470 NEXT Y5
4480 Y0=T(16)
4490 GOSUB 4820
4500 Y0=Y(16)
4510 GOSUB 4950
4530 MOVE GUS:UO*10^-X2+Y(16)*10^-Y2
4540 FOR Y5=T(16)*D7 TO (T(16)+T(17))*D7 STEP Y(17)/100*D7
4550 IF F(3)=2 AND Y5<=-P(31) THEN 4620
4560 Y0=Y5
4570 GOSUB 4820
4580 Y0=Y5
4590 GOSUB 4950
4610 DRAW GUS:UO*10^-X2+Y5*10^-Y2
4620 NEXT Y5
4630 L4=10000
4640 FOR T5=1 TO N
4650 IF X(T5)<=0 THEN 4670
4660 T4=T4 MIN X(T5)*10^-X2
4670 NEXT T5
4680 IF DR>T4 THEN 4700
4690 D0=D4
4700 VICUFORT 0,130,0,100
4710 WINDOW 0,130,0,100

4720 REM## X4=DEFECTION LIMIT IS *
4723 REM## IF D0<10000 THEN 4730
4725 X4=* *

4726 REM## X4=WARNING - Detection Limit EGRGR00R*

4728 GO TO 4770
4730 Y4=STR(D0)
4740 Y0=POS(Y4,*,*,1)
4750 Y4=SEC(Y4,1,Y0+2)
4760 X4=X4$Y4
4770 X0=1(S)/2+T(4)-LEN(X4)*7/B
4780 Y0=1(14)-14
4790 MOVE GUS:X0,Y0
4800 PRINT GUS:X4
4802 Y0=Y0-3
4803 Y4=STR(00)
4804 X4=CALIBRATION Curve # *BY$
4805 X0=T(5)/2+T(4)-LEN(X4)*7/B
4808 MOVE GUS:X0,Y0
4809 PRINT GUS:X4
4810 RETURN

```


5280 RETURN

5290 REM scale X & Y for plot

```
+++++ 5300 FOR J=1 TO I(1)
      5310 Y(J)=10*X(J)
      5320 NEXT J
      5330 Y2=Y2-1
+++++ 5340 GO TO 2950
      5350 FOR J=1 TO I(1)
      5360 X(J)=10*X(J)
      5370 NEXT J
      5380 X2=X2-1
      5390 GO TO 3060
```



```

208 INPUT QUC:U4
290 INPUT QUC:C,P(25),P(26),P(28)
300 N2=K2H
310 IF N9=K2 THEN 321
320 GO TO 270
321 F5=0
+++1+++
422 IF P(20)=4 THEN 330
423 PRINT 'IS THIS THE FIRST STAT RUN FOR TODAY? (Y/N)'
324 INPUT A4
325 IF A4='Y' THEN 330
326 F5=1
+++2+++
330 REM* SET X LABEL
350 N4=SEG(D4,4,2)
355 REM* SET X LABEL
360 A4=SEG(D4,1,2)
361 A=VAL(A4)
362 B=(A-1)*9H
363 X=SEG(C4,A,9)
370 REM* GET HISTORY Q
372 RESTORE 381
375 F4='10'&M4
380 GOSUB 4645
381 DATA 0,0,0,0
382 READ F1,F2,F3,F4
390 INPUT QUC:NI,D7,X9,Y9,M9,U9,L9,Y8,M8,U8,L8
395 INPUT QUC:WB,W9,F1,F2,F3,F4
396 FOR I=1 TO 31
397 X9(I)=I
398 NEXT I
400 D8=VAL(N4)
415 N1=P(28)*F5**K1
416 F1=0
417 F3=0
420 REM# N9(D8)=(M9(D7)**(K-1)+F(25))/K
430 REM# M8(D8)=(1.3(D7)**(K-1)+P(26))/K
440 Y9(D8)=P(25)+F5*Y9(D8)
450 Y8(D8)=P(26)+F5*Y8(D8)
460 IF K1=4 THEN 551
451 PRINT 'NO OC PLOT WILL BE PRODUCED FOR 'M4'' AT LEVEL 'JCI'.'
462 PRINT 'SINCE FOUR OC DATA POINTS ARE NOT YET AVAILABLE.'
463 GO TO 1010
465 GO TO 551
470 U9=D7(D8)+61(N1)*M8(D8)
480 L9=D9(D8)-61(N1)*M8(D8)
490 W9=L9*(K1)*M8(D8)
500 L8=D8*(1-1/500*(2*N1))*M8(D8)
510 U8=L8*(1-1/500*(2*N1))*M8(D8)
520 U7=(U8)+M9(D8)+3/500*(K1)*M8(D8)
530 L7=(L8)+M9(D8)-3/500*(K1)*M8(D8)
540 W7=(W8)+((1/500*(2*N1))*M8(D8)
550 L7(D8)=(1-1/500*(2*N1))*M8(D8)

```



```

1113111 551 REM* SET WARNING FLAG#
552 IF NOT(Y9(D8)>M9(D8) OR Y9(D8)<L9(D8)) THEN 554
553 F1=-1
1111111 554 IF ROT(Y8(D8)>U8(D8) OR Y8(D8)<L8(D8)) THEN 556
555 F3=-1
1111111 556 REM# ZERO OUT DATA FROM D7 TO D8
557 IF D7=00 THEN 573
558 I=07
560 IF D8=D7 THEN 562
561 I=0
562 I=I+1
563 IF I=08 THEN 573
564 Y9(I)=-1
568 Y8(I)=-1
572 GO TO 562
1112111 573 REM#
620 REM# UPDATE WARNING
621 F2=0
622 F4=0
625 FOR I=6 TO 1 STEP -1
630 W8(I+1)=W8(I)
640 W9(I+1)=W9(I)
650 NEXT I
660 IF Y9(D8)>M9(D8) THEN 690
670 W9(I)=-1
680 GO TO 700
1111111 690 W9(I)=1
1111111 700 IF Y8(D8)>M8(D8) THEN 730
710 W8(I)=-1
720 GO TO 740
1111111 730 W8(I)=1
1111111 740 FOR I=1 TO 7
750 F2=F2+W9(I)
760 F4=F4+W8(I)
770 NEXT I
771 F2=ABS(F2)
772 F4=ABS(F4)
780 REM# PLOT OC CHARTS
790 E4=ACCURACY CONTROL CHART FOR *B#
810 Y1=.
820 W1=.
900 Y1=L9
910 Y2=M9
920 Y3=U9
931 Y4=Y
932 Y5=Y
933 Y6=Y
940 IF W1(F1=1 OR F2=7) THEN 950
950 W1=WARNING - PROCESS IS OUT OF CONTROL*
960 REM# COSUB PLOT

```

956 PRINT 'TAJ'
960 IF U3=10 THEN 967
961 PRINT 'DO YOU WANT A 4662 PLOTT (Y/N)'
962 INPUT R4
963 A4=SEG(R4,1,1)
964 IF A4='Y' THEN 967
965 U3=10

965 GOSUB 1775
967 U3=32
970 E1='PRECISION CONTROL CHART FOR 'MS
980 U1=.

990 Y=Y0
1000 Y1=L9
1010 Y2=PB
1020 Y3=UB
1030 U=U0
1030 IF NOT(F3=1) THEN 1050
1040 U1='GAINING - PROCESS IS OUT OF CONTROL'

1050 REM# GOSUB PLOT
1055 GOSUB 1775
1060 PRINT 'TAJ'

1060 IF U3=10 THEN 1067
1061 PRINT 'DO YOU WANT A 4662 PLOTT (Y/N)'
1062 INPUT R5
1063 A5=SEG(R5,1,1)
1064 IF A5='Y' THEN 1067
1065 U3=10
1066 GOSUB 1775

1070 REM# UPDATE HISTORY O FILE
1080 F1='HO'&M4
1090 GOSUB 4945
1100 PRINT 'O1:R1,08,49,Y9,M9,U9,L9,Y8,MB,UB,L0
1110 PRINT 'O2:U8,U9,F1,F2,F3,F4
1120 GO TO 230

1755 FERM
1760 FERM OC L101 KQUILINES
1765 REM#

1775 DIM X\$(60),J\$(60)
1785 DIM X\$(31),Y\$(31),Y3(31),I(24)
2000 PAGE

2035 REM# HEIGHT OF SPACE
2045 HO=2.82
2055 REM HEIGHT OF CHARACTER
2065 HCH=1.63
2075 REM WIDTH OF SPACE

2085 H2=1.79
 2095 REM WIDTH OF CHARACTER
 2105 H3=1.55
 2115 REM HEIGHT OF TIC MARK
 2125 H4=1
 2135 REM WIDTH OF TIC MARK
 2145 H5=2
 2155 VIEWPORT 0,130,0,100
 2165 WINDOW 0,130,0,100
 2175 REM X MIN
 2185 T(4)=15
 2195 REM X DOMAIN
 2205 T(5)=105
 2215 REM Y MIN
 2225 T(14)=10
 2235 REM Y RANGE
 2245 T(15)=75
 2255 REM BOX GRAPH
 2265 MOVE PUS:(4),T(14)
 2275 DRAW PUS:(4),T(14),T(15)
 2285 DRAW PUS:(4),T(5),T(14),T(15)
 2295 DRAW PUS:(4),T(5),T(14)
 2305 DRAW PUS:(4),T(14)
 2315 REM MAKE TIC MARKS ON X AXIS
 2325 FOR I=0 TO 34 STEP 2
 2335 MOVE PUS:(4),T(5),T(14)+H4/2
 2345 DRAW PUS:(4),I+H4
 2355 REM LABEL THE MARK
 2365 MOVE PUS:-H2,-H0
 2375 IF I=0 OR I=31 THEN 2405
 2385 IF I=10 THEN 2395
 2395 MOVE PUS:-H2,0
 2405 PRINT PUS:II
 2415 NEXT I
 2415 REM PRINT OUT WARNING
 2420 A=LER(W)

```

2423 IF A#2 THEN 2535
2425 X0=T(4)+(T(5)-LEN(US)*H2)/2
2435 Y0=96
2445 MOVE @U3:Y0,Y0
2455 PRINT @U3:Y#
2465 REM DRAW @U3:BOX AROUND WARNING
2475 MOVE @U3:X0-H2/2,Y0-H0/3
2485 DRAW @U3:0,5*H0/3
2495 DRAW @U3:(LEN(W)+1)*H2/0
2505 DRAW @U3:0,-5*H0/3
2515 DRAW @U3:(-LEN(C)+1)*H2/0
2525 REM WRITE TITLE
2535 Y0=Y0-5
2545 X0=T(4)+(T(5)-LEN(E)*H2)/2
2555 MOVE @U3:X0,Y0
2565 PRINT @U3:Y#
2575 Y0=Y0-3
2585 X0=T(4)+(T(5)-LEN(J)*H2)/2
2595 MOVE @U3:X0,Y0
2605 PRINT @U3:Y#
2615 REM PRINT X AXIS LABEL
2625 Y0=T(14)-3*H0
2635 X0=T(4)+(T(5)-LEN(X)*H2)/2
2645 MOVE @U3:X0,Y0
2655 PRINT @U3:Y#
2665 REM Y AXIS LABEL
2675 X0=3
2685 Y0=T(14)+(T(15)+LEN(Y)*H0)/2
2695 MOVE @U3:Y0,Y0
2705 FOR I=1 TO LEN(Y) STEP 1
2715 Z=SEG(Y,I,1)
2725 PRINT @U3:Z#*JUL#
2735 NEXT I
2745 REM END OF PRELIMINARIES NOW DO PLOTS
2746 Y4=Y1(1)
2747 Y5=Y3(1)
2748 I=(Y5-Y4)/2
2749 @0=Y4-I
2750 @1=Y5+I
2751 @0 TO 2780
2755 REM SET UP STUFF
2756 Y4=10000
2757 Y5=10000
2758 FOR I=1 TO 31
2759 IF Y(I) > 0 THEN 2761
2760 Y4=Y4 MIN Y(I)
2761 IF Y(I) < 0 THEN 2763
2762 Y4=Y4 MIN Y(I)

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+++++

+++++

```

+++++ 2743 YS=Y5 MAX Y(I)
2764 YS=Y5 MAX Y3(I)
2765 NEXT I

2770 REM IN HERE GOES CODE TO PICK NEAT ENDPOINTS FOR Y-AXIS

+++++ 2780 VIEWPORT I(4),I(4)+I(5),Y(14),Y(14)+Y(15)
2781 WINDOW 0,35,00,01
2815 FOR I=1 TO 5 STEP 1
2820 IF Y(I)=0 THEN 2845,
2821 IF Y(I)=01 THEN 9400
2822 IF Y(I)=00 THEN 9500
2825 MOVE PUS:Y(I),Y(I)
2835 GOSUB 3185
2845 NEXT I

+++++ 2846 VIEWPORT I(4),I(4)+I(5),0,Y(15)
2847 WINDOW 0,35,00,01
2848 MOVE PUS:0,00
2849 G=SEG(L,1,3)
2850 PRINT GUS:G$ = 'Y(D)'
2851 VIEWPORT I(4),I(4)+I(5),Y(14),Y(14)+Y(15)
2852 WINDOW 0,35,00,01
2855 GOSUB 9000
2856 MOVE PUS:0,Y(I)
2857 DRAW PUS:35,Y(I)
2858 MOVE PUS:35,Y(I)
2859 DRAW PUS:0,Y3(I)
2860 MOVE PUS:0,Y2(I)
2861 DRAW PUS:35,Y2(I)
2862 RETURN
2865 MOVE PUS:0,Y(I)
2875 FOR I=1 TO 4 STEP 1
2880 IF Y(I)=0 THEN 2900
2885 DRAW PUS:X(I),Y(I)
2895 DRAW PUS:0,Y(I)+Y(I)
2898 GO TO 2705
2899 MOVE PUS:X(I+1),Y(I+1)
2905 NEXT I
2915 DRAW PUS:X(D),Y(D)
2925 FOR I=1 TO 4
2935 DRAW PUS:0,5,0
2945 DRAW PUS:0,5,0
2955 NEXT I

2965 REM DO Y3

2975 MOVE PUS:0,Y3(I)
2985 FOR I=1 TO 4 STEP 1
2990 IF Y(I)=0 THEN 3015
2995 DRAW PUS:X(I),Y3(I)
3005 DRAW PUS:0,Y3(I+1)-Y3(I)
3010 GO TO 2920
3015 MOVE PUS:X(I+1),Y3(I+1)
3020 NEXT I
3025 DRAW PUS:X(D),Y3(D)
3035 FOR I=1 TO 4 STEP 1
3045 DRAW PUS:0,5,0
3055 DRAW PUS:0,5,0
3065 NEXT I

```

3075 REM Y2

3085 MOVE @U3:0,Y2(1)
3095 FOR I=1 TO 8-1 STEP 1
2100 IF Y2(1) THEN 3125
3105 DRAW @U3:0,S:0
3115 MOVE @U3:0,S:Y2(I+1)-Y2(1)
3120 GO TO 3130
3125 MOVE @U3:1(I+1),Y2(I+1)
3130 NEXT I
3135 FOR I=1 TO 5
3145 DRAW @U3:0,S:0
3155 MOVE @U3:0,S:0
3165 NEXT I
3175 RETURN

---1--- 3185 REM\$ THIS CENTERS DIAMONDS

3200 MOVE @U3:0,-0.01*(01-00)
3205 DRAW @U3:0.35,0.01*(01-00)
3210 DRAW @U3:-0.35,0.01*(01-00)
3215 DRAW @U3:-0.35,-0.01*(01-00)
3220 DRAW @U3:0.35,-0.01*(01-00)
3225 RETURN
3235 DRAW @U3:1(0),Y(0)

---3--- 4845 REM\$ FIND/OPEN
4955 REM\$ (F\$,N9)

4820 FIND @U2:0
4865 FIND @U2:1
4875 INPUT @U2:1\$
4885 J1=SEG(B\$+1,3)
4895 IF J1<>'10\$' THEN 5175
4905 INPUT @U2:6:4
4915 IF A=1 THEN 4995
4925 INPUT @U2:1\$
4935 DIM J\$(10)
4945 J1=SEG(B\$+4,10)
4955 F=LEN(F\$)
4965 DIM J\$(F)
4975 IF J1=F\$ THEN 5035
4985 GO TO 4905

4995 REM\$

5005 PRINT "ERROR *** FILE:;F\$; NOT FOUND"

5015 CLOSE
5025 FIND 1
5035 OLD
5045 J1=SEG(B\$+1,3)
5055 DIM @U2:1\$
5065 INPUT @U2:1\$
5075 DIM J\$(10)

111111

```

5085 J$SEG(D$,1,10)
5095 F=LEN(F$)
5105 DIM J$(F)
5115 IF J$<>F$ THEN 5135
5125 RETURN
+++1+++
5135 PRINT "FILE DOES NOT MATCH INTERNAL NAME"
5145 PRINT "INDEX NAME =:F$:INTERNAL NAME =:J$"
5155 PRINT @U2:2:
5165 FIND 1
5175 OLD
+++1+++
5175 PRINT "DATA TAPE IN EXTERNAL TAPE UNIT IS NOT A IBS DATA TAPE"
5185 PRINT @U2:2:
5195 FIND 1
5196 OLD

5405 REM* PLOT OBSERVED DATA
5415 GOSUB 3395
6715-REM*DRAW HU
6720 SET DEGREES
6730 VIEWFOOT 0,130,0,100
6740 WINDOW 0,130,0,100
6750 REM*HO - PRINTED LINE HEIGHT
6760 REM*HI - PRINTED CHARACTER HEIGHT
6770 REM*H2 - WIDTH OF SPACE
6780 REM*H3 - WIDTH OF A CHARACTER
6790 SO=15
6800 HO=2.82
6810 HI=1.68
6820 H2=1.79
6830 H3=1.55
6840 MOVE @U3:HO+HO/20,YO+H2/20
6850 DRAW @U3:H3/SO,HI*S/50
6860 FOR I=1 TO SO/2
6870 DRAW @U3:O,HI/SO
6880 NEXT I
6890 FOR I=1 TO SO/2
6900 DRAW @U3:O,-HI/SO
6910 NEXT I
6920 FOR I=0 TO 180 STEP SO*3/2
6930 ROTATE I+270
6940 DRAW @U3:HI/SO,0
6950 NEXT I
6960 FOR I=1 TO SO/2
6970 DRAW @U2:HI/SO,0
6980 NEXT I
6990 FOR I=1 TO SO/2
7000 DRAW @U3:-HI/SO,0
7010 NEXT I
7020 FOR I=270 TO 360 STEP SO/2*3
7030 ROTATE I
7040 DRAW @U3:HI/SO,0
7050 NEXT I
7060 MOVE @U3:HO+H2*1.1,YO+O.1*HO
7070 RETURN

```

7999 REMYDRAW RND

8000 SET DEGREES

8010 VIEWPORT 0,130,0,100

8020 WINDOW 0,130,0,100

8030 REM*10 - PRINTED LINE HEIGHT

8040 REM*11 - PRINTED CHARACTER HEIGHT

8050 REM*12 - WIDTH OF SPACE

8060 REM*13 - WIDTH OF A CHARACTER

8070 MOVE QUS1X0-H1/2,Y0

8080 FOR I=-95 TO 265 STEP 15

8090 ROTATE I

8100 RORAW QUS1H3/SO*1.3,0

8110 NEXT I

8120 ROTATE -5

8130 RORAW QUS1O,-10*H3/SO

8140 RMOVE QUS1H3,0

8150 RETURN

8299 REM ROUTINE TO LABEL Y AXIS

----- 9000 REM

9070 L\$=STR(Y1(1))

9080 GOSUB 61600

9090 MOVE QUS1O,Y1(1)

9100 FOR I=1 TO QH1

9110 PRINT QUS1H*I

9120 NEXT I

9130 PRINT QUS1L\$

9140 L\$=STR(Y2(1))

9150 GOSUB 61600

9160 MOVE QUS1O,Y2(1)

9170 FOR I=1 TO QH1

9180 PRINT QUS1H*I

9190 NEXT I

9200 PRINT QUS1L\$

9210 L\$=STR(Y3(1))

9220 GOSUB 61600

9230 MOVE QUS1O,Y3(1)

9240 FOR I=1 TO QH1

9250 PRINT QUS1H*I

9260 NEXT I

9270 PRINT QUS1L\$

9280 RETURN

+++++ 9100 REM ROUTINE TO DRAW ARROW POINTING UP

9310 MOVE QUS1X(1),01

9320 PRINT QUS1J*J

9330 GO TO 2845

+++++ 9200 REM ROUTINE TO DRAW UPSIDE DOWN ARROW

9510 MOVE QUS1X(1),00

9520 L\$=CHR(127)

9530 PRINT QUS1L\$


```

9550 GO TO 2845
+++++++ 10000 PRINT "NO DC PLOTS ARE AVAILABLE FOR PLOTTING"
10050 FIND 1
10051 OLD
+++++++ 10100 PRINT "ERROR WITH HISTORY TAPE FILE NUMBER 2"
+++++++ 10200 FIND 1
10201 OLD

```

```

----- 61500 REM ROUTINE TO PRINT NUMBERS TO 3 DECIMAL PLACES
61610 REMPL$(L$)=LEFT$(CONTAINING NUMBER IN CHARACTER FORM THAT
61620 REM IS TO BE PRINTED OUT TO 3 DECIMAL PLACES
61630 REM RESULTANT STRING IS PASSED BACK IN L$
61640 REM FORMAT OF RESULT SD,000 WITH LENGTH OF 6

```

```

61650 00=F05(L$,"E",1)
61660 IF 00<>0 THEN 61700
61670 L$=SEG(L$,1,6)
61680 00=6
61690 RETURN

```

```

+++++++ 61700 REM NUMBER IS IN SCIENTIFIC NOTATION

```

```

61710 K$=SEG(L$,00+1,4)
61720 00=VAL(K$)
61730 IF 00>0 THEN 61880
61740 IF 00>=4 THEN 61780
61750 L$=" 0.000"
61760 00=6
61770 RETURN
61780 N$=SEG(L$,1,1)
61785 K$=K$*0.1
61790 GO TO -00 OF 61820,61810,61800

```

```

+++++++ 61800 K$=K$*0.1
+++++++ 61810 K$=K$*0.1
+++++++ 61820 00=6-LEN(K$)
61830 L$=SEG(L$,2,00+1)
61840 L$=REP(" ",2+1)
61850 L$=N$+L$
61860 00=6
61870 RETURN

```

```

+++++++ 61880 REM SECTION TO PRINT OUT $>0

```

```

61890 L$=SEG(L$,1,5)
61900 L$=L$*E
61910 L$=L$*K$
61920 00=6-LEN(K$)
61930 RETURN

```

THE FOLLOWING LINE NUMBERS ARE BRANCHED TO BUT DO NOT EXIST IN THIS TAPE FILE (# 4)
 61775 BEFORE THE LINE NUMBER INDICATES IT IS BRANCHED TO AS A SUBROUTINE (VIA A "GOSUB" OR "ON")

FILE # 5

```
10 DIM X$(4)
110 PAGE
120 PRINT
130 PRINT "JJJJJJJ"
140 PRINT "JJJJJJJ"
150 PRINT "JJJJJJJ"
160 PRINT "JJJJJJJ"
170 PRINT "JJJJJJJ"
180 PRINT "JJJJJJJ"
190 PRINT "JJJJJJJ"
200 PRINT "JJJJJJJ"
210 PRINT "JJJJJJJ"
220 PRINT "JJJJJJJ"
230 PRINT "JJJJJJJ"
240 PRINT "JJJJJJJ"
250 PRINT "JJJJJJJ"
260 PRINT "JJJJJJJ"
270 PRINT "JJJJJJJ"
280 PRINT "JJJJJJJ"
290 PRINT "JJJJJJJ"
300 PRINT "JJJJJJJ"
310 PRINT "JJJJJJJ"
320 PRINT "JJJJJJJ"
330 PRINT "JJJJJJJ"
340 PRINT "JJJJJJJ"
350 PRINT "PRESS RETURN TO CONTINUE"
360 INPUT Q$
370 U1=33
380 U2=11
390 GO TO 2180
400 PAGE
410 PRINT "EXTERNAL LABEL IS NOT EQUAL TO TAPE LABEL"
420 PRINT "WOULD YOU LIKE TO STOP? (Y/N)"
430 INPUT R$
440 IF R$="Y" THEN 2100
450 CLOSE
460 PRINT @U2,2:
470 END
480 PAGE
490 PRINT "error ** this is not the correct tape"
500 PRINT "PRESS RETURN TO CONTINUE"
510 INPUT Q$
520 GO TO 2230
530 PRINT "ENTER USER-ID"
540 INPUT U$
550 PRINT "ENTER DATE (dummy)"
560 INPUT R$
570 PAGE
580 PRINT "INSERT IDS HISTORY TAPE IN EXTERNAL TAPE UNIT # 4924"
590 PRINT
600 PRINT "ENTER EXTERNAL LABEL ON HISTORY TAPE"
610 INPUT Z$
620 FIND @U2:0
630 FIND @U2:1
640 FIND @U2:2
650 FIND @U2:3
660 DIM Y$(4)
670 IF Z$="Y" THEN 2120
680 CLOSE
690 PAGE
700 FIND @U2:0
710 FIND @U2:1
720 FIND @U2:2
730 FIND @U2:3
740 FIND @U2:4
750 FIND @U2:5
```

2370 OLD

10 U2=11
12 DATA 56
14 DATA 0.25,0.161
15 DATA 0.25,0.144
16 DATA 1.6,1.387
17 DATA 1.6,1.352
18 DATA 2.5,2.026
19 DATA 2.5,2.055
20 DATA 5.3,956
21 DATA 5.4,01
22 DATA 0.0,0.049
23 DATA 0.0,0.049
24 DATA 0.1,0.104
25 DATA 0.1,0.112
26 DATA 1.0,878
27 DATA 1.0,865
28 DATA 1.0,875
29 DATA 1.0,856
30 DATA 1.0,825
31 DATA 1.0,866
32 DATA 0.1,0.109
33 DATA 0.1,0.117
34 DATA 0.0,0.022
35 DATA 0.0,0.022
36 DATA 5.4,091
37 DATA 5.3,982
38 DATA 2.5,2.068
39 DATA 2.5,2.01
40 DATA 1.6,1.417
41 DATA 1.6,1.393
42 DATA 0.25,0.215
43 DATA 0.25,0.207
44 DATA 0.25,0.152
45 DATA 0.25,0.135
46 DATA 1.6,1.433
47 DATA 1.6,1.457
48 DATA 2.5,2.052
49 DATA 2.5,2.022
50 DATA 5.4
51 DATA 5.3,933
52 DATA 0.0,0.018
53 DATA 0.0,0.018
54 DATA 0.1,0.068
55 DATA 0.1,0.068
56 DATA 1.0,868
57 DATA 1.0,857
58 DATA 0.1,0.0986
59 DATA 0.1,0.107
60 DATA 0.0,0.017
61 DATA 0.0,0.019
62 DATA 5.4,059
63 DATA 5.4,005
64 DATA 2.5,2.02
65 DATA 2.5,2.005
66 DATA 1.6,1.411
67 DATA 1.6,1.363
68 DATA 0.25,0.205
69 DATA 0.25,0.205

100 PRINT "ENTER DATE (mm/dd/yy)"
110 INPUT B\$
120 PRINT "ENTER HISTORY LABEL (ID\$;X;X;X)"
130 INPUT C\$
140 DIM P(34),X(31),W(7),M9(31),H8(31),O0(31),O1(31),O2(31),O3(31)
150 F=0
160 F(6)=1
170 F(3)=1
180 F(29)=1
190 W=0
200 Z=0
210 M7=1
220 N=0
230 X4=0
240 PRINT "INSERT NEW HISTORY TAPE IN UNIT *I02
250 PRINT "PRESS 'RETURN' TO CONTINUE."
260 INPUT Z\$
270 FIND G02:0
280 MARK G02:1,3000
290 FIND G02:1
300 C=C\$X8K\$
310 PRINT G02:0\$
320 PRINT G02:"002SYSTEM****P"
330 PRINT G02:"003PLOTFILES**P"
340 PRINT G02:"004PLOTSQC****P"
350 PRINT G02:"005HRGDP*****P"
360 PRINT G02:"006HQRLLI,60P"
370 PRINT G02:"007HUCRQF1,60P"
1000 PRINT G02:2;
1010 FIND G02:2
1020 MARK G02:1,1000
1030 FIND G02:2
1040 PRINT G02:"SYSTEM****P"
1050 FIND G02:3
1060 MARK G02:1,5000
1070 FIND G02:3
1080 PRINT G02:"PLOTFILES**"
1090 FIND G02:4
1100 MARK G02:1,5000
1110 FIND G02:4
1120 PRINT G02:"PLOTSQC****P"
2000 FIND G02:5
2010 MARK G02:3,5000
2020 F=0
2030 M1=0
2040 F(7)=1
2050 READ F(8)
2060 DIM X(F(8)),Y(F(8))
2070 FOR I=1 TO F(8)
2080 READ X(I),Y(I)
2090 NEXT I
2100 M1=0
2110 M2=0
2120 M3=0
2130 M4=0
2140 M5=0
2150 M6=0
2160 M0=1
2170 FOR I=1 TO F(8)
2180 M1=M1+X(I)*M0

2190 M2=M2*(I)*M0
 2200 M3=M3*(I)*X(I)*M0
 2210 M4=M4*(I)*Y(I)*M0
 2220 M5=M5*(I)*X(I)*M0
 2230 M1=M1*(I)
 2240 NEXT I
 2250 C=M1*M3-M1^2
 2260 F(10)=M1/C
 2270 F(11)=M1/C
 2280 F(12)=M3/C
 2290 F(2)=(M1*M5-M1*M2)/(M1*M3-M1^2)
 2300 F(1)=(M2-F(2)*M1)/M1
 2310 F(4)=F(1)
 2320 F(5)=F(2)
 2330 I=0
 2340 FOR I=1 TO P(8)
 2350 B=0*(Y(I)-F(1)-P(2)*X(I))^2
 2350 NEXT I
 2370 F(23)=1-B/(M4-M2^2/P(8))
 2380 F(3)=1
 2390 F(6)=D/(F(8)-2)
 2400 F(9)=1
 2410 F(29)=1
 2420 P(27)=F(6)
 2430 FIND G2:5
 2440 PRINT G2:5;*****P*
 2450 PRINT G2:5;F
 2460 PRINT G2:2;
 2470 FIND G2:6

2480 REM PRINT *ENTER QL HISTORY FOR 1.6
 2490 REM PRINT *ENTER MEAN(OR CENTRAL STANDARD) FOR 1.6

2500 M1=1.6 PRINT *ENTER S.D.(OR STANDARD) FOR 1.6

2510 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*

2540 I=1.54
2550 OI=I

2560 REM PRINT *ENTER UPPER LIMIT FOR ACCURACY*

2570 I=1.25
2580 OI=I

2590 REM PRINT *ENTER LOWER LIMIT FOR PRECISION*

2600 I=0
2610 OI=I

2620 REM PRINT *ENTER UPPER LIMIT FOR PRECISION*

2630 I=0.073
2640 OI=I
2650 OI=OI
2660 K=0

```
2670 X0=0
2680 W=0
2690 Z=0
2700 M9=M1
2710 M8=M2
2720 PRINT
2730 PRINT SUB:N,D7:X0,X0:M9,01,00,X0,M8,03,02,U,M,K,K,K,K
2740 FIND Q2:Z

2750 REM PRINT *ENTER QP HISTORY FOR 1.60*
2760 REM PRINT *ENTER MEAN (OR STANDARD) FOR 1.60*
2770 M1=1.6
2780 REM PRINT *ENTER S:D.(OR STANDARD) FOR 1.60*
2790 M2=0.053
2800 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*
2810 I=1.5
2820 O0=I
2830 REM PRINT *ENTER UPPER LIMIT FOR ACCURACY*
2840 I=1.7
2850 O1=I
2860 REM PRINT *ENTER LOWER LIMIT FOR PRECISION*
2870 I=0
2880 O2=I
2890 REM PRINT *ENTER UPPER LIMIT FOR PRECISION*
2900 I=0.12
2910 O3=I
2920 M9=M1
2930 M8=M2
2940 PRINT
2950 PRINT SUB:N,D7:X0,X0:M9,01,00,X0,M8,03,02,U,M,K,K,K,K
2960 PRINT Q2:Z
2970 CLOSE
2980 FIND I
2990 OLD
3000 REM END OF PROGRAM
```

FILE # 7

```
100 INIT
110 PRINT @32.26:0

120 REM
130 REM THIS PROGRAM IS SUPPOSED TO UPDATE THE HISTORY FILE BETWEEN
140 REM EACH DAILY RUN. IT IS SUPPOSED TO LEAVE IN THE INFORMATION
150 REM ABOUT PREVIOUS DAYS SO THAT THE QC PLOTS WILL SHOW DAILY
160 REM PROGRESS. IT IS SUPPOSED TO REMOVE THE INDIVIDUAL PLOT FILES
170 REM SO THAT A "FRESH" HISTORY TAPE EACH DAY.
180 REM
190 REM DATE: 05/04/81
200 REM AUTHOR: COMPUTER SCIENCES CORPORATION
210 REM ISAAC WILLY TRAXLER
220 REM NSTL STATION, MS
230 REM
240 REM
250 REM DO SOME PRELIMINARIES
260 UI=33
270 PAGE
280 PRINT * BEGIN PROGRAM TO UPDATE HISTORY TAPE*
290 PRINT * INSERT HISTORY TAPE INTO INTERNAL TAPE DRIVE*
300 PRINT * MAKE SURE WRITE PROTECT IS NOT ON SAFE*
310 PRINT * PRESS HOME PAGE TO START PROGRAM*
320 PRINT *END*
330 PRINT * BEGIN PROCESSING*

340 FEM UI - DEVICE NUMBER OF INTERNAL TAPE DRIVE
350 REM A# - LINE 1 OF FILE 1
360 REM B# - LINE 2 OF FILE 1
370 REM C# - LINE 3 OF FILE 1
380 REM D# - LINE 4 OF FILE 1
390 REM E# - LINE 5 OF FILE 1
400 REM F# - LINE 6 OF FILE 1
410 REM G# - LINE 7 OF FILE 1
420 REM I - USED AS A TEMPORARY INDEX VARIABLE
430 REM
440 REM *** SECTION TO UPDATE FILE 1 ***

450 FJND 1
460 INPUT @UI:A$
470 INPUT @UI:B$
480 INPUT @UI:C$
490 INPUT @UI:D$
500 INPUT @UI:E$
510 INPUT @UI:F$
520 INPUT @UI:G$
530 CLOSE
540 FJND 1
550 PRINT @UI:A$
560 PRINT @UI:B$
570 PRINT @UI:C$
580 PRINT @UI:D$
590 PRINT @UI:E$
600 PRINT @UI:F$
610 PRINT @UI:G$
620 CLOSE
```



```
630 REM END OF FILE 1 SECTION
640 REM PUT TAPE AT BEGINNING OF FILE
650 FIND 0
660 REM *** SECTION FOR FILE 2 ***
670 FIND 2
680 PRINT @U1:":SYSTEM****
690 CLOSE
700 REM *** END OF FILE 2 SECTION ***
710 REM FIND BEGINNING OF TAPE
720 FIND 0
730 REM *** SECTION FOR FILE 3 ***
740 FIND 3
750 PRINT @U1:":PLOTFILES*
760 CLOSE
770 REM *** END OF SECTION FOR FILE 3 ***
780 REM FIND BEGINNING OF TAPE
790 FIND 0
800 REM *** SECTION FOR FILE 4 ***
810 FIND 4
820 PRINT @U1:":PLOTSOC***
830 CLOSE
840 PRINT
850 PRINT
860 PRINT
870 PRINT
880 PRINT
890 PRINT
900 PRINT *TAPE PROCESSING FINISHED*
910 PRINT *YOU MAY REMOVE THE TAPE NOW*
920 PRINT
930 PRINT *INSERT STATISTICS PROGRAM TAPE INTO INTERNAL TAPE DRIVE*
940 PRINT *PRESS 'HOME PAGE' TO CONTINUE*
950 PRINT *OKJ*
960 FIND 1
970 OLD
980 REM END OF PROGRAM
```

FILE * 8

```
2060 P=0
2065 W1=0
2072 F(7)=1
2080 READ P(8)
2090 DIM X(P(8)),Y(P(8))
2100 FOR I=1 TO P(8)
2110 READ X(I),Y(I)
2120 NEXT I
2130 M1=0
2140 M2=0
2150 M3=0
2160 M4=0
2170 M5=0
2180 W=0
2185 W0=1
2187 W0=1
2190 FOR I=1 TO P(8)
2200 M1=M1+X(I)*W0
2210 M2=M2+Y(I)*W0
2220 M3=M2+X(I)*X(I)*W0
2230 M4=M4+Y(I)*Y(I)*W0
2240 M5=M5+Y(I)*X(I)*W0
2245 W1=W1+W0
2250 NEXT I
2260 C=W1*M3-M1^2
2270 F(10)=W1/C
2280 F(11)=M1/C
2290 F(12)=M3/C
2300 F(2)=(W1*M5-M1*M2)/(W1*M3-M1^2)
2310 F(1)=(M2-P(2)*M1)/W1
2320 F(4)=F(1)
2330 F(5)=F(2)
2340 B=0
2350 FOR I=1 TO P(8)
2360 D=D+(Y(I)-P(1)-P(2)*X(I))^2
2370 NEXT I
2380 F(23)=1-D/(M4-M2^2/P(8))
2390 P(3)=2
2400 P(6)=D/(P(8)-2)
2410 P(9)=1
2420 F(29)=1
2430 F(27)=P(6)
```

FILE * 9

```
10 U2=11
100 PRINT *ENTER DATE (mm/dd/yy)*
110 INPUT M
120 PRINT *ENTER HISTORY LABEL (IDSRX...X)*
130 INPUT C$
140 DIM P(34),X(31),W(7),H9(31),M8(31),D0(31),O1(31),O2(31),O3(31)
150 F=0
156 F(6)=1
170 F(3)=1
180 F(29)=1
190 W=0
200 Z=0
210 U7=1
220 N=0
230 X4=0
240 PRINT *INSERT NEW HISTORY TAPE IN UNIT *U2
250 PRINT *PRESS 'RETURN' TO CONTINUE.*
260 INPUT Z$
270 FIND W2:0
280 MARK W2:1,3000
290 FIND W2:1
300 C=C+38$
310 PRINT W2:1C$
320 PRINT W2:1*002SYSTEM****P*
330 PRINT W2:1*003PLOTFILES$P*
340 PRINT W2:1*004PLOTISOC****P*
350 PRINT W2:1*005HRRG****P*
360 PRINT W2:1*006HRRGNL.108P*
370 PRINT W2:1*007HRRGNL.216P*
1000 FIND W2:1
1010 FIND W2:12
1020 MARK W2:1,1000
1030 FIND W2:12
1040 PRINT W2:1*SYSTEM****:
1050 FIND W2:13
1060 MARK W2:1,5000
1070 FIND W2:13
1080 PRINT W2:1*PLOTFILES**
1090 FIND W2:14
1100 MARK W2:1,5000
1110 FIND W2:14
1120 PRINT W2:1*PLOTISOC****:
2000 FIND W2:15
2010 MARK W2:1,5000
2020 F=0
2030 U1=0
2040 F(7)=1
2050 READ P(8)
2060 DIM X(P(8)),Y(P(8))
2070 FOR I=1 TO P(8)
2080 READ X(I),Y(I)
2090 NEXT I
2100 H1=0
2110 H2=0
2120 H3=0
2130 M4=0
```

```

2160 W0=1
2170 FOR I=1 TO P(8)
2180 M1=M1+X(I)*W0
2190 M2=M2+Y(I)*W0
2200 M3=M3+X(I)*X(I)*W0
2210 M4=M4+Y(I)*Y(I)*W0
2220 M5=M5+Y(I)*X(I)*W0
2230 W1=W1+W0
2240 NEXT I
2250 C=W1*M3-M1^2
2260 F(10)=W1/C
2270 P(11)=M1/C
2280 P(12)=M3/C
2290 P(2)=(W1*M5-M1*M2)/(M1*M3-M1^2)
2300 P(1)=(M2-P(2)*M1)/W1
2310 P(4)=P(1)
2320 P(5)=P(2)
2330 I=0
2340 FOR I=1 TO P(8)
2350 B=0+(Y(I)-P(1)-P(2)*X(I))^2
2360 NEXT I
2370 F(23)=1-D/(M4-M2^2/P(8))
2380 F(3)=2
2390 P(6)=D/(P(8)-2)
2400 P(9)=1
2410 F(29)=1
2420 P(27)=P(6)
2430 FIND Q215
2440 PRINT Q21:HRGD*****P
2450 PRINT Q21:B*,P
2460 PRINT Q21:2;
2470 FIND Q21:6
2480 PRINT "ENTER OL HISTORY FOR .108"
2490 PRINT "ENTER MEAN(CR CENTRAL STANDARD) FOR .108"
2500 INPUT M1
2510 PRINT "ENTER S.D.(CR STANDARD) FOR .108"
2520 INPUT M2
2530 PRINT "ENTER LOWER LIMIT FOR ACCURACY"
2540 INPUT I
2550 O0=I
2560 PRINT "ENTER UPPER LIMIT FOR ACCURACY"
2570 INPUT I
2580 O1=I
2590 PRINT "ENTER LOWER LIMIT FOR PRECISION"
2600 INPUT I
2610 O2=I
2620 PRINT "ENTER UPPER LIMIT FOR PRECISION"
2630 INPUT I
2640 O3=I
2650 O7=31
2660 N=0
2670 X0=0
2680 M=0
2690 Z=0
2700 M9=M1
2710 M3=M2
2720 PRINT Q21:H0GR0L.108*
2730 PRINT Q21:K,D7,X0,X0,M9,01,00,X0,M9,03,02,W,M,K,K,K,K
2740 FIND Q21:7
2750 PRINT "ENTER OL HISTORY FOR .216"

```

2760 PRINT *ENTER MEAN (OR STANDARD) FOR .216*
2770 INPUT M1
2780 PRINT *ENTER S.D.(OR STANDARD) FOR .216*
2790 INPUT M2
2800 PRINT *ENTER LOWER LIMIT FOR ACCURACY*
2810 INPUT L
2820 O0=I
2830 PRINT *ENTER UPPER LIMIT FOR ACCURACY*
2840 INPUT U
2850 O1=I
2860 PRINT *ENTER LOWER LIMIT FOR PRECISION*
2870 INPUT P
2880 O2=I
2890 PRINT *ENTER UPPER LIMIT FOR PRECISION*
2900 INPUT Q
2910 O3=I
2920 M2=M1
2930 M3=M2
2940 PRINT @U2:*H0000L.216**
2950 PRINT @U2:K,D7,X0,X0,H9,01,00,X0,H8,03,02,H,W,K,K,K,K
2960 PRINT @U3:2;
2970 CLOSE
2980 FIND 1
2990 OLD

3000 REM END OF PROGRAM

```

10 U2=11
12 DATA 5
14 DATA 0,0,0,0,5321
16 DATA 0,1,0,0,202791
18 DATA 0,8,0,0,774289
20 DATA 1,3,1,1,355521
22 DATA 4,1,4,4,237828
24 DATA 0,0,1,58099
100 PRINT "ENTER DATE (mm/dd/yy)*"
110 INPUT W$
120 PRINT "ENTER HISTORY LABEL (IDSxx,.,x)*"
130 INPUT C$
140 DIM P(34),X(31),W(7),M(31),M8(31),M9(31),O1(31),O2(31),O3(31)
150 P=0
160 P(6)=1
170 P(3)=1
180 P(29)=1
190 W=0
200 Z=0
210 U7=1
220 N=0
230 X4=0
240 PRINT "INSERT NEW HISTORY TAPE IN UNIT #102"
250 PRINT "PRESS 'RETURN' TO CONTINUE"
260 INPUT Z$
270 FIND O2:0
280 MARK O2:1,3000
290 FIND O2:1
300 C$=C+SR4
310 PRINT O2:0$
320 PRINT O2:1"002SYSTEM**"
330 PRINT O2:1"003PLOTFILES**"
340 PRINT O2:1"004PLOTSQC**"
350 PRINT O2:1"005HRC**"
360 PRINT O2:1"006HRCQL1.60P"
370 PRINT O2:1"007HRCQPL1.60P"
1000 PRINT O2:2:
1010 FIND O2:2
1020 MARK O2:1,1000
1030 FIND O2:2
1040 PRINT O2:1"SYSTEM**"
1050 FIND O2:3
1060 MARK O2:1,5000
1070 FIND O2:3
1080 PRINT O2:1"PLOTFILES*"
1090 FIND O2:4
1100 MARK O2:1,5000
1110 FIND O2:4
1120 PRINT O2:1"PLOTSQC**"
2000 FIND O2:5
2010 MARK O2:1,5000
2020 P=0
2030 W1=0
2040 P(7)=1
2050 READ P(8)
2060 DIM X(P(8)),Y(P(8))
2070 FOR I=1 TO P(8)
2080 READ X(I),Y(I)

```

```

2090 NEXT I
2100 M1=0
2110 M2=0
2120 M3=0
2130 M4=0
2140 M5=0
2150 W=0
2160 W0=1
2170 FOR I=1 TO P(8)
2180 M1=M1+X(I)*W0
2190 M2=M2+Y(I)*W0
2200 M3=M3+X(I)*X(I)*W0
2210 M4=M4+Y(I)*Y(I)*W0
2220 M5=M5+Y(I)*X(I)*W0
2230 W1=W1+W0
2240 NEXT I
2250 C=W1*M3-M1*2
2260 F(10)=W1/C
2270 F(11)=M1/C
2280 F(12)=M3/C
2290 F(2)=(W1*M5-M1*M2)/(W1*M3-M1*2)
2300 F(1)=(M2-P(2)*M1)/W1
2310 F(4)=F(1)
2320 F(5)=F(2)
2330 B=0
2340 FOR I=1 TO P(8)
2350 D=D+(Y(I)-P(1)-P(2)*X(I))^2
2360 NEXT I
2370 F(23)=1-D/(M4-M2^2/P(8))
2380 F(3)=2
2390 P(6)=D/(P(8)-2)
2400 F(9)=1
2410 F(29)=1
2420 F(27)=F(4)
2430 FIND @U2:5
2440 PRINT @U2:5*HRGB*****P
2450 PRINT @U2:5,P
2460 PRINT @U2:3
2470 FIND @U2:6

2480 REM PRINT *ENTER OL HISTORY FOR 1.6
2490 REM PRINT *ENTER MEAN(OR CENTRAL STANDARD) FOR 1.6

2500 M1=1.6
2510 REM PRINT *ENTER S.D.(OR STANDARD) FOR 1.6
2520 M2=0.032
2530 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*
2540 I=1.54
2550 U0=1
2560 REM PRINT *ENTER UPPER LIMIT FOR ACCURACY*
2570 I=1.66
2580 U1=1
2590 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*

```

```

2600 I=0
2610 O2=I
2620 REM PRINT *ENTER UPPER LIMIT FOR PRECISION*
2630 I=0.073
2640 O3=I
2650 D7=31
2660 K=0
2670 X0=0
2680 M=0
2690 Z=0
2700 H9=M1
2710 H8=M2
2720 PRINT @U21*H08R0L1.60*
2730 PRINT @U2:K,D7,XC,X0,H9,O1,(,X0,H8,O3,O2,M,M,K,K,K,K
2740 FIND @U2:7
2750 REM PRINT *ENTER OP HISTON. FOR 1.60*
2760 REM PRINT *ENTER MEAN (OR STANL 'SD) FOR 1.60*
2770 M1=1.6
2780 REM PRINT *ENTER S.D.(OR STANDARD) FOR 1.60*
2790 M2=0.053
2800 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*
2810 I=1.5
2820 O0=I
2830 REM PRINT *ENTER UPPER LIMIT FOR ACCURACY*
2840 I=1.7
2850 O1=I
2860 REM PRINT *ENTER LOWER LIMIT FOR PRECISION*
2870 I=0
2880 O2=I
2890 REM PRINT *ENTER UPPER LIMIT FOR PRECISION*
2900 I=0.12
2910 O3=I
2920 H9=M1
2930 H8=M2
2940 PRINT @U2:1*H08R0P1.60*
2950 PRINT @U2:K,D7,X0,X0,H9,O1,O0,X0,H8,O3,O2,M,M,K,K,K,K
2960 PRINT @U2:2;
2970 CLOSE
2980 FIND 1
2990 GLD
3000 REM END OF PROGRAM

```


FILE # 11

10 U2=11
12 DATA 56
14 DATA 0.25,0.161
15 DATA 0.25,0.144
16 DATA 1.6,1.387
17 DATA 1.6,1.352
18 DATA 2.5,2.026
19 DATA 2.5,2.055
20 DATA 5.3,9.56
21 DATA 5.4,01
22 DATA 0.0,0.049
23 DATA 0.0,0.047
24 DATA 0.1,0.104
25 DATA 0.1,0.112
26 DATA 1.0,0.876
27 DATA 1.0,0.865
28 DATA 1.0,0.875
29 DATA 1.0,0.856
30 DATA 1.0,0.825
31 DATA 1.0,0.866
32 DATA 0.1,0.109
33 DATA 0.1,0.117
34 DATA 0.0,0.022
35 DATA 0.0,0.022
36 DATA 5.4,0.91
37 DATA 5.3,9.82
38 DATA 2.5,2.068
39 DATA 2.5,2.01
40 DATA 1.6,1.417
41 DATA 1.6,1.393
42 DATA 0.25,0.215
43 DATA 0.25,0.207
44 DATA 0.25,0.152
45 DATA 0.25,0.135
46 DATA 1.6,1.433
47 DATA 1.6,1.457
48 DATA 2.5,2.052
49 DATA 2.5,2.022
50 DATA 5.4
51 DATA 5.3,9.23
52 DATA 0.0,0.018
53 DATA 0.0,0.018
54 DATA 0.1,0.068
55 DATA 0.1,0.058
56 DATA 1.0,0.848
57 DATA 1.0,0.857
58 DATA 0.1,0.0986
59 DATA 0.1,0.107
60 DATA 0.0,0.019
61 DATA 0.0,0.019
62 DATA 5.4,0.59
63 DATA 5.4,0.65
64 DATA 2.5,2.02
65 DATA 2.5,2.005
66 DATA 1.6,1.411
67 DATA 1.6,1.423
68 DATA 0.25,0.205
69 DATA 0.25,0.205

100 PRINT "ENTER DATE (mm/dd/yy)"
110 INPUT B\$
120 PRINT "ENTER HISTORY LABEL (IDSxx...x)"
130 INPUT C\$
140 DIM P(3),X(31),M(7),M9(31),M8(31),00(31),01(31),02(31),03(31)
150 P=0
160 P(6)=1
170 P(3)=1
180 P(29)=1
190 M=0
200 Z=0
210 B7=1
220 K=0
230 X4=0
240 PRINT "INSERT NEW HISTORY TAPE IN UNIT "IU2
250 PRINT "PRESS 'RETURN' TO CONTINUE"
260 INPUT Z\$
270 FIND G02:0
280 MARK G02:1,3000
290 FIND G02:1
300 C=C\$B\$
310 PRINT G02:C\$
320 PRINT G02:"002SYSTEM***"
330 PRINT G02:"003PLOTFILES*"
340 PRINT G02:"004PLOTSOC***"
350 PRINT G02:"005HROB***"
360 PRINT G02:"006HROB1.60P"
370 PRINT G02:"007HROB1.60P"
1000 PRINT G02:2:
1010 FIND G02:2
1020 MARK G02:1,1000
1030 FIND G02:2
1040 PRINT G02:"SYSTEM***"
1050 FIND G02:3
1060 MARK G02:1,5000
1070 FIND G02:3
1080 PRINT G02:"PLOTFILES*"
1090 FIND G02:4
1100 MARK G02:1,5000
1110 FIND G02:4
1120 PRINT G02:"PLOTSOC***"
2000 FIND G02:5
2010 MARK G02:3,5000
2020 P=0
2030 M1=0
2040 P(7)=1
2050 READ P(8)
2060 DIM X(P(8)),Y(P(8))
2070 FOR I=1 TO P(8)
2080 READ X(I),Y(I)
2090 NEXT I
2100 M1=0
2110 M2=0
2120 M3=0
2130 M4=0
2140 M5=0
2150 M6=0
2160 M0=1
2170 FOR I=1 TO P(8)
2180 M1=M1+X(I)*M0

```

2190 M2=M2+Y(I)*W0
2200 M3=M3+X(I)**X(I)*W0
2210 M4=M4+Y(I)*Y(I)*W0
2220 M5=M5+Y(I)**X(I)*W0
2230 W1=W1+W0
2240 NEXT I
2250 C=0.1*M3-M1^2
2260 F(10)=W1/C
2270 F(11)=M1/C
2280 F(12)=M3/C
2290 F(2)=(W1*M5-M1*M2)/(W1*M3-M1^2)
2300 F(1)=(M2-F(2)*M1)/W1
2310 F(4)=F(1)
2320 F(5)=F(2)
2330 B=0
2340 FOR I=1 TO F(8)
2350 D=0.1*(Y(I)-F(1)-F(2)*X(I))^2
2360 NEXT I
2370 F(23)=1-D/(M4-M2^2/P(8))
2380 F(3)=2
2390 F(6)=D/(P(8)-2)
2400 F(9)=1
2410 F(29)=1
2420 F(27)=P(6)
2430 FIND Q2:5
2440 PRINT Q2:5
2450 PRINT Q2:5;P
2460 PRINT Q2:2;
2470 FIND Q2:6
2480 REM
2490 REM
2500 M1=1.6
2510 REM
2520 REM
2530 REM
2540 I=1.54
2550 Q0=I
2560 REM
2570 I=1.66
2580 Q1=I
2590 REM
2600 I=0
2610 Q2=I
2620 REM
2630 I=0.073
2640 Q3=I
2650 Q7=31
2660 K=0

```

PRINT *ENTER OL HISTORY FOR 1.6
PRINT *ENTER MEAN(OR CENTRAL STANDARD) FOR 1.6

PRINT *ENTER S.D.(OR STANDARD) FOR 1.6

PRINT *ENTER LOWER LIMIT FOR ACCURACY*

PRINT *ENTER UPPER LIMIT FOR ACCURACY*

PRINT *ENTER LOWER LIMIT FOR PRECISION*

PRINT *ENTER UPPER LIMIT FOR PRECISION*

```
2670 X0=0
2680 W=0
2690 Z=0
2700 M2=M1
2710 M0=M2
2720 PRINT @U2:"HGGR01.60*"
2730 PRINT @U2:K,D7,X0,X0,M9,01,00,X0,M8,03,02,W,M,K,K,K,K
2740 FIND @U2:7

2750 REM PRINT *ENTER OP HISTORY FOR 1.60*
2760 REM PRINT *ENTER MEAN (OR STANDARD) FOR 1.60*

2770 M1=1.6
2780 REM PRINT *ENTER S.D.(OR STANDARD) FOR 1.60*

2790 M2=0.053
2800 REM PRINT *ENTER LOWER LIMIT FOR ACCURACY*

2810 I=1.5
2820 O0=I
2830 REM PRINT *ENTER UPPER LIMIT FOR ACCURACY*

2840 I=1.7
2850 O1=I
2860 REM PRINT *ENTER LOWER LIMIT FOR PRECISION*

2870 I=0
2880 O2=I
2890 REM PRINT *ENTER UPPER LIMIT FOR PRECISION*

2900 I=0.12
2910 O3=I
2920 M2=M1
2930 M8=M2
2940 PRINT @U2:"HGGR01.60*"
2950 PRINT @U2:K,D7,X0,X0,M9,01,00,X0,M8,03,02,W,M,K,K,K,K
2960 PRINT @U2:2
2970 CLOSE
2980 FIND 1
2990 OLD

3000 REM END OF PROGRAM
```

FILE # 12

1 GO TO 100
4 PRINT 041:30:0A
5 FROM 041:0L
+-----+
100 PRINT "ENTER FILE NUMBER"
110 INPUT F
115 PRINT 041:"FILE NUMBER:";F
+-----+
120 FROM 041:F
130 INCL 041:0A
140 FROM 0A
150 PRINT 041:0A
160 GO TO 130