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SUBJECT User's Guide for the Skylab Integrated Medical Data Analysis System

(NASA-CR-160189) USER'S GUIDE FOR THE SKYLAB INTEGRATED MEDICAL DATA ANALYSIS SYSTEM (General Electric Co.) 96 p HC A05/MF A01 N79-25740 CSCI 06P Unclas G3/52 26967

Capabilities of the Skylab Integrated Medical Data Analysis System (SIMDAS) are described and illustrated in this document. User's instructions are also given for the operation of this system on the Univac 1100 Series Demand System at the Johnson Space Center.



V. J. Marks V. J. Marks

Attachment /db

CONCURRENCES

Counterpart:

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DISTRIBUTION NASA/JSC:

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1.0 PROGRAM DESCRIPTION GUIDE

A. IDENTIFICATION

Program Name	Skylab Integrated Medical Data Analysis System (SIMDAS)
Programmers Name	D. J. Grounds, G. T. Archer, and V. J. Marks
Technical Contact	D. J. Grounds, GE/TSSD, Houston
Date of Issue	November 21, 1975

B. GENERAL DESCRIPTION

The basic composition of the data analysis system is a special purpose data base in conjunction with online graphics output, and online and batch statistical analysis programs. The data base structure which was developed as a part of this analysis system is designed to make maximum use of inherent logical relationships within the data. For this reason it was found that generalized data base systems were not as efficient as a system designed specially for the Skylab medical experiments data. The four medical experiments included were: bicycle ergometry (M171), lower body negative pressure (M092), endocrine-metabolic studies (M073), and hematology and immunology (M110). Also included were the clinical and environmental (CERV) data. The data base was designed to retrieve a basic unit of these data defined by the flight, experiment, measurement, crewmember, and flight phase (i. e., preflight, inflight, or postflight). By using units of data defined in such a manner, comparisons can be made between different flight phases of the same measured variable and a maximum number of comparisons can be made between variables of the same or different experiments, between flights, and between subjects. It is significant to note that many of these capabilities have never been available in any automated system for these data. Each Skylab data element in this structure is associated with the time at which the measurement of sample was taken. The day of the year, reference 1973, gives a unique temporal coordinate for each variable to be used in the graphics display output. Also, time is an important parameter to be used as an input to some analysis programs.

The analysis algorithms which have been incorporated into the present system consist primarily of general purpose programs to be used for screening large portions of the data. It is recognized that the number of analyses which could be applied constitute a very large collection. For this reason, the data analysis system is structured such that analysis programs from two large statistical packages may be added whenever the need for more explicit statistical analysis is determined. The programs which are presently included in the Skylab Integrated Medical Data Analysis System can compute means, standard deviations, and t-tests for each basic unit of data.

The comparison of means between data is accomplished with a paired t-test. In order to assist in hypothesis development and testing, a set of regression functions has been employed, also. These functions displayed on a graphics CRT use least squares criterion to fit linear and nonlinear equations to the data plots. Data can be plotted against time or another variable as the independent variable. This cross plotting capability can readily detect relationships between various measurements taken at corresponding times. The regression fitting capability allows the user to mathematically verify those relationships visually identified. By using a combination of these regression analyses and graphic CRT displays, statistical regression models of a measured variable can be applied to the total flight duration for all flights and all subjects.

C. USAGE AND RESTRICTIONS

Machine, Operating System, and Compiler Required	- Univac 1110, EXEC 8, FORTRAN V
Peripheral Equipment Required	- Tektronics 4010-1 Graphics Terminal and Hardcopy Device
Approximate Memory Required	- 20000 ₁₀

D. PARTICULAR DESCRIPTION

Equations used - see Reference 1
Definition of Terms - See Reference 2

E. DESCRIPTION OF INPUT

The Skylab Integrated Medical Data Analysis System (SIMDAS) has been implemented on the NASA/JSC Univac 1110 computer and can be operated in the demand or batch mode. The instructions given are for the demand mode only since the batch mode requires the same instructions submitted in card form. The following procedure is required to establish connection for a remote terminal:

SET TERMINAL ON LINE, TO EVEN PARITY, AND 30 CPS

DIAL 483-4881; ASK FOR HIGH SPEED LINE TO 1110
(LOW SPEED OPERATES AT 10 CPS)

ANSWER OPERATOR QUESTIONS

SET PHONE IN MODEM AND TYPE SITE ID WITH NO CR.

RESPOND CR TO REQUEST FOR PASSWORD

EXAMPLE RUN CARD

@RUN, /N DBHOLD, 7007-Q509-C, DB6-G03432, 10

TO DELETE TYPED CHARACTERS USE CTRL Z
FOR EACH BAD CHARACTER AND RETYPE

TO DELETE A COMPLETE LINE USE CTRL X

I/O TERMINATION:

HIT BREAK KEY DURING OUTPUT, RESPOND @@X TIO, CR
WAIT FOR PRINT BUFFER TO EMPTY

In order to use the SIMDAS the following system instructions are required:

@COPY SMEDEP., TPF\$.

When control is again restored, the user must specify any flight or model data he wishes to use.

@ASG,A SL2.	}	For Skylab 2
@USE 10,SL2.		
@ASG,A SL3.	}	For Skylab 3
@USE 11,SL3.		
@ASG,A SL4.	}	For Skylab 4
@USE 12,SL4.		
@ADD TGF		Assigns SL2., SL3., and SL4. automatically
@ASG,A Unit No.		For Model Data

Where,

Unit No. = 13 for Guyton's Model
14 for Red Cell Model

Other model or experimental data may be added on additional unit numbers, however, units 16 and 18 are dynamically assigned by SIMDAS for output from the BUIL function. The assigning of existing data files is only possible as long as present file space is maintained. The appropriate section of following procedure needs to be followed ONLY WHEN A SKYLAB FILE MUST BE BUILT FROM TAPE.

```
@ASG, UP SL2
@USE 10, SL2.
@ASG, T 7., 8C, Tape No.    } For Skylab 2
```

```
@ASG, UP SL3.
@USE 1, SL3.
@ASG, T 8., 8C, Tape No.    } For Skylab 3
```

```
@ASG, UP SL4.
@USE 12, SL4.
@ASG, T 9., 8C, Tape No.    } For Skylab 4
@XQT SLFILE
```

The user must then answer the questions asked by the program about which flight is desired.

Now that the system is loaded and the data files assigned, the user should begin execution by entering the following command.

```
@XQT MAPEL
```

Answer 'TYPE SHIFT-OUT' with a CR

Answer 'WANT HARD COPY QUESTION DURING PRINTOUT? (Y,N)'

The hard copy question provides a page division for tabular output, however, a negative (N) response will suppress this during output.

Answer 'DO YOU WISH TO BIAS ALL DATA BASE TIMES BY LAUNCH DATES? (Y,N)'

This allows the user to set launch dates to zero for the prime purpose of comparing data from one mission with data of another mission.

The command request appears as shown in Figure 1. Each of these commands will be explained in detail because they comprise the fundamental set of tools available to the system user.

```
>@XQT MAPEL
|
| TYPE SHIFT-OUT (SO) AND RETURN-->
|
| WANT HARD COPY QUESTION DURING PRINTOUT? (Y,N)
>N

| DO YOU WISH TO BIAS ALL DATA BASE TIMES BY LAUNCH DATES? (Y,N)
>N
| COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLO, MODV, STOP) A4, 1%, 9 (A6, 1%)
| COMM IDEN IDEN IDEN IDEN IDEN
>FETC
```

Figure 1 Command Request

FETC

The FETC command is required first in order to read the data files and place the data of interest into the working area of the system. The instructions given for this command appear as shown in Figure 2.

```

!
DO YOU WISH INSTRUCTIONS? (Y,N)
>Y
(IDEN=1-6 CHARS. TO IDENTIFY DATA) (NO.=1.-360. UNLESS FROM A MODEL)
(DATA BASE=SL2,SL3,SL4,GUYT,GROD,LBNP,HEAT,)
IF DATA FROM A MODEL, IGNORE REST OF INPUT...
(EXPER=M171,M092,M073,M110,CEVR,EXER,PRES)
(MAN C=COMMANDER,S=SCIENCE PILOT,P=PILOT) (PHASE=PRE,IN,POST)
(DAY=IGNORE UNLESS FUNCTION EXER OR PRES)
INPUT GO WHEN FINISHED FETCH/SCRCH INPUT, HIT CR IF WANT INSTRUCTIONS

IDEN  NO.  DATA  FUNCTN/
      BASE  EXPER  MAN  PHASE  DAY #
>UVOL  1.  SL2    M073  C    PRE
>UVOLA
>GO

```

Figure 2 FETC Command

IDEN is a user defined name to identify the unit of data to be retrieved. This name may be made meaningful to the user to aid in remembering the names and to appear in documentation of graphics output. All other commands require input from data in the working area by specifying the identifying name.

NO. refers to the measurement number as found in Appendix 1, the data base directory. These directory numbers do not apply to data from a model.

DATA BASE requires input of SL2, SL3, SL4, GUYT, or BUIL which direct the retrieval program to the proper data base or model output.

FUNCTN/EXER refers to the Skylab experiment number (M171, M092, M073, M110, CEVR). The functions EXER or PRES are specified for the retrieval of all data from one bicycle ergometry experiment or LBNP experiment.

MAN requires an input of C for commander, S for science pilot, or P for the pilot.

PHASE requires the input of PRE for the preflight phase, IN for the inflight phase, and POST for the postflight phase. ALL will retrieve data for all phases.

DAY is only required when the EXER or PRES options are used in FUNCTN/EXER. Then it refers to the day on which the experiment was run.

This completes the required input for retrieving and labeling one unit of data. When all required data has been specified, the user must input GO.

The user is allowed to combine data when the FETC command is input with a data name (IDEN). The retrieved data will be combined until the user inputs GO. The working area of the system will contain the combined data defined by the FETC name along with each retrieved name separately defined. An example of output of this command is given in Figure 9.

SCRC

The working area for data in this program is fixed size. Therefore, when all operations are complete on the data in the working area and more data are required, the input of SCRC will clear the working area of its contents and prepare the program to receive more data as described under the FETC option. Messages will be printed for the user during FETC inputs when the storage capacity of the working area has been exceeded.

LOOK

This command provides the user a summary of data specified by its identifying name. The required location of these names to be input is indicated with the request by IDEN. A response of ALL in the place of a data name (IDEN) will produce a summary of all data in the working area. The summaries printed supply information shown in Figure 3.

```

COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLO,MODV,STOP) A4.1X.9(A6.1X)
COMM IDEN  IDEN  IDEN  IDEN  IDEN
LOOK ALL
!

```

IDEN	NO.	DATA	FUNCTN	MAN	PHASE	...START....STOP....	NO.
		BASE	EXPER			DAY HR MN SE	DAY HR MN SE	DATA
UVOL	1	SL2	M073	C	PRE	115 0 0 0	143 0 0 0	22
			.275+04=HIGH		VALUE	710.	=LOW VALUE	
	1359.		=MEAN		487.2	=STN.DEV.	1.721735=T AT .95	
UVOLA	1	SL2	M073	C	ALL	115 0 0 0	187 0 0 0	63
			.275+04=HIGH		VALUE	533.	=LOW VALUE	
	1404.		=MEAN		416.3	=STN.DEV.	1.672830=T AT .95	
UV2	1	SL2	M073	C	PRE	115 0 0 0	143 0 0 0	22
			.275+04=HIGH		VALUE	710.	=LOW VALUE	
	1359.		=MEAN		487.2	=STN.DEV.	1.721735=T AT .95	
UV3	1	SL3	M073	C	PRE	189 0 0 0	207 0 0 0	17
			.201+04=HIGH		VALUE	886.	=LOW VALUE	
	1433.		=MEAN		328.0	=STN.DEV.	1.746426=T AT .95	
UV4	1	SL4	M073	C	PRE	293 0 0 0	319 0 0 0	27
			.253+04=HIGH		VALUE	.101+04=LOW	VALUE	
	1755.		=MEAN		472.2	=STN.DEV.	1.707018=T AT .95	
UVOLC	1	SL2	M073	C	PRE	115 0 0 0	319 0 0 0	66
			.275+04=HIGH		VALUE	710.	=LOW VALUE	
	1540.		=MEAN		475.1	=STN.DEV.	1.671736=T AT .95	

Figure 3 LOOK Output

DATA

The DATA command requires the same type of data specification input under IDEN as the LOOK command. The output from this command is identical to the LOOK command with the addition of each point of data printed along with the time when the observation was made. An example of output from the DATA command is given in Figure 4.

```

COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLO, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN IDEN IDEN IDEN IDEN
>DATA UNAKM
|
      DATA  FUNCTN/
IDEN  NO.  BASE  EXPER  MAN  PHASE  ...START....  ....STOP....  NO.
UNAKM   3  SL3   M073   S    PPE   193  0  0  0  207  0  0  0   13
              304.   =HIGH VALUE      163.   =LOW VALUE
      229.5  =MEAN                49.99  =STN.DEV.  1.789073=T AT .95
      192.5      193D  0H  0M  0S  JULY 12 1973
      162.8      194D  0H  0M  0S  JULY 13 1973
      204.6      195D  0H  0M  0S  JULY 14 1973
      280.5      196D  0H  0M  0S  JULY 15 1973
      183.7      197D  0H  0M  0S  JULY 16 1973
      273.9      198D  0H  0M  0S  JULY 17 1973
      291.5      199D  0H  0M  0S  JULY 18 1973
      287.1      200D  0H  0M  0S  JULY 19 1973
      185.9      201D  0H  0M  0S  JULY 20 1973
      207.9      202D  0H  0M  0S  JULY 21 1973
      187.0      203D  0H  0M  0S  JULY 22 1973
      303.6      206D  0H  0M  0S  JULY 25 1973
      222.2      207D  0H  0M  0S  JULY 26 1973

```

Figure 4 DATA Command

The DATA command may be used to modify data in the working area of the system. A response of MODV under the first IDEN and the data name to be modified under the second IDEN will allow the creation of a new and separate data name. The output from this command is identical to the DATA command with the addition of a printout of the day, old value, new value, and new name. An example of output from the DATA MODV command is given in Figure 5.


```
COMMAND (FETC, SCPC, LOOK, DATA, PLOT, BUIL, XPLO, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN IDEN IDEN IDEN IDEN
>DATA MODV UNAK
!
```

```
REQUEST TO MODIFY DATA ACCEPTED,
ENTER MODIFY FUNCTION (MFUN), NEW VARIABLE NAME (NVALN),
AND CONSTANT (VK)
```

- MFUN=1, NEW=OLD + VK
- =2, NEW=OLD - VK
- =3, NEW=OLD * VK
- =4, NEW=OLD / VK
- =5, NEW=(OLD-VK)/VK * 100. (%)
- =6, NEW=OLD**2
- =7, NEW=LN(OLD)
- =8, BIAS TIME BY VK(DAYS)

```
(I1/A6/E12.5)
```

```
>3
>UNAKM
>1.1
```

IDEN	NO.	BASE	EXPER	MAN	PHASE	DAY	HR	MN	SE	DAY	HR	MN	SE	NO.
UNAK	3	3L3	M073	3	PRE	189	0	0	0	207	0	0	0	15
		276.	=HIGH VALUE			148.	=LOW VALUE							
		213.2	=MEAN		45.42	=GTH.DEV.		1.770815=T AT .95						
		.27216+06	275.00			302.50				UNAKM				
		275.0	189D	0H	0M	03	JULY	8	1973					
		.27360+06	211.00			232.10				UNAKM				
		211.0	190D	0H	0M	03	JULY	9	1973					
		.27792+06	175.00			192.50				UNAKM				
		175.0	193D	0H	0M	03	JULY	12	1973					
		.27936+06	148.00			162.80				UNAKM				
		148.0	194D	0H	0M	03	JULY	13	1973					

Figure 5 DATA MODV Command

PLOT

The PLOT command allows the user to display his data on a graphics CRT terminal. The plot capabilities of this system were written for the Tektronix 4010-1 and are set to operate on a high speed (30 cps) line. The interactive instructions given by the system are shown in Figure 6.

```
INPUT HEADING WANTED. (15A4)
>URINE VOL (ML) SKYLAB 2 CDR
(IDEN=DATA IDEN,SAME,GO) (L=1.-6. FOR LOC.)
(P,1.=STAIR PLT 1ST.PT.HORIZ,2.=STAIR 2ND.PT.HORIZ,
3.=NO LINES,OR PT.TO PT,PLT.)
(X=1.FOR X SYMBOL AT EACH POINT)
(START/STOP LEFT BLANK MEANS PLOT ALL TIME OF DATA)

.....Y AXIS.....
.....X AXIS (TIME).....
.....START.... ....STOP..... ....BIAS.....
IDEN HIGH LOW L P X DAY HR MN SE DAY HR MN SE DAY HR MN SE
>UOL2 2500. 500. 1. 1.
```

Figure 6 PLOT Instructions

IDEN is the user defined name as previously defined. There is currently a maximum of six variables which can be entered. HIGH and LOW are the limits of the plot to be supplied by the user. These can be found in LOOK or DATA (output). These numbers are input as real numbers and therefore, a decimal point is required. If IDEN = GO, then HIGH must be equal to 3., 4., or 5. to set the number of X-axis divisions.

L is a request for location. The locations are created by dividing the vertical axes to separate plots as shown below in Figure 7.

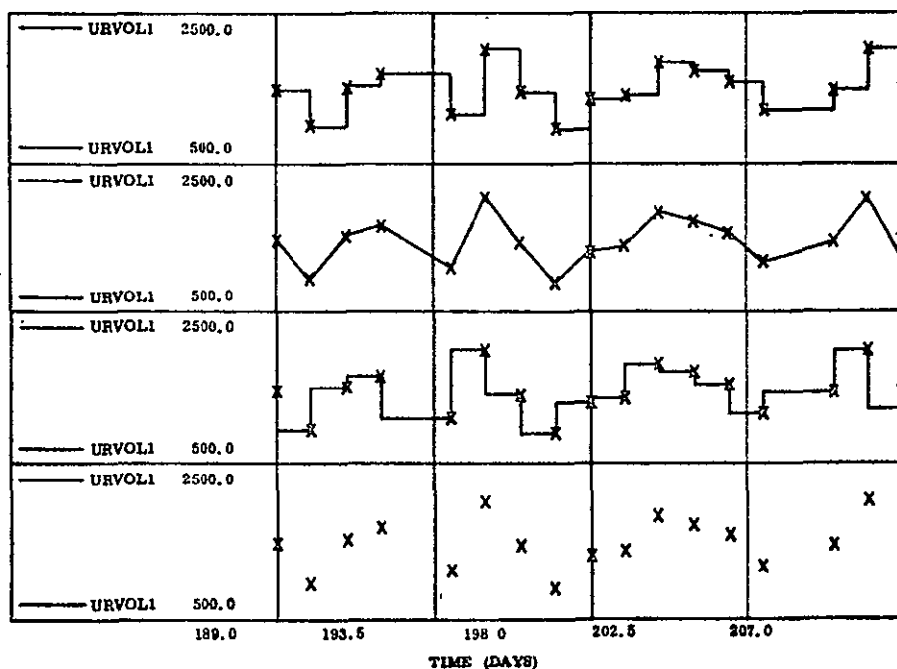


Figure 7 Multiplot Example

The upper plot is in location 1 and the bottom plot is in location 4. SIMDAS allows a maximum of six locations.

P is the format option which is also illustrated in Figure 7. The four possible choices are:

- blank = point to point plot (Loc. 2)
- 1 = stairstep plot with horizontal drawn from leading point (Loc. 1)
- 2 = stairstep plot with horizontal drawn from trailing point (Loc. 3)
- 3 = no lines (Loc. 4)

X is an option to mark each data point on the plot with an "X" as shown in all the plots of Figure 6. By entering a 1 the X's will be drawn; left blank they will be omitted. L, P, and X all must be entered as real numbers.

START is the request for the start time of the data to be plotted. Left blank, the first day of data will be used. DAY, HR, MN, SE means day, hour, minute, and second. For most data, day is the only input required.

STOP is a request for the last day of data to be plotted. Left blank, all data past the start time is plotted.

BIAS allows the user to shift the time axis of data to be plotted (e.g., if -208 is entered for Skylab 3 inflight data, the first point will be associated with Day 1.) Otherwise data from different flights will be displaced on the X-axis (time).

BUIL

The BUIL command allows the user to perform several types of analyses on the data and has the option to store appropriate results on a disk file to be retrieved for display or input to secondary analyses. The options given the user are shown in Figure 8.

The first option allows the user to ignore data points for analysis or display purposes. The additional instructions given for this option are also shown in Figure 8.

```

COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLO, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN IDEN IDEN IDEN IDEN
>BUIL
|
| DO YOU WISH INSTRUCTIONS?
|>Y
| THIS COMMAND ALLOWS THE USER TO PERFORM THE
| FOLLOWING FUNCTIONS UPON THE DATA
| 1 IGNORE DATA POINTS
| 2 LINEAR REGRESSION
| 3 PARABOLIC REGRESSION
| 7 TEST OF SIGNIFICANCE BETWEEN MEANS
| 9 STOP
|
| SPECIFY BUILD FUNCTION
|>1
|
| INPUT IDEN AND UP TO 4 TIMES OF DATA TO IGNORE
| INPUT GO WHEN FINISHED IGNORE INPUT.
| IDEN DAY HR MN SE DAY HR MN SE DAY HR MN SE DAY HR MN SE
|>UNARM 193. 194. 195. 196.
|>GO
|
| SPECIFY BUILD FUNCTION
|>9

```

Figure 8 BUIL Command

Where IDEN is the user defined name as previously mentioned, and where the times are specified under DAY, HR, MN, SE, only the day of the observation needs to be given.

The options 2 and 3 are the two regression functions which are presently available in the SIMDAS system (Reference 2). These functions, shown in Figure 7, provide a least-squares approximation to the coefficients of the chosen function. When one of the regression functions is chosen, the user is given the following query: "DO YOU WISH TO USE TIME AS THE INDEPENDENT VAR?". An answer of N will be followed by a request for two data IDEN's. The two units of data given must have at least two points which were taken on the same day as only points which are coincident in time are used in the analysis.

The tabular output given will be a regression of the two data units utilizing the data of first IDEN for the X coordinates. Included in the output are the coefficients of the equation of the chosen function, the data points which are used in the regression, and the corresponding points in the fitted equation.

If time is chosen as the independent variable only one variable IDEN is requested. The day of measurement is taken as the X-coordinate and the observation as the Y1 coordinate. Tabular output may be requested and the output of the fitted functions is stored on line under a new data IDEN specified by the user. These data in turn can be retrieved by the PLOT command and displayed graphically.

The other currently available option in the BUIL command is to test the difference between two means for significance. The only inputs required are the two data IDEN's. The method used is the T-test for paired observations which is discussed in Reference 2 report. The output of the program is the value calculated using the hypothesis that the samples come from the same normal population. The number of degrees of freedom are also given as output.

XPLO

The XPLO command allows the user to perform one of the two regression analyses shown in the BUIL command of Figure 8 and display the results graphically on the CRT. This same option exists with respect to using time for the independent variable as found in the BUIL command. Also, the restrictions of using only data IDEN's with at least two measurement days in common holds for the XPLO command. The plot that is created by using two independent units of data is called a scatter diagram. The scatter diagram is a plot which utilizes one variable as the X coordinate and the other as the Y coordinate. Corresponding points in time are shown with an 'X' on the plot and the fitted curve is plotted as a solid line using points generated by the regression programs. These plots make relationships between measurement or subjects much more evident to the user. Scale factors are established by the program and correspond to the maximums and minimums of the variables used. The number of divisions of the X and Y axes is determined by the program.

```

COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLD, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN IDEN IDEN IDEN IDEN
>FETC UVOLC
|
DO YOU WISH INSTRUCTIONS? (Y, N)
>YH
      DATA  FUNCTN/
IDEN  NO.  BASE  EXPER  MAN  PHASE  DAY
>UV2   1.  SL2   M073   C   PRE
>UV3           SL3
>UV4           SL4
>GO
COMMAND (FETC, SCRC, LOOK, DATA, PLOT, BUIL, XPLD, MODV, STOP) A4, 1X, 9 (A6, 1X)
COMM IDEN IDEN IDEN IDEN IDEN
>FETC
|
DO YOU WISH INSTRUCTIONS? (Y, N)
>N
      DATA  FUNCTN/
IDEN  NO.  BASE  EXPER  MAN  PHASE  DAY
>UNA   3.  SL3   M073   3   PRE
>UF    4.
>GO

```

Figure 9 Combine Function

MODV

The MODV command allows the user to modify one data name in the working area of the system by another data name in the working area. The output from this command is identical to the DATA command with the addition of a printout of the day, old value, new value, and new name. An example of output from the MODV command is given in Figure 10.

```

COMMAND<(FETC,SECR,LOOK,DATA,PLOT,BUIL,XPLO,MODV,STOP) A4,1X,9(A6,1X)
COMM IDEN IDEN IDEN IDEN IDEN
>MODV

```

THIS COMMAND ALLOWS THE USER TO MODIFY
ONE VARIABLE BY ANOTHER VARIABLE

```

DO YOU WISH INSTRUCTIONS? (Y,N)
>Y

```

ENTER DESIRED MODIFY FUNCTION

```

MFUN=1, VAR3=VAR1 + VAR2
    =2, VAR3=VAR1 - VAR2
    =3, VAR3=VAR1 * VAR2
    =4, VAR3=VAR1 / VAR2
    =5, VAR3=(VAR2-VAR1)/VAR1 * 100. (%)

```

.1

PLEASE LIST VAR1 TO BE MODIFIED BY VAR2 TO CREATE VAR3

VAR1	VAR2	VAR3			
>UNA	UK	UNAK			
.27216+06		209.00	66.000	275.00	UNAK
.27360+06		148.00	63.000	211.00	UNAK
.27792+06		117.00	58.000	175.00	UNAK
.27936+06		92.000	56.000	148.00	UNAK
.28080+06		118.00	68.000	186.00	UNAK
.28224+06		181.00	74.000	255.00	UNAK
.28368+06		125.00	42.000	167.00	UNAK
.28512+06		183.00	66.000	249.00	UNAK
.28656+06		214.00	51.000	265.00	UNAK
.28800+06		168.00	93.000	261.00	UNAK
.28944+06		97.000	72.000	169.00	UNAK
.29088+06		123.00	66.000	189.00	UNAK
.29232+06		111.00	59.000	170.00	UNAK
.29664+06		206.00	70.000	276.00	UNAK
.29808+06		129.00	73.000	202.00	UNAK

Figure 10 MODV Command

F. DESCRIPTION OF OUTPUT

See Reference 1 for example of SIMDAS output.

G. INTERNAL CHECKS AND EXITS

Input data is checked for validity before processing. IDEN's are checked against names in the FETC array. When buffer sizes are exceeded, an appropriate message is printed.

H. INDEPENDENT SUBROUTINES

All subroutines required by the SIMDAS are listed in Appendix A, the Program Listings.

I. SYSTEM SUBROUTINES

System subroutines used are:

SIGDM and STUD

J. COMPLETION OR FINAL CHECKOUT DATE

January 2, 1975

Revised Checkout - November 3, 1975

APPENDIX A

SKYLAB INTEGRATED MEDICAL DATA ANALYSIS SYSTEM

PROGRAM LISTING


```
DB6-603432*SMEDEP.MAPEL(0)
1      SEG MAIN
2      IN SYSS*RLIES. NSTCP$/JSC
3      LIB LEC*UR
4      LIB FDB-MSC*STATPACK
5      IN DIR
6      IN ABUF
7      IN BBUF
8      IN PLOTS
9      IN NAMS
10     IN PLTI
11     IN TKTRNX
12     SEG RTV*,(MAIN)
13     IN RETREV
14     SEG BUIL*,(MAIN)
15     IN BUILD
16     SEG REGR*,BUIL
17     IN REGRESS
18     SEG PLCT*,REGR
19     IN PLOT33
20     IN PLOT26
21     SEG MODV*,BUIL
22     IN MOD2V
23     END
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```
@PRT,S SMECEP.DIR(0)
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DB6-G03432*SMEDEP.DIR(O)
  1          CALL RETREV
  2          STOP
  3          END
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```
@PRT,S  SMEDEP.TIMP(C)
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DB6-603432*SMEDEP.TIMP(0)
1      SUBROUTINE TIMPRT(T, ID1, IH1, IM1, IS1)
2      C THIS ROUTINE COMPUTES TIME# FOR PRINTCLT.
3      C INPUT T (TIME IN MINS.).
4      C OUTPUT IC1=DAYS, IH1=HOURS, IM1=MINS, IS1=SECS.
5      TBIAS=0.
6      TM=T-TBIAS
7      C WRITE(6,555)T, TM
8      C 555 FORMAT(* ***)TBIAS CHECK*****,2F10.3)
9      IF(TM .GE. 0.) GO TO 1C
10     ID1 = ((TM - 1439.) / 1440.)
11     X1 = TM - (ID1 * 1440.)
12     GO TO 2C
13     1C ID1 = TM / 1440.
14     X1 = TM - (FLCAT(ID1) * 1440.)
15     2C IH1 = X1 / 60.
16     X1 = X1 - (FLCAT(IH1) * 60.)
17     IM1 = X1
18     IS1 = (X1 - FLOAT(IM1)) * 60.
19     RETURN
20     END

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```
@PRT,S SMEDEP.PAGE3(0)
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DB6-G03432*SMEDEP.PAGE3(C)

```
1      SUBROUTINE PAGE3
2      C THIS ROUTINE ASKS FOR HARD COPY UNTILL N IS ENTERED.
3      C THE PAGE IS THEN ERRASED AND CURSOR MCVCC TO PCME.
4      DATA INQ/'N  '/,IYO/'Y  '/
5      C 5 CALL GTOCH(34,1)
6      C
7      CALL BELL
8      WRITE(6,11)
9      11 FORMAT(' HARC COPY WANTED(Y,N)...')
10     8 READ(5,12,ERR=8) I
11     12 FORMAT(A4)
12     IF(I .EQ. INC) GO TO 25
13     IF(I .NE. IYO) GO TO 5
14     CALL HCCOPY
15     GO TO 5
16     C
17     25 CALL NEWPAG
18     RETURN
19     END
```

&PRT,S SMEDEP.LINES(O)

```

DB6-603432*SMEDEP.LINES(C)
1  SUBROUTINE LINES
2  COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3  * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4  * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5  * IEQ,AIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6  C
7  CC WRITE(6,6789)IFUNC,N,DELX
8  6789 FORMAT(1H,2I5,F10.4)
9  C SUBROUTINE FOR DETERMINING LEAST-SQUARES SOLUTIONS OF
10 C PARAMETERS FOR LINEAR EQUATIONS OF THE FORM
11 C
12 C  $Y = A + (B*X1) + (C*X2) + (D*X3),$ 
13 C
14 C WHERE A MAY BE SPECIFIED
15 C
16 C DETERMINE VALUES FOR COEFFICIENTS OF LINEAR EQUATIONS TO BE
17 C SOLVED.
18 C H(1,1) = AN
19 C H(1,2) = S(2)
20 C H(2,2) = S(3)
21 C H(2,1) = H(1,2)
22 C T(1) = S(1)
23 C T(2) = S(4)
24 C SOLVE FOR PARAMETERS.
25 C CALL SOLVES
26 C IF (IERR .EQ. 1) RETURN
27 C A = AH
28 C B = BH
29 C COMPUTED VALUES OF Y AND Y RESIDUALS
30 30 DO 40 I = 1, N
31 YC(I) = A + B*X1(I)
32 YDEV(I) = Y(I) - YC(I)
33 40 CONTINUE
34 RETURN
35 END

```

@PRT,S SMEDEP.PARA(0)

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DB6-603432*SMEDEP.PARA(0)
1  SUBROUTINE PARAS
2  COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3  * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4  * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5  * IEQ,N1V,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6
7  C
8  C
9  C
10 C
11 C
12 C
13 C
14 C
15 C
16 C
17 C
18 C
19 C
20 C
21 C
22 C
23 C
24 C
25 C
26 C
27 C
28 C
29 C
30 C
31 C
32 C
33 C
34 C
35 C
36 C
37 C
38 C
SUBROUTINE FOR DETERMINING LEAST-SQUARES SOLUTIONS OF
PARAMETERS FOR PARABOLIC EQUATIONS OF THE FORM

$$Y = A + (B * X) + (C * (X ** 2)),$$

WHERE A MAY BE SPECIFIED
H(1,1) = AN
H(1,2) = S(2)
H(1,3) = S(3)
H(2,1) = H(1,2)
H(2,2) = S(3)
H(2,3) = S(9)
H(3,1) = H(1,3)
H(3,2) = H(2,3)
H(3,3) = S(10)
T(1) = S(1)
T(2) = S(4)
T(3) = S(11)
SOLVE FOR PARAMETERS.
CALL SOLVES
IF (IERR .EQ. 1) RETURN
A = AH
B = BH
C = CH
COMPUTED VALUES OF Y AND Y RESIDUALS
30 DO 40 I = 1, N
YC(I) = A + (B * X1(I)) + (C * (X1(I) * X1(I)))
YDEV(I) = Y(I) - YC(I)
4C CONTINUE
RETURN
END

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@PRT,S SMEDEP.SOLVS(0)

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CB6-G03432#SMEDEP.SOLV(S)
1      SUBROUTINE SOLVES
2      COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6      DIMENSION U(12)
7
8      C      SUBROUTINE FOR SOLVING SIMULTANEOUS EQUATIONS
9
10     CC      WRITE(6,6789)IFUNC,A,DELX
11     6789    FORMAT(1H,2F5V,2I5,F10.4)
12     GO TO (30,30,40),NP
13     30     DENOM=(H(1,1)/H(1,2))-(H(2,1)/H(2,2))
14     IF(DENOM.EQ.0.)GO TO 6C
15     ANUM=(T(1)/H(1,2))-(T(2)/H(2,2))
16     AH=ANUM/DENOM
17     BH=(T(1)-(AH*T(1,1)))/H(1,2)
18     RETURN
19     40     U(1)=(T(1,1)*T(2,3))-(T(2,1)*T(1,3))
20     U(2)=(T(1,2)*T(2,3))-(H(2,2)*H(1,3))
21     U(3)=(T(1)*H(2,3))-(T(2)*H(1,3))
22     U(4)=(T(2,1)*H(3,3))-(H(3,1)*H(2,3))
23     U(5)=(H(2,2)*H(3,3))-(H(3,2)*H(2,3))
24     U(6)=(T(2)*H(3,3))-(T(3)*H(2,3))
25     DENOM = (U(1)/U(2))-U(4)/U(5)
26     IF(DENOM.EQ.0.)GO TO 6C
27     ANUM=(U(3)/U(2))-(U(6)/U(5))
28     AH=ANUM/DENOM
29     BH=(U(3)-(AH*U(1)))/U(2)
30     CH=(T(1)-(AH*T(1,1))-(BH*H(1,2)))/H(1,3)
31     RETURN
32     C      ERROR MESSAGE
33     60     WRITE(6,70)
34     70     FORMAT('0',//10X,'A ZERO DENOMINATOR EXISTS IN THE',
35     &' CALCCLATIONS OF SUBROUTINE SOLVE. THIS RUN HAS',
36     &' BEEN TERMINATED.')
37     RETURN
38     END

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@PRT,S SMEDEP.GOTOCH(0)

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LB6-603432*SMEDEP.GOTOCH(0)
1      SUBROUTINE GOTOCH(I,J)
2      C THIS ROUTINE MOVES THE A/N CURSOR TO LINE I COL J.
3      IY = 767 - ((I-1) * 21)
4      IX = J * 12
5      CALL MCVABS(IX,IY)
6      CALL ANMODE
7      RETURN
8      END
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@PRT,S SMEDEP.RETREV(0)
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DB6-G03432*SMEDEP.RETREV(C)
1 SUBROUTINE RETREV (LFLAG)
2 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(500,3),IEND,IENDG
3 COMMON/BBUF/RREC(18C),V(16C),VSLCP(261),ID(6C)
4 COMMON/NAMS/ITRSH(2),IHARD,IXMNV,IXMNC
5 EQUIVALENCE(RREC,B)
6 DIMENSION IDD(10),IICO(9),IEX(11),B(601),TLD(3)
7 DATA IICO/'FETC','LOOK','DATA','PLCT','STOP','SCRC','BUIL','XPLO',
8 'MCDV'/
9 DATA IEX/'M171','M092','M092A','M073','M11C','M110A','DUMMY'
10 'CEVR','EXEF','PRES'//
11 DIMENSION IIC(4),IPH(4),IDB(8)
12 DATA IIC/'C','S','P'//
13 DATA IF/'PRE','IN','POST','ALL'//
14 DATA ICB/'SL2','SL3','SL4','GUYT','GROD','LBNP',
15 'BUIL','MODV'//
16 DATA IGO/'GO','IBLNK'//,IALL/'ALL'//
17 DATA JYES/'Y','JNO/'N'//,TLD/145.,209.,320./
18 IF (GCT(1,1).NE.C.) GO TO 80
19 DEFINE FILE 1C(1000,19C,U,NREC),11(1000,19C,U,NREC)
20 DEFINE FILE 12(1000,190,U,NREC)
21 C CALL ERTRAN(6,'@ADD.TGF.')
22 CALL INITT(300)
23 IF=0
24 IFD=C
25 ISIF=1
26 WRITE(6,20)
27 20 FORMAT(' WANT HARD COPY QUESTION DURING PRINTOUT?(Y,N)')
28 40 READ(5,60,ERR=40) IHARD
29 60 FORMAT(A4)
30 80 CONTINUE
31 IEND=100
32 IENDG=500
33 IF (IHARD.NE.JYES.AND.IHARD.NE.JNO) GO TO 40
34 WRITE(6,90)
35 90 FORMAT('/ DO YOU WISH TO BIAS ALL DATA BASE TIMES',
36 ' BY LAUNCH CATES?(Y,N)')
37 1 READ(5,60)NTBAS
38 100 WRITE(6,120)
39 120 FORMAT(' COMMAND(FETC,SCRC,LOOK,DATA,PLOT,BUIL,XPLO,MCDV,STOP)')
40 1A4,1X,9(A6,1X)/* COMM IDEN',4(3X,'ICEN')
41 140 READ(5,160,ERR=140) ICOM,(ID(I),I=1,9)
42 160 FORMAT(A4,1X,9(A6,1X))
43 IF (ICOM.EQ.IALL) GO TO 1460
44 DO 180 I=1,9
45 I1=I
46 IF (ICOM.EQ.IICO(I)) GO TO 220
47 180 CONTINUE
48 WRITE(6,200)
49 200 FORMAT(' COMMAND NOT RECOGNIZED...TRY AGAIN')
50 GC TC 140
51 220 GO TO (260,158C,158C,238C,2440,240,240C,2420,2430), I1
52 C
53 C SCRATCH (SCRCH) COMMAND....
54 240 IFD=0
55 IEND=100
56 IENDG=500

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57      ISIF=1
58      IF=0
59      IXMNV=C
60      IXMNC=C
61      C      FETCH COMMAND
62      26C    CALL NEWPAG
63          NCOMB=ID(1)
64          IF (NCOMB.NE.IBLNK) NCB=IF+1
65          IF(IF.LT.ISIF)I1LST=1
66          WRITE (6,280)
67      28G    FORMAT (' DO YOU WISH INSTRUCTIONS?(Y,N)')
68      300    READ (5,320,ERR=300) IANS
69      320    FORMAT (A1)
70          IF (IANS.NE.JYES) GO TO 360
71          WRITE (6,340)
72      34G    FORMAT (' (IDEN=1-6 CHARS.TO IDENTIFY DATA)** (NO.=1.-18C. UNLESS
73          1FROM A MODEL)*/' (DATA BASE=SL2,SL3,SL4,GUYT,GROD,LBNP,HEAT,)'*/' I
74          2F DATA FROM A MODEL,IGNORE REST OF INPUT...*/' (EXPER=M171,MC92,MO
75          373,M11C,CEVR,'EXER,PRES)*/' (MAN C=COMMANDER,S=SCIENCE PILOT,'P
76          4=PILOT) (PHASE=PRE,IN,POST)*/' (DAY=IGNCRE UNLESS FUNCTCN',' EXER
77          5 OR PRES)*/' INPUT GC WHEN FINISHED FETCH/SCRCH',' INPUT',' , HIT
78          6CR IF WANT INSTRUCTIONS')
79      360    CONTINUE
80          WRITE (6,380)
81      380    FORMAT (' ',13X,'DATA FUNCTN/*/' IDEN NO. BASE', ' EXPER M
82          1AN PHASE DAY')
83      40C    I1=0
84          READ (5,420,ERR=860) IC(1),X,IC(5),(IC(I),I=2,4),X1
85      42C    FORMAT (A6,1X,F6.0,A4,3X,A5,2X,A1,3X,A4,3X,F8.0)
86          IF (ID(1).EQ.IG0) GO TO 1040
87          IF (ID(1).EQ.IBLNK) GO TO 260
88      C      FIND DATA BASE
89          IF (I1LST.EQ.C.AND.ID(5).EQ.IBLNK) GO TO 480
90          DO 440 I=1,7
91          IB=I
92          IF (ID(5).EQ.ICB(I)) GO TO 460
93      44C    CONTINUE
94          I1=3
95          GO TO 860
96      460    IBB=IB+9
97          IBS=IB
98      480    IF (I1LST.EQ.O.AND.X.EQ.O.)X=IFETC(IF,1)
99          I1=2
100         XNOR=0.
101         IZW=-268435456
102         IF (IBB.LE.12) GO TO 600
103      C      HERE IF DATA FROM MODEL OUTPUT.
104         READ (IBB,ERR=560,END=500) XNOW
105      50C    REWIND IBB
106         READ (IBB,ERR=560,END=560) XNOW
107      52C    READ (IBB,ERR=560,END=540) (B(JGEE),JGEE=1,4)
108         XNOR=XNOR+1.
109         IZW=B(1)*60.
110         IF (XACR.LT.1.5)X1=B(1)*60.
111         GO TO 520
112      540    REWIND IBB
113         IF (X.LT.1..OR.X.GT.XNOW) GO TO 860

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114      IF (X.GT.601.) GO TO 860
115      IE=11
116      IM=4
117      IP=4
118      GO TO 920
119 560    IM=IBB-9
120      WRITE (6,580) IBB,IBB,IDB(IM)
121 580    FORMAT (' UNIT',I3,' ERROR.', ' UNIT',I3,' SHOULD BE ASSIGNED TO DA
122      1TA BASE ',A4)
123      GO TO 900
124 600    IF (X.LT.1) GO TO 860
125      C      FIND EXPERIMENT.
126      IF (IE.EQ.11) I1LST=1
127      IF (I1LST.EQ.0.AND.ID(2).EQ.IBLNK) GO TO 640
128      DO 620 I=1,1C
129      IE=I
130      IF (ID(2).EQ.IEX(I)) GO TO 640
131 620    CONTINUE
132      I1=4
133      GO TO 860
134 640    IF (X.LT.181) GO TO 66C
135      IF (IE.NE.2.AND.IE.NE.5.AND.IE.NE.10) GO TO 860
136 660    IF (IE.LE.8) GO TO 780
137      C      HERE IF EXER OR PRES FUNCTION. MAKE SURE DATA NO,CORRECT.
138      IF (IE.EQ.9) GO TO 720
139      DO 680 I2=1,96,5
140 680    IF (X.EQ.I2) GO TO 780
141      DO 700 I2=151,281,5
142 700    IF (X.EQ.I2) GO TO 780
143      GO TO 860
144      DO 740 I2=1,41,5
145 740    IF (X.EQ.I2) GO TO 780
146      DO 760 I2=91,111,5
147 760    IF (X.EQ.I2) GO TO 780
148      GO TO 860
149 780    IF (X.GT.180.) IE=IE+1
150      IF (X.GT.180.) X=X-180.
151      C      FIND MAN.
152      IF (I1LST.EQ.(.AND.ID(3).EQ.IBLNK) GO TO 820
153      DO 800 I2=1,3
154      IM=I2
155      IF (ID(3).EQ.IIC(I2)) GO TO 820
156 800    CONTINUE
157      I1=5
158      GO TO 860
159      C      FIND PHASE.
160 820    IF (I1LST.EQ.(.AND.ID(4).EQ.IBLNK) GO TO 920
161      DO 840 I2=1,4
162      IP=I2
163      IF (ID(4).EQ.IPH(I2)) GO TO 920
164 840    CONTINUE
165      I1=6
166      C      HERE IF ERROR IN FETCH INPUT.
167 860    WRITE (6,880) I1
168 880    FORMAT (' **ERROR IN FLD',I2,' OF ABOVE FETCH INPUT**')
169 900    I1LST=1
170      GO TO 400

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171 C
172 C PUT FETCH INPUT IN IFETC ARRAY.
173 92C IF=IF+1
174 IF (IF.LE.IEND) GO TO 98C
175 WRITE (6,940)
176 940 FORMAT (' FETCH ARRAY FULL , WILL DO A GO...')
177 WRITE (6,960) IF,IEND
178 96C FORMAT (' IF=',I4,5X,'IEND=',I4)
179 IF=IEND
180 GO TO 1040
181 98C IF (IF.LE.1) GO TO 102C
182 I=IF-1
183 C MAKE SURE NOT DUPLICATE ID.
184 DO 100C I2=1,1
185 IF (IFETC(I2,2).NE.ID(1)) GO TO 100C
186 IF (IFETC(I2,2).NE.ACOMB) GO TO 100C
187 I1=1
188 IF=IF-1
189 GO TO 86C
190 100C CONTINUE
191 1020 IFETC(IF,1)=X
192 IFETC(IF,2)=IC(1)
193 IFETC(IF,3)=IE
194 IFETC(IF,4)=IM
195 IFETC(IF,5)=IP
196 IFETC(IF,6)=IEB
197 IFETC(IF,7)=X1
198 IFETC(IF,8)=IZW
199 IFETC(IF,9)=XNOR
200 I1LST=C
201 GO TO 400
202 C
203 C GO INPUT ...
204 C HERE WHEN TO SEARCH DISK FILE FOR DATA REQUESTED IN IFETC ARRAY.
205 1040 DO 1440 I=1,3
206 IB=I+9
207 J=ISIF-1
208 IF (NTBAS.EQ.JYES) TBIAS=-TLD(I)*144C.
209 C SEE IF ANY DATA FROM THIS SKYLAB WANTED.
210 1060 J=J+1
211 IF (.GT.IF) GO TO 144C
212 IF (IFETC(J,6).NE.IB) GO TO 1060
213 C HERE WHEN FOUND A DATA WANTED IN THIS SKYLAB DATA BASE
214 NREC=1
215 C READ FILE BOOK...
216 READ (IB*NREC,ERR=1400) (ID(I1),I1=1,8)
217 NREC=IC(1)+2
218 JDAY=IC(2)+2
219 LSDAY=ID(5)+1
220 IF ((I+1).EQ.ID(7)) GO TO 1100
221 IZ=I+1
222 WRITE (6,108C) IB,IZ
223 1080 FORMAT (' **ERROR , UNIT ',I2,' DOESNT HAVE SL ',I1,' DATA**')
224 GO TO 1440
225 C
226 C GO THROUGH FILE DAY STARTING AT EARLIEST ENTRY TO LAST ENTRY.
227 110C LEADC=NREC

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228      READ (IB*NREC,ERR=1400) (ID(I1),I1=1,60)
229      NNREC=ID(8)+2
230
231      C      GO THROUGH IFETC ARRAY TO SEE IF ANY DATA WANTS THIS DAYS DATA.
232      C      COMPUTE INDEX OF MISSION PHASE WORD IN DAY RECORD.
233      1120  IF (IFETC(J,6).NE.IB) GO TO 1340
234      KW=IFETC(J,3)
235      IF (KW.GT.8) KW=KW-8
236      IW=((KW-1)*6)+9
237      Iw=Iw+(((IFETC(J,4)-1)*2)
238      IF (ID(IW).EQ.-1) GO TO 1340
239      IF (ID(IW+1).LT.0) GO TO 1340
240      IF (IFETC(J,5).EQ.4) GO TO 1130
241      IF ((ID(IW)/100).NE.IFETC(J,5)) GO TO 1340
242      1130  NREC=IC(IW+1)+LSDAY+1
243      C      READ FILE EXPERMNT
244      READ (IB*NREC,ERR=1400) (IDD(I1),I1=1,10), (RREC(I1),I1=1,180)
245      C      DO VALIDITY CK ON THIS EXPERMNT RECORD COMPARED TO FILE DAY REC.
246      I1=1
247      IF (IDD(1).NE.ID(1)) GO TO 1360
248      I1=2
249      IF (IDD(7).NE.KW) GO TO 1360
250      I1=3
251      IF (IDD(8).NE.IFETC(J,4)) GO TO 1360
252      C      I1=4
253      C      IF (IDD(9).NE.ID(IW)) GO TO 8C
254      I1=5
255      IF (IDD(10).NE.(I+1)) GO TO 1360
256      C      GET DATA IN FILE EXPERMNT FOR THIS INPUT
257      IR=IFETC(J,1)
258      IF (IFETC(J,3).LE.8) GO TO 1140
259      IF (IFETC(J,8).NE.-268435456) GO TO 1340
260      IF (IFETC(J,7).NE.IDD(1).AND.IFETC(J,7).NE.0) GO TO 1340
261      IF ((IFD+5).GT.IENDG) GO TO 1160
262      IFD=IFD+1
263      GO TO 1200
264      1140  IFC=IFC+1
265      IF (IFC.LE.IENDG) GO TO 1260
266      C      HERE IF REACHED LIMIT OF GOT ARRAY
267      1160  WRITE (6,1180) IFETC(J,1)
268      1180  FORMAT (' BUFFER FOR SL DATA FULL.*/' WILL CONTINUE WITH ALL IDENT
269      1S ENTERER BEFORE ',A6)
270      IFETC(J,8)=-268435456
271      GO TO 100
272
273      C
274      1200  I2=1
275      I3=1
276      I4=5
277      IF (IFETC(J,3).GT.9) GO TO 122C
278      I2=5
279      I3=5
280      I4=25
281      1220  IFETC(J,7)=IDD(1)
282      IFETC(J,9)=5
283      IFETC(J,8)=IFC
284      1240  GOT(IFC,1)=(IDD(1)*144C.)+I2+TBIAS
      GOT(IFC,2)=RREC(IR)

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285 C PUT NEXT 4 DATA ASSOCIATED WITH THIS VARIABLE IN GOT.
286 I2=I2+I3
287 IF (I2.GT.I4) GO TO 1340
288 GOT(IFC,3)=IFD+1
289 IF(IFETC(J,3).GT.8.AND.IFETC(J,3).LT.12)IR=IR+1
290 IFD=IFC+1
291 GO TO 1240
292 C HERE IF NOT EXEC OR PRES FUNCTION.
293 1260 GOT(IFC,1)=IDC(1)*1440.+TBIAS
294 GOT(IFD,2)=RREC(IR)
295 IF (IFETC(J,8).NE.-268435456) GO TO 1280
296 C HERE IF 1ST ENTRY IN GOT FOR THIS DATA.
297 IFETC(J,8)=IFD
298 IFETC(J,9)=1
299 GO TO 1340
300 C HERE IF NOT 1ST ENTRY IN GOT FOR THIS VARIABLE.
301 1280 I2=IFETC(J,9)
302 IFETC(J,9)=IFETC(J,9)+1
303 I1=IFETC(J,8)
304 1300 I2=I2-1
305 IF (I2.EQ.0) GO TO 1320
306 I1=GCT(I1,3)
307 GO TO 1300
308 1320 GOT(I1,3)=IFC
309 C
310 C
311 1340 J=J+1
312 IF (J.LE.IF) GO TO 112C
313 IF (LENDD.EQ..J.DAY) GO TO 1440
314 NREC=NREC
315 J=ISIF
316 GO TO 1100
317 C
318 C
319 1360 I2=NREC-LSDAY-1
320 WRITE (6,138C) I1,LENDD,I2,IFETC(J,2)
321 1380 FORMAT (' **DETECTED AMBIGUITY',I2,' BETWEEN REC.',I5,' OF DAY'/'
322 1 AND REC.',I5,' OF EXPERMNT WHEN ', 'PROCESSING ',A6)
323 GO TO 1340
324 C
325 C
326 1400 WRITE (6,1420) NREC,IB
327 1420 FORMAT (' **ERROR WHEN READING REC.',I5,' OF FILE', ' CN UNIT',I3/'
328 1 RLN ABORTED')
329 RETURN
330 C
331 1440 CONTINUE
332 GO TO 1560
333 C ALL COMMAND TO CLMP TABLES.....
334 1460 DO 150C I=1,IF
335 WRITE (6,148C) (IFETC(I,I1),I1=1,9)
336 1480 FORMAT (' ',I7,1X,A6,5I7,I12,I7)
337 1500 CONTINUE
338 DO 154C I=1,IFC
339 WRITE (6,152C) (GOT(I,I1),I1=1,3),I
340 1520 FORMAT (' ',3F12.3,I7)
341 1540 CONTINUE

```

```

342      GO TO 100
343 1560  ISIF=IF+1
344      C
345      C  IGNO REMOVES ALL NEGATIVE NUMBERS FROM THE SIGMA3 D.B.
346      C
347      IF (IBB.LE.12) CALL IGNO
348      IF (NCCMB.EQ.IBLNK) GO TO 100
349      IF=IF+1
350      ISIF=IF+1
351      IFETC(IF,1)=IFETC(NCB,1)
352      IFETC(IF,2)=N(OMB
353      IFETC(IF,3)=IFETC(NCB,3)
354      IFETC(IF,4)=IFETC(NCB,4)
355      IFETC(IF,5)=IFETC(NCB,5)
356      IFETC(IF,6)=IFETC(NCB,6)
357      IFETC(IF,7)=IFETC(NCB,7)
358      IFETC(IF,8)=IFETC(NCB,8)
359      IFETC(IF,9)=C
360      IFM1=IF-1
361      DO 1570 I=NCB,IFM1
362      IFETC(IF,9)=IFETC(IF,9)+IFETC(I,9)
363
364 1570  CONTINUE
365      J=J+1
366      JK=IF-NCB
367      NNX=IFETC(NCB,8)
368 1571  JK=JK-1
369      IF (JK.LT.1) GO TO 100
370 1572  NNXS=NNX
371      NNX=GOT(NNX,3)
372      IF (NNX.GT.0) GO TO 1572
373      NCB=NCB+1
374      GOT(NNXS,3)=IFETC(NCB,8)
375      NNX=IFETC(NCB,8)
376      GO TO 1571
377      C
378      C  GO TO 100
379      C
380      C  LOOK COMMAND OR DATA COMMAND.....
381 1580  IP=50
382      IW2=0
383      CALL NEWPAG
384      DO 236C I=1,9
385      IF (ID(I).EQ.IALL) GO TO 1640
386      IF (ID(I).EQ.IBLNK) GO TO 100
387      DO 160C J=1,IF
388      J1=J
389      IF (ID(I).EQ.IDB(8)) GO TO 2350
390      IF (ID(I).EQ.IFETC(J,2)) GO TO 166C
391 1600  CONTINUE
392      IER=I
393 1610  IP=IP+1
394      IF (IP.GT.28) CALL RETPGE (IP,IHARD,NC)
395      WRITE (6,162C) ID(IER)
396 1620  FORMAT (' ',A6,' NOT RECOGNIZED.')
397      GO TO 2280
398
399 1640  J1=1
400      C  HERE WHEN FOUND VARIABLE LOOKING FOR IN IFETC...
401 1660  I1=IFETC(J1,3)

```

```

399      I2=IFETC(J1,4)
400      I3=IFETC(J1,5)
401      I4=IFETC(J1,6)-9
402      IF (I4.LT.1) I4=8
403      IW2=IW2+1
404      IF (NTBAS.EQ. YES) TBIAS=-TLD(I4)*1440.
405      IP=IP+1
406      IF (IP.GT.28) CALL RETPGE (IP,IHARD,JNO)
407      IF (IFETC(J1,6).LE.12) GO TO 1740
408      C   HERE IF DATA FROM A MODEL.
409      IF (IFETC(J1,5).LE.0) GO TO 1760
410      IR=IFETC(J1,1)
411      IB=IFETC(J1,6)
412      IF (IB.EQ.16) IR=IR*2
413      REWIND IB
414      XNOR=IFETC(J1,9)
415      READ (IB,ERR=1700) XNOW
416      X=-50000000.
417      X1=50000000.
418      R1=-9999900.
419      IN=0
420      1680 IN=IN+1
421      READ (IB,ERR=1700,END=1700) (B(I9),I9=1,IR)
422      IF (IB.EQ.16) B(1)=B(IR-1)
423      IF (R1.LT.-9999895.) R1=B(1)
424      R2=B(1)
425      IF (B(IR).LT.X1) X1=B(IR)
426      IF (B(IR).GT.X) X=B(IR)
427      IF ((IN+1).LE.IFIX(XNOR)) GO TO 1680
428      CALL TIMPRT(R1,ND1,NH1,NM1,NS1)
429      CALL TIMPRT(R2,ND2,NH2,NM2,NS2)
430      IF (ICOM.EQ.IICO(3).AND.IW2.NE.1) IP=3C
431      GO TO 2060
432      1700 IN=IFETC(J1,6)-9
433      WRITE (6,1720) IDB(IN),IFETC(J1,2)
434      1720 FORMAT (' ERR READING DATA BASE ',A4,' FOR ',A6)
435      GO TO 2280
436      C
437      1740 IF (IFETC(J1,8).NE.-268435456) GO TO 1800
438      1760 WRITE (6,1780) IFETC(J1,2),IFETC(J1,1),IDB(I4),IEX(I1),IIC(I2),IPH
439      1(I3)
440      FORMAT (' ',A6,I4,1X,A4,3X,A5,3X,A1,3X,A4,5X,'NO DATA')
441      C**** THIS WILL FIX GOT WHEN NO DATA OCCURS BETWEEN
442      C**** TWO FETC VARIABLES WITH DATA ON COMBINE
443      C**** LOOK/DATA *NCDATA VARI* MUST BE CALLED TO FIX
444      IF (NCCMB.EQ.IBLNK) GO TO 2280
445      C   NCB=NCB+1
446      IU=0
447      1785 IU=IU+1
448      IUM=J1-IU
449      C   IF (IUM.LT.1) IFETC(NCB-1,8)=IFETC(NCB,8)
450      C   IF (IUM.LT.1) GO TO 2280
451      IF (IFETC(IUM,9).LT.1) GO TO 1785
452      NSK=IFETC(IUM,8)
453      NSKL=IFETC(IUM,9)
454      DO 1790 IU=1,NSKL
455      NXG=NSK

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```

456     NSK=GOT(NSK,3)
457     IF (NSK.LT.1) GOT(NXG,3)=IFETC(J1+1,8)
458 1790  CONTINUE
459     GO TO 2280
460 C     HERE WHEN THERE IS DATA FOR THIS VARIABLE IN GOT....
461 1800  IR=IFETC(J1,8)
462     IN=IFETC(J1,9)
463     X=-50000000.
464     X1=50000000.
465     J=1
466     AV=0.
467 1820  IF (GOT(IR,2).GT.X)X=GOT(IR,2)
468     IF (GOT(IR,2).LT.X1)X1=GOT(IR,2)
469     RREC(J)=GOT(IR,1)
470     RREC(J+1)=GOT(IR,2)
471     AV=AV+GOT(IR,2)
472     J=J+2
473     IN=IN-1
474     IF (IN.LE.0) GO TO 184C
475     IF (GOT(IR,3).GT.0.) GO TO 1830
476 C     IF (NCOMB.EQ.IFETC(J1,2)) IR=IR+1
477 C     IF (NCOMB.EC.IFETC(J1,2) .AND. IR.GT.IFETC(J1,9)) IR=IR-1
478     IR=IR+1
479     GO TO 1820
480 1830  IR=GOT(IR,3)
481     GO TO 1820
482 1840  CALL TIMPB (RREC(1),TBIAS,ND1,NH1,NP1,NS1)
483     CALL TIMPB (RREC(J-2),TBIAS,ND2,NH2,NP2,NS2)
484     NDF=IFETC(J1,9)-1
485     IF (NDF.LT.1) GO TO 2000
486     SD=0.
487     AV=AV/IFETC(J1,9)
488     IN=IFETC(J1,9)
489     IR=IFETC(J1,8)
490 1860  SC=SC+(GOT(IR,2)-AV)**2
491     IN=IN-1
492     IF (IN.LE.0) GO TO 1880
493     IF (GOT(IR,3).GT.0.) GO TO 1870
494     IR=IR+1
495     GO TO 1860
496 1870  IR=GOT(IR,3)
497     GO TO 1860
498 1880  SD=SQRT(SD/(IFETC(J1,9)-1))
499 C     T TEST CALUCATION....
500     R1=.95
501     NDF=IFETC(J1,9)-1
502     IF (NDF.LT.1) GO TO 2000
503     R2=2.
504     CY=STLC(R2,NDF)
505     IF (R1-CY) 194C,1920,1900
506 1900  RX1=2.C1
507     GO TO 1960
508 1920  TTEST=2.
509     GO TO 1980
510 1940  RX1=1.99
511 1960  TTEST=RX1
512     RYY=STLC(TTEST,NDF)

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513      IF (ABS(RYY-R1).LE..001) GO TO 1960
514      RX1=TTEST+(TTEST-R2)*(R1-RYY)/(RYY-CY)
515      R2=TTEST
516      OY=RYY
517      GO TO 1960
518 1980   IZ=0
519      GO TO 2020
520 2000   IWFL=2
521 2020   CONTINUE
522      IF (IW2.EQ.1) GO TO 2040
523      IF (ICOM.EQ.IICO(3)) IZ=IFETC(J1,9)
524      IF ((IZ+IP).GT.28) CALL RETPGE (IP,IHARD,JNO)
525 2040   IP=IP+1
526 2060   IP=IP+1
527      IF (IB.EQ.16) I1=8
528      IF (IP.GT.28) CALL RETPGE (IP,IHARD,JNO)
529      WRITE (6,2080) IFETC(J1,2),IFETC(J1,1),IDB(I4),IEX(I1),IIC(I2),IPH
530 1(I3),ND1,NH1,NM1,NS1,ND2,NH2,NM2,NS2,IFETC(J1,9)
531 2080   FFORMAT (' ',A6,I4,1X,A4,3X,A5,3X,A1,3X,A4,I5,3I3,I5,3I3,I6)
532      WRITE (6,2100) X,X1
533 2100   FORMAT (' ',9X,G13.3,'=HIGH VALUE',2X,G13.3,'=LOW VALLE')
534      IF (IFETC(J1,6).GT.12) GO TO 2200
535      IF (IWFL.NE.2) GO TO 2140
536      WRITE (6,2120)
537 2120   FORMAT (' ONLY ONE PT. NO STATISTICS GENERATED')
538      IWFL=0
539      GO TO 2180
540 2140   CONTINUE
541      WRITE (6,2160) AV,SD,TTEST
542 2160   FORMAT (' ',2X,G13.4,'=MEAN ',2X,G13.4,'=STN.DEV.',F10.6,'=T AT .
543 195')
544 2180   CONTINUE
545 2200   IF (ICCM.NE.IICO(3)) GO TO 2280
546 C HERE IF DATA COMMAND.....
547      IF (IFETC(J1,6).GT.12) GO TO 2300
548      I6=1
549 2220   IF (RREC(I6).LT.-9999899.) GO TO 2270
550      IF (ID(1).EQ.IDB(8)) CALL MCDVAL(RREC(I6),MFUN,NVALN,VK,J1)
551      CALL TIMPB (RREC(I6),IBIAS,ND1,NH1,NM1,NS1)
552      CALL MCFR (ND1,I4,I3,I2)
553      IP=IP+1
554      IF (IP.LE.28.CR.IHARD.EQ.JNO) GO TO 2240
555      CALL RETPGE (IP,IHARD,JNO)
556 2240   WRITE (6,2260) RREC(I6+1),ND1,NH1,NM1,NS1,I4,I3,I2
557 2260   FORMAT (' ',5X,G15.4,I6,'D',I3,'H',I3,'M',I3,'S',2X,A4,I3,I5)
558 2270   I6=I6+2
559      IF (I6.LT.J) GO TO 2220
560 2280   IF (ID(1).NE.IALL) GO TO 2360
561      J1=J1+1
562      IF (J1.LE.IF) GO TO 1660
563      GO TO 100
564 C HERE IF DATA FROM A MODEL.
565 2300   REWIND IB
566      READ (IB,ERR=1700) X
567      IN=IFETC(J1,9)
568      DO 2340 I9=1,IN
569      READ (IB,ERR=1700,END=1700) (B(I1),I1=1,IR)

```

```

570      IF (I6.EQ.16) B(1)=B(IR-1)
571      B(2)=B(IR)
572      IF (B(1).LT.-9999899.) GO TO 2340
573      IF (ID(1).EQ.IDB(8)) CALL MCDVAL(B(1),MFUN,NVALN,VK,J1)
574      CALL TIMPRT(B(1),NC1,NF1,NM1,NS1)
575      IP=IP+1
576      IF (IP.LE.28.CR.IHARD.EQ.JNO) GO TO 2320
577      CALL RETPGE (IP,IHARD,JNO)
578 2320  WRITE (6,2260) B(IR),ND1,NH1,NM1,NS1
579 2340  CONTINUE
580      GO TO 2280
581 2350  DO 2353 JX=1,IF
582 2353  IF (ID(2).EQ.IFETC(JX,2)) GO TO 2354
583      IER=2
584      GO TO 1610
585 2354  WRITE (6,2351)
586 2351  FCRMAT(//' REQUEST TO MODIFY DATA ACCEPTED, '/
587 1 ' ENTER MODIFY FUNCTION (MFUN), NEW VARIABLE NAME (NVALN), '/
588 2 ' AND CONSTANT (VK) '/' MFUN=1, NEW=OLD + VK '/
589 3 ' =2, NEW=OLD - VK '/' =3, NEW=OLD * VK '/
590 4 ' =4, NEW=OLD / VK '/
591 5 ' =5, NEW=(OLD-VK)/VK * 100. (X) '/
592 6 ' =6, NEW=OLD**2 '/' =7, NEW=LN(OLD) '/
593 7 ' =8, BIAS TIME BY VK(DAYS) '/' (I1/A6/E12.5) '/
594      READ(5,2352)MFUN,NVALN,VK
595 2352  FCRMAT(I1/A6/E12.5)
596 2360  CONTINUE
597      GO TO 100
598  C PLOT COMMAND.....
599 2380  CALL PLOT26
600      GO TO 100
601  C
602  C IGNOR COMMAND
603 2400  CALL BLILD
604      GO TO 100
605 2420  CALL REGRES
606      GO TO 100
607 2430  CALL MCC2V
608      GO TO 100
609 2440  STOP
610      END

```

@PRT,S SMEDEP.IGNO(O)

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DB6-GC3432*SMECEP.IGNO(O)
1      SUBROUTINE IGNO
2      COMMON/ABUF/IF,IFD,ISIF,IFETC(10C,9),GCT(5CC,3)
3      DO 40 IRR=1,IF
4      IND = IFETC(IRR,9)
5      IG = IFETC(IRR,8)
6      IGX = IG
7      29 IF(GCT(IG,2)+2222.)99,30,99
8      99 CONTINUE
9      IGO=IG
10     98 CONTINUE
11     IG = GCT(IG,3)
12     IND = IND - 1
13     IF(IND .GT. C) GO TO 29
14     GO TO 40
15     30 IFETC(IRR,9) = IFETC(IRR,9) - 1
16     IF(IFETC(IRR,9) .GT. 0) GO TO 33
17     IFETC(IRR,8) = -268435456
18     GO TO 38
19     33 IF(IGX .EQ.IG) IFETC(IRR,8) = GOT(IG,3)
20     IF(IGX .NE.IG) GOT(IGO,3) = GOT(IG,3)
21     38 GOT(IG,1) = -9999900.
22     IGX = IFETC(IRR,8)
23     GO TO 98
24     40 CONTINUE
25     RETURN
26     END

```

```

&PRT,S  SMECEP.RETPG2(G)

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```

DB6-603432*SMEDEP.RETPG2(0)
  1 SUBROUTINE RETPGE(IP,IHARD,JNO)
  2 IF(IP.GT.49) GO TO 150
  3 IF(IHARD.EQ.JNO) RETURN
  4 CALL PAGE3
  5 150 WRITE(6,151)
  6 151 FORMAT(' ',11X,'DATA FUNCTN/',12X,'...START...',
  7 1 '...STOP...',NO.*/' IDEN NO. BASE EXPER',
  8 2 ' MAN PHASE',2(' DAY HR MN SE'),' DATA')
  9 IP = 2
 10 RETURN
 11 END

```

```

@PRT,S SMEDEP.MCDVAL(0)

```

```

DB6-603432*SMEDEP.MODVAL(0)
1  SUBROUTINE MODVAL(DATA,MFUN,NVALN,VK,J1)
2  COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(500,3),IENC,IENDG
3  REAL DATA(2)
4  IF (MFLN.LT.1 .OR. MFUN.GT.8) GO TO 500
5  GO TO (10,20,30,40,50,60,70,80), MFLN
6  10  DATAN=DATA(2)+VK
7      GO TO 100
8  20  DATAN=DATA(2)-VK
9      GO TO 100
10 30  CATAN=DATA(2)*VK
11     GO TO 100
12 40  DATAN=DATA(2)/VK
13     GO TO 100
14 50  DATAN=(DATA(2)-VK)/VK * 100.
15     GO TO 100
16 60  CATAN=DATA(2)**2
17     GO TO 100
18 70  DATAN=ALOG(DATA(2))
19     GO TO 100
20 80  DATAN=DATA(1)+VK*1440.
21 100 CONTINUE
22  WRITE(6,110)DATA,DATAN,NVALN
23  FORMAT(3G15.5,5X,A6)
24 110 IF (NVALN.EQ.NVALL) GO TO 140
25     NVALL=NVALN
26     NC=0
27     IF=IF+1
28     ISIF=ISIF+1
29     IF (IF.LE.IENC) GO TO 130
30     WRITE(6,120)
31 120  FORMAT(//' *** FETCH ARRAY FULL')
32     IF=IF-1
33     GO TO 520
34 130  IFETC(IF,1)=IFETC(J1,1)
35     IFETC(IF,2)=NVALN
36     IFETC(IF,3)=IFETC(J1,3)
37     IFETC(IF,4)=IFETC(J1,4)
38     IFETC(IF,5)=IFETC(J1,5)
39     IFETC(IF,6)=IFETC(J1,6)
40     IF (IFETC(IF,6).GT.12) IFETC(IF,6)=9
41     IFETC(IF,7)=IFETC(J1,7)
42     IFETC(IF,8)=IFC+1
43     IFETC(IF,9)=IFETC(J1,9)
44 140  IFD=IFC+1
45     IF (IFC.LE.IENDG) GO TO 160
46     WRITE(6,150)
47 150  FORMAT(//' *** DATA BUFFER FULL')
48     IFC=IFC-1
49     GO TO 520
50 160  GOT(IFC,1)=DATA(1)
51     IF (MFLN.EQ.7) GOT(IFD,1)=DATAN
52     GOT(IFD,2)=DATAN
53     GOT(IFC,3)=0.
54     NC=NC+1
55     IF (NC.LT.IFETC(IF,9)) GOT(IFD,3)=IFC+1
56     RETURN

```

```
57      500  WRITE(6,510)MFUN
58      510  FORMAT(//'*** INCCRRECT MCDIFY FLNCTION',I7)
59      520  WRITE(6,530)
60      530  FORMAT(' REQUEST TO MODIFY DATA DENIED'//)
61      RETURN
62      END
```

@PRT,S SMEDEP.MCYR(0)

GB6-G03432*SMEDEP.MDYR(0)

```
1 SUBROUTINE MDYR(ITT,IM,ID,IY)
2 C INPUT.. ITT=DAY(1/1/73=1,12/30/72=-1 ETC.)
3 C THIS ROUTINE RETURNS IM=ALPHA MONTH, IC=INTEGER DAY ,
4 C IY=INTEGER YEAR.
5 C THIS ROUTINE WILL GENERATE DATES FROM 1960 ON....
6 DIMENSION M(12),MA(12)
7 DATA M/31,28,31,30,31,30,31,31,30,31,30,31/
8 DATA MA/'JAN ','FEB ','MAR ','APR ','MAY ','JUNE',
9 1 'JULY','AUG ','SEPT','OCT ','NOV ','DEC '/
10 IT = ITT + 4749
11 I = IT / 1461
12 IL = IT - (I * 1461)
13 IZ = 366
14 DO 1C I1 = 1,4
15 I11 = I1
16 ID = IL
17 IL = IL - IZ
18 IF(IL .LE. 0) GO TO 15
19 IZ = 365
20 1C CONTINUE
21 C FIND YEAR.....
22 15 IY = (I*4) + I11 + 1959
23 C FIND MONTH.....
24 M(2) = 28
25 IL = IY / 4
26 IF(IY .EQ. (IL*4)) M(2) = 29
27 DO 20 I = 1,12
28 I1 = I
29 IL = IC
30 ID = IC - M(I)
31 IF(IC .LE. 0) GO TO 25
32 2C CONTINUE
33 25 IM = MA(I1)
34 ID = IL
35 RETURN
36 END
```

@PRT,S SMEDEP.RSUM2(0)


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DB6-603432*SMEDEP.RSUM2(G)
1  SUBROUTINE RSLM2
2  COMMCK/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YCEV(85),
3  * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4  * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5  * IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,CELX,N,IXXY,IRR,IRI,JYES
6  COMMON/PLTI/XXZ(170),XZZ(100),SMY,YHING
7  SUBRCUTINE FCF ORDERING DATA AND OBTAINING VARIOUS SUMS AND
8  SSTDARD DEVIATIONS OF INPUT DATA
9
10 C
11 C ** CLEAR COMMON BLOCK
12     ISOLVE=0
13     NOTE=0
14     IERR=0
15     NG=50
16     DO 1 I=171,55(
17 1 X1(I)=0.
18 C
19 C ** FIND THE SMALLEST Y
20 C
21     YHI=Y(1)
22     SMY=Y(1)
23     DO 3 J=2,N
24     IF(SMY.LE.Y(J)) GOTO 3
25     SMY=Y(J)
26 3 CONTINUE
27     DO 33 J=2,N
28     IF(YHI.GE.Y(J)) GOTO 33
29     YHI=Y(J)
30 33 CONTINUE
31 C
32     IF(SMY.GT.0.0) GO TO 5
33     SHIFTY=(1.0-SMY)
34 C
35 C ** SHIFTING THE Y-AXIS
36 C
37     DO 4 K=1,N
38     Y(K)=Y(K)+SHIFTY
39 4 CONTINUE
40     GO TO 6
41 5 SHIFTY=0.0
42 C
43 C ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
44 6 NK=N-1
45     DO 9 I=1,NK
46     IN=I+1
47     DO 8 J=IN,N
48     IF(X1(I).LE.X1(J)) GOTO 8
49     TEMP=X1(I)
50     X1(I)=X1(J)
51     X1(J)=TEMP
52     TEMP=Y(I)
53     Y(I)=Y(J)
54     Y(J)=TEMP
55 8 CONTINUE
56 9 CONTINUE

```

```

57
58 C
59 DO 132 I=1,85
60 XXZ(I)=X1(I)
61 XXZ(85+I)=Y(I)
62 C
63 C577 WRITE(6,577)XXZ(I),XXZ(85+I)
64 132 FORMAT(1H,2(F10.5,5X))
65 CONTINUE
66 IF(X1(1).GT.0.0)GO TO 11
67 SHIFTX=(1.0-X1(1))
68
69 C
70 C ** SHIFTING THE X-AXIS
71 C
72 DO 10 K=1,N
73 X1(K)=X1(K)+SHIFTX
74 10 CONTINUE
75 GO TO 12
76 11 SHIFTX=0.0
77
78 C
79 12 NIV=1
80 NP=2
81 IF(IEQ.EQ.2.OR.IEQ.EQ.4) NP=NP+1
82 AN=FLOAT(N)
83
84 C
85 C OBTAIN VARIOUS SUMS OF INPUT DATA.
86 DO 13 I=1,N
87 YL(I) = ALOG(Y(I))
88 X1L(I) = ALOG(X1(I))
89 X1SQ = X1(I) * X1(I)
90 S(1) = S(1) + Y(I)
91 S(2) = S(2) + X1(I)
92 S(3) = S(3) + X1SQ
93 S(4) = S(4) + (X1(I) * Y(I))
94 IF (IEQ .EQ. 1) GO TO 13
95 S(5) = S(5) + YL(I)
96 S(6) = S(6) + X1L(I)
97 S(7) = S(7) + (X1L(I) * YL(I))
98 IF (IEQ .NE. 2) GO TO 13
99 S(8) = S(8) + (X1L(I) * X1L(I))
100 S(9) = S(9) + (X1SQ * X1(I))
101 S(10) = S(10) + (X1SQ * X1SQ)
102 S(11) = S(11) + (X1SQ * Y(I))
103 13 CONTINUE
104
105 C
106 C CALCULATE MEANS OF INPUT DATA.
107 DO 14 J=1,2
108 VMEAN(J)=S(J)/AN
109 14 CONTINUE
110
111 C
112 C CALCULATE SUMS OF THE INPUT DATA ABOUT THEIR MEANS.
113 DO 15 K=1,N
114 S(12)=S(12)+(Y(K)-VMEAN(1))**2
115 15 CONTINUE
116
117 C
118 XCIF=(X1(N)-X1(1))/N
119
120 C
121 IF(IEQ.GE.1.AND.IEQ.LE.6)GO TO 533
122 WRITE(6,532)
123 532 FORMAT(1H,' ERROR N IEQ')

```

```

114      RETURN
115      533 GO TO (20,30,70,70,70,70),IEQ
116      20 CALL LINES
117          XP=X1(1)
118          DO 21 I=1,2
119          XZZ(I)=XP-SHIFTX
120          XZZ(NG+I)=(A+E*XP)-SHIFTY
121          XP=XP+XDIF*NG
122          21 CONTINUE
123          RETURN
124          30 CALL PARAS
125          XP=X1(1)
126          DO 31 I=1,NG
127          XZZ(I)=XP-SHIFTX
128          XZZ(NG+I)=A+B*XP+C*XP*XP-SHIFTY
129          XP=XP+XDIF
130          31 CCNTINLE
131          RETURN
132      C 40 CALL PCWRS
133      C      XP=X1(1)
134      C      DO 41 I=1,NG
135      C      XZZ(I)=XP-SHIFTX
136      C      XZZ(NG+I)=A*XP**B-SHIFTY
137      C      XP=XP+XDIF
138      C 41 CONTINUE
139      C      RETURN
140      C 50 CALL ASYMS
141      C      XP=X1(1)
142      C      DO 51 I=1,NG
143      C      XZZ(I)=XP-SHIFTX
144      C      XZZ(NG+I)=A*XF**B+C-SHIFTY
145      C      XP=XP+XDIF
146      C 51 CCNTINLE
147      C      RETURN
148      C 60 CALL EXPOS
149      C      XP=X1(1)
150      C      DO 61 I=1,NG
151      C      XZZ(I)=XP-SHIFTX
152      C      XZZ(NG+I)=EXP(A+B*XP)-SHIFTY
153      C      XP=XP+XDIF
154      C 61 CONTINUE
155      C      RETURN
156      70 IERR=1
157      RETURN
158      END

```

@PRT,S SMECEP.SUMS(0)

```

DB6-G03432*SMEDEP.SUMS(0)
1 SUBROUTINE SLMSS
2 COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3 * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4 * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5 * IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6 C SLBROUTINE FOR ORDERING DATA AND OBTAINING VARIOUS SLMPS AND
7 C SSTDANDARD DEVIATIONS OF INPLT DATA
8 C
9 C ** CLEAR COMMON BLOCK
10 C
11 ISOLVE=0
12 NOTE=0
13 IERR=0
14 C WRITE(6,6789)IFUNC,N,DELX
15 DO 1 I=171,556
16 1 X1(I)=0.
17 C
18 C ** FIND THE SMALLEST Y
19 C
20 SHY=Y(1)
21 DO 3 J=2,N
22 IF(SHY.LE.Y(J)) GOTO 3
23 SHY=Y(J)
24 3 CONTINUE
25 C
26 IF(SHY.GT.0.0) GO TO 5
27 SHIFTY=(1.0-SHY)
28 C
29 C ** SHIFTING THE Y-AXIS
30 C
31 DO 4 K=1,N
32 Y(K)=Y(K)+SHIFTY
33 4 CONTINUE
34 GO TO 6
35 5 SHIFTY=0.0
36 C
37 C ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
38 6 NK=N-1
39 DO 9 I=1,NK
40 IN=I+1
41 DO 8 J=IN,N
42 IF(X1(I).LE.X1(J)) GOTO 8
43 TEMP=X1(I)
44 X1(I)=X1(J)
45 X1(J)=TEMP
46 TEMP=Y(I)
47 Y(I)=Y(J)
48 Y(J)=TEMP
49 8 CONTINUE
50 9 CONTINUE
51 C
52 IF(X1(1).GT.0.0)GO TO 11
53 SHIFTX=(1.0-X1(1))
54 C
55 C ** SHIFTING THE X-AXIS
56 C

```

```

57      DO 10 K=1,N
58      X1(K)=X1(K)+SHIFTX
59      10 CONTINUE
60      GO TO 12
61      11 SHIFTX=0.0
62      C
63      12 NIV=1
64      NP=2
65      IF(IEQ.EQ.2.CR.IEQ.EQ.4) NP=NP+1
66      AN=FLOAT(N)
67      C
68      C      OBTAIN VARIOUS SUMS OF INPUT DATA.
69      DO 13 I=1,N
70      YL(I) = ALOG(Y(I))
71      X1L(I) = ALOG(X1(I))
72      X1SQ = X1(I) * X1(I)
73      YSQ=YSC+Y(I)*Y(I)
74      S(1) = S(1) + Y(I)
75      S(2) = S(2) + X1(I)
76      S(3) = S(3) + X1SQ
77      S(4) = S(4) + (X1(I) * Y(I))
78      RVAL=(A*S(4)-S(1)*S(2))/((N*S(3)-S(2)*S(2))*(N*YSQ-S(1)*S(1)))**.5
79      IF (IEQ .EQ. 1) GO TO 13
80      S(5) = S(5) + YL(I)
81      S(6) = S(6) + X1L(I)
82      S(7) = S(7) + (X1(I) * YL(I))
83      IF (IEC .NE. 2) GO TO 13
84      S(8) = S(8) + (X1L(I) * X1L(I))
85      S(9) = S(9) + (X1SQ * X1(I))
86      S(10) = S(10) + (X1SQ * X1SQ)
87      S(11) = S(11) + (X1SQ * Y(I))
88      13 CONTINUE
89      C
90      C      CALCULATE MEANS OF INPUT DATA.
91      DO 14 J=1,2
92      VMEAN(J)=S(J)/AN
93      14 CONTINUE
94      C      CALCULATE SUMS OF THE INPUT DATA ABOUT THEIR MEANS.
95      DO 15 K=1,N
96      S(12)=S(12)+(Y(K)-VMEAN(1))**2
97      15 CONTINUE
98      C
99      C
100     CC      WRITE(6,6789)IFUNC,N,DELX
101     6789  FORMAT(1H,1HS,2I5,F10.4)
102     GO TO (20,30,70,70,70,70), IEQ
103     C
104     C      *** ADDITIONAL CURVE SUPPLIED BY USER CAN BE INSERTED AT
105     C      *** STATEMENT 70 AND FOLLOWING
106     C
107     20  CALL LINES
108     C
109     C      *** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
110     C
111     WRITE(6,97)
112     DO 21 I=1,N
113     YNEW=A+B*X1(I)

```

```

114         XNEW=X1(I)-SHIFTX
115         YNEW=YNEW-SHIFTY
116         WRITE(6,98)XNEW,YNEW
117     21 CONTINUE
118 C
119 C ** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
120 C     WRITE(6,99)
121 C
122         XP=X1(1)
123         YP=A+B*XP
124         XOUT = XP - SHIFTX
125         YOUT = YP - SHIFTY
126 C
127 C
128         WRITE(6,98)XOUT,YOUT
129         XP=XP+DELX
130     22 YP=A+B*XP
131         XOUT = XP - SHIFTX
132         YOUT = YP - SHIFTY
133 C
134 C
135         WRITE(6,98)XOUT,YOUT
136         XP=XP+DELX
137         IF(XP.LT.X1(N))GO TO 22
138 C     IF((XP+0.0005).LT.X1(N))GO TO 22
139         YP=A+B*X1(N)
140         XOUT=X1(N)-SHIFTX
141         YOUT = YP - SHIFTY
142 C     YP=A+B*X1(N)
143         XOUT = XP - SHIFTX
144         YOUT = YP - SHIFTY
145 C
146 C
147         WRITE(6,98) XOUT,YOUT
148         GO TO E5
149     30 CALL PARAS
150 C
151 C *** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
152 C
153         WRITE(6,97)
154         DC 31 I=1,N
155         YNEW=A+B*X1(I)+C*X1(I)*X1(I)
156         XNEW=X1(I)-SHIFTX
157         YNEW=YNEW-SHIFTY
158         WRITE(6,98)XNEW,YNEW
159     31 CONTINUE
160 C
161 C ** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
162 C     WRITE(6,99)
163 C
164 C
165         XP=X1(1)
166         YP=A+B*XP+C*XP*XP
167         XOUT = XP - SHIFTX
168         YOUT = YP - SHIFTY
169 C
170 C

```

```

171 C WRITE(6,98)XCLT,YOUT
172 XP=XP+DELX
173 32 YP=A*B*XP+C*XP*XP
174 XOUT = XP - SHIFTX
175 YOUT = YP - SHIFTY
176 C
177 C
178 C WRITE(6,98)XOUT,YOUT
179 XP=XP+DELX
180 C IF((XP+0.0005).LT.X1(N))GO TO 32
181 IF(XP.LT.X1(N))GO TO 32
182 C YP=A*B*X1(N)+C*X1(N)*X1(N)
183 C XOUT = XP - SHIFTX
184 C YOUT = YP - SHIFTY
185 YP=A+B*X1(N)+C*X1(N)*X1(N)
186 XOUT=XP-SHIFTX
187 YOUT = YP - SHIFTY
188 C
189 C
190 C WRITE(6,98) XOUT,YOUT
191 GO TO 85
192 C
193 C 4C CALL PCWRS
194 CC
195 CC*** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
196 CC
197 C WRITE(6,97)
198 DO 41 I=1,N
199 C YNEW=A*X1(I)**B
200 C XNEW=X1(I)-SHIFTX
201 C YNEW=YNEW-SHIFTY
202 C WRITE(6,98)XNEW,YNEW
203 C 41 CONTINUE
204 CC
205 CC** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
206 CC
207 C WRITE(6,99)
208 CC
209 C XP=X1(1)
210 C YP=A*XP**B
211 C XOUT = XP - SHIFTX
212 C YOUT = YP - SHIFTY
213 CC
214 CC
215 C WRITE(6,98)XOUT,YOUT
216 C XP=XP+DELX
217 C 42 YP=A*XP**B
218 C XOUT = XP - SHIFTX
219 C YOUT = YP - SHIFTY
220 CC
221 CC
222 C WRITE(6,98)XCLT,YCLT
223 C XP=XP+DELX
224 CC IF((XP+0.0005).LT.X1(N))GO TO 42
225 C IF(XP.LT.X1(N))GO TO 42
226 CC YP=A*X1(N)**B
227 CC XOUT = XP - SHIFTX

```

```

228      CC      YOUT = YP - SHIFTY
229      C       YP=A*X1(N)**B
230      C       XOUT=X1(N)-SHIFTX
231      C       YOUT = YP - SHIFTY
232      CC
233      CC
234      CC      WRITE(6,98)  XOUT,YOUT
235      C       GO TO 85
236      CC
237      C       50 CALL ASYMS
238      CC
239      CC*** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
240      CC
241      C       WRITE(6,97)
242      C       DO 51 I=1,N
243      C       YNEW=A*X1(I)**B+C
244      C       XNEW=X1(I)-SHIFTX
245      C       YNEW=YNEW-SHIFTY
246      C       WRITE(6,98)XNEW,YNEW
247      C       51 CONTINUE
248      CC
249      CC*** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
250      CC
251      C       WRITE(6,99)
252      CC
253      C       XP=X1(1)
254      C       YP=A*XP**B+C
255      C       XOLT = XP - SHIFTX
256      C       YOUT = YP - SHIFTY
257      CC
258      CC
259      C       WRITE(6,98)XOUT,YOUT
260      C       XP=XP+DELX
261      C       52 YP=A*XP**B+C
262      C       XOLT = XP - SHIFTX
263      C       YOUT = YP - SHIFTY
264      CC
265      CC
266      C       WRITE(6,98)XOUT,YOUT
267      C       XP=XP+DELX
268      CC      IF((XP+0.0005).LT.X1(N))GO TO 52
269      C       IF(XP.LT.X1(N))GO TO 52
270      CC      YP=A*X1(N)**B+C
271      CC      XOUT = XP - SHIFTX
272      CC      YOUT = YP - SHIFTY
273      C       YP=A*X1(N)**B+C
274      C       XOUT=X1(N)-SHIFTX
275      C       YOUT = YP - SHIFTY
276      CC
277      CC
278      CC      WRITE(6,98)  XOUT,YOLT
279      C       GO TO 85
280      CC
281      C       60 CALL EXPOS
282      CC
283      CC*** PRINT OUT THE GENERATED POINTS AT THE ORIGINAL STEP SIZE
284      CC

```



```

285 C WRITE(6,97)
286 C DO 61 I=1,N
287 C YNEW=EXP(A+B*X1(I))
288 C XNEW=X1(I)-SHIFTX
289 C YNEW=YAEW-SHIFTY
290 C WRITE(6,98)XNEW,YNEW
291 C 61 CONTINUE
292 CC
293 CC** CALCULATE THE SMOOTHED POINTS AND PRINT THEM OUT
294 CC
295 C WRITE(6,99)
296 CC
297 C XP=X1(1)
298 C YP=EXP(A+B*XP)
299 C XOUT = XP - SHIFTX
300 C YOUT = YP - SHIFTY
301 CC
302 CC
303 C WRITE(6,98)XCLT,YOUT
304 C XP=XP+DELX
305 C 62 YP=EXP(A+B*XP)
306 C XCLT = XP - SHIFTX
307 C YOUT = YP - SHIFTY
308 CC
309 CC
310 C WRITE(6,98)XOUT,YOUT
311 C XP=XP+DELX
312 C IF((XP+C.0005).LT.X1(N))GO TO 62
313 C IF(XP.LT.X1(N))GO TO 62
314 C YP=EXP(A+B*X1(N))
315 C XOUT = XP - SHIFTX
316 C YOUT = YP - SHIFTY
317 C YP=EXP(A+B*X1(N))
318 C XOUT=X1(N)-SHIFTX
319 C YOUT = YP - SHIFTY
320 CC
321 CC
322 C WRITE(6,98) XOUT,YOUT
323 C GO TO 85
324 CC
325 C ** ADDITIONAL CURVE SUPPLIED BY USER CAN BE INSERTED HERE
326 C
327 C 70 IERR=1
328 C RETURN
329 C
330 C 85 CALL PRINT
331 C IF(IFUNC.GE.3)GO TO 120
332 C A=A+B*SHIFTX+C*SHIFTX*SHIFTX
333 C B=B+2*C*SHIFTX**2
334 C 120 WRITE(6,111) SHIFTX,SHIFTY,DELX,A,B,C
335 C 97 FORMAT('0',12X,'THE GENERATED POINTS AT THE ORIGINAL',
336 C '* STEP SIZE ARE '//22X,'X',13X,'Y')
337 C 98 FORMAT(' ',12X,2F14.5)
338 C 99 FORMAT('0',12X,'THE GENERATED POINTS AT THE GIVEN',
339 C '* STEP SIZE ARE '//22X,'X',13X,'Y')
340 C 111 FCRMAT('C',12X,'SHIFTX',7X,'SHIFTY',4X,'DELX',6X,'A',1CX,
341 C '*B',10X,'C'/'C',10X,6F10.4)

```

342
343

RETURN
END

@PRT,S SMECEP.PRIN(C)

```

DB6-G03432*SMEDEP.PRIN(0)
1      SUBROUTINE PRINT
2      CCMCMN/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,E,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,CELX,N,IXXY,IRR,IRI,JYES
6
7      C
8      C
9      IF(IFUNC.NE.0) GOTO 2
10     IFUNC=IEQ
11     GO TO (2C,40,6C,80,10C),IEQ
12     WRITE(6,30)
13     FORMAT(1H0/,1(X, 59HLINEAR REGRESSION -- Y = A + (B * X1) * (C *
14     & X2) + (C * X3) /)
15     RETURN
16     40 WRITE(6,50)
17     FORMAT(1H0/,15X, 52HPARABOLIC REGRESSION -- Y = A + (B * X) +
18     & (C * X**2) /)
19     RETURN
20     60 WRITE(6,70)
21     FORMAT(1H0/,15X, 55HPOWER REGRESSION -- Y = A * (X1**B) * (X2**C)
22     & * (X3**D) /)
23     RETURN
24     80 WRITE(6,90)
25     FORMAT(1H0/,15X, 51HASYMPTOTIC-POWER REGRESSION -- Y = (A * (X**B
26     &)) + C /)
27     RETURN
28     100 WRITE(6,110)
29     FORMAT(1H0/,
30     &(B * X)) /)
31     RETURN
31     END

```

```
@PRT,S SMEDEP.BUILD(0)
```

DB6-603432*SMEDEF.BUILD(C)

```
1 SUBROUTINE BUILD
2 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(SCC,3),IEND,IENDG
3 COMMON/BBUF/RREC(180),V(160),VSLOP(261),ID(60)
4 COMMON/PLOTS/ X1(85),Y(85),XIL(85),YL(85),YC(85),YDEV(85),
5 &RNARA(46),
6 * IEQ,NIV,NP,IERR,ISOLVE,NOTE,ITP,DELX,NM,IY,IRR,IRI,JYES
7 COMMON/PLTI/XYZ(170),XZZ(100),RXX(2),NG
8 COMMON/NAMS/IDX,IDY,IZZZ,MNV,MNC
9 COMMON/MP/ICO
10 DIMENSION XARA(85),YARA(85),YAR1(85),LXT(85),JYT(85)
11 DIMENSION B(100)
12 DATA JYES/'Y' /
13 NG=50
14 DELX=1.
15 CALL NEWPAG
16 WRITE(6,98)
17 98 FORMAT(' ','DC YOU WISH INSTRUCTIONS?')
18 988 READ(5,97,ERR=988)INS
19 97 FORMAT(A4)
20 IF(INS.NE.JYES)GO TO 96
21 WRITE(6,95)
22 95 FORMAT(' ','THIS COMMAND ALLOWS THE USER TO PERFORM THE ',
23 &/' FOLLOWING FUNCTIONS UPON THE DATA'/' 1 IGNORE DATA POINTS',/
24 $/' 2 LINEAR REGRESSION',/' 3 PARABOLIC REGRESSION',/
25 $/' 4 POWER REGRESSION',/' 5 ASYMPTOTIC-POWER REGRESSION',/
26 $/' 6 EXPONENTIAL REGRESSION',/' 7 TEST OF SIGNIFICANCE BETWEEN'
27 $/' 7 TEST OF SIGNIFICANCE BETWEEN MEANS',
28 &/' MEANS',/' 8 AUTO CORRELATION & CROSS CORRELATION ANALYSIS',/
29 &/' 9 STOP')
30 96 CONTINUE
31 WRITE(6,94)
32 94 FORMAT(' ','SPECIFY BUILD FUNCTION')
33 93 READ(5,993,ERR=93)IFUN
34 993 FORMAT(I1)
35 IF(IFUN.LT.1.OR.IFUN.GT.9)GO TO 96
36 IFTEST=IFUN-3
37 GO TO (92,91,91,91,91,91,90,89,111),IFLN
38 92 CALL IGNORE
39 GO TO 96
40 91 ITP=IFUN-1
41 IF(ITP.LE.2)GO TO 99
42 WRITE(6,477)
43 477 FORMAT(' ERROR IN BUILD FUNCTION TRY AGAIN')
44 GO TO 93
45 99 IEQ=ITP
46 ICO=0
47 INFG=1
48 WRITE(6,87)
49 87 FORMAT(' DO YOU WISH TO USE TIME AS THE INDEPENDENT VAR?')
50 86 READ(5,97,ERR=86)IY
51 IF(IY.NE.JYES)GO TO 85
52 WRITE(6,84)
53 84 FORMAT(' INPUT ICEN (A6)')
54 83 READ(5,82,ERR=83)IDNT
55 82 FORMAT(A6)
56 DO 15 I = 1,IF
```

```

57      IRR = I
58      IF (IFETC(I,2) .EQ. IDNT) GO TO 2C
59      15 CONTINUE
60      9 WRITE(6,16) ICNT
61      16 FORMAT(' DO NOT RECOGNIZE ',A6,'. TRY AGAIN.')
```

20 CONTINUE

```

63      IR=IFETC(IRR,8)
64      NM=IFETC(IRR,9)
65      WRITE(6,1991)
66      1991 FORMAT(' DO YOU WISH COMPLETE TABULAR OUTPLT ?')
```

67 READ (5,97)INS

```

68      IF (IAS.AE.JYES)GO TO 1000
69      DO 81 I=1,NM
70      CALL TAMPRT(GCT(IR,1),ADI,NH,LM,NS)
71      XNDI=NGI
72      CALL PLOT(XNDI,GOT(IR,2),ITP)
73      C WRITE(6,788)NM,XNDI,GOT(IR,2)
74      C 788 FCRMAT(' ',15,2F12.5)
75      IR=GCT(IR,3)
76      81 CONTINUE
77      1000 CONTINUE
78      DO 88 I=1,NM
79      CALL TAMPRT(GCT(IR,1),ADI,NH,LP,NS)
80      X1(I)=NGI
81      Y(I)=GCT(IR,2)
82      C WRITE(6,788)NM,XNDI,GOT(IR,2)
83      C 788 FORMAT(' ',15,2F12.5)
84      IF (GOT(IR,3).GT.0.) GC TO 288
85      IR=IR+1
86      GO TO 88
87      288 IR=GCT(IR,3)
88      88 CONTINUE
89      CALL RSUM2
90      DO 754 I=1,NG
91      754 XZZ(I)=XZZ(I)*1440.
92      WNV=(MAV*2)/2
93      1999 WRITE(6,1099)WNV
94      1099 FORMAT(' NAME OF NEW VARIABLE IN LOC',F4.0,'/' IDEN')
```

95 READ(5,82)NICN

```

96      DO 1008 I=1,IF
97      1008 IF(IFETC(I,2).EQ.NIDN)GO TO 1010
98      IFX=IF+1
99      IF(IFX.GT.IEND)GO TO 1111
100     IF=IF+1
101     IFETC(IF,1)=WNV
102     IFETC(IF,2)=NIDN
103     IFETC(IF,6)=16
104     IFETC(IF,7)=XZZ(1)*60
105     IFETC(IF,8)=XZZ(NG)*60
106     IFETC(IF,9)=NG
107     IF(ITP.EQ.1)IFETC(IF,8)=XZZ(2)*60
108     IF(IIP.EQ.1)IFETC(IF,9)=2
109     GO TO 1110
110     1010 WRITE(6,1101)
111     1101 FCRMAT(' CLPLICATE ICENS TRY AGAIN')
```

112 GO TO 1999

```

113     1111 WRITE(6,1112)
```

```

114      1112  FORMAT(* FETCH ARRAY FULL MUST DO A SCRCH*)
115      CALL RETREV
116      111C  IF(MNV.LE.0)GO TO 1001
117      REWIND 16
118      REWIND 18
119      IF(IFETC(IF,9).GT.MNC)MWF=1
120      WRITE (16)WNV
121      READ(18)WNV
122      DO 1002 MM=1,MNC
123      READ(18)(B(I),I=1,MNV)
124      WRITE(16)(B(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
125      WRITE(6,767)(E(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
126      C767  FORMAT(1H ,6F10.1)
127      1002  CONTINUE
128      IF(NWF.NE.1)GO TO 7471
129      MNC=IFETC(IF,9)-MNC
130      DO 474 IM=1,MNC
131      474   WRITE(16)(B(I),I=1,MNV),XZZ(MM),XZZ(MM+NG)
132      MNC=IFETC(IF,9)
133      MWF=C
134      7471  CONTINUE
135      ENDFILE 16
136      REWIND 16
137      REWIND 18
138      WNV=(MNV+2)/2
139      WRITE (18)WNV
140      READ(16)WNV
141      MNV=MNV+2
142      DO 1003 MM=1,MNC
143      READ(16)(B(I),I=1,MNV)
144      WRITE(18)(B(I),I=1,MNV)
145      1003  CONTINUE
146      ENDFILE 18
147      GO TO 1005
148      1001  MNC=IFETC(IF,9)
149      MNV=2
150      WNV=MNV/2
151      WRITE(18)WNV,WNV,WNV,WNV
152      WRITE(16)WNV,WNV,WNV,WNV
153      DO 1004 I=1,MNC
154      WRITE(16)XZZ(I),XZZ(I+NG)
155      C765  WRITE(6,765)XZZ(I),XZZ(I+NG)
156      C765  FORMAT(* X*,6F10.1)
157      1004  WRITE(18)XZZ(I),XZZ(I+NG)
158      ENDFILE 16
159      ENCFILE 18
160      1005  CONTINUE
161      REWIND 16
162      REWIND 18
163      GO TO 96
164      85    IDFG=0
165      WRITE(6,100)
166      100   FORMAT(1X,'VAR 1',5X,'VAR 2',/1X,'IDEN',2X,'IDEN')
167      102   READ(5,101,ERR=102)IDX,IDY
168      101   FORMAT(2A6)
169      104   IDNT=ICX
170      IF(ILFE.EQ.1)ICNT=IDY

```

```

171      IRI=IRR
172      DO 17 I = 1,IF
173      IRR = I
174      IF(IFETC(I,2) .EQ. ICNT) GO TO 103
175      17 CONTINUE
176      WRITE(6,16) ICNT
177      GO TO 85
178      103 CONTINUE
179      IDFG=IDFG+1
180      IF(ICFG.EQ.1)GO TO 104
181      IRX=IFETC(IRI,8)
182      IRY=IFETC(IRR,8)
183      NX=IFETC(IRI,9)
184      NY=IFETC(IRR,9)
185      DO 107 I=1,NX
186      CALL TIMPRT(GOT(IRX,1),NDIX,NH,LP,NS)
187      JXT(I)=NDIX
188      XARA(I)=GOT(IRX,2)
189      IF (GOT(IRX,3).GT.0.) GO TO 113
190      IRX=IRX+1
191      GO TO 107
192      113 IRX=GOT(IRX,3)
193      107 CONTINUE
194      DO 109 I=1,NY
195      CALL TIMPRT(GOT(IRY,1),NDIY,NH,LM,NS)
196      JYT(I)=NDIY
197      YAR1(I)=GOT(IRY,2)
198      IF (GOT(IRY,3).GT.0.) GO TO 114
199      IRY=IRY+1
200      GO TO 109
201      114 IRY=GOT(IRY,3)
202      109 CONTINUE
203      IF(INFG.GT.3.OR.INFG.LT.1)WRITE(6,666)INFG
204      666 FORMAT(' BUIL 96 INFG=',I5)
205      GO TO(125,120,122),INFG
206      C 125 IF(INFG.EQ.2)GO TO 120
207      MM=1
208      DO 105 I=1,NX
209      DO 105 J=1,NY
210      IF(JXT(I).EQ.JYT(J))GO TO 106
211      GO TO 105
212      106 XARA(MM)=XARA(I)
213      YARA(MM)=YAR1(J)
214      MM=MM+1
215      105 CONTINUE
216      NM=MM-1
217      DO 108 I=1,NM
218      CALL PLCT(XARA(I),YARA(I),ITP)
219      108 CONTINUE
220      GO TO 96
221      90 INFG=2
222      GO TO 85
223      120 CONTINUE
224      DAV=C.
225      INFG=1
226      CALL SIGDMN(XARA,NX,YAR1,NY,DAV,U1,S1,U2,S2,T,ETA,NDF)
227      WRITE(6,121)ICX,IDY,U1,U2,S1,S2,T,ETA,NDF

```

```

228      121 FORMAT(' ',5X,A6,10X,A6,/2X' MEAN=',F7.2,9X,'MEAN=',F7.2,5X,
229      S/3X,' SD=',F7.2,11X,'SC=',F7.2,/' T STATISTIC=',F5.2,4X,
230      &'WITH PROBABILITY=',F7.5,/' DEGREES OF FREEDOM=',I2)
231      GO TO 96
232 C 89 WRITE(6,158)
233 C 158 FORMAT(' THIS FUNCTION IS NOT BUILT YET')
234      89 INFG=3
235      GO TO 85
236      122 CONTINUE
237      DAV=0.
238      INFG=1
239      CALL SIGCMN(XARA,NX,YAR1,NY,DAV,U1,S1,L2,S2,T,ETA,NDF)
240      WRITE(6,123)ICX,IDY,T,ETA,NDF
241      123 FORMAT('0',2CX,' T STATISTIC BETWEEN MEANS',/,5X,' (',
242      &A6,')',(',A6,')',5X,' T=',F5.2,2X,' PROB=',F7.5,2X,' NDF=',I2)
243      GO TO 96
244      111 LFLAG=99
245      CALL RETREV(LFLAG)
246      RETURN
247      END

```

@PRT,S SMEDEP.IGNORE(0)


```

GB6-603432*SMEDF. IGNORE(0)
1 SUBROUTINE IGNORE
2 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3)
3 DIMENSION IIN(16),R(4,4)
4 DATA IGOC/'GC ','IBLK/' '/'
5 CALL NEWPAG
6 WRITE(6,10)
7
8 1C FORMAT(' INPUT IDEN AND UP TO 4 TIMES OF DATA TO IGNORE'
9 1 /' INPUT GO WHEN FINISHED IGNOR INPUT.)/
10 2 ' IDEN ',4(' DAY HR MN SE'))
11 READ(5,12,ERR=9) I2,(IIN(I),I=1,16)
12 FORMAT(A6,4(2X,A5,A2,1X,A2,1X,A2))
13 IF(I2.EQ.IG(0)) RETURN
14 DO 15 I = 1,IF
15 IRR = I
16 IF(IFETC(I,2).EQ.I2) GC TC 2C
17 CONTINUE
18 WRITE(6,16) I2
19 FORMAT(' DO NOT RECOGNIZE ',A6,'. TRY AGAIN.')
```

20 GO TO 11

21 2C IF(IFETC(IRR,6).LE.12) GO TO 23

22 WRITE(6,22)

23 FORMAT(' IGNOR ILLEGAL FOR DATA FROM MODELS.')

24 GO TC 11

25 DECODE(96,25,IIN(1),I1)((R(I2,I3),I2=1,4),I3=1,4)

26 FORMAT(4(F5.0,1X,3(F2.0,4X)))

27

28 DO 4C I = 1,4

29 I3 = ((I - 1) * 4) + 1

30 I4 = I3 + 3

31 DO 100 I2 = I3,I4

32 IF(IIN(I2).NE.IBLK) GO TO 102

33 CONTINUE

34 GO TC 11

35 102 T = (R(1,I)*1440.) + (R(2,I)*60.) + R(3,I) +

36 1 (R(4,I)/60.)

37 INC = IFETC(IRR,9)

38 IG = IFETC(IRR,8)

39 IGO = IG

40 29 X = ABS(GOT(IG,1) - T)

41 IF(X.LT..02) GO TO 30

42 IF(GOT(IG,1).GT.T) GO TO 105

43 IGC = IG

44 IG = GOT(IG,3)

45 IND = IND - 1

46 IF(IND.GT.C) GO TO 29

47 105 WRITE(6,32) (R(J,I),J=1,4)

48 32 FORMAT(' NO DATA ASSOCIATED WITH ',F6.0,'D',F5.0,'F',

49 1 F5.0,'M',F5.0,'S')

50 GO TO 40

51 3C IFETC(IRR,9) = IFETC(IRR,9) - 1

52 IF(IFETC(IRR,9).GT.0) GO TO 33

53 IFETC(IRR,8) = -268435456

54 GO TC 38

55 33 IF(IGO.EQ.IG) IFETC(IRR,8) = GOT(IG,3)

56 IF(IGO.NE.IG) GOT(IGO,3) = GOT(IG,3)

38 GOT(IG,1) = -999990C.

```
57      40 CONTINUE  
58      60 TC 11  
59      END
```

```
@PRT,S  SMEDEP.TPLT(0)
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```

DB6-603432*SMEDEP.TPLT(0)
1  SUBROUTINE PLCT(XIN,YIN,ITYPE)
2  COMMON/PLCTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3  * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4  * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5  * IEQ,NIV,NP,IERR,ISOLVE,NCTE,IFLNC,DELX,N,IXXY,IRR,IRI,JYES
6  COMMON/MP/ICO
7
8  CC WRITE(6,6789)IFUNC,N,DELX
9  6789 FORMAT(1H ,2I5,F10.4)
10  DELX=1.
11  IEQ=IFLNC
12
13  C IF(IFUNC.NE.C) GOTO 2
14  IF(N.EQ.0) GOTO 1
15  WRITE(6,444) N,IEQ
16  444 FORMAT(' ',12X,'TEST OF',I4,' POINTS ON CURVE',I4)
17  WRITE(6,555)
18  555 FORMAT('0',12X,'THE ORIGINAL GIVEN POINTS ARE'//22X,
19  *'X',13X,'Y')
20  WRITE(6,666)(X1(I),Y(I),I=1,N)
21  666 FORMAT(' ',12X,2F14.5)
22  CALL SUMSS
23  WRITE(6,777)
24  777 FORMAT('0',12X,'THE ABOVE SET IS TERMINATED BY A ZERO',
25  *' IFUNC CALL'/'1')
26
27  C *** IFLNC = 0 MEFLY PASS THE PEN COMMAND
28  CONTINUE
29
30  C WRITE(6,999) XIN,YIN,ITYPE
31  999 FORMAT('0',12X,'POINT PASSED BY A IFUNC = 0 CALL'/'0',
32  *22X,'X',13X,'Y',4X,'PEN COMMAND'/'0',12X,2F14.5,I7/'1')
33  RETURN
34
35  C 2 IF(N.EC.0) GOTO 4
36  IF(IEQ.NE.IFUNC) GOTO 6
37  4 ICO=ICO+1
38  X1(ICO)=XIN
39  Y(ICO)=YIN
40  IF(ICO.NE.N) RETURN
41  CALL PRINT
42
43  C
44  WRITE(6,444)N,IEQ
45  WRITE(6,555)
46  WRITE(6,666)(X1(I),Y(I),I=1,N)
47  CALL SUMSS
48  RETURN
49  6 IF(N.EC.1) GOTO 8
50
51  C *** NLESS THAN 50
52  C
53  WRITE(6,444)N,IEQ
54  WRITE(6,555)
55  WRITE(6,666)(X1(I),Y(I),I=1,N)
56  CALL SLMSS

```

```

57      WRITE(6,888)
58      888 FORMAT('0',12X,'ONE JOB IS DONE, READY FOR NEXT.'//)
59      N=1
60      IEC=IFLAC
61      X1(1)=XIN
62      Y(1)=YIN
63      RETURN
64      C
65      C *** ERROR MESSAGE
66      C
67      8 IERR=1
68      WRITE(6,11)
69      11 FORMAT('0' GIVEN ONE POINT ONLY, NO CLRVE CAN BE GENERATED')
70      RETURN
71      END

```

6PRT,S SMEDEP.REGRESS(0)

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DB6-G03432*SMEDEP. REGRESS(O)
1 SUBROUTINE REGRES
2 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(500,3),IEND,IENDG
3 COMMON/BBUF/RREC(180),V(160),VSLCP(261),ID(60)
4 COMMON/PLOTS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
5 * YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
6 * A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
7 * IEQ,NJV,NP,IERR,ISOLVE,NCTE,ITP,DELX,NM,IY,IRR,IRI,JYES
8 COMMON/PLTI/XXZ(170),XZZ(100),RXX(2),NG
9 COMMON/NAMS/ICX,IDY,IZZZ,MNV,MNC
10 DIMENSION XARA(85),YAR1(85),JXT(85),JYT(85)
11 DATA JYES/'Y' /*,IDAYT/'DAYS'/*,IBLK/'' /*
12 NG=50
13 CALL NEWPAG
14 IF(INS.NE.0) GO TO 7655
15 WRITE(6,98)
16 98 FORMAT(' ',*DC YOU WISH INSTRUCTIONS?*)
17 988 READ(5,97,ERR=988)INS
18 97 FCRMAT(A4)
19 7655 CONTINUE
20 IF(INS.NE.JYES)GO TO 96
21 WRITE(6,95)
22 95 FORMAT(' ',*THIS COMMAND ALLOWS THE USER TO PERFORM THE *,
23 &/' FOLLOWING REGRESSION FUNCTIONS UPON THE DATA'/*
24 $/' 1 LINEAR REGRESSION'/*/' 2 PARABOLIC REGRESSION'/*
25 C $/' 3 POWER REGRESSION'/*/' 4 ASYMPTOTIC-POWER REGRESSION'/*
26 C $/' 5 EXPONENTIAL REGRESSION'/*/' 6 STOP'*)
27 $/' 6 STOP'*)
28 96 CONTINUE
29 WRITE(6,94)
30 94 FORMAT(' '/* SPECIFY REGRESSION FLACTION*)
31 93 READ(5,993,ERR=93)IFUN
32 993 FORMAT(I1)
33 IF(IFUN.LT.1.OR.IFUN.GT.6)GO TO 96
34 IFTEST=IFUN-2
35 IF(IFTEST.LE.C)GO TO 426
36 GO TO (99,99,59,111),IFTEST
37 426 IEQ=IFUN
38 IF(IFUN.EQ.6)GO TO 111
39 91 ITP=IFUN
40 ICC=C
41 WRITE(6,87)
42 87 FORMAT(' DO YOU WISH TO USE TIME AS THE INCEPENTENT VAR?*)
43 86 READ(5,97,ERR=86)IY
44 IF(IY.NE.JYES)GO TO 85
45 WRITE(6,84)
46 84 FORMAT(' INPLT IDEN (A6)*)
47 83 READ(5,82,ERR=83)IDNT
48 82 FORMAT(A6)
49 IDY=IDNT
50 DC 15 I = 1,IF
51 IRR = I
52 IF(IFETC(I,2) .EQ. IDNT) GO TO 20
53 15 CONTINUE
54 9 WRITE(6,16) IDNT
55 16 FORMAT(' DO NOT RECOGNIZE ',A6,*. TRY AGAIN.)*
56 GO TO 83

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```

57      99      WRITE(6,427)
58      427      FORMAT(' ERROR IN FUNCTION TRY AGAIN')
59      GO TO 93
60      20      CONTINUE
61      IR=IFETC(IRR,8)
62      NM=IFETC(IRR,9)
63      DO 81 I=1,NM
64      CALL TIMPRT(GCT(IR,1),NDI,NH,LM,NS)
65      X1(I)=NDI
66      Y(I)=GOT(IR,2)
67      C 788      WRITE(6,788)NM,XADI,GCT(IR,2)
68      FORMAT(' ',15,2F12.5)
69      IF (GOT(IR,3).GT.0.) GO TO 80
70      IR=IR+1
71      GO TO 81
72      8C      IR=GCT(IR,3)
73      81      CONTINUE
74      IDX=IDAYT
75      CALL RSUM1
76      C 678      DO 678 I=1,NM
77      C678      WRITE(6,679)XXZ(I),XXZ(85+I),IRR,IRI
78      C679      FORMAT(1H ,2F10.4,2I5)
79      C      WRITE(6,888)XZZ(1),XZZ(51)
80      C      WRITE(6,888)XZZ(50),XZZ(100)
81      C888      FORMAT(' ',2F10.5)
82      CALL PLOT33
83      GO TC 96
84      85      IDFG=C
85      WRITE(6,100)
86      100      FORMAT(1X,'XAXIS',5X,'YAXIS',/1X,'IDEN',2X,'IDEN')
87      102      READ(5,101,ERR=102)IDX,IDY
88      101      FORMAT(2A6)
89      104      ICNT=ICX
90      IF(ICFG.EQ.1)ICNT=IDY
91      IRI=IRR
92      DO 17 I = 1,IF
93      IRR = I
94      IF(IFETC(I,2) .EQ. ICNT) GO TO 103
95      17      CONTINUE
96      WRITE(6,16) ICNT
97      GO TC 85
98      103      CONTINUE
99      IDFG=ICFG+1
100     IF(ICFG.EQ.1)EC TC 104
101     IRX=IFETC(IRI,8)
102     IRY=IFETC(IRR,8)
103     NX=IFETC(IRI,9)
104     NY=IFETC(IRR,9)
105     DO 107 I=1,NX
106     CALL TIMPRT(GCT(IRX,1),NDIX,NH,LM,NS)
107     JXT(I)=NDIX
108     XARA(I)=GOT(IRX,2)
109     IF (GOT(IRX,3).GT.0.) GO TO 113
110     IRX=IRX+1
111     GO TC 107
112     113     IRX=GOT(IRX,3)
113     107     CONTINUE

```

```

114      DO 109 I=1,NY
115      CALL TIMPRT(GOT(IRY,1),NDIY,NF,LP,NS)
116      JYT(I)=NDIY
117      YAR1(I)=GOT(IRY,2)
118      IF (GOT(IRY,3).GT.0.) GO TO 114
119      IRY=IRY+1
120      GO TC 109
121      114 IRY=GOT(IRY,3)
122      109 CONTINUE
123      MM=1
124      DO 105 I=1,NX
125      DO 105 J=1,NY
126      IF (JYT(I).EQ..YI(,))GO TC 106
127      GO TC 105
128      106 X1(MM)=XARA(I)
129      Y(MM)=YAR1(J)
130      MM=MM+1
131      105 CONTINUE
132      NM=MM-1
133      CALL RSUM1
134      CALL PLOT33
135      GO TO 96
136      111 CALL RETREV
137      RETURN
138      END

```

&PRT,S SMEDEP.RSUM1(0)

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DB6-603432*SMEDEP.RSUM1(0)
1      SUBROUTINE RSUM1
2      COMMON/PLTOS/ X1(85),Y(85),X1L(85),YL(85),YC(85),YDEV(85),
3      *      YDSQ(5),H(3,3),T(3),S(12),VMEAN(3),
4      *      A,A1,B,B1,C,C1,AH,BH,CH,AN,AN1,AN2,SHIFTX,SHIFTY,
5      *      IEQ,NIV,NP,IERR,ISOLVE,NOTE,IFUNC,DELX,N,IXXY,IRR,IRI,JYES
6      COMMON/PLTI/XXZ(170),XZZ(100),SMY,YFI,NG,RVAL
7      SUBROUTINE FOR ORDERING DATA AND OBTAINING VARIOUS SMLS AND
8      SSTDANDARD DEVIATIONS OF INPUT DATA
9      C
10     C
11     C ** CLEAR COMMON BLOCK
12     C
13     C     ISOLVE=0
14     C     NOTE=0
15     C     IERR=0
16     C     NG=50
17     C     DO 1 I=171,556
18     C     1 X1(I)=C.
19     C
20     C ** FIND THE SMALLEST Y
21     C
22     C     YHI=Y(1)
23     C     SMY=Y(1)
24     C     DO 3 J=2,N
25     C     IF(SMY.LE.Y(J)) GOTO 3
26     C     3 SMY=Y(J)
27     C     CONTINUE
28     C     DO 33 J=2,N
29     C     IF(YHI.GE.Y(J)) GOTO 33
30     C     YHI=Y(J)
31     C     33 CONTINUE
32     C
33     C ORDER THE DATA FROM LOW TO HIGH VALUES OF X.
34     C     NK=N-1
35     C     DO 9 I=1,NK
36     C     IN=I+1
37     C     DO 8 J=IN,N
38     C     IF(X1(I).LE.X1(J)) GOTO 8
39     C     TEMP=X1(I)
40     C     X1(I)=X1(J)
41     C     X1(J)=TEMP
42     C     TEMP=Y(I)
43     C     Y(I)=Y(J)
44     C     Y(J)=TEMP
45     C     8 CONTINUE
46     C     9 CONTINUE
47     C
48     C     DO 132 I=1,85
49     C     XXZ(I)=X1(I)
50     C     XXZ(85+I)=Y(I)
51     C     WRITE(6,577)XXZ(I),XXZ(85+I)
52     C577  FORMAT(1H ,2(F10.5,5X))
53     C     132 CONTINUE
54     C     IF(SMY.GT.0.C) GO TO 5
55     C     SHIFTY=(1.0-SMY)
56     C
57     C ** SHIFTING THE Y-AXIS

```



```

57 C
58 DO 4 K=1,N
59 Y(K)=Y(K)*SHIFTY
60 4 CONTINUE
61 GO TO 6
62 5 SHIFTY=0.0
63 C
64 6 IF(X1(1).GT.C.0)GO TO 11
65 SHIFTX=(1.0-X1(1))
66 C
67 C C ** SHIFTING THE X-AXIS
68 C
69 DO 10 K=1,N
70 X1(K)=X1(K)+SHIFTX
71 10 CONTINUE
72 GO TO 12
73 11 SHIFTX=0.0
74 C
75 12 NIV=1
76 NP=2
77 IF(IEQ.EQ.2.OR.IEQ.EQ.4) NP=NP+1
78 AN=FLOAT(N)
79 C
80 C OBTAIN VARIOUS SUMS OF INPUT DATA.
81 DO 13 I=1,N
82 YL(I) = ALOG(Y(I))
83 X1L(I) = ALOG(X1(I))
84 X1SQ = X1(I) * X1(I)
85 YSQ=YSC+Y(I)*Y(I)
86 S(1) = S(1) + Y(I)
87 S(2) = S(2) + X1(I)
88 S(3) = S(3) + X1SQ
89 S(4) = S(4) + (X1(I) * Y(I))
90 RVAL=(N*S(4)-S(1)*S(2))/((N*S(3)-S(2)*S(2))*(N*YSQ-S(1)*S(1)))**.5
91 C WRITE(6,1001)RVAL
92 C1001 FORMAT(' R=',F10.5)
93 IF (IEQ .EQ. 1) GO TO 13
94 S(5) = S(5) + YL(I)
95 S(6) = S(6) + X1L(I)
96 S(7) = S(7) + (X1(I) * YL(I))
97 IF (IEQ .NE. 2) GO TO 13
98 S(8) = S(8) + (X1L(I) * X1L(I))
99 S(9) = S(9) + (X1SQ * X1(I))
100 S(10) = S(10) + (X1SQ * X1SQ)
101 S(11) = S(11) + (X1SQ * Y(I))
102 13 CONTINUE
103 C
104 C CALCULATE MEANS OF INPUT DATA.
105 DO 14 J=1,2
106 VMEAN(J)=S(J)/AN
107 14 CONTINUE
108 C CALCULATE SUMS OF THE INPUT DATA ABOUT THEIR MEANS.
109 DO 15 K=1,N
110 S(12)=S(12)+(Y(K)-VMEAN(1))**2
111 15 CONTINUE
112 C
113 XCIF=(X1(N)-X1(1))/NG

```

```

114 C
115 IF (IEQ.GE.1.AND.IEQ.LE.6)GO TO 533
116 WRITE(6,532)
117 532 FORMAT(1H,' ERROR N IEQ')
118 RETURN
119 533 GO TO (20,30,70,70,70,70),IEQ
120 20 CALL LINES
121 XP=X1(1)
122 DO 21 I=1,NG
123 XZZ(I)=XP-SHIFTX
124 XZZ(NG+I)=(A+E*XP)-SHIFTY
125 XP=XP+XDIF
126 21 CONTINUE
127 RETURN
128 30 CALL PARAS
129 XP=X1(1)
130 DO 31 I=1,NG
131 XZZ(I)=XP-SHIFTX
132 XZZ(NG+I)=A+B*XP+C*XP*XP-SHIFTY
133 XP=XP+XDIF
134 31 CONTINUE
135 RETURN
136 C 40 CALL PCWRS
137 C XP=X1(1)
138 C DO 41 I=1,NG
139 C XZZ(I)=XP-SHIFTX
140 C XZZ(NG+I)=A*XP**B-SHIFTY
141 C XP=XP+XDIF
142 C 41 CONTINUE
143 C RETURN
144 C 50 CALL ASYMS
145 C XP=X1(1)
146 C DO 51 I=1,NG
147 C XZZ(I)=XP-SHIFTX
148 C XZZ(NG+I)=A*XP**B+C-SHIFTY
149 C XP=XP+XDIF
150 C 51 CONTINUE
151 C RETURN
152 C 60 CALL EXPOS
153 C XP=X1(1)
154 C DO 61 I=1,NG
155 C XZZ(I)=XP-SHIFTX
156 C XZZ(NG+I)=EXP(A+B*XP)-SHIFTY
157 C XP=XP+XDIF
158 C 61 CONTINUE
159 C RETURN
160 70 IERR=1
161 RETURN
162 END

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DB6-G03432*SMEDEP.PLOT26(0)

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1 SUBROUTINE PLOT26
2 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GCT(500,3)
3 DIMENSION XX(17)
4 COMMON/BBUF/B(601)
5 DATA IGO/'GO',ISAM/'SAME'/
6 DIMENSION TSTEPX(4),TSTALP(4)
7 DATA TSTEPX/.C1666667,1.,60.,144C./
8 DATA TSTALP/'SECS','MINS','HOUR','DAYS'/
9 COMMON/SEG22/IIDAS(6,2),PPARS(6,9),TTSPT,ICUP,NOP,I3Y
10 1,K,RUNSTP,XFF,R1
11 DIMENSION XNO(5),HEAD(15)
12 761 CALL NEWPAG
13 WRITE(6,600)
14 600 FORMAT(' INPUT HEADING WANTED. (15A4)')
15 602 READ(5,601,ERR=602) (HEAD(I),I=1,15)
16 601 FORMAT(15A4)
17 WRITE(6,610)
18 61C FORMAT(' (IDEN=DATA IDEN,SAME,GC) (L=1.-6. FOR LOG.)'/
19 1 ' (P,1.=STAIR PLT 1ST.PT.HORIZ,2.=STAIR 2ND.PT.HORIZ,',
20 C /' 3.=NO LINES,OR PT.TO PT.PLT.)'/
21 C ' (X=1.FOR X SYMBOL AT EACH POINT)')
22 2 /' (START/STOP LEFT BLANK MEANS',
23 ' PLOT ALL TIME OF DATA)'/
24 C ' ,28X,14('), 'X AXIS (TIME)',14(')/
25 4 ' ,7('), 'Y AXIS',8('),7X,'...START...
26 5 'STOP...BIAS.../ IDEN HIGH',3X,'LOW',
27 6 4X,'L P X',3(' DAY 'R MN SE')
28 NACP = C
29 KK = 1
30 ISJ = C
31 7 READ(5,6,ERR=5C1) I2,(XX(I1),I1=1,4),XX(17),(XX(I1),I1=5,16)
32 6 FORMAT(A6,1X,2F7.3,2F2.0,F3.0,3(F5.0,3F3.0))
33 IF(KK .EQ. 1 .AND. I2 .EQ. ISAM) GO TO 10
34 IF(KK .GT. 1 .AND. I2 .EQ. IGC) GO TO 25
35 IF(KK .GT. 6) GO TO 728
36 DC 210 J = 1,IF
37 J1 = J
38 IF(I2 .EQ. IFETC(J,2)) GO TO 13
39 21C CONTINUE
40 ISJ = 1
41 GO TO 501
42 13 IF(IFETC(J1,9) .LT. 2) GO TO 5
43 IF(IFETC(J1,6) .GT. 12) GO TO 20
44 IF(IFETC(J1,8) .NE. -268435456) GO TO 20
45 5 WRITE(6,9) I2
46 9 FORMAT(' ONE OR LESS DATA FOR ',A6)
47 GO TO 7
48 20 ISJ = 2
49 IF(XX(2) .GE. XX(1)) GO TO 501
50 ISJ = 4
51 IF(XX(3) .LT. 1. .OR. XX(3) .GT. 6.) GO TO 5C1
52 ISJ = 5
53 IF(XX(4) .LT. 0. .OR. XX(4) .GT. 3.) GO TO 501
54 TB = (XX(13)*1440.) + (XX(14)*60.) + XX(15) +
55 1 (XX(16)/6C.)
56 T1 = (XX(5)*144C.) + (XX(6)*6C.) + XX(7) +
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57      1 (XX(8)/60.)
58      T2 = (XX(9)*1440.) + (XX(10)*60.) + XX(11) +
59      1 (XX(12)/60.)
60      IF(T1 .EQ. 0. .AND. T2 .EC. 0.) GO TO 5C6
61      IF(T2 .GT. T1) GO TO 5C6
62      WRITE(6,5C3)
63      503 FORMAT(' ERROR IN START/STOP TIME')
64      GO TO 7
65      501 WRITE(6,5C2) JSJ
66      502 FORMAT(' **ERROR IN FLD',I2)
67      GO TO 7
68      506 PPARS(KK,1) = J1
69      IF(IFIX(XX(3)) .GT. NNOP) NNOP = XX(3)
70      PPARS(KK,3) = XX(1)
71      PPARS(KK,4) = XX(2)
72      PPARS(KK,2) = XX(3)
73      PPARS(KK,5) = TB
74      PPARS(KK,6) = XX(4)
75      PPARS(KK,9) = XX(17)
76      IF(T1 .NE. 0. .OR. T2 .NE. 0.) GO TO 370
77      PPARS(KK,7) = -9000000.
78      PPARS(KK,8) = 9000000.
79      GO TO 371
80      370 PPARS(KK,7) = T1
81      PPARS(KK,8) = T2
82      371 KK = KK + 1
83      IF(KK .LE. 6) GO TO 7
84      GO TO 728
85      25 IF(XX(1) .GE. 3. .AND. XX(1) .LE. 5.) GO TO 626
86      728 WRITE(6,27)
87      27 FORMAT(' INPLT GO N. (A6,1X,F8.3)',
88      1 ' N=NC.DIVISIONS FOR TIME. ')
89      GO TO 7
90      626 K = KK - 1
91      NOP = ANOP
92      TTSP1 = XX(1)
93      C COMPUTE LENGTH OF TIME FOR X SCALE.
94      R1 = 5000000.
95      R2 = -5000000.
96      DO 628 J = 1,K
97      I1 = PPARS(J,1)
98      IF(IFETC(I1,6) .LE. 12) GO TO 700
99      C HERE IF DATA FROM A MODEL.
100     IB = IFETC(I1,6)
101     S1 = FLOAT(IFETC(I1,7)) / 60.
102     S2 = FLOAT(IFETC(I1,8)) / 60.
103     S1 = S1 + PPARS(J,5)
104     S2 = S2 + PPARS(J,5)
105     GO TO 701
106     C
107     700 I2 = IFETC(I1,8)
108     S1 = GCT(I2,1) + PPARS(J,5)
109     701 IF(PPARS(J,7) .GT. -8900000.) S1 = PPARS(J,7) + PPARS(J,5)
110     IF(S1 .LT. R1) R1 = S1
111     IF(IFETC(I1,6) .GT. 12) GO TO 702
112     I3 = IFETC(I1,9)
113     31 IF (GOT(I2,3).GT.C.) GO TO 331

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114      I2=I2+1
115      GO TO 332
116      331 I2 = GCT(I2,3)
117      332 I3 = I3 - 1
118      IF(I3 .GT. 1) GO TO 31
119      S2 = GCT(I2,1) + PPARS(J,5)
120      702 IF(PPARS(J,8) .LT. 8900000.) S2= PPARS(J,8) + PPARS(J,5)
121      IF(S2 .GT. R2) R2 = S2
122      628 CONTINUE
123      RUNSTP = R2 - R1
124      C   BUILD WHOLE PAGE GRAPH.
125      1C  CALL NEWPAG
126      CALL MCVABS(C,780)
127      CALL DMPBUF
128      WRITE(6,21) (HEAD(J),J=1,15)
129      21  FORMAT(' ',2X,15A4)
130      CALL MCVABS(3,100)
131      CALL DRWABS(1000,100)
132      CALL DRWABS(1000,750)
133      CALL DRWABS(3,750)
134      CALL DRWABS(3,100)
135      CALL MCVABS(300,750)
136      CALL DRWABS(300,100)
137      CALL DMPBUF
138      I1 = TTSPT - 1.
139      I2 = 300
140      I3 = 700 / (I1 + 1)
141      DO 625 I = 1,I1
142      I2 = I2 + I3
143      CALL MCVABS(I2,100)
144      CALL DRWABS(I2,750)
145      625 CONTINUE
146      CALL DMPBUF
147      C   DRAW DIVISIONS FOR DIFFERENT GRAPHS.
148      I3Y = 650 / MCP
149      I4Y = I3Y / 2
150      I1 = MCP - 1
151      I2 = 100
152      IF(I1 .LT. 1) GO TO 28C
153      DO 26 I = 1,I1
154      I4 = I2 + I4Y
155      CALL MCVABS(300,I4)
156      CALL DRWABS(305,I4)
157      CALL MCVABS(995,I4)
158      CALL DRWABS(1000,I4)
159      I2 = I2 + I3Y
160      CALL MOVABS(0,I2)
161      CALL DRWABS(1000,I2)
162      CALL DMPBUF
163      26 CONTINUE
164      28C I4 = I2 + I4Y
165      CALL MOVABS(300,I4)
166      CALL DRWABS(305,I4)
167      CALL MCVABS(995,I4)
168      CALL DRWABS(1000,I4)
169      CALL DMPBUF
170      C   ACD ALPHA

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171      I1 = 750
172      IDUP = 1
173      CALL VWINDO(C.,1023.,C.,780.)
174      CALL SWINDO(C,1023,0,780)
175      DO 7C I = 1,NCP
176      I11 = I1
177      I22 = I1 - I3Y + 30
178      ID = 0
179      DO 6C J = 1,K
180      IF (IFIX(PPARS(J,2)) .NE. I) GO TO 6D
181      CALL MCVABS(C,I11)
182      CALL ANMODE
183      CALL DMPBUF
184      J33 = PPARS(J,1)
185      WRITE(6,55) IFETC(J33,2),PPARS(J,3)
186      55 FORMAT(' ',6X,A6,F8.2)
187      Y1 = I11 - 11.
188      CALL MCVEA(10.,Y1)
189      IF(IC .EQ. 0) GO TO 41C
190      ID1 = C
191      ID2 = C
192      CALL DSHARC(84.,Y1,ID,ID1,ID2,IDUP)
193      GO TO 411
194      41C CALL DRAWA(84.,Y1)
195      411 CALL MCVABS(C,I22)
196      CALL ANMODE
197      CALL DMPBUF
198      WRITE(6,55) IFETC(J33,2),PPARS(J,4)
199      Y1 = I22 - 13.
200      CALL MCVEA(1C.,Y1)
201      IF(ID .EQ. 0) GO TO 413
202      ID1 = C
203      ID2 = C
204      CALL DSHARC(84.,Y1,ID,ID1,ID2,IDUP)
205      GO TO 415
206      413 CALL DRAWA(84.,Y1)
207      415 ID = IC + 1
208      I11 = I11 - 21
209      I22 = I22 + 21
210      6C CONTINUE
211      I1 = I1 - I3Y
212      70 CONTINUE
213      X = (RLNSTP/TISPT) + .000001
214      I = 2
215      IF(X .LT. 1.) I = 1
216      IF(X .GE. 60.) I = 3
217      IF(X .GE. 1440.) I = 4
218      X = X / TSTEPX(I)
219      X2 = R1 / TSTEPX(I)
220      X1 = X2 + X
221      I1 = TISPT
222      DO 75 J = 1,I1
223      XNC(J) = X1
224      X1 = X1 + X
225      75 CONTINUE
226      CALL MCVABS(C,100)
227      CALL ANMODE

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228      CALL DMPBUF
229      IF(TTSPT .GT. 4.) GO TO 80
230      IF(TTSPT .GT. 3.) GO TO 79
231      WRITE(6,93) X2,(XAC(J),J=1,3)
232      93 FORMAT(' ',15X,F6.1,11X,F6.1,11X,F6.1,10X,F6.1)
233      GO TO 85
234      79 WRITE(6,77) X2,(XNO(J),J=1,4)
235      77 FORMAT(' ',15X,F6.1,6X,F6.1,7X,F6.1,6X,F6.1,7X,F6.1)
236      GO TO 85
237      80 WRITE(6,81) X2,(XAC(J),J=1,5)
238      81 FORMAT(' ',11X,6(4X,F6.1))
239      85 WRITE(6,86) ISALP(I)
240      86 FORMAT(' ',30X,'TIME (' ,A4,')')
241      C INITIALIZE DASH INFORMATION.
242      CC 9C = 1,6
243      IIDAS(J,1) = C
244      90 CONTINUE
245      C PLOT VARIABLES...
246      IL = 750
247      DO 40 I = 1,NOP
248      IL = IL - I3Y
249      IDAS = -1
250      IDUP = 1
251      DO 30 II = 1,K
252      IF(IFIX(PPARS(II,2)) .NE. I) GO TO 30
253      IDAS = IDAS + 1
254      X = R1
255      XL = RLNSTP
256      Y = PPARS(II,4)
257      YL = PPARS(II,3) - Y
258      CALL S&INDO(X,XL,Y,YL)
259      CALL S&INDO(3CC,700,IL,I3Y)
260      I4 = PPARS(II,1)
261      IF(IFETC(I4,6) .LE. 12) GO TO 234
262      C HERE IF DATA FROM A MODEL.
263      IB = IFETC(I4,6)
264      IR = IFETC(I4,1)
265      IF(IB.EQ.16)IR=IR*2
266      REWIND IB
267      READ(IB,ERR=710) WN
268      MK2 = IFETC(I4,9)
269      DO 712 MK1 = 1,MK2
270      READ(IB,ERR=71C,END=71C) (B(I1),I1=1,IR)
271      IF(IB.EQ.16)B(1)=B(IR-1)
272      IF(B(1) .GE. PPARS(II,7)) GO TO 713
273      712 CONTINUE
274      GO TO 30
275      713 X = B(1) + PPARS(II,5)
276      Y = B(IR)
277      IDUP = IDUP + 1
278      JOUT = 0
279      IF(Y .LT. PPARS(II,4).CR.Y.GT.PPARS(II,3))JCLT=1
280      IF(Y .LT. PPARS(II,4)) Y=PPARS(II,4)
281      IF(Y .GT. PPARS(II,3)) Y = PPARS(II,3)
282      CALL MCVEA(X,Y)
283      IF(PPARS(II,9) .GT. 0. .AND. JOUT .EQ. 0) CALL PLSYM(X,Y,IDUP)
284      KEN = 0

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285      KI = 0
286      ISTAR = PPARS(II,6)
287      IF(ISTAR .EQ. 3) ISTAR = 0
288      IF(KEN .EQ. 1) GO TO 30
289      725 READ(IB,ERR=710,END=81C) (B(I1),I1=1,IR)
290      IF(IB .EQ. 16) B(1)=B(IR-1)
291      IF(B(1) .LE. PPARS(II,8)) GO TO 807
292      81C KEN = 1
293      REWIND IB
294      IF(ISTAR .EQ. 0) GO TO 30
295      GO TC 808
296      807 IF(KEN .EQ. 1) GO TO 3C
297      808 KI = KI + 1
298      IF(ISTAR .EQ. 0) GO TO 801
299      IF(MCD(KI,2) .EQ. 0) GO TO 802
300      IF(ISTAR .EQ. 2) GO TO 8C3
301      801 X = B(1) + PPARS(II,5)
302      IF(ISTAR .EQ. 0) Y = B(IR)
303      GO TO 802
304      803 Y = B(IR)
305      802 JOUT = 0.
306      IF(Y .LT. PPARS(II,4) .OR. Y .GT. PPARS(II,3)) JOUT = 1
307      IF(Y .LT. PPARS(II,4)) Y = PPARS(II,4)
308      IF(Y .GT. PPARS(II,3)) Y = PPARS(II,3)
309      IF(PPARS(II,6) .EQ. 3.) GO TO 812
310      IF(IDAS .GT. C) GO TO 717
311      ICUP = ICUP + 1
312      CALL DRAWA(X,Y)
313      812 IF(PPARS(II,9) .LT. 1. .OR. JOUT .EQ. 1) GO TO 805
314      IF(MCD(KI,2) .EQ. 0 .OR. ISTAR .EQ. C) CALL PLSYM(X,Y,ICUP)
315      GO TO 805
316      717 L = IICAS(II,1)
317      N = IICAS(II,2)
318      CALL DSHARC(X,Y,IDAS,L,N,ICUP)
319      IIDAS(II,1) = L
320      IIDAS(II,2) = N
321      GO TO 812
322      805 IF(ICUP .LT. 9) GO TC 806
323      CALL DMPBUF
324      IDUP = 1
325      806 IF(ISTAR .EQ. 0) GO TO 725
326      IF(MOD(KI,2) .EQ. 0) GO TO 807
327      IF(ISTAR .EQ. 1) Y = B(IR)
328      IF(ISTAR .EQ. 1) GO TO 725
329      X = B(1) + PPARS(II,5)
330      GO TO 725
331      710 WRITE(6,711) IB
332      711 FORMAT(' ERROR TRYING TO READ UNIT',I3)
333      GO TC 3C
334      C  HERE IF DATA FROM A SL DATA BASE.
335      234 I1 = IFETC(I4,8)
336      JE = IFETC(I4,9)
337      233 IF(GOT(I1,1) .GE. PPARS(II,7)) GO TO 240
338      JE = JE - 1
339      IF(JE .LE. 0) GO TC 3C
340      IF(GOT(I1,3) .GT. 0.) GO TO 235
341      I1=I1+1

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342 GO TO 233
343 235 I1 = GCT(I1,3)
344 GO TO 233
345 240 JEE = JEE
346 I2 = I1
347 241 IF (GOT(I2,1) .GT. PPARS(II,8)) GO TO 245
348 JEE = JEE - 1
349 IF (JEE .LE. C) GO TO 245
350 IF (GOT(I2,3) .GT. 0.) GO TO 244
351 I2 = I2 + 1
352 GO TO 241
353 244 I2 = GCT(I2,3)
354 GO TO 241
355 245 JE = JE - JEE
356 IF (JE .LE. 1) GO TO 30
357 X = (GCT(I1,1) + PPARS(II,5))
358 Y = GOT(I1,2)
359 IF (GOT(I1,3) .GT. 0.) GO TO 246
360 I1 = I1 + 1
361 GO TO 97
362 246 I1 = GCT(I1,3)
363 97 IDUP = IDUP + 1
364 JOUT = 0
365 IF (Y .LT. PPARS(II,4) .OR. Y .GT. PPARS(II,3)) JOUT = 1
366 IF (Y .LT. PPARS(II,4)) Y = PPARS(II,4)
367 IF (Y .GT. PPARS(II,3)) Y = PPARS(II,3)
368 CALL MCVEA(X,Y)
369 IF (PPARS(II,9) .GT. 0. .AND. JOUT .EQ. 0) CALL PLSYM(X,Y,IDUP)
370 C SET UP FOR TYPE (F PLCT(STAIR STEPS OR PCINT TO PCINT)...
371 ISTAR = 50
372 I2 = JE - 1
373 IF (PPARS(II,6) .NE. 1. .AND. PPARS(II,6) .NE. 2.)
374 1 GO TO 141
375 I2 = (JE - 1) * 2
376 ISTAR = PPARS(II,6)
377 141 DO 35 III = 1, I2
378 IF (ISTAR .EQ. 50) GO TO 118
379 IF (MOD(III,2) .EQ. 0) GO TO 119
380 IF (ISTAR .EQ. 2) GO TO 117
381 118 X = (GCT(I1,1) + PPARS(II,5))
382 IF (ISTAR .EQ. 50) Y = GOT(I1,2)
383 GO TO 119
384 117 Y = GOT(I1,2)
385 119 JOUT = 0
386 IF (Y .LT. PPARS(II,4) .OR. Y .GT. PPARS(II,3)) JOUT = 1
387 IF (Y .LT. PPARS(II,4)) Y = PPARS(II,4)
388 IF (Y .GT. PPARS(II,3)) Y = PPARS(II,3)
389 IF (PPARS(II,6) .EQ. 3.) GO TO 820
390 IF (IDAS .GT. C) GO TO 33
391 IDUP = IDUP + 1
392 CALL DRAWA(X,Y)
393 820 IF (PPARS(II,9) .LT. 1. .OR. JOUT .EQ. 1) GO TO 34
394 IF (MOD(III,2) .EQ. 0 .OR. ISTAR .EQ. 50) CALL PLSYM(X,Y,IDUP)
395 GO TO 34
396 33 L = IIDAS(II,1)
397 N = IICAS(II,2)
398 CALL CSFARC(X,Y,ICAS,L,N,ICLP)

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399      IIDAS(II,1) = L
400      IIDAS(II,2) = N
401      GO TO 820
402      34 IF(IDUP .LT. 9 ) GO TO 135
403      CALL DMPBUF
404      IDUP = 1
405      135 IF(ISTAR .EQ. 50) GO TO 136
406      IF(MOD(III,2) .EQ. 0) GO TO 35
407      IF(ISTAR .EQ. 1) Y = GOT(II,2)
408      IF(ISTAR .EQ. 1) GO TO 136
409      X = GOT(II,1) + PPARS(II,5)
410      136 IF (GOT(II,3).GT.0.) GO TO 137
411      II=II+1
412      GO TO 35
413      137 II = GOT(II,3)
414      35 CONTINUE
415      30 CONTINUE
416      4C CONTINUE
417      IF(IDUP .GT. 1) CALL DMPBUF
418      CALL PAGE3
419      WRITE(6,763)
420      763 FORMAT(' IF YOU WISH TO PLOT MORE ENTER 1 OTHERWISE RETN')
421      READ(5,762)IYX
422      762 FORMAT(I1)
423      IF(IYX.NE.1)CALL RETREV(LFLAG)
424      IF (IYX.EQ.1) GO TO 761
425      RETURN
426      END

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&PRT,S SMEDEP.PLOT33(C)

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DB6-603432*SMECEP.PLOT33(0)
1 SUBROUTINE PLCT33
2 COMMON/PLOTS/XXX(556),IARA(6),ITP,DELX,NM,IXXY,IRR,IRI,JYES
3 COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3)
4 COMMON/BBUF/B(601)
5 COMMON/NAMS/ICX,IDY,IZZZ,MNV,MNC
6 COMMON/PLTI/X)2(170),XZZ(100),YLO,YHI,NG,RVAL
7 DIMENSION XNC(5),HEAD(15)
8 DATA IYDA/'Y
9 CALL NEWPAG
10 WRITE(6,600)
11 600 FCORMAT(' INPLY HEADING WANTED. (15A4)')
12 602 READ(5,601,ERR=602) (HEAD(I),I=1,15)
13 601 FORMAT(15A4)
14 YDIS=YHI-YLO
15 XLO=XXZ(1)
16 XHI=XXZ(NM)
17 RUNSTP=XXZ(NM)-XXZ(1)
18 DO 77 IZ=3,5
19 IRSTP=RUNSTP
20 IRST2=IRSTP/IZ*IZ
21 77 IF (IRST2.EQ.IRSTP)GO TO 778
22 IZ=4
23 778 TTSTP=IZ
24 C BUILD WHOLE PAGE GRAPH
25 10 CALL NEWPAG
26 CALL MCVABS(0,780)
27 CALL DMPBUF
28 WRITE(6,21) (HEAD(J),J=1,15)
29 21 FORMAT(' ',2X,15A4)
30 CALL MCVABS(3,100)
31 CALL DRWABS(1000,100)
32 CALL DRWABS(1000,750)
33 CALL DRWABS(3,750)
34 CALL DRWABS(3,100)
35 CALL MCVABS(300,750)
36 CALL DRWABS(300,100)
37 CALL DMPBUF
38 I1 = TTSTP - 1.
39 I2 = 300
40 I3 = 700 / (I1 + 1)
41 DO 625 I = 1,I1
42 I2 = I2 + I3
43 CALL MCVABS(I2,100)
44 CALL DRWABS(I2,750)
45 625 CONTINUE
46 C DRAW 'Y TICS'
47 IZY=263
48 DO 87 I=1,3
49 CALL MCVABS(300,IZY)
50 CALL DRWABS(300,IZY)
51 CALL MCVABS(995,IZY)
52 CALL DRWABS(1000,IZY)
53 ZZY=FLCAT(IZY)+162.5
54 IZY=ZZY
55 87 CONTINUE
56 CALL MCVABS(0,750)

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57      CALL ANMODE
58      CALL DMPBUF
59      WRITE(6,55)ICY,YHI
60      55  FORMAT(' ',6X,A6,F9.3)
61      CALL MCVABS(0,130)
62      CALL ANMODE
63      CALL DMPBUF
64      WRITE(6,55)ICY,YLO
65      IZP1=IZ+1
66      X=(RUNSTP/TTSTP)+.0000C1
67      X1=XXZ(1)
68      DO 75 J=1,IZP1
69      XNO(J)=X1
70      75  X1=X1+X
71      CALL MCVABS(C,100)
72      CALL ANMODE
73      CALL DMPBUF
74      IZM2=IZ-2
75      GO TO (78,79,80),IZM2
76      78  WRITE(6,93)(XNO(J),J=1,4)
77      93  FORMAT(' ',18X,4(F6.1,9X))
78      GO TO 85
79      79  WRITE(6,777)(XNO(J),J=1,5)
80      777 FORMAT(' ',15X,5(F6.1,6X))
81      GO TO 85
82      80  WRITE(6,178)(XNO(J),J=1,6)
83      178 FORMAT(' ',15X,6(F6.1,4X))
84      85  WRITE(6,86)ICX
85      IF(ITP.EQ.1)WRITE(6,1001)RVAL
86      1001 FORMAT(18X,' R=',F6.4)
87      86  FORMAT(' ',37),A6)
88      C  ***PLOT VARIABLES***
89      CALL VWINDO(XLO,RUNSTP,YLO,YDIS)
90      CALL SWINDO(300,700,100,650)
91      DO 51 I=1,NM
92      X=XXZ(I)
93      Y=XXZ(85+I)
94      CALL MCVEA(X,Y)
95      51  CALL PLSYM(X,Y,2)
96      CALL DMPBUF
97      IF(ITP.NE.1)GO TO 151
98      CALL DMPBUF
99      CALL MCVEA(XZZ(1),XZZ(NG+1))
100     CALL DRAWA(XZZ(NG),XZZ(NG+NG))
101     CALL DMPBUF
102     GO TO 454
103     151  CALL DMPBUF
104     CALL MCVEA(XXZ(1),XXZ(85+1))
105     DO 152 I=1,NG
106     CALL DRAWA(XZZ(I),XZZ(NG+I))
107     152  IF(MOD(I,15).EQ.0)CALL DMPBUF
108     CALL DMPBLF
109     454  CALL MCVABS(310,750)
110     CALL ANMODE
111     CALL DMPBUF
112     CALL MCVABS(0,0)
113     CALL MCVABS(0,0)

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```
114      CALL DMPBUF
115      WRITE(6,455)
116      455  FORMAT(' HARD COPY WANTED?')
117      READ(5,456)IHD
118      456  FORMAT(A4)
119      IF (IHC.NE.IYCA)GO TO 999
120      CALL HECOPY
121      999  CALL REGRES
122      STOP
123      END
```

@PRT,S SMECEP.PLSYM(D)

```

DB6-603432*SMEDEP.PLSYM(C)
 1 SUBROUTINE PLSYM(X,Y,IDUP)
 2 C THIS ROUTINE PLOTS A X SYMBOL AT THE POINT DEFINED BY
 3 C ENGINEERING UNITS OF X AND Y.
 4 COMMCN/TKTRNX/KBAUCR,KERROR,KGRAFL,KHCMEY,KKMODE,
 5 1 KHORSZ,KVERSZ,KITALC,KSIZEF,KLMRGN,KRMRGN,
 6 2 KTBSZ,KHORZT(10),KVERTT(10),
 7 3 KBEAMX,KBEAMY,KMOVEF,KPCHAR(4),
 8 4 KMINSX,KMINSY,KMAXSX,KMAXSY,TMINX,TMINY,TMAXX,TMAXY,
 9 5 TREALX,TREALY,TIMAGX,TIMAGY,TRCOSF,TRSINF,TRSCAL
10 CALL MCVEA(X,Y)
11 IX1 = KBEAMX - 3
12 IX2 = KBEAMX + 3
13 IY1 = KBEAMY - 3
14 IY2 = KBEAMY + 3
15 IF (IDUP .LT. 9) GO TO 2
16 CALL DMPBUF
17 2 CALL MCVABS(IX1,IY1)
18 CALL DRWABS(IX2,IY2)
19 CALL MCVABS(IX2,IY1)
20 CALL DRWABS(IX1,IY2)
21 CALL MCVEA(X,Y)
22 IDUP = 1
23 CALL DMPBUF
24 RETURN
25 END

```

```

&PRT,S SMEDEP.MOD2V(0)

```

```

DB6-603432*SMEDEP.MOD2V(G)
1  SCBRCLINE MCC2V
2  COMMON/ABUF/IF,IFD,ISIF,IFETC(100,9),GOT(500,3),IEND,IENDG
3  REAL DATA(2)
4  DATA JYES/'Y'/
5  WRITE (6,20)
6  20  FORMAT(/' THIS COMMAND ALLOWS THE USER TO MODIFY'/,
7      &' ONE VARIABLE BY ANOTHER VARIABLE'//)
8  WRITE(6,21)
9  21  FORMAT(' DO YOU WISH INSTRUCTIONS?(Y,N)')
10 READ (5,22) JY
11 22  FORMAT(A1)
12 IF (JY.NE.JYES) GO TO 30
13 WRITE(6,23)
14 23  FORMAT(/' ENTER DESIRED MODIFY FUNCTION'/
15      2  ' MFUN=1, VAR3=VAR1 + VAR2'//
16      3  ' =2, VAR3=VAR1 - VAR2'//
17      4  ' =3, VAR3=VAR1 * VAR2'//
18      5  ' =4, VAR3=VAR1 / VAR2'//
19      4  ' =5, VAR3=(VAR2-VAR1)/VAR1 * 100. (2)'//)
20 READ (5,25) MFUN
21 25  FORMAT(I1)
22 IF (MFUN.GT.0 .AND. MFUN.LT.6) GO TO 35
23 WRITE(6,26)
24 26  FORMAT(/' *** INCORRECT MODIFY FUNCTION, TRY AGAIN')
25 GO TO 24
26 30  WRITE(6,31)
27 31  FORMAT(/' ENTER DESIRED MODIFY FUNCTION')
28 GO TO 24
29 35  WRITE(6,36)
30 36  FORMAT(/
31      &' PLEASE LIST VAR1 TO BE MODIFIED BY VAR2 TO CREATE VAR3'//)
32 WRITE(6,60)
33 60  FORMAT(' VAR1  VAR2  VAR3')
34 READ (5,80) ID1,ID2,ID3
35 80  FORMAT(3(A6,1X))
36 I1=0
37 I2=0
38 DO 120 I=1,IF
39 IF (IFETC(I,2).NE.ID3) GO TO 90
40 WRITE (6,85) ID3
41 85  FORMAT(' DUPLICATE NAME ',A6,' TRY AGAIN'//)
42 GO TO 40
43 90  IF (IFETC(I,2).NE.ID1) GO TO 100
44 I1=I
45 100 IF (IFETC(I,2).NE.ID2) GO TO 120
46 I2=I
47 120 CONTINUE
48 IF (I1.GT.0) GO TO 160
49 WRITE (6,140) ID1
50 140 FORMAT(2X,A6,' NOT RECOGNIZED, TRY AGAIN'//)
51 GO TO 40
52 160 IF (I2.GT.0) GO TO 180
53 WRITE (6,140) ID2
54 GO TO 40
55 180 IN1=IFETC(I1,9)
56 IN2=IFETC(I2,9)
    NG1=IFETC(I1,8)
    NV1=C

```

```

57      DO 280 I=1,IN1
58      NG2=IFETC(I2,8)
59      DO 240 J=1,IN2
60      IF (ABS(GOT(NG2,1)-GOT(NG1,1)).GT.1.E-10) GO TO 195
61      DATA(1)=GOT(NG1,1)
62      DATA(2)=GOT(NG1,2)
63      CALL MCDVAR(DATA,MFUN,ID3,GOT(NG2,2),I1)
64      NVM=NVM+1
65      IFETC(IF+1,9)=NVM
66      195 CONTINUE
67      IF (GOT(NG2,3).GT.0.) GO TO 200
68      NG2=NG2+1
69      GO TO 240
70      200 NG2=GOT(NG2,3)
71      240 CONTINUE
72      IF (GOT(NG1,3).GT.C.) GO TO 260
73      NG1=NG1+1
74      GO TO 280
75      260 NG1=GOT(NG1,3)
76      280 CONTINUE
77      LFLAG=99
78      IF=IF+1
79      CALL RETREV(LFLAG)
80      RETURN
81      END

```

QPRT,S SMEDEP.MODVAR(C)


```

DB6-G03432*SMEDEP.MODVAR(0)
1  SUBROUTINE MODVAR(DATA,MFUN,NVALN,VK,J1)
2  COMMON/ABUF/IF,IFD,ISIF,IFETC(ICC,9),GCT(SCC,3),IEND,IENCG
3  REAL DATA(2)
4  GO TO (10,20,30,40,50),MFUN
5  10  DATAN=DATA(2)+VK
6  GO TO 100
7  20  DATAN=DATA(2)-VK
8  GO TO 100
9  30  DATAN=DATA(2)*VK
10 GO TO 100
11 40  DATAN=DATA(2)/VK
12 GO TO 100
13 50  DATAN=(VK-DATA(2))/DATA(2)*ICC.
14 100 CONTINUE
15 WRITE(6,110)DATA,VK,DATAN,NVALN
16 110 FORMAT(4G12.5,5X,A6)
17 IF(NVALN.EQ.NVALL)GO TO 140
18 NVALL=NVALN
19 NC=0
20 ISIF=ISIF+1
21 IF(IF+1.LE.IEND)GO TO 130
22 WRITE(6,120)
23 120 FORMAT(//' *** FETCH ARRAY FULL *')
24 GO TO 520
25 130 IFETC(IF+1,1)=IFETC(J1,1)
26 IFETC(IF+1,2)=NVALN
27 IFETC(IF+1,3)=IFETC(J1,3)
28 IFETC(IF+1,4)=IFETC(J1,4)
29 IFETC(IF+1,5)=IFETC(J1,5)
30 IFETC(IF+1,6)=IFETC(J1,6)
31 IF(IFETC(IF+1,6).GT.12)IFETC(IF+1)=9
32 IFETC(IF+1,7)=IFETC(J1,7)
33 IFETC(IF+1,8)=IFD+1
34 140 IFD=IFD+1
35 IF(IFD.LE.IENDG)GO TO 160
36 WRITE(6,150)
37 150 FORMAT(//' *** DATA BUFFER FULL *')
38 IFD=IFD-1
39 GO TO 520
40 160 GOT(IFD,1)=DATA(1)
41 IF(MFUN.EQ.7)GOT(IFD,1)=DATAN
42 GOT(IFD,2)=DATAN
43 GOT(IFD,3)=0.
44 NC=NC+1
45 IF(NC.LT.IFETC(IF,9))GOT(IFD,3)=IFD+1
46 RETURN
47 520 WRITE(6,530)
48 530 FORMAT(' REQUEST TO MODIFY DATA DENIED'//)
49 LFLAG=99
50 CALL RETREV(LFLAE)
51 ENC

```

APPENDIX B

DATA BASE DIRECTORY

LABELS FOR EXPERIMENT M171

1 V02-REST (L/MIN)
 2 V02-LEVEL 1 (L/MIN)
 3 V02-LEVEL 2 (L/MIN)
 4 V02-LEVEL 3 (L/MIN)
 5 V02-RECOVERY (L/MIN)
 6 VCO2-REST (L/MIN)
 7 VCO2-LEVEL 1 (L/MIN)
 8 VCO2-LEVEL 2 (L/MIN)
 9 VCO2-LEVEL 3 (L/MIN)
 10 VCO2-RECOVERY (L/MIN)
 11 RER-REST
 12 RER-LEVEL 1
 13 RER-LEVEL 2
 14 RER-LEVEL 3
 15 RER-RECOVERY
 16 VE-REST (L/MIN)
 17 VE-LEVEL 1 (L/MIN)
 18 VE-LEVEL 2 (L/MIN)
 19 VE-LEVEL 3 (L/MIN)
 20 VE-RECOVERY (L/MIN)
 21 H R-REST (BT/MIN)
 22 H R-LEVEL 1 (BT/MIN)
 23 H R-LEVEL 2 (BT/MIN)
 24 H R-LEVEL 3 (BT/MIN)
 25 H R-RECOVERY (BT/MIN)
 26 SBP-REST (MM HG)
 27 SBP-LEVEL 1 (MM HG)
 28 SBP-LEVEL 2 (MM HG)
 29 SBP-LEVEL 3 (MM HG)
 30 SBP-RECOVERY (MM HG)
 31 DBP-REST (MM HG)
 32 DBP-LEVEL 1 (MM HG)
 33 DBP-LEVEL 2 (MM HG)
 34 DBP-LEVEL 3 (MM HG)
 35 DBP-RECOVERY (MM HG)
 36 MAP-REST (MM HG)
 37 MAP-LEVEL 1 (MM HG)
 38 MAP-LEVEL 2 (MM HG)
 39 MAP-LEVEL 3 (MM HG)
 40 MAP-RECOVERY (MM HG)
 41 CARD OUT-REST (L/MIN)
 42 CARD OUT-LEV 1 (L/MIN)
 43 CARD OUT-LEV 2 (L/MIN)
 44 CARD OUT-LEV 3 (L/MIN)
 45 CARD OUT-RECOV (L/MIN)
 46
 47
 48
 49
 50
 51 V01 * 160 HR
 52 V02 * 140 HR
 53 V02/KG-MIN * 180 HR
 54 V02 * 150 WATTS
 55 VE * 2. L V02
 56 CO * 2. L V02
 57 CO * 160 HR

LABELS FOR EXPERIMENT M171

58 CO * 140 HR
 59 CO * 200 SBP
 60 CO * 110 MAP
 61 SBP * 15 L/MIN
 62 DBP * 15 L/MIN
 63 SBP * 160 HR
 64 DBP * 160 HR
 65 RER * 160 HR
 66 SV * 160 HR
 67 AV02 * 2 L V02
 68 AV02 * 1 L V02
 69 MAP * 160 HR
 70 MAP * 12 L/MIN CO
 71 MAP * 15 L/MIN CO
 72 TPR * 160 HR
 73 TPR * 12 L/MIN CO
 74 TPR * 15 L/MIN CO
 75 TPR * 2 L/MIN V02
 76 AV02 * 120 HR
 77 AV02 * 140 HR
 78 AV02 * 160 HR
 79
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 81
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 89 AVG XRCTS STROKE VOL
 90
 91 STROKE VOL-REST CC
 92 STROKE VOL-LEV 1 CC
 93 STROKE VOL-LEV 2 CC
 94 STROKE VOL-LEV 3 CC
 95 STROKE VOL-RECOV CC
 96 AV02 DIFF-REST
 97 AV02 DIFF-LEV 1
 98 AV02 DIFF-LEV 2
 99 AV02 DIFF-LEV 3
 100 AV02 DIFF-RECOV
 101 TPR-REST
 102 TPR-LEV 1
 103 TPR-LEV 2
 104 TPR-LEV 3
 105 TPR-RECOVERY
 106 PULSE PRS-REST (MMHG)
 107 PULSE PRS-LEV 1 (MMHG)
 108 PULSE PRS-LEV 2 (MMHG)
 109 PULSE PRS-LEV 3 (MMHG)
 110 PULSE PRS-RECOV (MMHG)
 111 TIME TENS INDX-REST
 112 TIME TENS INDX-LEV 1
 113 TIME TENS INDX-LEV 2
 114 TIME TENS INDX-LEV 3

LABELS FOR EXPERIMENT M171

115 TIME TENS INDX-RECOV
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LABELS FOR EXPERIMENT M171

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END ONSITE PRINTOUT ON DECEMBER 3, 1975 AT 08:43:35
DB6-G03432*TPF\$(0).W(0)

LABELS FOR EXPERIMENT M092

1 HEART RATE (CONTROL)
 2 HEART RATE (-30)
 3 HEART RATE (-40)
 4 HEART RATE (-50)
 5 HEART RATE (RECOVERY)
 6 SYSTOLIC BP (CONTROL)
 7 SYSTOLIC BP (-30)
 8 SYSTOLIC BP (-40)
 9 SYSTOLIC BP (-50)
 10 SYSTOLIC BP (RECOVERY)
 11 DIASTOLIC BP (CONTROL)
 12 DIASTOLIC BP (-30)
 13 DIASTOLIC BP (-40)
 14 DIASTOLIC BP (-50)
 15 DIASTOLIC BP (RECOVERY)
 16 MEAN BP (CONTROL)
 17 MEAN BP (-30)
 18 MEAN BP (-40)
 19 MEAN BP (-50)
 20 MEAN BP (RECOVERY)
 21 PULSE PRESSURE (CONTROL)
 22 PULSE PRESSURE (-30)
 23 PULSE PRESSURE (-40)
 24 PULSE PRESSURE (-50)
 25 PULSE PRESSURE (RECOVERY)
 26 PLVC EOP (CONTROL)
 27 PLVC EOP (-30)
 28 PLVC EOP (-40)
 29 PLVC EOP (-50)
 30 PLVC EOP (RECOVERY)
 31 S1 SLOPE (CONTROL)
 32 S1 SLOPE (-30)
 33 S1 SLOPE (-40)
 34 S1 SLOPE (-50)
 35 S1 SLOPE (RECOVERY)
 36 S2 SLOPE (CONTROL)
 37 S2 SLOPE (-30)
 38 S2 SLOPE (-40)
 39 S2 SLOPE (-50)
 40 S2 SLOPE (RECOVERY)
 41 S1 COMPLIANCE (CONTROL)
 42 S1 COMPLIANCE (-30)
 43 S1 COMPLIANCE (-40)
 44 S1 COMPLIANCE (-50)
 45 S1 COMPLIANCE (RECOVERY)
 46 PEP (CONTROL)
 47 PEP (-30)
 48 PEP (-40)
 49 PEP (-50)
 50 PEP (-RECOVERY)
 51 LVET (CONTROL)
 52 LVET (-30)
 53 LVET (-40)
 54 LVET (-50)
 55 LVET (RECOVERY)
 56 PEP/LVET (CONTROL)
 57 PEP/LVET (-30)

LABELS FOR EXPERIMENT M092

58 PEP/LVET (-40)
 59 PEP/LVET (-50)
 60 PEP/LVET (RECOVERY)
 61 ETI (CONTROL)
 62 ETI (-30)
 63 ETI (-40)
 64 ETI (-50)
 65 ETI (RECOVERY)
 66 (Q-S2) I (CONTROL)
 67 (Q-S2) I (-30)
 68 (Q-S2) I (-40)
 69 (Q-S2) I (-50)
 70 (Q-S2) I (RECOVERY)
 71 S1 AMPLITUDE (CONTROL)
 72 S1 AMPLITUDE (-30)
 73 S1 AMPLITUDE (-40)
 74 S1 AMPLITUDE (-50)
 75 S1 AMPLITUDE (RECOVERY)
 76 STROKE VOLUME (CONTROL)
 77 STROKE VOLUME (-30)
 78 STROKE VOLUME (-40)
 79 STROKE VOLUME (-50)
 80 STROKE VOLUME (RECOVERY)
 81 CARDIAC OUTPUT (CONTROL)
 82 CARDIAC OUTPUT (-30)
 83 CARDIAC OUTPUT (-40)
 84 CARDIAC OUTPUT (-50)
 85 CARDIAC OUTPUT (RECOVERY)
 86 PRU (CONTROL)
 87 PRU (-30)
 88 PRU (-40)
 89 PRU (-50)
 90 PRU (RECOVERY)
 91 ECHO LV-THICKNESS (CONTROL)
 92 ECHO LV-THICKNESS (-30)
 93 ECHO LV-THICKNESS (-40)
 94 ECHO LV-THICKNESS (-50)
 95 ECHO LV-THICKNESS (RECOVERY)
 96 ECHO LV-STROKE VOL. (CONTROL)
 97 ECHO LV-STROKE VOL. (-30)
 98 ECHO LV-STROKE VOL. (-40)
 99 ECHO LV-STROKE VOL. (-50)
 100 ECHO LV-STROKE VOL. (RECOVERY)
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LABELS FOR EXPERIMENT M092

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151 VECTAN HEART RATE (CONTROL)
152 VECTAN HEART RATE (-30)
153 VECTAN HEART RATE (-40)
154 VECTAN HEART RATE (-50)
155 VECTAN HEART RATE (RECOVERY)
156 PR INTERVAL (CONTROL)
157 PR INTERVAL (-30)
158 PR INTERVAL (-40)
159 PR INTERVAL (-50)
160 PR INTERVAL (RECOVERY)
161 QRS DURATION (CONTROL)
162 QRS DURATION (-30)
163 QRS DURATION (-40)
164 QRS DURATION (-50)
165 QRS DURATION (RECOVERY)
166 QT INTERVAL (CONTROL)
167 QT INTERVAL (-30)
168 QT INTERVAL (-40)
169 QT INTERVAL (-50)
170 QT INTERVAL (RECOVERY)
171 P MAX MAG (CONTROL)

LABELS FOR EXPERIMENT M092

172 P MAX MAG (-30)
173 P MAX MAG (-40)
174 P MAX MAG (-50)
175 P MAX MAG (RECOVERY)
176 P MAX AZ (CONTROL)
177 P MAX AZ (-30)
178 P MAX AZ (-40)
179 P MAX AZ (-50)
180 P MAX AZ (RECOVERY)
181 P MAX EL (CONTROL)
182 P MAX EL (-30)
183 P MAX EL (-40)
184 P MAX EL (-50)
185 P MAX EL (RECOVERY)
186 QRS-E CIRC (CONTROL)
187 QRS-E CIRC (-30)
188 QRS-E CIRC (-40)
189 QRS-E CIRC (-50)
190 QRS-E CIRC (RECOVERY)
191 QRS-E AREA (CONTROL)
192 QRS-E AREA (-30)
193 QRS-E AREA (-40)
194 QRS-E AREA (-50)
195 QRS-E AREA (RECOVERY)
196 QRS-E DEPTH (CONTROL)
197 QRS-E DEPTH (-30)
198 QRS-E DEPTH (-40)
199 QRS-E DEPTH (-50)
200 QRS-E DEPTH (RECOVERY)
201 QRS MAX MAG (CONTROL)
202 QRS MAX MAG (-30)
203 QRS MAX MAG (-40)
204 QRS MAX MAG (-50)
205 QRS MAX MAG (RECOVERY)
206 QRS MAX AZ (CONTROL)
207 QRS MAX AZ (-30)
208 QRS MAX AZ (-40)
209 QRS MAX AZ (-50)
210 QRS MAX AZ (RECOVERY)
211 QRS MAX EL (CONTROL)
212 QRS MAX EL (-30)
213 QRS MAX EL (-40)
214 QRS MAX EL (-50)
215 QRS MAX EL (RECOVERY)
216 ST-E CIRC (CONTROL)
217 ST-E CIRC (-30)
218 ST-E CIRC (-40)
219 ST-E CIRC (-50)
220 ST-E CIRC (RECOVERY)
221 ST-E AREA (CONTROL)
222 ST-E AREA (-30)
223 ST-E AREA (-40)
224 ST-E AREA (-50)
225 ST-E AREA (RECOVERY)
226 ST-E DEPTH (CONTROL)
227 ST-E DEPTH (-30)
228 ST-E DEPTH (-40)

LABELS FOR EXPERIMENT M092

229 ST-E DEPTH (-50)
 230 ST-E DEPTH (RECOVERY)
 231 ST MAX MAG (CONTROL)
 232 ST MAX MAG (-30)
 233 ST MAX MAG (-40)
 234 ST MAX MAG (-50)
 235 ST MAX MAG (RECOVERY)
 236 ST MAX AZ (CONTROL)
 237 ST MAX AZ (-30)
 238 ST MAX AZ (-40)
 239 ST MAX AZ (-50)
 240 ST MAX AZ (RECOVERY)
 241 ST MAX EL (CONTROL)
 242 ST MAX EL (-30)
 243 ST MAX EL (-40)
 244 ST MAX EL (-50)
 245 ST MAX EL (RECOVERY)
 246 J MAG (CONTROL)
 247 J MAG (-30)
 248 J MAG (-40)
 249 J MAG (-50)
 250 J MAG (RECOVERY)
 251 J AZ (CONTROL)
 252 J AZ (-30)
 253 J AZ (-40)
 254 J AZ (-50)
 255 J AZ (RECOVERY)
 256 J EL (CONTROL)
 257 J EL (-30)
 258 J EL (-40)
 259 J EL (-50)
 260 J EL (RECOVERY)
 261 D-ST SLOPE (CONTROL)
 262 D-ST SLOPE (-30)
 263 D-ST SLOPE (-40)
 264 D-ST SLOPE (-50)
 265 D-ST SLOPE (RECOVERY)
 266 D-P VECTOR INTEGRAL (CONTROL)
 267 D-P VECTOR INTEGRAL (-30)
 268 D-P VECTOR INTEGRAL (-40)
 269 D-P VECTOR INTEGRAL (-50)
 270 D-P VECTOR INTEGRAL (RECOVERY)
 271 D-QRS VECTOR INTEGRAL (CONTROL)
 272 D-QRS VECTOR INTEGRAL (-30)
 273 D-QRS VECTOR INTEGRAL (-40)
 274 D-QRS VECTOR INTEGRAL (-50)
 275 D-QRS VECTOR INTEGRAL (RECOVERY)
 276 D-ST VECTOR INTEGRAL (CONTROL)
 277 D-ST VECTOR INTEGRAL (-30)
 278 D-ST VECTOR INTEGRAL (-40)
 279 D-ST VECTOR INTEGRAL (-50)
 280 D-ST VECTOR INTEGRAL (RECOVERY)
 281 QRS-T SPATIAL ANGLE (CONTROL)
 282 QRS-T SPATIAL ANGLE (-30)
 283 QRS-T SPATIAL ANGLE (-40)
 284 QRS-T SPATIAL ANGLE (-50)
 285 QRS-T SPATIAL ANGLE (RECOVERY)

LABELS FOR EXPERIMENT M092

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 301 DATE (CAL.)
 302 DOY
 303 MD
 304 TIME (GMT)
 305 PRESYNCOPE TIME
 306 WEIGHT
 307 L CALF CIRC
 308 R CALF CIRC
 309 L LEG VOLUME
 310 R LEG VOLUME
 311 ORAL TEMP.
 312 AMB. TEMP-BEGIN
 313 AMB. TEMP-END
 314 LBNPD TEMP-BEGIN
 315 LBNPD TEMP-END
 316 HOURS SINCE LAST MEAL
 317 HOURS SINCE SLEEP
 318 HOURS OF SLEEP
 319 TEST STATION
 320 CLINICAL SBP
 321 CLINICAL DBP
 322 C/TS RATIO (DIAM)
 323 C/TS RATIO (AREAL)
 324 C/TD RATIO (DIAM)
 325 C/TD RATIO (AREAL)
 326
 327
 328
 329 ATMOSPHERIC PRESS (MMHG)
 330 ACHILLES REFLEX TIME
 331 P-VEINUS PRESS
 332 CIRC TIME-1 (ARM-RHEART)
 333 CIRC TIME-2 (ARM-LHEART)
 334 CIRC TIME-3 (AREA-FEM)
 335 ECHO LV-THICKNESS (-8)
 336 ECHO LV-THICKNESS (-16)
 337 ECHO SV (-8)
 338 ECHO SV (-16)
 339 HEART RATE (-8)
 340 HEART RATE (-16)
 341 SYSTOLIC BP (-8)
 342 SYSTOLIC BP (-16)

LABELS FOR EXPERIMENT M092

343 DIASTOLIC BP (-8)
 344 DIASTOLIC BP (-16)
 345 MEAN BP (-8)
 346 MEAN BP (-16)
 347 PULSE PRESS (-8)
 348 PULSE PRESS (-16)
 349 PLVC EOP (-8)
 350 PLVC EOP (-16)
 351 S1 SLOPE (-8)
 352 S1 SLOPE (-16)
 353 S2 SLOPE (-8)
 354 S2 SLOPE (-16)
 355 S1 COMPLIANCE (-8)
 356 S2 COMPLIANCE (-16)
 357 LEG BL FL-1 (-30)
 358 LEG BL FL-2 (-30)
 359 LEG BL FL-1 (-50)
 360 LEG BL FL-2 (-50)

END ONSITE PRINTOUT ON DECEMBER 3, 1975 AT 08:46:09
 DB6-G03432*TPF\$(0).W(0)

LABELS FOR EXPERIMENT M073

1 TOTAL URINE VOL (ML)
 2 URINE OSMOL (MOSM/TV)
 3 URINE NA (MEQ/TV)
 4 URINE K (MEQ/TV)
 5 URINE MG (MEQ/TV)
 6 URINE PO4 (MG/TV)
 7 URINE CA (MEQ/TV)
 8 URINE CL (MEQ/TV)
 9 URINE H (MLAOH/VOL)
 10 URINE SPECIFIC GRAV
 11 URINE CREAT (MG/TV)
 12 URINE URIC A (MG/TV)
 13 EPINEPHRINE (UG/TV)
 14 NOREPINEPHRIN (UG/TV)
 15 ADH (MU/TV)
 16 HYDROCORTISON (UG/TV)
 17 ALDOSTERONE (UG/TV)
 18 17-OH-CORT (MG/TV)
 19 5-OH-IAA (MG/TV)
 20 BLOOD OSMOL (MOSM/L)
 21 BLOOD NA (MEQ/L)
 22 BLOOD K (MEG/L)
 23 BLOOD MG (MG())
 24 BLOOD PO4 (MG())
 25 BLOOD CA (MG())
 26 BLOOD CL (MEQ/L)
 27 BLOOD GLUCOSE (MG())
 28 TOTAL PLASMA PROT (G())
 29 PARATHORMONE (PG/ML)
 30 CALCITONIN (PG/ML)
 31 VITAMIN D (NG/ML)
 32 TSH (PG/ML)
 33 HYDROCORT (UG/100ML)
 34 ALDOSTERONE (PG/ML)
 35 GROWTH HORMONE (NG/ML)
 36 ANGIOTENSIN (MUG/ML/H)
 37 INSULIN (UU/ML)
 38 THYROXIN (UG/100ML)
 39 ACTH (PG/ML)
 40 TESTOST (NG/100ML)
 41 DIET CALORIES (KCAL)
 42 DIET PROTEIN (G)
 43 DIET CALCIUM (MG)
 44 DIET PHOSPHORUS (MG)
 45 DIET SODIUM (MG)
 46 DIET MAGNESIUM (MG)
 47 DIET POTASSIUM (MG)
 48 WATER INTAKE (ML)
 49
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 52
 53 PREGNANEDIOL (MG/TV)
 54 ANDROSTERONE (MG/TV)
 55 ETIOCHOLAN (MG/TV)
 56 DEHYDROEPIANO (MG/TV)
 57 11-O-ANDRO (MG/TV)

LABELS FOR EXPERIMENT M073

58 11-O-ETIOCHO (MG/TV)
 59 11-OH-ANDRO (MG/TV)
 60 11-OH-ETIOCHO (MG/TV)
 61 TOTAL 17-KETO (TMG/TV)
 62 TOTAL LYSINE (MG/TV)
 63 TOTAL HISTIOIN (MG/TV)
 64 TOTAL NH3X1000 (MG/TV)
 65 TOTAL ARGININE (MG/TV)
 66 TOTAL OH-PROL (MG/TV)
 67 TOTAL ASP ACID (MG/TV)
 68 TOTAL THREONIN (MG/TV)
 69 TOTAL SERINE (MG/TV)
 70 TOTAL GLU ACID (MG/TV)
 71 TOTAL PROLINE (MG/TV)
 72 TOTAL GLYCINE (MG/TV)
 73 TOTAL ALANINE (MG/TV)
 74 TOTAL CYSTIN/2 (MG/TV)
 75 TOTAL VALINE (MG/TV)
 76 TOTAL METHION (MG/TV)
 77 TOTAL ISOLEUC (MG/TV)
 78 TOTAL LEUCINE (MG/TV)
 79 TOTAL TYROSINE (MG/TV)
 80 TOTAL PHENYLAL (MG/TV)
 81 FREE OH-LYSINE (MG/TV)
 82 FREE GABA (MG/TV)
 83 FREE ORNITHINE (MG/TV)
 84 FREE ETOHAMINE (MG/TV)
 85 FREE NH3X1000 (MG/TV)
 86 FREE LYSINE (MG/TV)
 87 FREE 1-CH3-HIS (MG/TV)
 88 FREE HISTIDINE (MG/TV)
 89 FREE 3-CH3-HIS (MG/TV)
 90 FREE ANSERINE (MG/TV)
 91 FREE TRYPTOPHA (MG/TV)
 92 FREE CREATININ (MG/TV)
 93 FREE CARNOSINE (MG/TV)
 94 FREE ARGININE (MG/TV)
 95 PHOSPHOSERINE (MG/TV)
 96 PO4-ETOH-AMINE (MG/TV)
 97 FREE TAURINE (MG/TV)
 98 UREA/1000 (MG/TV)
 99 FREE OH-PROLIN (MG/TV)
 100 FREE ASPART AC (MG/TV)
 101 FREE THREONINE (MG/TV)
 102 FREE SERINE (MG/TV)
 103 FREE ASPARAGIN (MG/TV)
 104 FREE GLUTAMINE (MG/TV)
 105 FREE SARCOSE (MG/TV)
 106 FREE PROLINE (MG/TV)
 107 FREE GLUT ACID (MG/TV)
 108 FREE CITRULLIN (MG/TV)
 109 FREE GLYCINE (MG/TV)
 110 FREE ALANINE (MG/TV)
 111 A-AMINOADIPTC (MG/TV)
 112 A-NH2-N-BUTYR (MG/TV)
 113 FREE VALINE (MG/TV)
 114 FREE CYSTIN/2 (MG/TV)

LABELS FOR EXPERIMENT M073

115 CYSTATHIONINE (MG/TV)
 116 FREE METHIONIN (MG/TV)
 117 FREE ISOLEUCIN (MG/TV)
 118 FREE LEUCINE (MG/TV)
 119 FREE TYROSINE (MG/TV)
 120 FREE PHENYLALA (MG/TV)
 121 FREE B-ALANINE (MG/TV)
 122 B-NH2-I-BUTYR (MG/TV)
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LABELS FOR EXPERIMENT M073

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LABELS FOR EXPERIMENT M110

1 RBC (MILL/CU MM)
2 HB (G PCT)
3 OXYHB (PCT SAT)
4 COHB (PCT SAT)
5 METHB (PCT)
6 HCT (PCT)
7 RETIC (PCT)
8 RETIC NO (THOU/CU MM)
9 RETIC INDEX
10 MCV (CU UM)
11 MCH (PM G)
12 MCHC (PCT)
13 PLAT (/CU MM)
14 TOT EO (/CU MM)
15 WBC (/CU MM)
16 NEUT NO (/CU MM)
17 LYMPH NO (/CU MM)
18 MONO NO (/CU MM)
19 NEUT (PCT)
20 LYMPH (PCT)
21 MONO (PCT)
22 EO (PCT)
23 BASO (PCT)
24 BAND (PCT)
25 TSP (G PCT)
26 ALB (G PCT)
27 A1-M (G PCT)
28 A2-M (G PCT)
29 B-M (G PCT)
30 G-M (G PCT)
31 LIPO A1 (PCT)
32 LIPO PRE B (PCT)
33 LIPO B (PCT)
34 CRP (-1 OR +1)
35 RPR (-1 OR +1)
36 AHA (-1 OR +1)
37 LDH 1 (PCT)
38 LDH 2 (PCT)
39 LDH 3 (PCT)
40 LDH 4 (PCT)
41 LDH 5 (PCT)
42
43 TRANS (MG PCT)
44 HAPTO (MG PCT)
45 CERULO (MG PCT)
46 HEMOPEX (MG PCT)
47 PRE ALB (MG PCT)
48
49 IGA (MG PCT)
50 IGG (MG PCT)
51 IGM (MG PCT)
52 IGD (MG PCT)
53 IGE (NG/ML)
54
55 B1 A (MG PCT)
56 A2 MACRO (MG PCT)
57 A GLYCO (MG PCT)

LABELS FOR EXPERIMENT M110

58 A1 ANTITRYP (MG PCT)
 59 LYSOZYME (UG/ML)
 60
 61 PL PROT (G PCT)
 62 PL ALB (G PCT)
 63 PL A2-M (G PCT)
 64 PL G-M (G PCT)
 65 PL PRE ALB (MG PCT)
 66 PL TRANS (MG PCT)
 67 PL HAPTO (MG PCT)
 68 PL HEMOPEX (MG PCT)
 69 PL CERULO (MG PCT)
 70 PL A2 MACRO (MG PCT)
 71 PL INT-A-TRIP INH (MG PCT)
 72 PL A1 GLYCO (MG PCT)
 73 PL A1 ANTITRIP (MG PCT)
 74 PL C3 (MG PCT)
 75 PL C4 (MG PCT)
 76 PL C1 INH (PCT NPS)
 77 PL CRP (MG PCT)
 78 PL LYSOZYME (UG/ML)
 79 PL IGG (MG PCT)
 80 PL IGA (MG PCT)
 81 PL IGM (MG PCT)
 82 PL IGD (MG PCT)
 83 PL IGE (MG PCT)
 84
 85 RCM (ML)
 86 (+ OR -) RCM PCT (PCT)
 87 RCM/WT (ML/KG)
 88 PVOL (ML)
 89 (+ OR -) PVOL PCT (PCT)
 90 PVOL/WT (ML/KG)
 91 PI (UG PCT)
 92 PIT (MG/KG/DAY)
 93 FE T1/2 (MIN)
 94 RBC 51CR T1/2 (DAYS)
 95 RBC 14C
 96 FE REAPPEARANCE (PCT)
 97 BLD VOL (ML)
 98 BLD VOL/WT (ML/KG)
 99 PER HCT (PCT)
 100 BDY HCT (PCT)
 101 HCT RATIO
 102 BLD DRWN (ML/MAN)
 103 TBW (L)
 104 ECF (L)
 105 ICF (L)
 106 ISF (L)
 107
 108
 109 TOT K (MEQ)
 110 BDY WT (KG)
 111 LEAN BDY MASS (KG)
 112
 113 3H2O (UCI)
 114 43K (UCI)

LABELS FOR EXPERIMENT M110

115 51CR (UCI)
 116 125I (UCI)
 117 35S04 (UCI)
 118 59FE (UCI)
 119 14C (UCI)
 120 TOT DOSE (UCI)
 121 HGB (G PCT)
 122 METHGB (PCT)
 123 GSH (MG PCT)
 124 LIPID PEROXIDES (NM/G HB)
 125 ATP (UM/G HB)
 126 23DPG (UM/G HB)
 127 ATP/DPG
 128 G6PD (EU/G HB)
 129 HK (EU/G HB)
 130 PFK (EU/G HB)
 131 G3PD (EU/G HB)
 132 PGK (EU/G HB)
 133 PK (EU/G HB)
 134 ACHE (EU/G HB)
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 136
 137
 138 SPG1 (PCT)
 139 SPG2 (PCT)
 140 SPG3 (PCT)
 141 SPG4 (PCT)
 142 SPG5 (PCT)
 143 SPG6 (PCT)
 144 SPG7 (PCT)
 145 SPG8 (PCT)
 146 SPG9 (PCT)
 147 SPG10 (PCT)
 148 SPG11 (PCT)
 149 SPG12 (PCT)
 150 SPG13 (PCT)
 151 RBC K (MEQ/L CELLS)
 152 LCF K (MEQ/L CELLS)
 153 UNS K (MEQ/L CELLS)
 154 HCF K (MEQ/L CELLS)
 155 RBC NA (MEQ/L CELLS)
 156 LCF RETIC (PCT)
 157 K INFLUX TOT (MEQ/L RBC/HR)
 158 K INFLUX OUA (MEQ/L RBC/HR)
 159 K INFLUX ACT (MEQ/L RBC/HR)
 160 INT FRAG BEGIN (PCT)
 161 INT FRAG 50((PCT)
 162 INT FRAG END (PCT)
 163 INT FRAG BEGIN (MIN)
 164 INT FRAG 50((MIN)
 165 INT FRAG END (MIN)
 166 24 HR FRAG BEGIN (PCT)
 167 24 HR FRAG 50((PCT)
 168 24 HR FRAG END (PCT)
 169 24 HR FRAG BEGIN (MIN)
 170 24 HR FRAG 50((MIN)
 171 24 HR FRAG END (MIN)

LABELS FOR EXPERIMENT M110

172 DISCOCYTE (PCT)
 173 KNIZOCYTE (PCT)
 174 STOMATOCYTE (PCT)
 175 SPHEROCYTE (PCT)
 176 CODOCYTE (PCT)
 177 LEPTOCYTE (PCT)
 178 RETICULOCYTE (PCT)
 179 ECHINOCYTE I (PCT)
 180 OTHER (PCT)
 181 PT (SEC)
 182 PTT (SEC)
 183 FIB (MG PCT)
 184 FACTOR V (PCT)
 185 FACTOR VIII (PCT)
 186 FACTOR II (PCT)
 187 FSP (MG/ML)
 188 PLASMINOGEN (U/ML)
 189 AT-III (PCT)
 190 ESF (U) (MIU)
 191
 192
 193 RNA-U (24 HR) (DPM/MILL CELLS)
 194 RNA-PHA (24 HR) (DPM/MILL CELLS)
 195 DNA-U (72 HR) (DPM/MILL CELLS)
 196 DNA-PHA (72 HR) (DPM/MILL CELLS)
 197 MLC RESPONSE (DPM/CULTURE)
 198 T-CELLS (UTMB) (PCT)
 199 WBC CT (THOU/CU MM)
 200 LYMPH CT (THOU/CU MM)
 201 T-CELLS (PCT)
 202 B-CELLS (PCT)
 203 BG-CELLS (PCT)
 204 BA-CELLS (PCT)
 205 BM-CELLS (PCT)
 206 N-CELLS (PCT)
 207 SEM LYMPH SMOOTH (PCT)
 208 SEM LYMPH ROUGH (PCT)
 209
 210
 211 GLU (MG/DL)
 212 CHOL (MG/DL)
 213 SGOT (MU/ML)
 214 SGPT (MU/ML)
 215 BUN (MG/DL)
 216 URIC ACID (MG/DL)
 217 ALK PHOS IU
 218 CA (MG/DL)
 219 MG (MG/DL)
 220 PO4 (MG/DL)
 221 BILI T (MG/DL)
 222 BILI D (MG/DL)
 223 CREAT (MG PCT)
 224 CPK (MU/ML)
 225 LDH (MU/ML)
 226 OSMOL (MOSM/L)
 227 NA (MEQ/L)
 228 K (MEQ/L)

LABELS FOR EXPERIMENT M110

229 CL (MEQ/L)
 230 TRIGLY (MG PCT)
 231 CO2 (MG PCT)
 232 TURBIDITY (MEQ/L)
 233
 234
 235 RETIC CLASS YOUNG (PCT)
 236 RETIC CLASS INTER (PCT)
 237 RETIC CLASS MATURE (PCT)
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LABELS FOR EXPERIMENT M110

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LABELS FOR EXPERIMENT M110

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LABELS FOR CLINICAL/ENVIR DATA

1 MAJOR MISSION ACTIVITY
 2 MISSION ACTIVITY #2
 3 MISSION ACTIVITY #3
 4 MISSION ACTIVITY #4
 5 MISSION ACTIVITY #5
 6 MISSION ACTIVITY #6
 7 MEDICAL EXPERIMENT/DTO
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 18
 19 ILLNESS/SYMPTON/PROBLEM
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 21
 22
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 24
 25 MEDICATION AND DOSAGE
 26
 27
 28
 29
 30
 31 AMOUNT OF SLEEP (HOURS)
 32 SLEEP CONDITION
 33 UPPER BODY ERGOMETRY (WATT-MINUTES)
 34 LOWER BODY ERGOMETRY (WATT-MINUTES)
 35 EVA METABOLIC WORK ESTIMATE (KEAL/HR)
 36 EVA DURATION (HOURS)
 37 MK. I EXERCISE (MINI-GYM) (MINUTES)
 38 MK. II EXERCISE (SPRING) (MINUTES)
 39 MK. III EXERCISE (EXERGYM) (MINUTES)
 40 TREADMILL (MINUTES)
 41 ISOMETRICS (MINUTES)
 42 WEIGHT LIFTING (MINUTES)
 43 CALISTHENICS (MINUTES)
 44 RUNNING (MINUTES)
 45 PADDLE BALL (MINUTES)
 46 TENNIS (MINUTES)
 47 TOTAL EXERCISE TIME-MISC. TYPE (MINUTES)
 48
 49 HEIGHT (INCHES)
 50 HEIGHT (CM)
 51 WEIGHT (POUNDS)
 52 WEIGHT (KG)
 53
 54
 55 HIP MEASUREMENT (CM)
 56 WAIST (CM)
 57 CHEST GIRTH (INSPIRED) (CM)

LABELS FOR CLINICAL/ENVIR DATA

58 CHEST GIRTH (EXPIRED) (CM)
 59 NECK (CM)
 60 RIGHT ARM (CM)
 61 LEFT ARM (CM)
 62 RIGHT ARM VOLUME (CU CM)
 63 LEFT ARM VOLUME (CU CM)
 64 GRIP STRENGTH - RIGHT HAND (FT-LB)
 65 GRIP STRENGTH - LEFT HAND (FT-LB)
 66 CENTER OF GRAVITY MEASUREMENT (CM)
 67
 68
 69
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 71
 72
 73 HISTORICAL DATA
 74
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 91 DAILY RADIATION DOSE - SKIN (RAD)
 92 ACCUMULATED RADIATION - SKIN (REM)
 93 DAILY RADIATION DOSE - EYE (RAD)
 94 ACCUMULATED RADIATION - EYE (REM)
 95 DAILY RADIATION DOSE - BONE (RAD)
 96 ACCUMULATED RADIATION - BONE (REM)
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LABELS FOR CLINICAL/ENVIR DATA

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167 AVERAGE DAILY TEMPERATURE (F)
168 AVERAGE AMBIENT PRESSURE (PSIA)
169 PARTIAL PRESSURE OXYGEN (PSIA)
170 PARTIAL PRESSURE NITROGEN (PSIA)
171 PARTIAL PRESSURE CO2 (MM HG)

LABELS FOR CLINICAL/ENVIR DATA

172 DEW POINT (F)
173 RELATIVE HUMIDITY (%)
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END ONSITE PRINTOUT ON DECEMBER 3, 1975 AT 08:59:12
DB6-G03432*TPFS(O).W(O)

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