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STREP

(Snap Temperature Reduction Plotting)

by

Katharine W. Medeiros

Applied Mathematics

MASTER

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EXPLANATION:

ABSTRACT

STREP is a general purpose program for linear plotting of parameters, in optional groupings, against a common abscissa.

ACKNOWLEDGMENT

The work reported herein was supported by
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I. IDENTIFICATION

- A. Title - STREP (Snap Temperature Reduction Plotting),
Deck No. 3W-804.
- B. Requested by R. H. Prowett, Department 723-33.
- C. Programmed by Katharine W. Medeiros, Atomics International,
Department 716-61, October, 1963.

II. PURPOSE

To provide printed and graphic records of experimental data.

III. RESTRICTIONS

- A. Written in FORTRAN for the IBM 7090/7094.
- B. NAA systems programs for the SC-4020 required.
- C. Maximum number of data records (groups) not to exceed 3.
- D. Maximum number of channels per record not to exceed 24.
- E. Maximum number of data points per channel not to exceed 100.
- F. Data input must follow the format: channels per time point,
not time points per channel.

IV. METHOD

See Appendix I.

V. HOW TO USE THE PROGRAM: SAMPLE INPUT AND OUTPUT

See Appendix II.

VI. SOURCE PROGRAM LISTING

See Appendix III.

VII. CODING INFORMATION

Approximately (14247)₈ core locations unused by program.
Execution time is approximately 5 milliseconds per time point
on the IBM 7094.

APPENDIX IMETHOD

STREP was set up to process temperature channel recordings. Although the abscissa will be referred to as time, other variables are acceptable.

Since a calibration factor is read in for each channel, there is no restriction as to type of units used. The abscissa, however, is not calibrated. An option provides two ways of arriving at abscissa values:

1. The input of pre-determined data: machine calculations are bypassed.
2. Initial and final values of each time section are read in: machine calculates a delta time and increments time zero.

Provision is made for instances where slow devices stretch the data recording time span to unacceptable limits. In this event, one pre-zero group of data must be read in. Channel input sequence starts with the channel recorded at time zero. Then,

- (a) If $\beta_i < \beta_1$

$$y_i = y_{i-1} + \frac{\beta_1 - \beta_i}{\lambda} (y_i - y_{i-1})$$

- (b) If $\beta_i \geq \beta_1$

$$y_i = y_{i-1} + \frac{\beta_1 - \beta_i + \lambda}{\lambda} (y_i - y_{i-1})$$

where

y = data

λ = total number of channels

β = channel number.

The following example illustrates the method used.

The data points identified by x are the pre-zero group.

Channel sequence is: 4,5,6,7,8,9,10,1,2,3

$$\alpha = 10$$

$$\beta_1 = 4$$

and

(a) for channel 2

$$y_i = y_{i-1} + \frac{4-2}{10} (y_i - y_{i-1})$$

(b) for channel 7

$$y_i = y_{i-1} + \frac{4-7+10}{10} (y_i - y_{i-1})$$

APPENDIX II

HOW TO USE THE PROGRAM

I. Deck Setup

1. Object Deck No. 3W-804
2. Semi-permanent data
3. Control cards
4. Data cards

II. Operating Instructions for a Production Run (See Sample Input for Further Clarification)

A. Semi-permanent Data

Card (1) (2712)

Numerical values for selecting plotting symbols.

See NAA Engineer's Computing Manual, p. 99.04.14 (MCH)

Card (2) (2F12.6)

a. Numerical value to determine spacing between abscissa grid lines (XLIN)*

b. Value for ordinate lines (YLIN)*

*16.0 is a recommended value.

Cards (3-83) (12A6)

Twelve-word headings to identify parameters in
legend print (HED2)**

Cards (84-90) (12A6)

One-word headings to identify parameters in
tabular print (HED)**

Cards (91-102) (9A6)

Nine-word titles to identify curve on legend
frame (CTI)

Card (103) (9A6)

Abscissa title for graphs (XT)

Card (104) (9A6)

Ordinate title for graphs (YT)

Card (105) (1A6)

Abscissa units for tabular print (TIM)

B. Control Cards

Card (106) (12A6)

Twelve-word title to appear at top of each page
of tabular print and each legend frame (TITLE)

Card (107) (36I2)

a. Option to connect points on graphs with
vectors (NLIN)

= 1 Do not connect

= 2 Connect

b. Option to read in abscissa values (IXIN)

= 0 Read in values

≠ 0 Calculate values

c. Option to read in new semi-permanent data for the
following case (IREAD)

**
27 headings are provided for each of the six records. The last
three (25-27) refer to parameter averages. Blanks may be entered
for unused channels.

- = 0 No new permanent data. The following
case starts at TITLE
- = 1 Following case starts at card (193), TIM
- = 2 Start at card (192), YT
- = 3 Start at card (191), XT
- = 4 Card (179), CTI
- = 5 Card (165), HED
- = 6 Card (3), HED2
- = 7 Card (2), XLIN, YLIN
- = 8 Card (1), MCH

- d. Option to bypass tabular print (IPRINT)
- = 0 print
 - ≠ 0 bypass

Card (108)

(36I2)

- a. Number of records (groups of parameters) to
be processed (NREC)
- b. Number of graphs to be drawn (NGRAPH)
- c. Number of calibration correction factors to be
read in. MAX = 50 (NCC)
- d. Number of time sections per record. MAX = 6 (NSECT)
- e. Total number of channels to be read in per record.
MAX = 24 (NCHT)
- f. Total number of averages to be calculated per record.
MAX = 3/record (NAVGR)
- g. Total number of channels to be plotted per graph (NCGR)
- h. Number of channels to be averaged per average, per
record (NCHAR)
- i. Number of channels recorded per record (NTC)

Card (109)

(36I2)

Number of data points per section, per record (NPTS)

Cards (110-115)

(6F12.6)

Initial and final time (in hours) per section, per
record. Omit if IXIN = 0 (TI)***

***Use only as many cards as needed.

Card (116) (6F12.6)
Calibration factors per record (CALN)

Cards (117-118) (36I2)
Identification numbers of channels per record, sequenced
in the same order as the data input (ICHT)*

Cards (119-130) (36I2)
Record number and channel number, in alternating
sequence, of curves to be plotted, one card per
graph (IRG, ICHG)*

Cards (131-132) (36I2)
Numbers of channels to be averaged per average, per
record. Omit if NAVGR = 0 (IAVG)*

Cards (133-141) (6(2I2,F8.4))
Record number, channel number and calibration correction
for the parameter identified. Omit if NCC = 0
(ICALR, ICALCH, CC)*

C. Data

Cards (142-150) (12F6.2)
Abscissa values. Omit if IXIN $\neq$ 0*

Cards (151-END)
Ordinate values. There are two input formats:
(1) If the data are in unit measure, with a calibration
factor of 1, the format is (12F6.0)
(2) For data in terms of per cent deflection, the format
is (12F6.3)

Formats may vary from record to record but must be consistent
within the record.*

* Use only as many cards as needed.

FORTRAN FIXED 10 DIGIT DECIMAL DATA

DECK NO. _____ PROGRAMMER _____ DATE _____ PAGE _____ of _____ JOB NO. _____

DECK NO.		PROGRAMMER	DATE	PAGE	OF	REVISION
NUMBER		IDENTIFICATION	DESCRIPTION DO NOT KEY PUNCH			
1	17.18.19.20.21.22		MCH			
13	23.24.25.33.					
25						
37						
49			(36I2)			
61		73	80			
1	16		XLIN, YLIN			
13	16.					
25						
37						
49			(6F12.6)			
61		73	80			
1	T101 REACTOR		HED2			
13	R VESSEL - Z					
25	ONE 1.					
37						
49			(12A6)			
61		73	80			
1	T101 T102		HED			
13	T103 T104					
25	T109 T110					
37	T111 T112					
49	T117 T118		(12A6)			
61	T119 T120	73	80			
1		84	To 90			

FORTRAN FIXED 10 DIGIT DECIMAL DATA

DECK NO. _____ PROGRAMMER _____ DATE _____ PAGE _____ of _____ JOB NO. _____

	NUMBER	IDENTIFICATION	DESCRIPTION DO NOT KEY PUNCH
1	CURVE 1		CTI
13			
25			
37			
49		73 80	(9A6)
61		91	To 102
1			XT
13	TI		
25	ME - HRS		
37			
49		73 80	(9A6)
61		1.03	
1			YT
13	TEMPERATURE		
25	- DEGREES		
37			
49		73 80	(9A6)
61		1.04	
1	HRS		TIM
13			
25			
37			
49		73 80	(9A6)
61		1.05	

FORTRAN FIXED 10 DIGIT DECIMAL DATA

DECK NO. _____ PROGRAMMER _____ DATE _____ PAGE _____ of _____ JOB NO. _____

NUMBER	IDENTIFICATION	DESCRIPTION	DO NOT KEY PUNCH
1 S 10.DRM.1.R		TITLE	
13 E A.C.T.Φ.R. ASSEM			
25 B L.Y. RUN 6			
37			
49			(12A6)
61	1.06		
1 2 1		NLIN, IXIN, IREAD, IPRINT	
13			
25			
37			
49			(36I2)
61	1.07		
1 3 5 0 2 2 2		NKEC, NGRAPH, NCC, NSECT	
13 1 8 2 4 2 3		NCHT, NAVGR	
25 8 9 9 9 9		NCGR	
37			
49		NCHAR	(36I2) (36I2)
61	1.08	NTC	
1 1 5 2 8		NPTS	
13 2 0 2 8			
25 2 0 2 8			
37			
49			(36I2)
61	1.09		

FORTRAN FIXED 10 DIGIT DECIMAL DATA

DECK NO. _____ PROGRAMMER _____ DATE _____ PAGE _____ of _____ JOB NO. _____

	NUMBER	IDENTIFICATION	DESCRIPTION DO NOT KEY PUNCH
1	0		TI
13	5		
25	7.5		
37	7.5		
49			(6F12.6)
61		1.10	TO 115
1	1.204819277		CALN
13	1.215805471		
25	1.215805471		
37			
49			(6F12.6)
61		1.16	
1	1.23567		ICHT
13	8.910111213		
25	14.1516171819		
37			
49			(36I2)
61		1.17	TO 118
1	1.11213		IRG, ICHG
13	1.9112117		
25	2.19224		
37			
49			(36I2)
61		1.19	TO 130

FORTRAN FIXED 10 DIGIT DECIMAL DATA

DECK NO. _____ PROGRAMMER _____ DATE _____ PAGE _____ of _____ JOB NO. _____

NUMBER	IDENTIFICATION	DESCRIPTION DO NOT KEY PUNCH
1		IAVG
13		
25		
37		
49	73 80	(36I2)
61	1.3.1	To 132
1		ICALR, ICALCH, CC
13		
25		
37		
49	73 80	(6(2I2, F8.4)
61	1.3.3	To 141
1		DATA
13		(Abscissa Values)
25		
37		
49	73 80	(12F6.2)
61	1.4.2	To 150
1		(Ordinate)
13		
25		
37		
49	73 80	(12F6.3)
61	1.5.1	To END OF CASE

PT NO	TIME HRS	T101	T102	T103	T109	T110	T111	T112	T117	T118
1	0.	147.	155.	159.	157.	163.	184.	224.	87.	90.
2	0.036	181.	205.	223.	616.	611.	614.	664.	88.	93.
3	0.071	334.	371.	380.	633.	536.	546.	694.	90.	95.
4	0.107	373.	425.	433.	539.	490.	507.	542.	90.	95.
5	0.143	376.	434.	437.	489.	459.	480.	613.	90.	100.
6	0.179	373.	428.	435.	458.	449.	471.	561.	100.	114.
7	0.214	369.	418.	430.	454.	439.	461.	571.	110.	129.
8	0.250	369.	414.	423.	467.	431.	457.	558.	122.	141.
9	0.286	373.	408.	418.	458.	427.	451.	553.	131.	151.
10	0.321	373.	404.	413.	451.	420.	449.	548.	139.	155.
11	0.357	371.	401.	411.	453.	418.	443.	541.	143.	163.
12	0.393	373.	398.	410.	454.	416.	440.	539.	148.	164.
13	0.429	375.	394.	404.	453.	412.	442.	530.	149.	167.
14	0.464	377.	394.	401.	446.	410.	435.	533.	151.	169.
15	0.500	373.	394.	401.	442.	408.	434.	531.	153.	172.
16	0.750	433.	478.	460.	539.	536.	506.	620.	165.	183.
17	1.000	534.	580.	917.	657.	657.	1165.	564.	177.	199.
18	1.250	652.	699.	701.	764.	748.	735.	731.	194.	219.
19	1.500	728.	755.	749.	857.	807.	783.	861.	212.	243.
20	1.750	828.	860.	847.	965.	954.	886.	945.	241.	277.
21	2.000	927.	970.	925.	1073.	1071.	964.	1037.	271.	313.
22	2.250	993.	1002.	969.	1131.	1024.	1001.	1069.	305.	351.
23	2.500	996.	1014.	969.	1124.	1048.	989.	1069.	336.	382.
24	2.750	999.	1023.	976.	1124.	1051.	1005.	1059.	366.	410.
25	3.000	1000.	1020.	975.	1124.	1078.	1007.	1060.	386.	430.
26	3.250	1000.	1017.	975.	1120.	1041.	1005.	1057.	401.	442.
27	3.500	1001.	1016.	971.	1124.	1086.	1007.	1057.	414.	452.
28	3.750	999.	1018.	971.	1127.	1059.	1000.	1052.	423.	463.
29	4.000	1000.	1011.	967.	1124.	1084.	1005.	1053.	429.	469.
30	4.250	976.	999.	953.	1095.	1059.	963.	1020.	436.	476.
31	4.500	908.	922.	895.	1002.	952.	875.	945.	440.	473.
32	4.750	820.	840.	824.	900.	871.	794.	824.	431.	461.
33	5.000	755.	763.	753.	824.	788.	722.	729.	422.	447.
34	5.250	680.	692.	687.	736.	716.	659.	640.	404.	425.

PT NO	TIME HRS	T101	T102	T103	T109	T110	T111	T112	T117	T118
35	5.500	604.	616.	607.	639.	631.	590.	541.	383.	399.
36	5.750	548.	554.	549.	570.	566.	540.	492.	365.	381.
37	6.000	494.	498.	496.	512.	511.	490.	451.	346.	360.
38	6.250	459.	464.	464.	476.	473.	457.	422.	331.	343.
39	6.500	429.	434.	435.	446.	446.	429.	394.	316.	322.
40	6.750	401.	401.	410.	416.	419.	404.	372.	299.	308.
41	7.000	383.	386.	386.	394.	399.	386.	354.	288.	298.
42	7.250	365.	369.	370.	376.	382.	364.	339.	277.	284.
43	7.500	347.	353.	353.	358.	361.	349.	322.	265.	272.

PT NO	TIME HRS	T119	T120	T130	T132	T124	T140	T141	T142	T50
1	0.	96.	105.	128.	301.	106.	75.	146.	72.	75.
2	0.036	101.	108.	124.	295.	111.	73.	143.	73.	77.
3	0.071	102.	117.	125.	290.	116.	77.	145.	72.	77.
4	0.107	108.	120.	125.	286.	122.	75.	143.	76.	78.
5	0.143	114.	133.	133.	273.	133.	73.	142.	72.	77.
6	0.179	136.	152.	142.	259.	152.	75.	140.	71.	77.
7	0.214	151.	165.	151.	249.	169.	73.	141.	73.	76.
8	0.250	164.	178.	163.	248.	177.	76.	143.	73.	77.
9	0.286	171.	182.	177.	270.	187.	76.	143.	72.	76.
10	0.321	180.	192.	193.	289.	193.	76.	148.	70.	73.
11	0.357	182.	193.	202.	313.	200.	75.	153.	71.	75.
12	0.393	184.	200.	218.	331.	204.	76.	157.	73.	77.
13	0.429	189.	205.	234.	349.	206.	75.	163.	75.	78.
14	0.464	192.	206.	242.	367.	211.	76.	169.	76.	80.
15	0.500	195.	211.	259.	384.	213.	77.	175.	73.	78.
16	0.750	211.	235.	347.	466.	234.	76.	223.	72.	76.
17	1.000	235.	265.	418.	548.	259.	77.	263.	73.	78.
18	1.250	259.	295.	496.	651.	288.	78.	302.	73.	78.
19	1.500	293.	337.	559.	742.	328.	78.	349.	75.	78.
20	1.750	334.	384.	622.	828.	376.	80.	398.	75.	83.
21	2.000	377.	437.	675.	919.	425.	81.	454.	76.	83.
22	2.250	422.	488.	712.	990.	473.	84.	495.	78.	84.
23	2.500	453.	517.	707.	993.	505.	84.	510.	78.	88.
24	2.750	478.	536.	695.	989.	528.	86.	517.	81.	93.
25	3.000	495.	552.	695.	989.	542.	71.	518.	78.	90.
26	3.250	506.	560.	692.	992.	549.	66.	519.	77.	86.
27	3.500	514.	566.	690.	990.	558.	64.	518.	77.	86.
28	3.750	522.	572.	683.	992.	564.	64.	517.	75.	90.
29	4.000	525.	577.	683.	988.	570.	66.	517.	75.	89.
30	4.250	529.	580.	680.	969.	572.	69.	506.	76.	89.
31	4.500	522.	565.	620.	892.	559.	70.	466.	75.	94.
32	4.750	504.	539.	560.	813.	534.	71.	429.	81.	95.
33	5.000	478.	506.	512.	736.	501.	73.	398.	78.	96.
34	5.250	452.	476.	459.	670.	471.	72.	363.	81.	98.

PT NO	TIME HRS	T119	T120	T130	T132	T124	T140	T141	T142	T50
35	5.500	422.	440.	406.	587.	437.	71.	319.	83.	98.
36	5.750	394.	411.	355.	514.	411.	75.	289.	78.	96.
37	6.000	371.	382.	317.	425.	382.	75.	259.	81.	98.
38	6.250	349.	364.	295.	354.	360.	75.	229.	81.	95.
39	6.500	333.	346.	273.	293.	342.	67.	196.	81.	96.
40	6.750	317.	324.	255.	241.	323.	61.	169.	80.	93.
41	7.000	305.	313.	242.	217.	310.	63.	165.	73.	92.
42	7.250	292.	299.	229.	198.	295.	64.	147.	78.	96.
43	7.500	278.	287.	220.	190.	283.	66.	155.	73.	94.

PT NO	TIME HRS	T41	T42	T43	T44	T45	T46	T47	T48	T59
1	0.	97.	95.	89.	91.	85.	89.	86.	89.	91.
2	0.026	96.	94.	91.	91.	85.	89.	86.	88.	91.
3	0.053	97.	94.	89.	91.	85.	88.	85.	86.	91.
4	0.079	97.	94.	89.	91.	85.	88.	85.	88.	91.
5	0.105	97.	95.	90.	91.	85.	88.	85.	86.	90.
6	0.132	97.	95.	90.	92.	86.	90.	86.	89.	91.
7	0.158	98.	94.	90.	91.	86.	89.	85.	88.	91.
8	0.184	97.	94.	89.	91.	85.	89.	86.	89.	91.
9	0.211	98.	95.	89.	91.	85.	89.	88.	91.	92.
10	0.237	100.	95.	90.	91.	86.	89.	89.	92.	92.
11	0.263	100.	95.	90.	94.	86.	90.	91.	95.	94.
12	0.289	101.	96.	90.	95.	89.	91.	91.	97.	94.
13	0.316	106.	100.	91.	97.	90.	91.	94.	97.	96.
14	0.342	106.	98.	91.	97.	91.	94.	95.	97.	96.
15	0.368	106.	100.	94.	97.	91.	94.	96.	98.	97.
16	0.395	108.	101.	94.	97.	91.	94.	97.	101.	97.
17	0.421	109.	102.	94.	98.	92.	94.	97.	101.	97.
18	0.447	109.	103.	94.	100.	91.	96.	98.	101.	100.
19	0.474	111.	105.	95.	101.	94.	96.	98.	102.	100.
20	0.500	113.	106.	94.	101.	94.	97.	100.	103.	100.
21	0.750	123.	116.	101.	108.	100.	98.	105.	111.	108.
22	1.000	135.	123.	106.	116.	103.	107.	111.	122.	118.
23	1.250	141.	130.	112.	125.	106.	113.	122.	137.	124.
24	1.500	150.	146.	119.	136.	117.	124.	136.	160.	135.
25	1.750	165.	159.	130.	151.	128.	136.	152.	188.	150.
26	2.000	184.	179.	142.	171.	140.	153.	176.	224.	167.
27	2.250	201.	201.	159.	196.	156.	175.	203.	264.	188.
28	2.500	213.	219.	179.	215.	175.	195.	224.	286.	204.
29	2.750	225.	235.	196.	233.	195.	213.	240.	303.	219.
30	3.000	235.	249.	213.	250.	213.	232.	253.	319.	231.
31	3.250	241.	260.	224.	261.	227.	247.	266.	329.	241.
32	3.500	244.	269.	237.	274.	241.	261.	278.	340.	248.
33	3.750	244.	271.	243.	278.	249.	267.	282.	347.	252.
34	4.000	248.	275.	253.	288.	259.	278.	292.	355.	255.

PT NO	TIME HRS	T41	T42	T43	T44	T45	T46	T47	T48	T59
35	4.250	250.	278.	259.	292.	269.	287.	299.	360.	258.
36	4.500	255.	283.	267.	297.	278.	293.	303.	359.	261.
37	4.750	252.	281.	269.	293.	281.	293.	298.	347.	261.
38	5.000	248.	278.	274.	291.	283.	293.	295.	336.	260.
39	5.250	241.	274.	272.	287.	281.	292.	288.	323.	257.
40	5.500	231.	264.	266.	276.	280.	286.	281.	310.	247.
41	5.750	224.	258.	264.	272.	274.	280.	274.	300.	243.
42	6.000	218.	249.	258.	264.	270.	274.	269.	292.	235.
43	6.250	212.	243.	253.	257.	264.	269.	263.	282.	230.
44	6.500	203.	235.	248.	249.	260.	261.	255.	275.	222.
45	6.750	191.	225.	243.	243.	253.	255.	247.	266.	214.
46	7.000	191.	220.	235.	235.	248.	249.	243.	261.	209.
47	7.250	180.	213.	225.	225.	240.	240.	237.	250.	201.
48	7.500	185.	210.	225.	224.	237.	240.	237.	250.	201.

PT NO	TIME HRS	T60	T61	T62	T63	T64	T65	T66	T38	T39
1	0.	109.	90.	96.	88.	91.	85.	90.	120.	140.
2	0.026	109.	90.	96.	89.	91.	85.	88.	120.	141.
3	0.053	108.	90.	96.	88.	90.	86.	89.	122.	140.
4	0.079	106.	90.	96.	88.	91.	85.	86.	118.	140.
5	0.105	107.	90.	96.	86.	90.	85.	89.	122.	139.
6	0.132	106.	89.	96.	86.	91.	85.	89.	120.	139.
7	0.158	105.	90.	96.	85.	91.	85.	89.	122.	137.
8	0.184	109.	89.	97.	86.	92.	85.	89.	123.	143.
9	0.211	109.	90.	98.	88.	91.	86.	91.	124.	150.
10	0.237	109.	91.	98.	86.	91.	86.	92.	124.	154.
11	0.263	114.	94.	102.	89.	94.	89.	94.	129.	158.
12	0.289	116.	94.	106.	91.	96.	90.	95.	130.	160.
13	0.316	118.	96.	106.	91.	95.	90.	96.	130.	163.
14	0.342	119.	94.	108.	91.	96.	91.	97.	131.	167.
15	0.368	119.	96.	109.	92.	97.	91.	98.	133.	169.
16	0.395	122.	95.	111.	94.	97.	91.	98.	133.	173.
17	0.421	123.	97.	112.	94.	98.	94.	100.	135.	173.
18	0.447	124.	97.	113.	94.	98.	92.	101.	135.	179.
19	0.474	126.	98.	112.	94.	100.	94.	102.	139.	181.
20	0.500	128.	97.	114.	94.	101.	95.	103.	139.	182.
21	0.750	143.	105.	123.	98.	106.	101.	108.	150.	208.
22	1.000	158.	109.	135.	105.	114.	105.	120.	163.	233.
23	1.250	164.	114.	143.	109.	122.	113.	134.	174.	241.
24	1.500	181.	124.	158.	120.	134.	123.	152.	199.	274.
25	1.750	203.	134.	180.	130.	151.	140.	176.	227.	302.
26	2.000	236.	150.	208.	143.	168.	159.	210.	267.	348.
27	2.250	259.	168.	237.	160.	190.	184.	248.	310.	373.
28	2.500	272.	182.	255.	179.	208.	203.	271.	343.	374.
29	2.750	288.	202.	274.	199.	230.	224.	291.	368.	388.
30	3.000	294.	219.	286.	219.	247.	242.	306.	387.	389.
31	3.250	300.	231.	295.	233.	263.	255.	319.	401.	390.
32	3.500	305.	243.	304.	247.	274.	267.	328.	410.	389.
33	3.750	300.	248.	304.	252.	280.	274.	334.	407.	374.
34	4.000	303.	255.	310.	264.	288.	282.	340.	410.	371.

PT NO	TIME HRS	T60	T61	T62	T63	T64	T65	T66	T38	T39
35	4.250	308.	263.	316.	271.	295.	292.	349.	412.	378.
36	4.500	305.	269.	315.	280.	299.	295.	344.	412.	367.
37	4.750	294.	269.	308.	283.	299.	295.	336.	400.	347.
38	5.000	286.	271.	300.	286.	298.	293.	323.	384.	329.
39	5.250	267.	267.	288.	286.	295.	292.	312.	366.	297.
40	5.500	252.	264.	275.	278.	284.	281.	300.	342.	265.
41	5.750	240.	258.	264.	276.	281.	276.	291.	322.	243.
42	6.000	231.	253.	259.	271.	275.	270.	283.	306.	241.
43	6.250	215.	248.	249.	263.	267.	265.	272.	287.	210.
44	6.500	201.	241.	233.	257.	258.	259.	265.	265.	181.
45	6.750	188.	231.	224.	252.	249.	252.	257.	246.	159.
46	7.000	186.	227.	216.	244.	244.	248.	250.	233.	165.
47	7.250	179.	220.	210.	237.	237.	240.	243.	219.	158.
48	7.500	186.	218.	212.	232.	235.	237.	240.	213.	178.

PT NO	TIME HRS	T34	T35	T26	T27	T28	T33
1	0.	130.	128.	95.	98.	85.	88.
2	0.026	133.	128.	94.	98.	86.	88.
3	0.053	134.	126.	94.	98.	86.	86.
4	0.079	131.	126.	92.	98.	84.	86.
5	0.105	133.	128.	95.	98.	86.	86.
6	0.132	133.	128.	94.	100.	85.	88.
7	0.158	134.	130.	92.	98.	85.	88.
8	0.184	140.	131.	94.	100.	85.	100.
9	0.211	146.	135.	94.	98.	85.	109.
10	0.237	156.	140.	96.	102.	85.	118.
11	0.263	164.	147.	97.	102.	88.	128.
12	0.289	174.	152.	101.	103.	89.	133.
13	0.316	182.	159.	101.	106.	91.	137.
14	0.342	193.	165.	101.	105.	91.	142.
15	0.368	202.	174.	102.	107.	91.	146.
16	0.395	212.	180.	105.	111.	91.	150.
17	0.421	222.	190.	103.	111.	94.	152.
18	0.447	231.	198.	106.	113.	95.	153.
19	0.474	238.	204.	107.	113.	94.	154.
20	0.500	249.	213.	106.	116.	96.	157.
21	0.750	323.	283.	120.	135.	102.	164.
22	1.000	385.	343.	139.	167.	113.	173.
23	1.250	423.	389.	154.	196.	125.	135.
24	1.500	463.	439.	179.	231.	137.	135.
25	1.750	503.	481.	207.	265.	158.	148.
26	2.000	547.	522.	237.	302.	182.	203.
27	2.250	578.	554.	266.	334.	213.	214.
28	2.500	576.	553.	282.	353.	230.	210.
29	2.750	578.	552.	294.	367.	240.	244.
30	3.000	575.	550.	300.	376.	248.	252.
31	3.250	578.	547.	308.	381.	255.	261.
32	3.500	574.	543.	311.	383.	261.	259.
33	3.750	559.	537.	316.	384.	264.	235.
34	4.000	558.	536.	312.	388.	271.	235.

PT NO	TIME HRS	T34	T35	T26	T27	T28	T33
35	4.250	557.	535.	316.	388.	271.	261.
36	4.500	530.	503.	310.	387.	275.	270.
37	4.750	491.	462.	295.	374.	274.	266.
38	5.000	452.	423.	276.	357.	274.	261.
39	5.250	411.	385.	261.	342.	261.	227.
40	5.500	360.	342.	243.	322.	252.	205.
41	5.750	317.	304.	231.	305.	240.	201.
42	6.000	294.	276.	218.	288.	240.	225.
43	6.250	276.	253.	205.	269.	229.	203.
44	6.500	249.	231.	192.	257.	219.	185.
45	6.750	227.	212.	181.	244.	212.	175.
46	7.000	222.	202.	175.	232.	199.	192.
47	7.250	210.	188.	167.	220.	190.	193.
48	7.500	221.	187.	167.	213.	186.	219.

PT NO	TIME HRS	T 1	T 9	T51	T52	T53	T54	T55	T56	T57
1	0.	79.	81.	79.	85.	78.	79.	80.	83.	79.
2	0.026	79.	81.	81.	84.	78.	77.	81.	83.	79.
3	0.053	78.	83.	81.	86.	79.	78.	80.	84.	79.
4	0.079	79.	83.	81.	86.	80.	79.	81.	84.	80.
5	0.105	79.	83.	81.	88.	80.	78.	81.	84.	80.
6	0.132	79.	85.	85.	88.	79.	79.	80.	83.	81.
7	0.158	78.	84.	81.	88.	80.	79.	81.	84.	80.
8	0.184	78.	83.	85.	91.	79.	77.	85.	89.	81.
9	0.211	79.	85.	91.	97.	80.	79.	92.	94.	81.
10	0.237	80.	91.	97.	100.	81.	79.	100.	95.	84.
11	0.263	85.	97.	103.	109.	88.	86.	111.	106.	91.
12	0.289	88.	98.	108.	114.	89.	88.	116.	108.	94.
13	0.316	89.	101.	109.	116.	90.	86.	119.	112.	94.
14	0.342	91.	103.	113.	120.	91.	88.	123.	116.	94.
15	0.368	91.	105.	113.	123.	90.	90.	128.	116.	95.
16	0.395	91.	106.	114.	124.	91.	91.	128.	118.	96.
17	0.421	94.	108.	116.	128.	94.	91.	130.	120.	97.
18	0.447	95.	109.	118.	126.	94.	91.	131.	122.	101.
19	0.474	94.	109.	118.	129.	94.	91.	134.	122.	97.
20	0.500	94.	109.	118.	128.	92.	91.	134.	123.	100.
21	0.750	98.	114.	136.	134.	97.	96.	142.	130.	103.
22	1.000	108.	120.	201.	146.	103.	102.	154.	182.	116.
23	1.250	101.	118.	187.	135.	116.	116.	146.	205.	137.
24	1.500	98.	122.	203.	147.	128.	131.	163.	221.	164.
25	1.750	97.	130.	225.	164.	140.	145.	182.	244.	190.
26	2.000	111.	153.	276.	191.	162.	170.	237.	306.	232.
27	2.250	120.	173.	300.	216.	192.	202.	264.	326.	266.
28	2.500	123.	186.	310.	225.	207.	215.	276.	328.	280.
29	2.750	135.	203.	332.	250.	227.	238.	303.	356.	292.
30	3.000	137.	210.	337.	266.	240.	252.	311.	357.	300.
31	3.250	145.	219.	343.	281.	254.	267.	321.	361.	310.
32	3.500	145.	230.	345.	294.	270.	283.	328.	360.	320.
33	3.750	135.	227.	329.	297.	281.	295.	320.	334.	325.
34	4.000	140.	237.	337.	310.	292.	308.	332.	337.	334.

PT NO	TIME HRS	T 1	T 9	T51	T52	T53	T54	T55	T56	T57
35	4.250	150.	246.	351.	328.	304.	320.	350.	361.	340.
36	4.500	160.	255.	356.	334.	312.	328.	353.	361.	340.
37	4.750	162.	258.	344.	334.	312.	329.	349.	349.	334.
38	5.000	164.	259.	343.	332.	314.	329.	344.	339.	327.
39	5.250	157.	252.	329.	321.	311.	327.	323.	310.	320.
40	5.500	148.	241.	321.	311.	306.	325.	309.	292.	312.
41	5.750	147.	238.	312.	304.	300.	319.	300.	283.	304.
42	6.000	151.	237.	312.	308.	295.	312.	303.	294.	294.
43	6.250	158.	240.	312.	308.	297.	310.	308.	303.	292.
44	6.500	142.	222.	292.	286.	283.	299.	278.	261.	280.
45	6.750	141.	219.	291.	276.	280.	294.	271.	255.	276.
46	7.000	156.	219.	286.	277.	274.	288.	274.	263.	271.
47	7.250	159.	215.	281.	276.	270.	286.	270.	261.	265.
48	7.500	167.	219.	286.	280.	266.	280.	277.	275.	261.

PT NO	TIME HRS	T58	T73	T74	T75	T76	T77	T78	T84	T21
1	0.	77.	74.	81.	80.	83.	85.	81.	77.	112.
2	0.026	77.	77.	81.	80.	81.	86.	80.	77.	113.
3	0.053	77.	77.	81.	81.	84.	86.	80.	78.	114.
4	0.079	78.	78.	84.	81.	84.	85.	81.	78.	113.
5	0.105	79.	79.	84.	86.	85.	88.	81.	78.	112.
6	0.132	79.	80.	85.	86.	84.	88.	85.	78.	113.
7	0.158	79.	81.	86.	89.	85.	90.	84.	78.	114.
8	0.184	77.	81.	85.	91.	85.	91.	85.	78.	114.
9	0.211	77.	81.	89.	92.	89.	94.	86.	77.	113.
10	0.237	80.	81.	91.	94.	91.	95.	90.	77.	114.
11	0.263	85.	86.	97.	100.	97.	101.	95.	84.	120.
12	0.289	85.	85.	97.	101.	97.	102.	97.	83.	119.
13	0.316	86.	86.	101.	101.	101.	105.	98.	84.	119.
14	0.342	85.	86.	102.	103.	105.	109.	101.	85.	122.
15	0.368	89.	86.	103.	102.	105.	109.	101.	85.	122.
16	0.395	89.	86.	103.	103.	106.	112.	103.	85.	122.
17	0.421	89.	86.	107.	103.	106.	114.	103.	86.	122.
18	0.447	89.	85.	109.	105.	111.	116.	106.	86.	122.
19	0.474	89.	85.	109.	103.	111.	118.	106.	85.	120.
20	0.500	90.	86.	112.	103.	111.	119.	107.	85.	120.
21	0.750	92.	84.	122.	105.	122.	137.	118.	85.	120.
22	1.000	100.	85.	137.	105.	146.	162.	139.	86.	123.
23	1.250	122.	94.	160.	100.	167.	182.	163.	88.	124.
24	1.500	134.	96.	191.	98.	195.	210.	188.	94.	123.
25	1.750	148.	97.	225.	100.	215.	237.	221.	94.	124.
26	2.000	169.	102.	264.	113.	250.	288.	274.	101.	130.
27	2.250	201.	113.	312.	122.	286.	328.	322.	112.	135.
28	2.500	215.	116.	334.	123.	293.	337.	322.	112.	133.
29	2.750	236.	122.	353.	134.	312.	353.	348.	122.	135.
30	3.000	250.	126.	370.	134.	320.	361.	362.	123.	135.
31	3.250	264.	130.	378.	142.	333.	372.	373.	129.	139.
32	3.500	280.	137.	389.	146.	339.	377.	372.	135.	141.
33	3.750	295.	143.	395.	146.	348.	374.	378.	142.	142.
34	4.000	308.	151.	402.	152.	359.	378.	384.	151.	145.

PT NO	TIME HRS	T58	T73	T74	T75	T76	T77	T78	T84	T21
35	4.250	319.	157.	410.	160.	367.	395.	391.	154.	146.
36	4.500	326.	160.	402.	169.	377.	389.	389.	159.	151.
37	4.750	328.	164.	389.	171.	371.	384.	381.	162.	152.
38	5.000	329.	171.	373.	176.	356.	372.	368.	167.	157.
39	5.250	328.	171.	356.	174.	340.	357.	354.	167.	157.
40	5.500	325.	176.	340.	171.	328.	340.	339.	170.	160.
41	5.750	319.	176.	327.	173.	316.	325.	325.	170.	159.
42	6.000	310.	170.	310.	175.	305.	310.	312.	167.	159.
43	6.250	310.	171.	305.	176.	304.	305.	310.	170.	159.
44	6.500	300.	170.	291.	168.	286.	289.	293.	167.	158.
45	6.750	297.	171.	281.	165.	281.	282.	286.	167.	158.
46	7.000	292.	171.	274.	169.	275.	274.	276.	167.	159.
47	7.250	287.	173.	265.	169.	270.	267.	271.	170.	159.
48	7.500	281.	173.	259.	170.	264.	261.	261.	169.	160.

PT NO	TIME HRS	T22	T80	T81	T83	T40
1	0.	112.	81.	80.	79.	79.
2	0.026	112.	81.	80.	77.	78.
3	0.053	113.	81.	81.	79.	79.
4	0.079	113.	81.	81.	78.	79.
5	0.105	112.	81.	81.	79.	79.
6	0.132	113.	81.	80.	78.	77.
7	0.158	113.	81.	80.	79.	77.
8	0.184	113.	84.	80.	78.	78.
9	0.211	113.	86.	83.	79.	79.
10	0.237	114.	89.	84.	79.	79.
11	0.263	119.	95.	88.	85.	85.
12	0.289	120.	95.	89.	85.	85.
13	0.316	119.	97.	90.	85.	85.
14	0.342	118.	97.	90.	85.	86.
15	0.368	119.	98.	91.	86.	86.
16	0.395	119.	100.	91.	86.	86.
17	0.421	119.	101.	92.	88.	86.
18	0.447	120.	101.	94.	90.	89.
19	0.474	118.	98.	91.	86.	89.
20	0.500	118.	100.	91.	86.	89.
21	0.750	118.	101.	92.	86.	94.
22	1.000	122.	103.	94.	89.	100.
23	1.250	120.	98.	92.	88.	106.
24	1.500	122.	98.	94.	88.	109.
25	1.750	122.	100.	94.	88.	111.
26	2.000	123.	113.	102.	91.	116.
27	2.250	128.	122.	109.	96.	122.
28	2.500	126.	118.	106.	92.	118.
29	2.750	128.	123.	108.	94.	122.
30	3.000	128.	117.	106.	91.	120.
31	3.250	131.	114.	102.	91.	122.
32	3.500	134.	111.	98.	89.	122.
33	3.750	135.	106.	96.	88.	122.
34	4.000	136.	108.	96.	86.	123.

PT NO	TIME HRS	T22	T80	T81	T83	T40
35	4.250	137.	111.	96.	88.	122.
36	4.500	140.	113.	96.	86.	124.
37	4.750	142.	113.	96.	88.	123.
38	5.000	146.	114.	96.	91.	126.
39	5.250	148.	105.	91.	91.	128.
40	5.500	151.	97.	89.	88.	126.
41	5.750	151.	97.	86.	85.	128.
42	6.000	151.	100.	86.	86.	125.
43	6.250	154.	103.	90.	89.	125.
44	6.500	153.	86.	79.	81.	124.
45	6.750	154.	80.	78.	81.	124.
46	7.000	154.	85.	79.	81.	125.
47	7.250	154.	86.	79.	81.	124.
48	7.500	156.	94.	81.	81.	124.

7356-98
007 000

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 3

TEMPERATURE - DEGREES

7356-98
008 000

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 3

TEMPERATURE - DEGREES

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

7356-98
009 000

LEGEND FOR CURVE 3

SYMBOL

T101	REACTOR VESSEL - ZONE 1	A
T55	-Z REFLECTOR TOP 1.5 INCHES FROM -Y PARTING LINE	B
T56	-Z REFLECTOR TOP 2.5 INCHES FROM -Y PARTING LINE	C
T57	-Z REFLECTOR TOP MISPOINT OF REFLECTOR	D
T58	-Z REFLECTOR TOP 1.5 INCHES FROM +Y PARTING LINE	E
T75	-Z FINE CONTROL DRUM, OUTSIDE AT SHIM CUTOUT	F
T77	-Z REFLECTOR BOTTOM 0.75 INCHES FROM -Y PARTING LINE	G
T78	-Z REFLECTOR BOTTOM 0.75 INCHES FROM +Y PARTING LINE	H
T1	-Z FINE CONTROL DRUM (3RD SHIM) OUTSIDE, UPPER	I

7356-98
010 000

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 4

TEMPERATURE - DEGREES

7356-98
011 000

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 4

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

LEGEND FOR CURVE 4

SYMBOL

T101	REACTOR VESSEL - ZONE 1	A
T41	-Z ACTUATOR BRAKE COVER, OUTBOARD	B
T42	-Z ACTUATOR BRAKE COVER, INBOARD	C
T43	-Z ACTUATOR UPPER END BELL, OUTBOARD	D
T44	-Z ACTUATOR UPPER END BELL, INBOARD	E
T45	-Z ACTUATOR STATOR CASE, OUTBOARD	F
T46	-Z ACTUATOR STATOR CASE, INBOARD	G
T47	-Z ACTUATOR LOWER END BALL, OUTBOARD	H
T48	-Z ACTUATOR LOWER END BELL, INBOARD	I

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 5

7356-98
014 000

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

CURVE 5

S 10 DRM 1 REACTOR ASSEMBLY RUN 6

7356-98
015 000

LEGEND FOR

CURVE 5

SYMBOL

T101	REACTOR VESSEL - ZONE 1	A
T59	+Z ACTUATOR BRAKE COVER, OUTBOARD	B
T60	+Z ACTUATOR BRAKE COVER, INBOARD	C
T61	+Z ACTUATOR UPPER END BELL, OUTBOARD	D
T62	+Z ACTUATOR UPPER END BELL, INBOARD	E
T63	+Z ACTUATOR STATOR CASE, OUTBOARD	F
T64	+Z ACTUATOR STATOR CASE, INBOARD	G
T65	+Z ACTUATOR LOWER END BELL, OUTBOARD	H
T66	+Z ACTUATOR LOWER END BELL, INBOARD	I

APPENDIX III

Source Program Listing

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C          STREP                                00100000
C          (SNAP TEMPERATURE REDUCTION PLOTTING) 00100010
C                                                  00100020
C                                                  00100100
C          WRITTEN BY K.MEDEIROS FOR R.H. PROWETT, DEPT 723-33, MAY, 1963 00100200
C                                                  00100300
C          DIMENSION XT(9),YT(9),CTI(9,12),MCH(12),HED(27,3),HED2(12,27,3), 00100400
C          1TITLE(12),NSECT(3),NCHT(3),NAVGR(3),NCGR(12),NCHAR(3,3),NPTS(6,3), 00100500
C          2DT(6,3),TI(2,6,3),ICHT(24,3),IRG(10,12),ICHG(10,12),IAVG(24,3,3), 00100600
C          3ICALR(50),ICALCH(50),CC(50),THED(27,3),THEDP(27),THEDL(12,12), 00100700
C          4DATA(100,28,3),TDATA(100,27),ICH(27,3),CALN(3),LOC(12),NPT(6,3) 00100800
C          5,NTC(3)                                00100810
C          COMMON XT,YT,CTI,TIM,MCH,XLIN,YLIN,HED,HED2,TITLE,NTC,IREAD, 00100900
C          1IPRINT,NREQ,NGRAPH,NLIN,NCC,NSECT,NCHT,NAVGR,NCGR,NCHAR,NPTS,NPT, 00101000
C          2DT,TI,CALN,ICHT,IRG,ICHG,IAVG,ICALR,ICALCH,CC,TDATA,DATA,ICH,THED, 00101100
C          3IN,IOUT,LEG,LOC,THEDL,THEDP,NCZ        00101200
C                                                  00101300
C          1 FORMAT (12A6)                        00101400
C          2 FORMAT (9A6)                          00101500
C          3 FORMAT (36I2)                         00101600
C          4 FORMAT (6F12.6)                       00101700
C          5 FORMAT (12F6.3)                       00101800
C          7 FORMAT (1H-,3X,49HCOMPUTED INITIAL OR FINAL TIME POINTS FOR SECTION 00101900
C          1N,12,7H RECORD,12,25H, DO NOT AGREE WITH INPUT./4X,58HCHECK DELTA 00102000
C          2T AND TOTAL POINTS, PER SECTION. RESUBMIT JOB.///32X,18HINITIAL TI 00102100
C          3ME (HRS),20X,16HFINAL TIME (HRS)//4X,8HCOMPUTED,25X,F7.3,31X,F7.3/ 00102200
C          44X,5HINPUT,28X,F7.3,31X,F7.3)         00102300
C          8 FORMAT (12F6.0)                       00102400
C          9 FORMAT (2(4X,I2),4X,1A6)              00102500
C          11 FORMAT (6(I2,I2,F8.4))               00102600
C          12 FORMAT (12F6.2)                      00102610
C                                                  00102700
C          IN=5                                    00102800
C          IOUT=6                                 00102900
C          995 READ INPUT TAPE IN,3, MCH          00103000
C          996 READ INPUT TAPE IN,4, XLIN,YLIN    00103100
C          997 READ INPUT TAPE IN,1, HED2         00103200
C          998 READ INPUT TAPE IN,1, HED          00103300
C          999 READ INPUT TAPE IN,2, CTI,XT,YT,TIM 00103400

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1000 READ INPUT TAPE IN,1, TITLE 00103500
      READ INPUT TAPE IN,3, NLIN,IXIN,IREAD,IPRINT 00103550
      READ INPUT TAPE IN,3, NREC,NGRAPH,NCC,NSECT,NCHT,NAVGR,NCGR,NCHAR 00103600
1,NTC,NPTS 00103700
      IF (IXIN) 88,89,88 00103710
88 DO 10 K=1,NREC 00103720
      ISECT=NSECT(K) 00103730
      READ INPUT TAPE IN,4, ((TI(J,I,K),J=1,2),I=1,ISECT) 00103740
      NND=0 00103750
      DATA(1,28,K)=0.0 00103760
      DO 10 I=1,ISECT 00103770
      NST=NND+2 00103780
      NND=NND+NPTS(I,K) 00103790
      NPT(I,K)=NND 00103800
      PTS=NPTS(I,K)-1 00103805
      DATA(NST-1,28,K)=TI(1,I,K) 00103810
      DT(I,K)=(TI(2,I,K)-TI(1,I,K))/PTS 00103820
      DO 10 J=NST,NND 00103830
      DATA(J,28,K)=DATA(J-1,28,K)+DT(I,K) 00103840
10 CONTINUE 00103850
      GO TO 1050 00103855
89 DO 15 K=1,NREC 00103860
      ISECT=NSECT(K) 00103865
      NPT(1,K)=NPTS(1,K) 00103870
      DO 15 I=2,ISECT 00103880
      NPT(I,K)=NPT(I-1,K)+NPTS(I,K) 00103885
15 CONTINUE 00103890
1050 READ INPUT TAPE IN,4, CALN 00103900
      READ INPUT TAPE IN,3, ((ICHT(I,N),I=1,24),N=1,NREC) 00103950
      IF (NGRAPH) 102,102,101 00104000
101 DO 20 N=1,NGRAPH 00104050
      NCG=NCGR(N) 00104100
      READ INPUT TAPE IN,3, (IRG(I,N),ICHG(I,N),I=1,NCG) 00104150
20 CONTINUE 00104175
102 DO 25 N=1,NREC 00104200
      NAV=NAVGR(N) 00104225
      IF (NAV) 25,25,111 00104300
111 DO 24 M=1,NAV 00104350
      NCH=NCHAR(M,N) 00104400
```

READ INPUT TAPE IN,3, (IAVG(L,M,N),L=1,NCH)	00104450
24 CONTINUE	00104460
25 CONTINUE	00104475
26 IF (NCC) 122,122,121	00104500
121 READ INPUT TAPE IN,11, (ICALR(I),ICALCH(I),CC(I),I=1,NCC)	00104600
122 DO 200 K=1,NREC	00104700
ISECT=NSECT(K)	00104800
NC=NCHT(K)	00105000
NT=NPT(ISECT,K)	00105100
IF (IXIN) 127,126,127	00105200
126 READ INPUT TAPE IN,12, (DATA(I,28,K),I=1,NT)	00105300
127 IF (CAL-1.0) 132,131,132	00105900
131 DO 30 I=1,NT	00106000
READ INPUT TAPE IN,8, (TDATA(I,N),N=1,NC)	00106100
30 CONTINUE	00106150
GO TO 1100	00106200
132 DO 40 I=1,NT	00106300
READ INPUT TAPE IN,5, (TDATA(I,N),N=1,NC)	00106400
40 CONTINUE	00106450
1100 IF (ICHT(1,K)-1) 141,1999,141	00106500
141 DO 50 N=1,NC	00106900
IF (ICHT(N,K)-1) 50,151,50	00107000
151 NICHT=N-1	00107100
NST=N	00107200
GO TO 2000	00107300
50 CONTINUE	00107400
1999 NST=1	00107450
2000 NND=NC	00107500
I=0	00107550
2001 DO 85 N=NST,NND	00107600
CAL=CALN(K)	00109450
IF (NCC) 162,162,161	00107610
161 DO 60 IZ=1,NCC	00107620
IF (ICALR(IZ)-K) 60,171,60	00107630
171 IF (ICALCH(IZ)-ICHT(N,K)) 60,172,60	00107640
172 CAL=CALN(K)*CC(IZ)	00107650
60 CONTINUE	00107675
162 I=I+1	00107700
ICH(I,K)=ICHT(N,K)	00107800

IC=ICH(I,K)	00107900
THED(I,K)=HED(IC,K)	00108000
IF (NTC(K)) 177,177,176	00108050
176 CTN=NTC(K)	00108075
IF (ICHT(N,K)-ICHT(1,K)) 181,182,182	00108100
181 C=ICHT(1,K)-ICHT(N,K)	00108200
GO TO 2050	00108300
182 C=ICHT(1,K)-ICHT(N,K)+NTC(K)	00108400
2050 CK=C/CTN	00108500
NPX=NPT(1,K)+1	00108550
DO 70 J=2,NPX	00108600
DATA(J-1,I,K)=(TDATA(J-1,N)+CK*(TDATA(J,N)-TDATA(J-1,N)))*CAL	00108700
70 CONTINUE	00108800
JST=NPX+1	00108900
GO TO 3000	00109000
177 JST=1	00109100
3000 DO 80 J=JST,NT	00109200
DATA(J,I,K)=TDATA(J,N)*CAL	00109300
80 CONTINUE	00109400
85 CONTINUE	00109450
IF (NST-1) 201,202,201	00109500
201 NST=1	00109600
NND=NICHT	00109700
GO TO 2001	00109800
202 IF (NAVGR(K)) 200,200,221	00110610
221 DO 110 IAV=1,3	00110620
IF (NCHAR(IAV,K)) 110,110,231	00110630
231 IDATA=IAV+24	00110640
NVG=NCHAR(IAV,K)	00110650
AVG=NVG	00110660
DO 100 I=1,NT	00110670
DATA(I,IDATA,K)=0.0	00110680
DO 90 NIAV=1,NVG	00110700
ICHAV=IAVG(NIAV,IAV,K)	00110710
DATA(I,IDATA,K)=DATA(I,IDATA,K)+DATA(I,ICHAV,K)	00110730
90 CONTINUE	00110740
DATA(I,IDATA,K)=DATA(I,IDATA,K)/AVG	00110750
100 CONTINUE	00110760
110 CONTINUE	00110800

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200 CONTINUE
7000 IF (NGRAPH) 1002,1002,1001
1001 CALL GRAPH
1002 IF (IPRINT) 1004,1003,1004
1003 CALL PRINT
1004 IF (IREAD) 1005,1000,1005
1005 GO TO (999,998,997,996,995), IREAD
END(1,0,0,0,0,0,1,0,0,1,0,0,0,0,0)

00111000
00112000
00112100
00112200
00112300
00112400
00112500

STORAGE NOT USED BY PROGRAM

DEC OCT
1197 02255

DEC OCT
19096 45230

STORAGE LOCATIONS FOR VARIABLES APPEARING IN COMMON STATEMENTS

DEC OCT
CALN 31226 74772
DT 31280 75060
ICALCH 30645 73665
ICHT 31223 74767
IREAD 31352 75170
MCH 32434 77262
NCHAR 31325 75135
NLIN 31348 75164
NSECT 31346 75162
THEDP 19124 45264
TITLE 31367 75207
YT 32552 77450

DEC OCT
CC 30595 73603
HED2 32339 77123
ICALR 30695 73747
IN 19283 45523
IRG 31151 74657
NAVGR 31340 75154
NCHT 31343 75157
NPT 31298 75102
NTC 31355 75173
THED 19364 45644
XLIN 32422 77246

DEC OCT
CTI 32543 77437
HED 32420 77244
ICHG 31031 74467
IOUT 19282 45522
LEG 19281 45521
NCC 31347 75163
NCZ 19097 45231
NPTS 31316 75124
TDATA 30545 73521
TIM 32435 77263
XT 32561 77461

DEC OCT
DATA 27845 66305
IAVG 30911 74277
ICH 19445 45765
IPRINT 31351 75167
LOC 19280 45520
NCGR 31337 75151
NGRAPH 31349 75165
NREC 31350 75166
THEDL 19268 45504
TI 31262 75036
YLIN 32421 77245

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENTS

DEC OCT
AVG 1196 02254
CTN 1192 02250
IDATA 1188 02244
JST 1184 02240
NCG 1180 02234
NND 1176 02230
NT 1172 02224

DEC OCT
CAL 1195 02253
IAV 1191 02247
I 1187 02243
K 1183 02237
NCH 1179 02233
NPX 1175 02227
NVG 1171 02223

DEC OCT
CK 1194 02252
ICHAV 1190 02246
ISECT 1186 02242
M 1182 02236
NC 1178 02232
N 1174 02226
PTS 1170 02222

DEC OCT
C 1193 02251
IC 1189 02245
IXIN 1185 02241
NAV 1181 02235
NICHT 1177 02231
NST 1173 02225

SYMBOLS AND LOCATIONS FOR SOURCE PROGRAM FORMAT STATEMENTS

EFN LOC
811 1 02152
815 5 02143
818 11 02054

EFN LOC
812 2 02150
817 7 02141
81C 12 02051

EFN LOC
813 3 02147
818 8 02061

EFN LOC
814 4 02145
819 9 02057

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
1)	1131 02153	2)	1043 02023	3)	1056 02040	4)	32767 77777
6)	1058 02042	A)105	972 01714	A)109	985 01731	A)10A	998 01746
A)1G2	1011 01763	A)1GA	1024 02000	C)G0	1135 02157	C)G1	1136 02160
C)G3	1137 02161	C)G4	1138 02162	C)100	1139 02163	C)101	1140 02164
C)104	1141 02165	C)105	1142 02166	C)107	1143 02167	C)108	1144 02170
C)109	1145 02171	C)10A	1146 02172	C)10B	1147 02173	C)10C	1148 02174
C)1G1	1149 02175	C)1G2	1150 02176	C)1G3	1151 02177	C)1G4	1152 02200
C)1G7	1153 02201	C)1G8	1154 02202	C)1G9	1155 02203	C)1GA	1156 02204
C)200	1157 02205	C)201	1158 02206	C)207	1159 02207	C)208	1160 02210
C)209	1161 02211	C)20A	1162 02212	C)20B	1163 02213	C)20C	1164 02214
C)20D	1165 02215	C)20E	1166 02216	C)20F	1167 02217	C)20G	1168 02220
C)20H	1169 02221	D)108	125 00175	D)10D	181 00265	D)114	381 00575
D)118	417 00641	D)12I	728 01330	D)12M	780 01414	D)13A	965 01705
D)20J	258 00402	D)224	592 01120	D)22Q	804 01444	D)22S	813 01455
D)22V	890 01572	D)232	919 01627	D)234	926 01636	D)30J	257 00401
D)324	591 01117	D)32I	727 01327	D)32M	779 01413	D)332	918 01626
D)40E	221 00335	D)426	617 01151	D)50E	220 00334	D)72I	726 01326
D)72M	778 01412	E)13	364 00554	E)20	577 01101	E)2A	637 01175
E)2T	818 01462						

LOCATIONS OF NAMES IN TRANSFER VECTOR

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
GRAPH	4 00004	PRINT	5 00005	(FPT)	0 00000	(RTN)	3 00003
(SLI)	2 00002	(TSH)	1 00001				

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

GRAPH	PRINT	(FPT)	(RTN)	(SLI)	(TSH)
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EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	L00	EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C
995	16	00021	996	18	00030	997	20	00040	998	22	00047
999	24	00056	1000	26	00075	88	33	00163	10	54	00341
89	56	00371	15	61	00426	1050	62	00437	101	73	00476

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20	80	00535	102	81	00540	111	84	00555	24	91	00633
25	92	00642	26	93	00645	121	94	00651	122	99	00670
126	104	00730	127	109	00761	131	110	00766	30	116	01016
132	118	01021	40	124	01051	1100	125	01053	141	126	01056
151	128	01103	50	131	01111	1999	132	01115	2000	133	01121
2001	135	01131	161	138	01160	171	140	01170	172	141	01176
60	142	01201	162	143	01203	176	148	01230	181	150	01243
182	152	01252	2050	153	01261	70	157	01342	177	160	01352
3000	161	01354	80	163	01420	85	164	01424	201	166	01437
202	169	01445	221	170	01451	231	172	01464	90	180	01604
100	182	01614	110	183	01630	200	184	01637	7000	185	01665
1001	186	01671	1002	187	01674	1003	188	01700	1004	189	01703
1005	190	01706									

BEGIN COMPILATION 29

8 TAPES 08-08-37

09/06/23

SUBROUTINE PRINT

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C
      DIMENSION XT(9),YT(9),CTI(9,12),MCH(12),HED(27,3),HED2(12,27,3), 00200000
      1TITLE(12),NSECT(3),NCHT(3),NAVGR(3),NCGR(12),NCHAR(3,3),NPTS(6,3), 00200100
      2DT(6,3),TI(2,6,3),ICHT(24,3),IRG(10,12),ICHG(10,12),IAVG(24,3,3), 00200400
      3ICALR(50),ICALCH(50),CC(50),THED(27,3),THEDP(27),THEDL(12,12), 00200500
      4DATA(100,28,3),TDATA(100,27),ICH(27,3),CALN(3),LOC(12),NPT(6,3) 00200600
      5,NTC(3) 00200700
      COMMON XT,YT,CTI,TIM,MCH,XLIN,YLIN,HED,HED2,TITLE,NTC,IREAD, 00200800
      1IPRINT,NREQ,NGRAPH,NLIN,NCC,NSECT,NCHT,NAVGR,NCGR,NCHAR,NPTS,NPT, 00200810
      2DT,TI,CALN,ICHT,IRG,ICHG,IAVG,ICALR,ICALCH,CC,TDATA,DATA,ICH,THED, 00200900
      3IN,IOUT,LEG,LOC,THEDL,THEDP,NCZ 00201000
C
      1 FORMAT (1H1,9X,12A6,9X,4HPAGE,I3///2X,5HPT N0,3X,4HTIME,9(3X,1A6)) 00201100
      2 FORMAT (1H0) 00201200
      3 FORMAT (1H ,I4,3X,F7.3,2X,9(F6.0,3X)) 00201250
      4 FORMAT (1H+,18X,3HAVG) 00201300
      5 FORMAT (1H+,18X,3HAVG,6X,3HAVG) 00201400
      6 FORMAT (1H+,18X,3HAVG,6X,3HAVG,6X,3HAVG) 00201500
      7 FORMAT (1H ,9X,A3) 00201600
C
      NPAGE=0 00201700
      DO 100 K=1,NREC 00201800
      ISECT=NSECT(K) 00201900
      NT=NPT(ISECT,K) 00202000
      NC=NCHT(K)+NAVGR(K) 00202100
1000 IF (NC-9) 11,12,12 00202200
      11 NND=NC 00202300
      GO TO 2000 00202400
      12 NND=9 00202500
2000 IST=1 00202600
      NST=1 00202700
      NF=NND 00202800
      KAVG=NAVGR(K) 00202900
      N2=KAVG+1 00203000
      IF (KAVG) 2001,2001,1001 00203100
1001 DO 10 N=1,KAVG 00203200
      KVG=N+24 00203300
      THEDP(N)= HED(KVG,K) 00203400
      00203500
      00203600
      00203700
      00203800
      00203900
      00204000
      00204100

```

D0 10 I=1,NT	00204200
TDATA(I,N)=DATA(I,KVG,K)	00204300
10 CONTINUE	00204400
2001 NPR=N2-KAVG-1	00204450
D0 20 N=N2,NC	00204500
NPR=NPR+1	00204600
THEDP(N)=THED(NPR,K)	00204700
D0 20 I=1,NT	00204800
TDATA(I,N)=DATA(I,NPR,K)	00204900
20 CONTINUE	00205000
3000 NPAGE=NPAGE+1	00206700
IPR=0	00206800
IPNT=0	00206900
WRITE OUTPUT TAPE IOUT,1, TITLE,NPAGE,(THEDP(N),N=NST,NF)	00207000
WRITE OUTPUT TAPE IOUT,7, TIM	00207100
IF (KAVG) 133,133,128	00207200
128 IF (NST-9) 129,133,133	00207300
129 G0 T0 (131,132,232), KAVG	00207400
131 WRITE OUTPUT TAPE IOUT,4	00207500
G0 T0 133	00207600
132 WRITE OUTPUT TAPE IOUT,5	00207700
G0 T0 133	00207725
232 WRITE OUTPUT TAPE IOUT,6	00207750
133 D0 60 J=1,I SECT	00207800
J2=J	00207900
IND=NPT(J,K)	00207950
D0 50 I=IST,IND	00208000
IPNT=IPNT+1	00208200
IPR=IPR+1	00208300
WRITE OUTPUT TAPE IOUT,3, IPNT,DATA(I,28,K),(TDATA(I,N),N=NST,NF)	00208400
IF (IPR-36) 50,13,13	00208500
13 IF (I-NT) 113,313,313	00208600
113 NPAGE=NPAGE+1	00208700
IPR=0	00208800
WRITE OUTPUT TAPE IOUT,1, TITLE,NPAGE,(THEDP(N),N=NST,NF)	00208900
WRITE OUTPUT TAPE IOUT,7, TIM	00209000
313 IF (KAVG) 50,50,138	00209100
138 IF (NST-9) 139,50,50	00209200
139 G0 T0 (141,142,143), KAVG	00209300

```
141 WRITE OUTPUT TAPE IOUT,4
    GO TO 50
142 WRITE OUTPUT TAPE IOUT,5
    GO TO 50
143 WRITE OUTPUT TAPE IOUT,6
50 CONTINUE
    IF (J2-ISECT) 14,17,17
14 WRITE OUTPUT TAPE IOUT,2
    IPR=IPR+2
    IST=IND+1
60 CONTINUE
17 IF (NF-NC) 18,100,100
18 NST=NST+9
    IST=1
    NDIF=NC-NF
    IF (NDIF-9) 19,21,21
19 NF=NC
    GO TO 3000
21 NF=NF+9
    GO TO 3000
100 CONTINUE
    RETURN
    END(1,0,0,0,0,0,1,0,0,1,0,0,0,0,0)
```

```
00209400
00209500
00209600
00209625
00209650
00209700
00209800
00209900
00210000
00210100
00210700
00210800
00210900
00211000
00211200
00211300
00211400
00211500
00211600
00211700
00211800
00211900
```

STORAGE NOT USED BY PROGRAM

DEC OCT
593 01121

DEC OCT
19096 45230

STORAGE LOCATIONS FOR VARIABLES APPEARING IN COMMON STATEMENTS

DEC OCT
CALN 31226 74772
DT 31280 75060
ICALCH 30645 73665
ICHT 31223 74767
IREAD 31352 75170
MCH 32434 77262
NCHAR 31325 75135
NLIN 31348 75164
NSECT 31346 75162
THEDP 19124 45264
TITLE 31367 75207
YT 32552 77450

DEC OCT
CC 30595 73603
HED2 32339 77123
ICALR 30695 73747
IN 19283 45523
IRG 31151 74657
NAVGR 31340 75154
NCHT 31343 75157
NPT 31298 75102
NTC 31355 75173
THED 19364 45644
XLIN 32422 77246

DEC OCT
CTI 32543 77437
HED 32420 77244
ICHG 31031 74467
IOUT 19282 45522
LEG 19281 45521
NCC 31347 75163
NCZ 19097 45231
NPTS 31316 75124
TDATA 30545 73521
TIM 32435 77263
XT 32561 77461

DEC OCT
DATA 27845 66305
IAVG 30911 74277
ICH 19445 45765
IPRINT 31351 75167
LOC 19280 45520
NCGR 31337 75151
NGRAPH 31349 75165
NREC 31350 75166
THEDL 19268 45504
TI 31262 75036
YLIN 32421 77245

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENTS

DEC OCT
IND 592 01120
ISECT 588 01114
KAVG 584 01110
NC 580 01104
NPAGE 576 01100
NT 572 01074

DEC OCT
IPNT 591 01117
IST 587 01113
K 583 01107
NDIF 579 01103
NPR 575 01077

DEC OCT
IPR 590 01116
J2 586 01112
KVG 582 01106
NF 578 01102
N 574 01076

DEC OCT
I 589 01115
J 585 01111
N2 581 01105
NND 577 01101
NST 573 01075

SYMBOLS AND LOCATIONS FOR SOURCE PROGRAM FORMAT STATEMENTS

EFN LOC
811 1 01054
815 5 01030

EFN LOC
812 2 01042
816 6 01023

EFN LOC
813 3 01041
817 7 01015

EFN LOC
814 4 01033

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
1)	557	01055	2)	508	00774	6)	518	01006	A)100	469	00725
A)101	482	00742	A)103	495	00757	C)G0	561	01061	C)G1	562	01062
C)G2	563	01063	C)100	564	01064	C)101	565	01065	C)102	566	01066
C)103	567	01067	C)104	568	01070	C)1G2	569	01071	C)200	570	01072
C)201	571	01073	D)106	80	00120	D)10A	117	00165	D)10B	155	00233
D)10J	228	00344	D)410	362	00552	D)412	374	00566	D)416	398	00616
E)T	334	00516	E)12	371	00563	E)516	400	00620			

LOCATIONS OF NAMES IN TRANSFER VECTOR

	DEC	OCT		DEC	OCT		DEC	OCT		DEC	OCT
(FIL)	2	00002	(SL0)	1	00001	(STH)	0	00000			

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

(FIL)	(SL0)	(STH)
-------	-------	-------

EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C
1000	17	00045	11	18	00051	12	20	00054	2000	21	00056
1001	27	00077	10	32	00153	2001	33	00166	20	39	00266
3000	40	00277	128	52	00340	129	53	00345	131	54	00350
132	56	00355	232	58	00362	133	59	00366	13	72	00512
113	73	00517	313	83	00553	138	84	00557	139	85	00567
141	86	00572	142	88	00601	143	90	00610	50	91	00621
14	93	00632	60	96	00644	17	97	00654	18	98	00660
19	102	00674	21	104	00677	100	106	00703			

BEGIN COMPILATION 29

8 TAPES 08-09-02

09/06/23

SUBROUTINE GRAPH

```

C
  DIMENSION XT(9),YT(9),CTI(9,12),MCH(12),HED(27,3),HED2(12,27,3),
  1TITLE(12),NSECT(3),NCHT(3),NAVGR(3),NCGR(12),NCHAR(3,3),NPTS(6,3),
  2DT(6,3),TI(2,6,3),ICHT(24,3),IRG(10,12),ICHG(10,12),IAVG(24,3,3),
  3ICALR(50),ICALCH(50),CC(50),THED(27,3),THEDP(27),THEDL(12,12),
  4DATA(100,28,3),TDATA(100,27),ICH(27,3),CALN(3),LOC(12),NPT(6,3)
  5,NTC(3)
  COMMON XT,YT,CTI,TIM,MCH,XLIN,YLIN,HED,HED2,TITLE,NTC,IREAD,
  1IPRINT,NREQ,NGRAPH,NLIN,NCC,NSECT,NCHT,NAVGR,NCGR,NCHAR,NPTS,NPT,
  2DT,TI,CALN,ICHT,IRG,ICHG,IAVG,ICALR,ICALCH,CC,TDATA,DATA,ICH,THED,
  3IN,IOUT,LEG,LOC,THEDL,THEDP,NCZ
  KC=90

C
  DO 100 K=1,NGRAPH
    ISECT=0
    LEG=K
    NCG=NCGR(K)
    DO 15 I=1,NCG
      IRGI=IRG(I,K)
      NC=NCHT(IRGI)
      ISECT=XMAXOF(ISECT,NSECT(IRGI))
      DO 15 N=1,NC
        IF (ICHG(I,K)-ICH(N,IRGI)) 7,9,7
      7 NCAV=24
      DO 10 J=1,3
        NCAV=NCAV+1
        IF (ICHG(I,K)-NCAV) 10,8,10
      8 LOC(I)=NCAV
    10 CONTINUE
    GO TO 15
  9 LOC(I)=N
  15 CONTINUE
  YU=0.0
  YL=0.0
  DO 20 N=1,NCG
    ICGN=LOC(N)
    IREC=IRG(N,K)
    NSEC=NSECT(IREC)

```

```

00300000
00300100
00300400
00300500
00300600
00300700
00300800
00300810
00300900
00301000
00301100
00301200
00301250
00301300
00301400
00301450
00301500
00301600
00301700
00301800
00301900
00301950
00302000
00302100
00302110
00302120
00302130
00302140
00302150
00302160
00302170
00302200
00302300
00302400
00302500
00302600
00302700
00302800
00302850

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```

      NT=NPT(NSEC,IREC)
      DO 20 I=1,NT
      YU=MAX1F(YU,DATA(I,ICGN,IREC))
      YL=MIN1F(YL,DATA(I,ICGN,IREC))
20  CONTINUE
      JST=1
      DO 90 J=1,I SECT
      XL=1.0E06
      XU=0.0
      DO 40 I=1,NCG
      IREC=IRG(I,K)
      JND=NPT(J,IREC)
      IF (J-1) 37,37,36
36  JST=NPT(J-1,IREC)
37  XL=MIN1F(XL,DATA(JST,28,IREC))
      XU=MAX1F(XU,DATA(JND,28,IREC))
40  CONTINUE
      NFR=1
      DO 50 N=1,NCG
      IREC=IRG(N,K)
      IF (N SECT(IREC)-J) 50,44,44
44  NSYM=MCH(N)
      ICGN=L0C(N)
      IF (J-1) 900,900,950
900 NST=1
      NP=NPTS(J,IREC)
      GO TO 1000
950 NST=NPT(J-1,IREC)
      NP=NPTS(J,IREC)+1
1000 CALL AICRT3(0,0,DATA(NST,28,IREC),DATA(NST,ICGN,IREC),NP,1,NLIN,1,
      1 NSYM,TITLE,XT,YT,NFR,1,XLIN,YLIN,2,XL,XU,2,YL,YU)
      NFR=2
50  CONTINUE
      CALL CHSIZW (3,3)
      CALL RITE2W (775,1005,1023,KC,2,8,1,CTI(1,K),NLAST)
90  CONTINUE
      CALL LEGEND
100 CONTINUE
      RETURN
      END(1,0,0,0,0,0,1,0,0,1,0,0,0,0,0)

```

```

00302900
00303000
00303100
00303200
00303300
00304200
00304400
00304425
00304450
00304500
00304600
00304700
00304725
00304750
00304800
00304900
00305000
00305600
00305700
00305800
00305850
00305900
00306000
00306100
00306200
00306300
00306400
00306950
00306975
00307000
00307100
00307200
00307300
00307900
00308000
00308100
00308200
00308300
00308400

```

STORAGE NOT USED BY PROGRAM

DEC OCT
618 01152

DEC OCT
19096 45230

STORAGE LOCATIONS FOR VARIABLES APPEARING IN COMMON STATEMENTS

DEC OCT
CALN 31226 74772
DT 31280 75060
ICALCH 30645 73685
ICHT 31223 74767
IREAD 31352 75170
MCH 32434 77262
NCHAR 31325 75135
NLIN 31348 75164
NSECT 31346 75162
THEDP 19124 45264
TITLE 31367 75207
YT 32552 77450

DEC OCT
CC 30595 73603
HED2 32339 77123
ICALR 30695 73747
IN 19283 45523
IRG 31151 74657
NAVGR 31340 75154
NCHT 31343 75157
NPT 31298 75102
NTC 31355 75173
THED 19364 45644
XLIN 32422 77246

DEC OCT
CTI 32543 77437
HED 32420 77244
ICHG 31031 74467
IOUT 19282 45522
LEG 19281 45521
NCC 31347 75163
NCZ 19097 45231
NPTS 31316 75124
TDATA 30545 73521
TIM 32435 77263
XT 32561 77461

DEC OCT
DATA 27845 66305
IAVG 30911 74277
ICH 19445 45765
IPRINT 31351 75167
LOC 19280 45520
NCGR 31337 75151
NGRAPH 31349 75165
NREC 31350 75166
THEDL 19268 45504
TI 31262 75036
YLIN 32421 77245

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENTS

DEC OCT
ICGN 617 01151
JND 613 01145
K 609 01141
NFR 605 01135
NSEC 601 01131
XL 597 01125

DEC OCT
IREC 616 01150
J 612 01144
NCAV 608 01140
NLASt 604 01134
NST 600 01130
XU 596 01124

DEC OCT
IRGI 615 01147
JST 611 01143
NCG 607 01137
NP 603 01133
NSYM 599 01127
YL 595 01123

DEC OCT
ISECT 614 01146
KC 610 01142
NC 606 01136
N 602 01132
NT 598 01126
YU 594 01122

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

DEC OCT
1) 569 01071
A)103 462 00716
A)1G3 514 01002
C)G2 575 01077
C)101 579 01103
C)105 583 01107

DEC OCT
2) 546 01042
A)104 475 00733
A)1G4 527 01017
C)G3 576 01100
C)102 580 01104
C)1G1 584 01110

DEC OCT
3) 561 01061
A)1G1 488 00750
C)G0 573 01075
C)G4 577 01101
C)103 581 01105
C)1G2 585 01111

DEC OCT
6) 563 01063
A)1G2 501 00765
C)G1 574 01076
C)100 578 01102
C)104 582 01106
C)1G3 586 01112

5606

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C11G4	587	01113	C1200	588	01114	C1201	589	01115	C1203	590	01116
C1204	591	01117	C1205	592	01120	C1206	593	01121	D1107	90	00132
D110J	271	00417	D110K	280	00430	D1203	71	00107	D120H	220	00334
D120I	239	00357	D1303	70	00106	D130K	279	00427	D140N	340	00524
D140R	411	00633	D160N	339	00523	D170K	278	00426	E16	86	00126

LOCATIONS OF NAMES IN TRANSFER VECTOR

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
AICRT3	0 00000	CHSIZV	1 00001	LEGEND	3 00003	RITE2V	2 00002

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

AICRT3	CHSIZV	LEGEND	RITE2V
--------	--------	--------	--------

EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C
7	16	00113	8	20	00127	10	21	00133	9	23	00136
15	24	00141	20	35	00300	36	44	00420	37	45	00431
40	47	00444	44	52	00525	900	55	00541	950	58	00554
1000	60	00567	50	63	00634	90	68	00670	100	70	00703

BEGIN COMPILATION 29

8 TAPES 08-09-24

09/06/23

SUBROUTINE LEGEND

```

C
  DIMENSION XT(9),YT(9),CTI(9,12),MCH(12),HED(27,3),HED2(12,27,3),
1 TITLE(12),NSECT(3),NCHT(3),NAVGR(3),NCGR(12),NCHAR(3,3),NPTS(6,3),
2 DT(6,3),TI(2,6,3),ICHT(24,3),IRG(10,12),ICHG(10,12),IAVG(24,3,3),
3 ICALR(50),ICALCH(50),CC(50),THED(27,3),THEDP(27),THEDL(12,12),
4 DATA(100,28,3),TDATA(100,27),ICH(27,3),CALN(3),LOC(12),NPT(6,3)
5,NTC(3)
  COMMON XT,YT,CTI,TIM,MCH,XLIN,YLIN,HED,HED2,TITLE,NTC,IREAD,
1 IPRINT,NREQ,NGRAPH,NLIN,NCC,NSECT,NCHT,NAVGR,NCGR,NCHAR,NPTS,NPT,
2 DT,TI,CALN,ICHT,IRG,ICHG,IAVG,ICALR,ICALCH,CC,TDATA,DATA,ICH,THED,
3 IN,IOUT,LEG,LOC,THEDL,THEDP,NCZ

C
  CALL FRAMEV
  CALL TITL1W (1,TITLE(1),7,IERR)
  CALL TITL2W (280,950,-1,3,1023,-1,12H LEGEND FOR ,2,IERR)
  CALL TITL2W (604,950,-1,3,1023,1,CTI(1,LEG),2,IERR)
  CALL TITL2W (800,800,-1,3,1023,-1,6HSYMBOL,1,IERR)
  NY=750
  IND=NCGR(LEG)
  DO 20 I=1,IND
  IRGI=IRG(I,LEG)
  ICHGI=ICHG(I,LEG)
  DO 10 J=1,12
  THEDL(J,I)=HED2(J,ICHGI,IRGI)
10 CONTINUE
  CALL TITL2W (100,NY,-1,2,1023,1,THEDL(1,I),12,IERR)
  CALL PLOTV (850,NY,MCH(I))
  NY=NY-35
20 CONTINUE
  CALL LINEV (51,873,957,873)
  CALL LINEV (957,873,957,375)
  CALL LINEV (957,375,51,375)
  CALL LINEV (51,375,51,873)
  RETURN
  END(1,0,0,0,0,0,1,0,0,1,0,0,0,0,0)

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00400000
00400100
00400400
00400500
00400600
00400700
00400800
00400810
00400900
00401000
00401100
00401200
00401250
00401300
00401400
00401500
00401600
00401800
00401900
00402500
00402700
00402900
00403000
00403100
00403200
00403300
00403600
00403700
00403800
00403900
00404000
00404100
00404200
00404300
00404400

```


STORAGE NOT USED BY PROGRAM

DEC OCT
259 00403

DEC OCT
19096 45230

STORAGE LOCATIONS FOR VARIABLES APPEARING IN COMMON STATEMENTS

DEC OCT
CALN 31226 74772
DT 31280 75060
ICALCH 30645 73665
ICHT 31223 74767
IREAD 31352 75170
MCH 32434 77262
NCHAR 31325 75135
NLIN 31348 75164
NSECT 31346 75162
THEDP 19124 45264
TITLE 31367 75207
YT 32552 77450

DEC OCT
CC 30595 73603
HED2 32339 77123
ICALR 30695 73747
IN 19283 45523
IRG 31151 74657
NAVGR 31340 75154
NCHT 31343 75157
NPT 31298 75102
NTC 31355 75173
THED 19364 45644
XLIN 32422 77246

DEC OCT
CTI 32543 77437
HED 32420 77244
ICHG 31031 74467
IOUT 19282 45522
LEG 19281 45521
NCC 31347 75163
NCZ 19097 45231
NPTS 31316 75124
TDATA 30545 73521
TIM 32435 77263
XT 32561 77461

DEC OCT
DATA 27845 66305
IAVG 30911 74277
ICH 19445 45765
IPRINT 31351 75167
LOC 19280 45520
NCGR 31337 75151
NGRAPH 31349 75165
NREC 31350 75166
THEDL 19268 45504
TI 31262 75036
YLIN 32421 77245

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENTS

DEC OCT
ICHGI 258 00402
NY 254 00376

DEC OCT
IERR 257 00401

DEC OCT
IND 256 00400

DEC OCT
IRGI 255 00377

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

DEC OCT
1) 245 00365
B) 234 00352
C)101 252 00374
D)501 101 00145

DEC OCT
2) 213 00325
C)G1 249 00371
C)102 253 00375

DEC OCT
6) 239 00357
C)G2 250 00372
D)102 122 00172

DEC OCT
A)100 204 00314
C)100 251 00373
D)401 102 00146

LOCATIONS OF NAMES IN TRANSFER VECTOR

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
FRAMEV	0 00000	LINEV	4 00004	PL0TV	3 00003	TITL1V	1 00001
TITL2V	2 00002						

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

FRAMEV	LINEV	PL0TV	TITL1V	TITL2V
--------	-------	-------	--------	--------

EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	L00	EFN	IFN	L0C	EFN	IFN	L0C	EFN	IFN	L0C
10	21	00175	20	27	00241						

K MEDEIRØS
**PRINTING=

7356-06 A02 4 TAPES 08-09-45
613 LINES **PUNCHING= 131 CARDS **CRT=

09/06/23
0-35MM

0-9INCH