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J. D. Drinan
Editor

Haystack Pointing System:
Auxiliary Real-Time Programs

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
LINCOLN LABORATORY

HAYSTACK POINTING SYSTEM:
AUXILIARY REAL-TIME PROGRAMS

J. D. DRINAN, Editor

Group 62

TECHNICAL NOTE 1966-6

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ABSTRACT

A description is given of ten non-major subprograms in the Haystack Pointing System. These programs all operate in the real-time environment, but in a sense are embellishments to the system proper inasmuch as they are by design either utilitarian to system operation or perform minor system functions. The additional system capabilities provided by this set of subprograms include: alteration of memory locations; modification of certain system parameters; constant monitoring of selectable memory locations; pointing of the antenna to any azimuth and elevation or right ascension and declination; outputting of certain planning information "on-line"; strip chart recording; magnetic tape recording; high-speed printer interfacing and Westford/Millstone intersite coupling.

Accepted for the Air Force
Franklin C. Hudson
Chief, Lincoln Laboratory Office

HAYSTACK POINTING SYSTEM: AUXILIARY REAL-TIME PROGRAMS

INTRODUCTION

The ten programs described in this document play important but non-major roles in the operation of the Haystack Pointing System. They all function in "on-line" operation of the system as distinguished from another set of minor programs which operate peripherally to the system.

A brief abstract of each program is given in alphabetical order along with the name of each author.

The listings for the individual programs are found in a separate section at the end of this memo.

CHANGE CORE S. J. White Page 3

The contents of any memory location can be changed as the system operates. Typeout of the specified location, old and new contents is given.

CHANGE PARAMETER A. A. Mathiasen Page 5

Certain selected system parameters can be changed by typing in the symbolic parameter name and the new value.

DYNAMIC DUMP S. J. White Page 8

The contents of one to eight selected memory locations, along with the name of the system program that has just operated, can be examined on the high-speed printer after the operation of each system program.

FIXED AZIMUTH-ELEVATION A. A. Mathiasen Page 18

The system can be directed to point at any desired azimuth or elevation.

FIXED RIGHT ASCENSION-DECLINATION A. A. Mathiasen Page 20

The system can be directed to a point in space having any right ascension, declination and radius. The rates of change of any of these quantities can be varied.

PLANNING J. D. Drinan Page 22

In the simulation mode, if jump key 2 is on, rise times and set times of the object under surveillance are logged on the high-speed printer.

PLOT R. Teoste Page 25

Command azimuth and elevation angles and their differences from actual antenna angles along with time marks are plotted on the channel 5 strip chart recorder. Adjustment and calibration facilities are provided.

PRLOG S. J. White Page 29

Messages to be output on the high-speed printer are accepted from any system program. Priority indication and page spacing facilities are provided.

RECORDING J. D. Drinan Page 38
A. A. Mathiasen

A central facility is provided for handling all of the magnetic tape recording as requested by any of the system programs.

WFORD/MSTONE INTERSITE COUPLING J. D. Drinan Page 50

As the Haystack Pointing System cycles, pointing information in the form of azimuth, elevation, range, and doppler data is automatically output to both the West Ford and Millstone sites.

CHANGE CORE

INTRODUCTION

The Change Core Program (CHCOR) permits changing the contents of any core location in the Haystack Pointing System while it is in operation.

INPUT

Location address and new contents are entered via the console typewriter.

OUTPUT

The specified address, old contents and new contents will be typed out on the console typewriter and the desired core change made.

OPERATION

CHCOR is called to operate via the "attention" symbol route. The user, in response to the message "E. L. + C." (enter location and contents) typed out on the console typewriter, types in an octal address followed by a carriage return.* This address is the location whose contents are to be changed. Next, the user types in the new contents in octal, again followed by a carriage return. (Leading zeros need not be typed.)

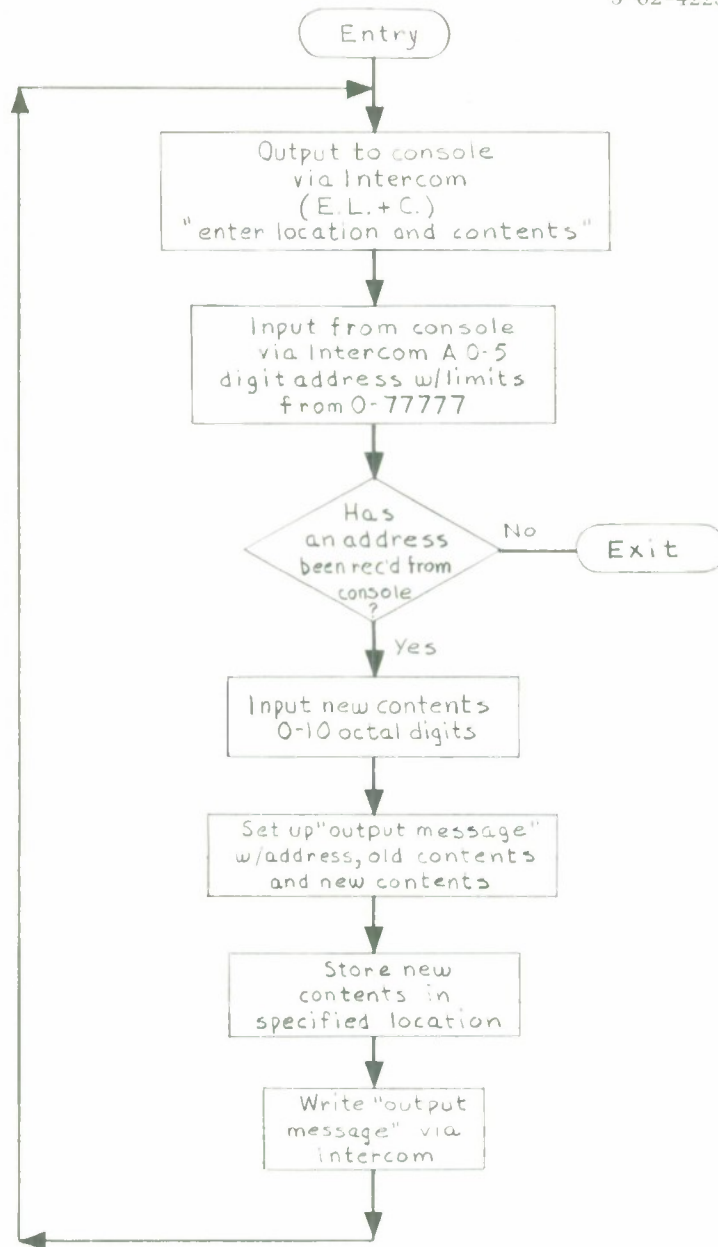
Typeouts of the specified address, old contents and new contents will then be provided on the console typewriter.

The program will continue to cycle until the answer to a request for an input is a carriage return alone.

Example: (Console Listing)

```
E. L. + C.  
      76543*  
      7777654321*  
76543 1234567777 7777654321  
E. L. + C.  
      16345*  
      10*  
16345 1035061111 0000000010  
E. L. + C.  
      *
```

*Note: The console output for a carriage return is the asterisk.



CHANGE CORE PROGRAM

CHANGE PARAMETER

INTRODUCTION

The parameter program enables an experimenter to change certain selected constants in the Haystack Pointing System easily by typing in the name of the parameter and its value. This should be done immediately after bootstrap or before starting a new experiment. The new parameters are valid only until the pointing system is read in anew by the bootstrap procedure, at which time the values compiled into the system are used. If a permanent change is desired, the new value must be compiled into the program which sets up the Common Storage register.*

The setting in of numbers like site latitude, longitude, height, the frequencies of Haystack and Westford or the equatorial and polar radii of the earth are straightforward.

The register DELTATEE contains the difference in days between ephemeris time and universal time and is found in the table " ΔT , Reduction from Universal Time to Ephemeris Time" in the beginning of the American Ephemeris and Nautical Almanac, and should be set if accurate output is desired for other than the current year. For the current year, the correct value should be compiled into the program that sets up this register.*

The register AZIMOVER which has the azimuth overlap indicator[†] should be set to the proper value to ensure a complete run on the object to be tracked without running into the cable wrap limits. A positive value (such as +0) starts the antenna in the non overlap region ($0^{\circ} \leq \text{Azimuth} \leq 360^{\circ}$). A negative value (which may be entered as -0) starts the antenna in the overlap region ($-120^{\circ} \leq \text{Azimuth} \leq 0$ or $360^{\circ} \leq \text{Azimuth} \leq 480^{\circ}$). The azimuth overlap indicator is set to +0 upon bootstrapping in the system, but subsequently is not changed by any program (except CHANGE PARAMETER). Thus if in a run the antenna moves from the non-overlap region to an overlap region, AZIMOVER is not changed so that a new

* See "Haystack Pointing System: Control Program" by J. D. Drinan and A. A. Mathiasen (in preparation).

† See "Haystack Pointing System: Acquisition" by R. Teoste (in preparation).

run would unwind the antenna into the non-overlap region unless AZIMOVER is now set negative.

OPERATION

Upon initialization by way of the attention symbol and the appropriate options, the parameter program types the following:

CHANGE PARAMETERS

NAME OF PARAMETER, CARRIAGE RETURN, NEW VALUE, CARRIAGE RETURN.

WHEN FINISHED CHANGING PARAMETERS, PRESS CARRIAGE RETURN AN EXTRA TIME.

The experimenter then types the parameter name followed by a carriage return, and the new value, followed by a carriage return. When he has no more new values, he types simply carriage return. Thus, a typical sequence might be the following (where * indicates a typed carriage return):

GEODETLAT*

45.0*

LONGITUDE*

233.0*

*

When the sequence is ended, the parameter program returns to the Master Control Program in its initialization section but after common storage set up.

CHANGEABLE PARAMETERS

The Common Storage registers which may be changed are given in the following table:

Name	Contents	Scaling	Lower and Upper Limit
DELTATEE	Ephemeris Time - Universal Time	Days B28	-.00005 +.001
FREQUENCY	Haystack Radar Frequency	Megacycles B14	0 10,000
WFFREQ	Westford Frequency	Megacycles B14	0 10,000
LONGITUDE	Haystack Longitude	Degrees B20 + is east	-360 +360
GEODETLAT	Haystack Geodetic Latitude	Degrees B20 + is north	-90 +90
HEIGHT	Haystack Height	Feet B0	-300 30,000
EQUATOR	Equatorial Radius	Nautical Miles B17	3,000 4,000
POLE	Polar Radius	Nautical Miles B17	3,000 4,000
AZIMOVER	Azimuth Overlap Indicator	Octal + = non-overlap - = overlap	None

Other parameters may be easily incorporated into the program. The format of an addition to the table follows:

Word 1 FD · 2 · Name of parameter
Word 3 FD · 1 · Scaling
Word 4 XX · Name of parameter
Word 5 Lower Limit
Word 6 Upper Limit

The scaling is explained in a separate memo on Intercom. XX is the setting of the carriage and the limit checking as explained in the same memo. Words 3 to 5 make up part of the calling sequence to Intercom.

DYNAMIC DUMP

INTRODUCTION

The purpose of the Dynamic Dump Program (DYDMP) is to print dynamically the contents of one to eight core locations on the high-speed printer, as the pointing system cycles. The contents of the core locations selected, and the name of the system program that has just operated, are printed after the operation of each system program. DYDMP uses the Printer Logging Program (PRLOG) for output to the high-speed printer(HSP).

INITIALIZATION

One must first gain entrance to the initialization section of DYDMP. This is accomplished by depressing the attention symbol while the Haystack pointing system is in operation. Proper selection of the coded figures, as in Appendix A, produces a typeout from DYDMP of:

ENTER LOCATION

In answer to this typeout, type an octal number of one to five digits such as:

63141

followed by a carriage return.

Once again the typeout

ENTER LOCATION

is produced. This will continue for a total of 8 entries, or until a carriage return alone is given in response to an output. (See Appendix A)

OUTPUT

When the user has signaled (carriage return alone) that he is finished specifying locations to be dumped or has specified the maximum of eight locations, DYDMP prints a heading line on the HSP and exits to Master Control Program (MCP). Thereafter, each time it is entered in the working section, DYDMP will print one line containing the name of the system program that has just operated as well as the contents of the specified locations at that time. (See Appendix B.) Since

MCP calls DYDMP (when activated) after each system program output will occur at these times. Output of the contents of the selected locations will continue until the user reinitializes DYDMP.

REINITIALIZATION

Entering the initialization section of DYDMP for the second time via the attention symbol route, as in Appendix C, effects the typeout:

STOP (Y-N)

i. e. , should the operation of DYDMP be stopped, yes (Y) or no (N)?

Answering N causes an additional typeout to appear on the console.

Change O/P (0-7)

i. e. , which of the 8 columns of output 0-7, should the address be changed?

Typing

4

would mean that in the fifth column, the address of the contents, now being printed, is to be changed. The program then types:

ENTER LOCATION

Now the new address replacing the one in the fifth column is entered. Again this continues for a total of 8 entries or until a carriage return alone is given in answer to an output. Henceforth, as shown in Appendix D, the contents of the addresses that have been changed will be printed out along with the ones unchanged.

To stop the operation of DYDMP, one merely answers Y to the initial question above.

APPENDIX A

SIGN OFF (1) MOD (2) NEXT RUN (3) PRINT (4)
2*

MOON (1) SCAN (2) RECORDING (3) RADIOMETER (4) TIMING (5) OTHER (6)
6*

RA -DEC DISPLAY (1) CORRECTION (2) PARAMETERS (3) ACQUISITION (4)
CC (5) DYDMP (6)
6*

ENTER LOCATION
63141*

ENTER LOCATION
12345*

ENTER LOCATION
123*

ENTER LOCATION
5*

ENTER LOCATION
54321*

ENTER LOCATION
321*

ENTER LOCATION
1*

ENTER LOCATION
22222*

APPENDIX C

SIGN OFF (1) MOD (2) NEXT RUN (3) PRINT (4)
2*

MOON (1) SCAN (2) RECORDING (3) RADIOMETER (4) TIMING (5) OTHER (6)
6*

RA-DEC DISPLAY (1) CORRECTION (2) PARAMETERS (3) ACQUISITION (4)
CC (5) DYDMP (6)
6*

STOP (Y-N)
N*

CHANGE O/P (0-7)
4*

ENTER LOCATION
10*

CHANGE O/P (0-7)
7*

ENTER LOCATION
33333*

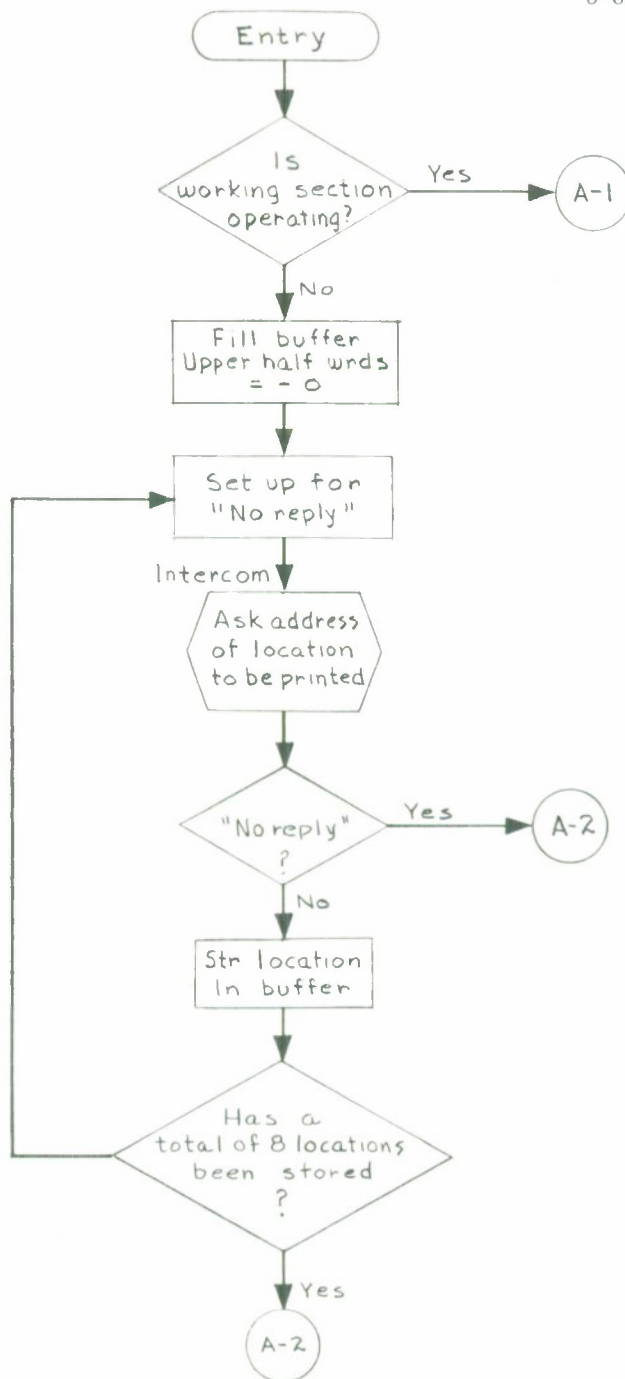
CHANGE O/P (0-7)
*
0

SIGN OFF (1) MOD (2) NEXT RUN (3) PRINT (4)
2*

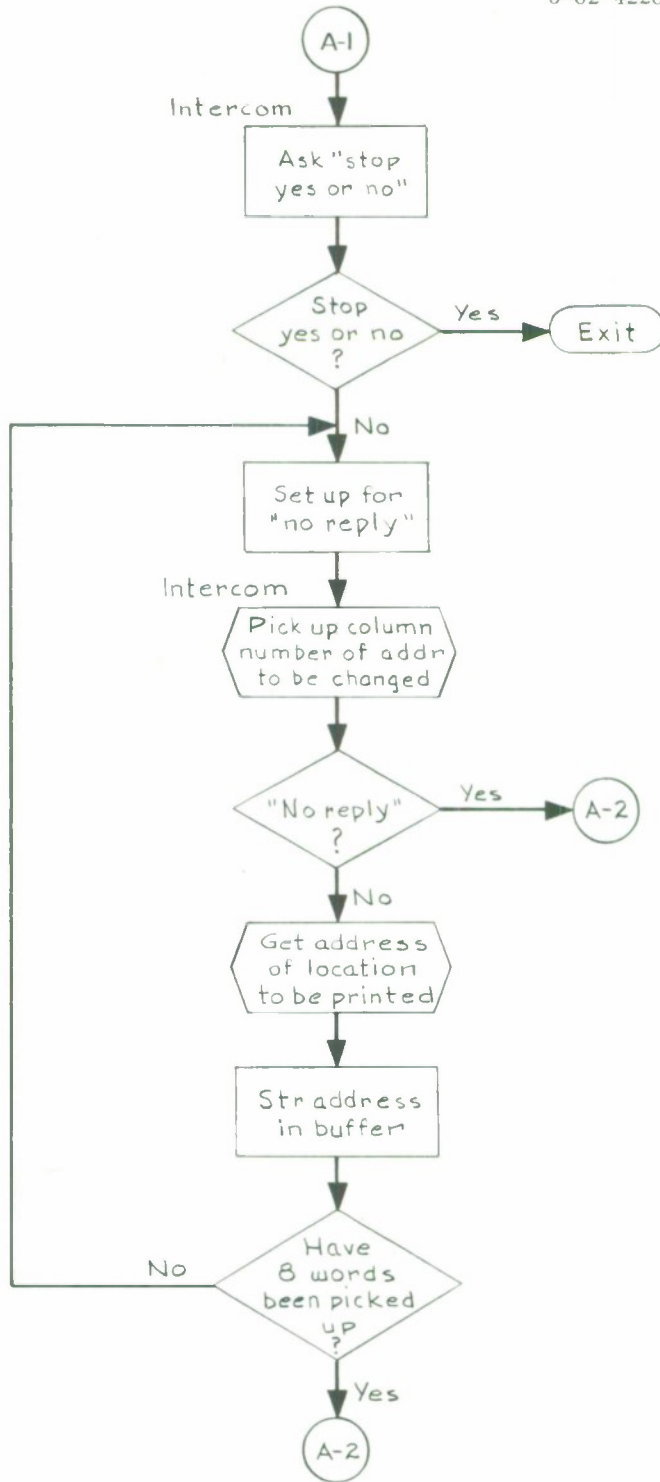
MOON (1) SCAN (2) RECORDING (3) RADIOMETER (4) TIMING (5) OTHER (6)
6*

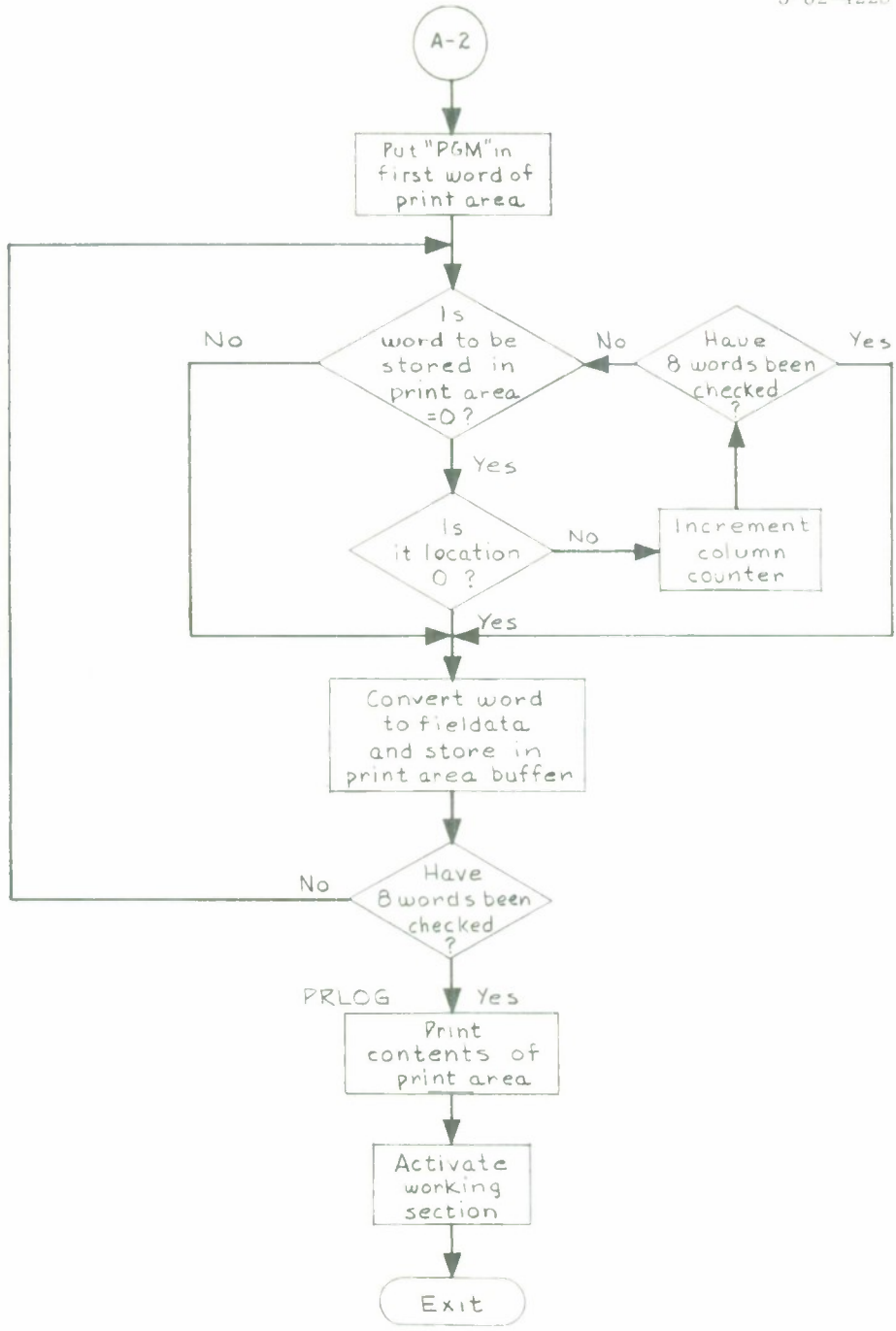
RA-DEC DISPLAY (1) CORRECTION (2) PARAMETERS (3) ACQUISITION (4)
CC (5) DYDMP (6)
6*

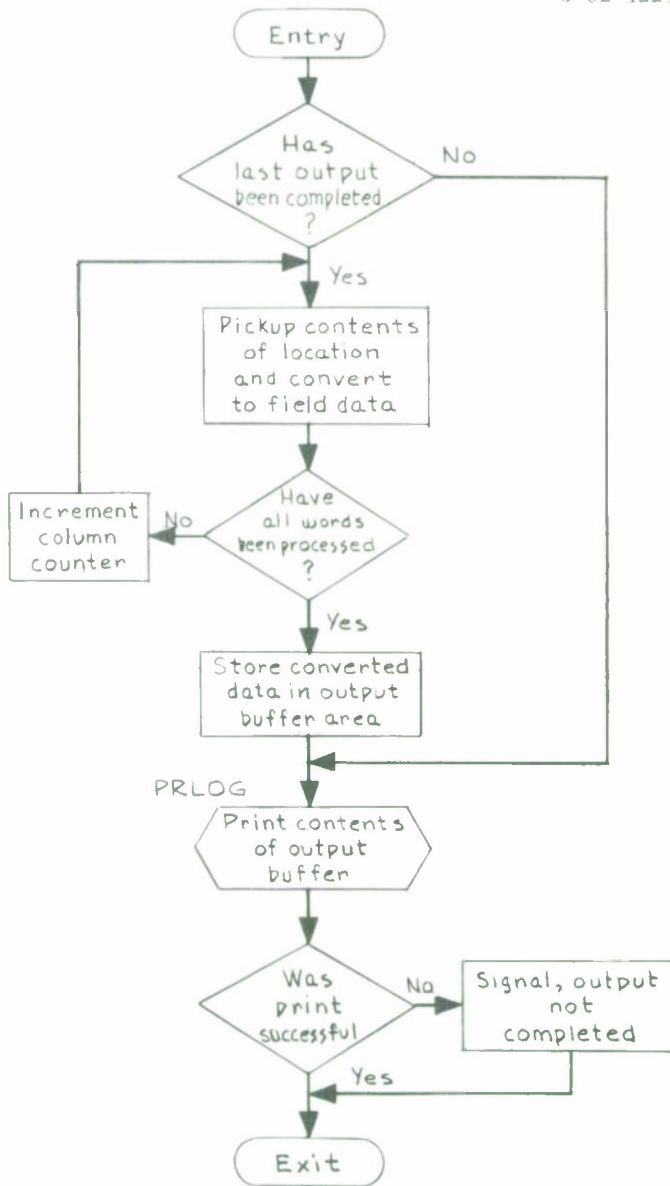
STOP (Y-N)
Y*



DYNAMIC DUMP PROGRAM INITIALIZATION SECTION







DYNAMIC DUMP WORK SECTION

FIXED AZIMUTH-ELEVATION

INTRODUCTION

The fixed azimuth and elevation program provides a means for pointing the Haystack antenna at any azimuth or elevation.

OPERATION

Upon initialization, the fixed azimuth and elevation program allows input of a single azimuth and a single elevation. Following is a typical sequence of questions and answers:

AZIMUTH(DEGREES)

182.3*

ELEVATION (DEGREES)

47.61*

Upon reinitialization, i. e. , when the antenna buffer chain is operating and the fixed azimuth elevation program is chosen via the Attention Symbol route, the program types out the following:

AZIMUTH (DEGREES) PREFIXING WITH A, OR

ELEVATION (DEGREES) PREFIXING WITH E.

A CARRIAGE RETURN IS NECESSARY AFTER PREFIXED LETTER.

The initialization section "keeps control" allowing rapid changing of azimuth or elevation. The experimenter may enter azimuth or elevation about as fast as he can type. Following is a possible sequence.

A*

179.3*

A*

171.65*

E*

47*

A*

152*

E*

48.1*

Until the attention symbol is again typed, the initialization section of fixed azimuth-elevation retains communications with the experimenter.

If a mistake in typing a prefix is made, the program types an error message.

Thus,

B*

YOU HAVE TYPED ILLEGAL PREFIX. TRY AGAIN.

A*

157.6*

COMMON STORAGE SET

AZIMUTH

ELEVATION

FIXED RIGHT ASCENSION-DECLINATION

INTRODUCTION

The fixed right ascension-declination program provides a means for pointing the Haystack antenna at any desired right ascension or declination. The program also provides a means for entering radius, or the rates of change of any of these three quantities.

OPERATION

Upon initialization, the program requests via Intercom various inputs. A typical question and answer sequence might be the following:

RIGHT ASCENSION (DEGREES)

123. *

DECLINATION (DEGREES)

-21. 4*

RADIUS (EARTH RADII)

52. 35*

R. A. DOT (DEGREES/SEC)

-. 0632*

DEC. DOT (DEGREES/SEC)

. 001*

RADIUS DOT (NAUTICAL MILES/SEC)

-3. 76*

When the program is reinitialized and the azimuth buffer chain is operating, the program types out the following:

RIGHT ASCENSION (DEGREES), PREFIXING WITH A,

DECLINATION (DEGREES), PREFIXING WITH D,

RADIUS (EARTH RADII), PREFIXING WITH R,

RADOT (DEGREES/SEC), PREFIXING WITH B,

DECDOT (DEGREES/SEC), PREFIXING WITH E, OR

RADIUSDOT (N. M. /SEC), PREFIXING WITH S.

A CARRIAGE RETURN IS NECESSARY AFTER PREFIXED LETTER.

A typical answer sequence might be

A*
37.6*
D*
-10.7*
R*
32.5*
A*
39*
S*
2.7*
B*
.06*

Until the attention symbol is typed the experimenter remains in communication with the fixed right ascension-declination program.

When the program is reinitialized upon the Pointing System's reaching the System Time Limit, the program does not ask for inputs, but keeps the values it had.

The working section of the program is merely a dummy program.

COMMON STORAGE SET

RADIUS
RA
DEC
RADIUSDOT
RADOT
DECDOT

PLANNING

INTRODUCTION

The Haystack Pointing System Planning Program (PLAN) provides the user of the System with a means of conveniently determining the rise time and set time of the object under surveillance. However, two conditions must be met before PLAN will operate and provide this information. The first of these is that the Haystack Pointing System must be operating in the simulation mode and secondly jump key 2 must be turned on.

INPUT

PLAN uses Common Storage (C/S) Registers ELEV, FIRSTELEV, and CELTIME.

OUTPUT

PLAN uses the high-speed printer via the PRLOG subroutine to print out the rise and set information.

INITIALIZATION SECTION

PLAN is initialized only when the System is about to cycle in the simulation mode. When this occurs the contents of C/S ELEV, which now contains the most recently computed elevation, is transferred to C/S FIRSTELEV for later comparison in the operation section.

OPERATION SECTION

Once during each cycle of the System in the simulated mode, the operation section of PLAN is entered. This occurs after the System has computed the new elevation corresponding to the time in CELTIME.

Unless jump key 2 is on PLAN will make an immediate return to the control program. When the key is on, PLAN compares the most recently computed elevation in C/S ELEV with the elevation computed one System cycle earlier saved in C/S FIRSTELEV. If both elevations have the same sign, no change in visibility is assumed to have occurred. If on the other hand the elevation has gone from minus

plus from the previous frame to this, a change of visibility status from invisible to visible is understood.* The inverse, of course, is true. Thus, if a change of sign has occurred, the time of computation in C/S CELTIME is converted and one of the following messages is output via PRLOG:

ROSE AT 12 05 06 , say,

or

SET AT 12 05 06

exit is then made to the control program.

*NOTE: The difference in the reported rise and set times and the actual rise and set times can approach the "increment to GMT" elected by the user when initializing the system.

SIGN OFF (1) MOD (2) NEXT RUN (3) PRINT (4)
2*

SUN (1) DATA PROCESSING (2) SCAN (3) RECORDING (4) TIMING (5) OTHER (6)
6*

RA-DEC DISPLAY (1) CORRECTION (2) PARAMETERS (3) ACQUISITION (4)
7*

DO YOU WANT TO ADJUST STRIP CHART RECORDER (Y OR N)
Y*

CARRIAGE RETURN TO STOP ADJUSTMENT
*

Fig. 1. Sample of on-line log.

PLOT

The Pointing Program System contains a routine which drives the strip chart recorder that is connected to the computer by means of the general purpose output channel No. 5. Whenever the Pointing Program System is asked to command the antenna in real time, the commands are subtracted from the actual antenna angles and the resulting difference is plotted on the strip chart recorder. The errors in azimuth and elevation axes are plotted on separate recorder channels. The antenna azimuth and elevation are recorded on two additional channels. A time mark is recorded on the chart at the beginning of every minute.

A facility for adjusting and calibrating the recorder is provided. Upon request through the keyboard, adjusting signals are output to the recorder. When adjustments have been made, a calibration record will be recorded on each channel, which shows linearity of the plot.

The on-off control of the recorder paper drive is accomplished through the computer automatically.

PROGRAM INPUTS

The program uses the following in-core inputs:

U(INELEVADD)	The location of first word storage of the presently incoming elevation angle.
W(112)	Elevation buffer control word.
L(SYSTAT1)	Code for indicating that the system is cycling. (Plus means system is cycling, minus means system is stopped.)
U(SECONDS)	Time in seconds B0

In addition to the above, the program uses the real-time antenna angles and commands from the appropriate buffers.

Figure 1 shows the on-line communication sequence for calibrating the system. The program can be controlled only through the attention symbol path.

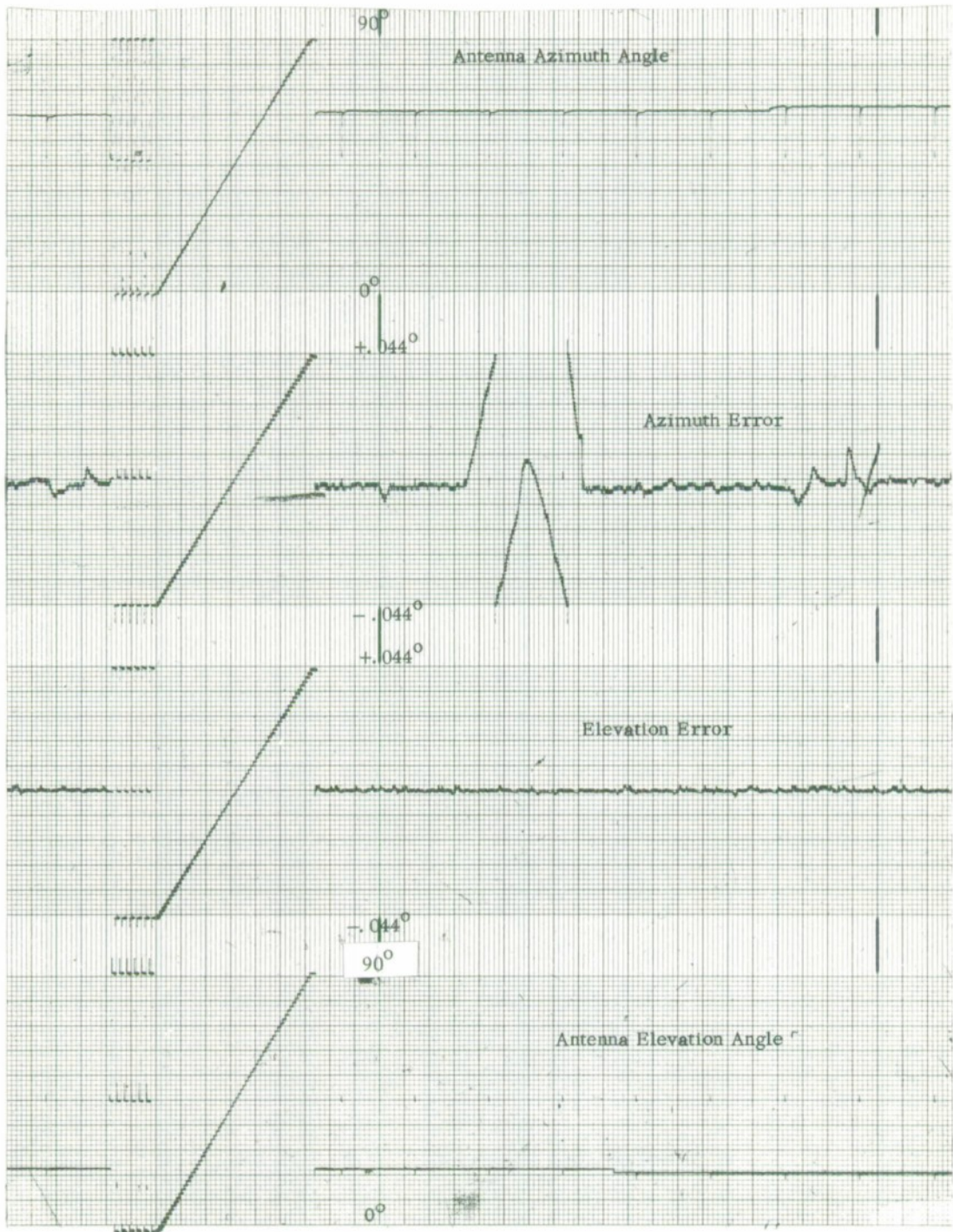


Fig. 2 Sample strip chart recording.

PROGRAM OUTPUTS

The output on the strip chart recorder is shown on Fig. 2. Initially the figure shows the plotted errors and angles in the indicated channels, as they would appear on a normal run. Then the adjust mode was requested through the attention symbol entry. A few cycles of adjust mode are shown; however, this mode can be kept as long as desired until proper adjustments have been made. When the adjust mode is stopped by means of the keyboard, a calibration record will be recorded as shown and the recorder will return to the normal mode of plotting antenna angle information.

The scale factors for plotting are fixed. As shown by Fig. 2, the azimuth and elevation angles are plotted with 90° as full scale. Angles in other quadrants are plotted modulo 90° , so that an uncertainty exists. The recorder resolution is 64 levels. In the error signal plots one level corresponds to twice the low order bit resolution of the antenna encoder system, with the zero reference signal half way up the charts. This provides a full scale error amplitude of approximately $\pm .044^{\circ}$. If the error magnitude exceeds $.044^{\circ}$, the pen will move to the other side of the graph and continue plotting larger errors. The example of Fig. 2 shows this phenomenon as the error was purposely made large on the azimuth axis.

PROGRAM NOTES

The strip chart recorder is programmed by means of the external function on channel No. 5. The function word is divided into four six bit values to be plotted, one bit for turning on the recorder, and a fixed five bit code as follows:

29-25	Fixed code 01010
24	Paper drive code
23-18	Channel #4 value
17-12	Channel #3 value
11-6	Channel #2 value
5-0	Channel #1 value

The timing for the plot program is obtained from the elevation input buffer. Every two seconds the master control program gives a monitored IN command on

the elevation channel (channel 10). In the working entry of the Plot program, the buffer control word is changed so that a suitable time delay is obtained. The adjust and calibrate plots use a two second plotting increment, the normal data is plotted every .04 seconds and the time marks are .24 seconds long. When the interrupt occurs, a new buffer control word is set up so that the next interrupt occurs after the desired time increment.

Three entries exist to the program:

1. initialization entry
2. working entry
3. interrupt entry

The initialization entry (PLOTINIT) sets up the interrupt register on the elevation-input channel and, if the system is cycling, it asks the appropriate questions about adjusting and calibrating, and sets up a code for plotting mode in U(PLOT B). The code is:

- | | |
|---|---------------------|
| 0 | for normal plotting |
| 1 | for adjustment |
| 2 | for calibration |

Every two-second cycle the Plot Program is entered by means of the working entry (PLOTWORK). This routine first examines the above code and acts according to what has been requested.

If the code indicates that normal plotting is required (PLOTCASE), the working section sets up the appropriate buffer control word for interrupts to occur at proper time intervals and plots a time mark if the beginning of a minute is detected.

If the code indicates that adjustment is to be performed (ADJUSTCASE), the program makes the pen move zero, half scale, full scale in two-second intervals.

If calibration is requested (CALCASE), a stair case will be plotted with two-second long steps one plotting increment high.

The interrupt entry (PLOTINTER), examines whether the system is cycling and either turns off the recorder or does the following: it writes a time mark if the beginning of a minute is indicated; otherwise it computes the differences between commands and the actual antenna angle, and plots them.

PRLOG

INTRODUCTION

The Printer Logging program (PRLOG) provides the means whereby any of the Haystack Pointing System programs may output information on the high-speed printer while the system is operating.

PRLOG transfers the field data information set up by the user program to one of the 20 buffer areas of its own.

As the printer becomes available, the program prints these areas in order received.

The calling sequence for PRLOG (described below) has provision for a priority structure among program messages. Additionally, page spacing facilities are provided.

INITIALIZATION SECTION

PRLOG is initialized by the control program (MCP) during each system initialization.

WORKING SECTION

Interaction between PRLOG and the user program is through the working section via U(PRLOG). PRLOG's working section first saves all operational registers it uses. Next, PRLOG's current in-out indexing registers are restored, and the pertinent information from the calling sequence is obtained. A check is made on the status of the high-speed printer. If the printer is not operative, the operational registers are restored and control is transferred to the user program's busy return. Otherwise, a check is performed to determine if the message to be printed is classified as emergency. If the message is not emergency data, further check is made to see if the RADIOMETER SWITCH* is set. If the RADIOMETER SWITCH is set and the request for printing does not override this switch, control

*This switch was first used in connection with the radiometer signal processing program; hence, the name.

will be transferred to the user program's busy return. If the request for printing does override this switch, or if the switch is not set, the message is handled as follows:

First a check is made to see if there is room for the message in PRLOG's 20 buffer areas. If there is no room, the operational registers are restored and control is returned to the user program's busy return. With room for more messages, the MOVEDATA routine transfers the data from the user program's buffer area to an empty internal buffer and indexes the input index register. If there is a previous message not yet fully printed, control is given to the user program's normal return. If the new message can be output at this time, it is. Requested spacing and top-of-paging are performed at this time. Lastly, the operational registers are restored and control is transferred to the user program's normal return.

If a message is labeled as "emergency" in the calling sequence, it is printed at the first available time, taking precedence over all other messages in the PRLOG internal buffer areas. In addition, emergency messages may space after printing (to bring the message into view of the operator).

INTERRUPT SECTION

As in the working section, the first operation in the interrupt section is to save the operational registers. If the interrupt status is anything but normal, a switch is set to "channel inoperative". The operational registers are restored and the program exits.

CALLING SEQUENCE

α	RJP U(PRLOG)
$\alpha + 1$	#Words FWA
$\alpha + 2$	<u>+</u> SBP + \rightarrow TOP; - \rightarrow SAP
$\alpha + 3$	BUSY RETURN
$\alpha + 4$	NORMAL RETURN

The first word of the calling sequence in the user program at α contains
RJP U(PRLOG)

The second word at $\alpha + 1$ contains

1. (In the upper half) the number of field data words to be transferred from the user program to the PRLOG program's buffer area. A maximum of 26_{10} words (128 characters) can be transferred at one time, to accommodate one line on the high-speed printer.
2. (In the lower half) the first word address of the data to be transferred.*

The third word of the calling sequence at $\alpha + 2$ is interpreted as follows:

1. (In the upper half) a dual parameter specifying both the identity of the user program and the number of lines the printer is to be spaced before printing this line (SBP).

PRLOG takes the absolute value of this parameter as the value for SBP. If SBP is negative, the setting of the RADIOMETER SWITCH is ignored. If SBP is positive, the line will not be printed if the RADIOMETER SWITCH is set. This feature allows specified programs to monopolize the printer (except for emergency messages).

2. (In the lower half) a dual parameter specifying a) the number of lines the printer is to space after printing the message if and only if the message is deemed of an emergency nature and b) whether or not a top-of-page is to be issued before printing this line.

If this parameter is positive (it may only be +0 or +1) PRLOG interprets this message as non-emergency and will take the following action:

- a. + 0 \rightarrow no action
- b. + 1 \rightarrow top-of-page before printing

If this parameter is negative PRLOG accepts this message as emergency data and will space after printing the number of lines equal to the absolute value of this parameter.

It should be noted that in the normal case there is no spacing after printing.

*CAUTION . . . The field data character "STOP" (77_g) must not be included in the field data string to be output. PRLOG provides stop information to the printer on partial line output.

The fourth word of the calling sequence at $\alpha + 3$ is the busy return.

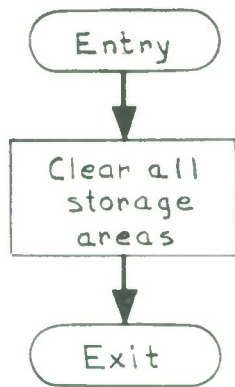
When control is returned here, the "A" register indicates the reason the request could not be accepted for output.

1. A positive zero indicates all the PRLOG buffer areas are full.
2. A negative zero indicates that the RADIOMETER SWITCH is set (and this calling sequence has a positive SBP), or that the printer channel is inoperative.

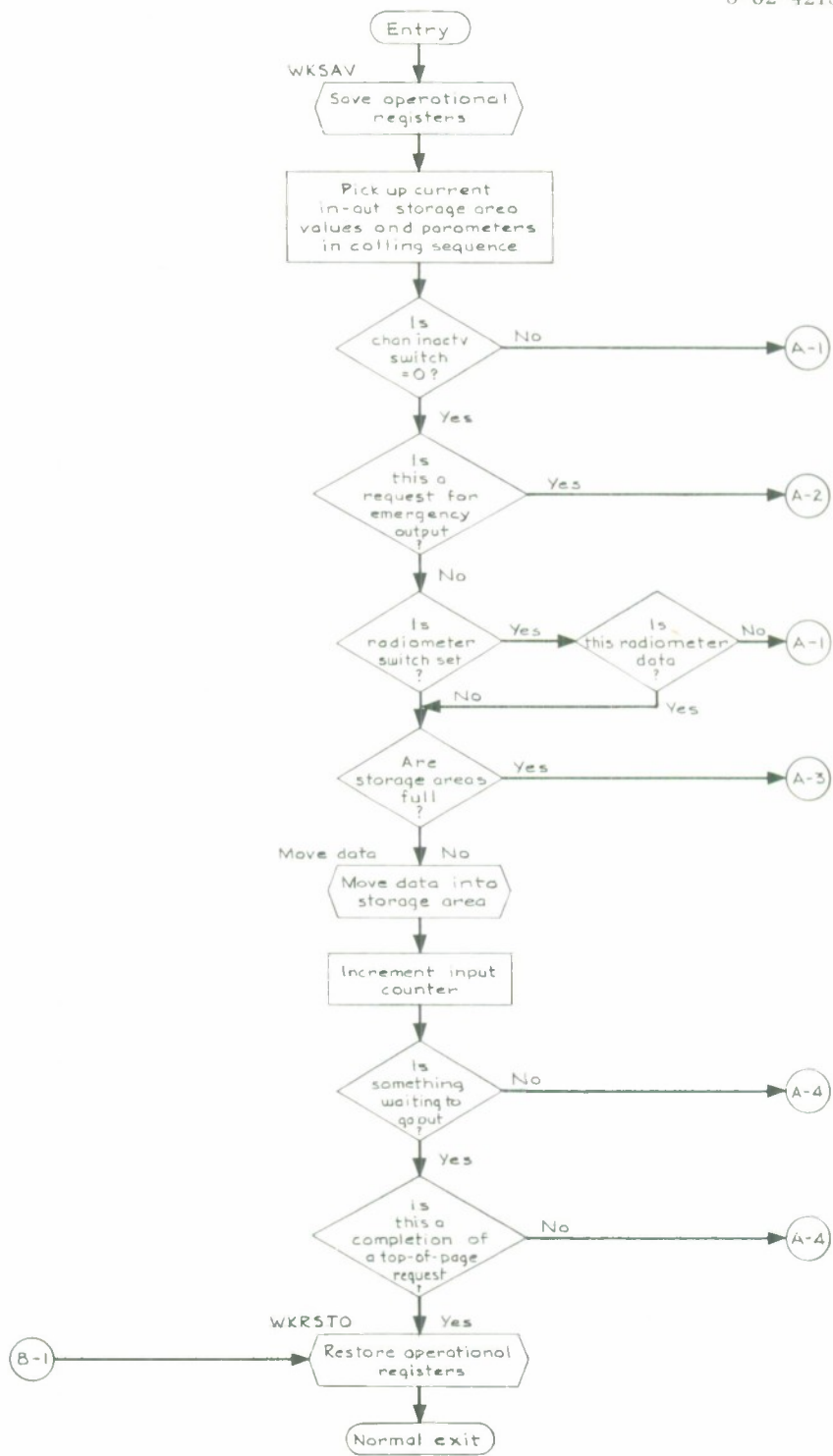
The fifth word at $\alpha + 4$ is the normal return.

Control is returned here if the data was successfully transferred and has been output or is waiting to be output.

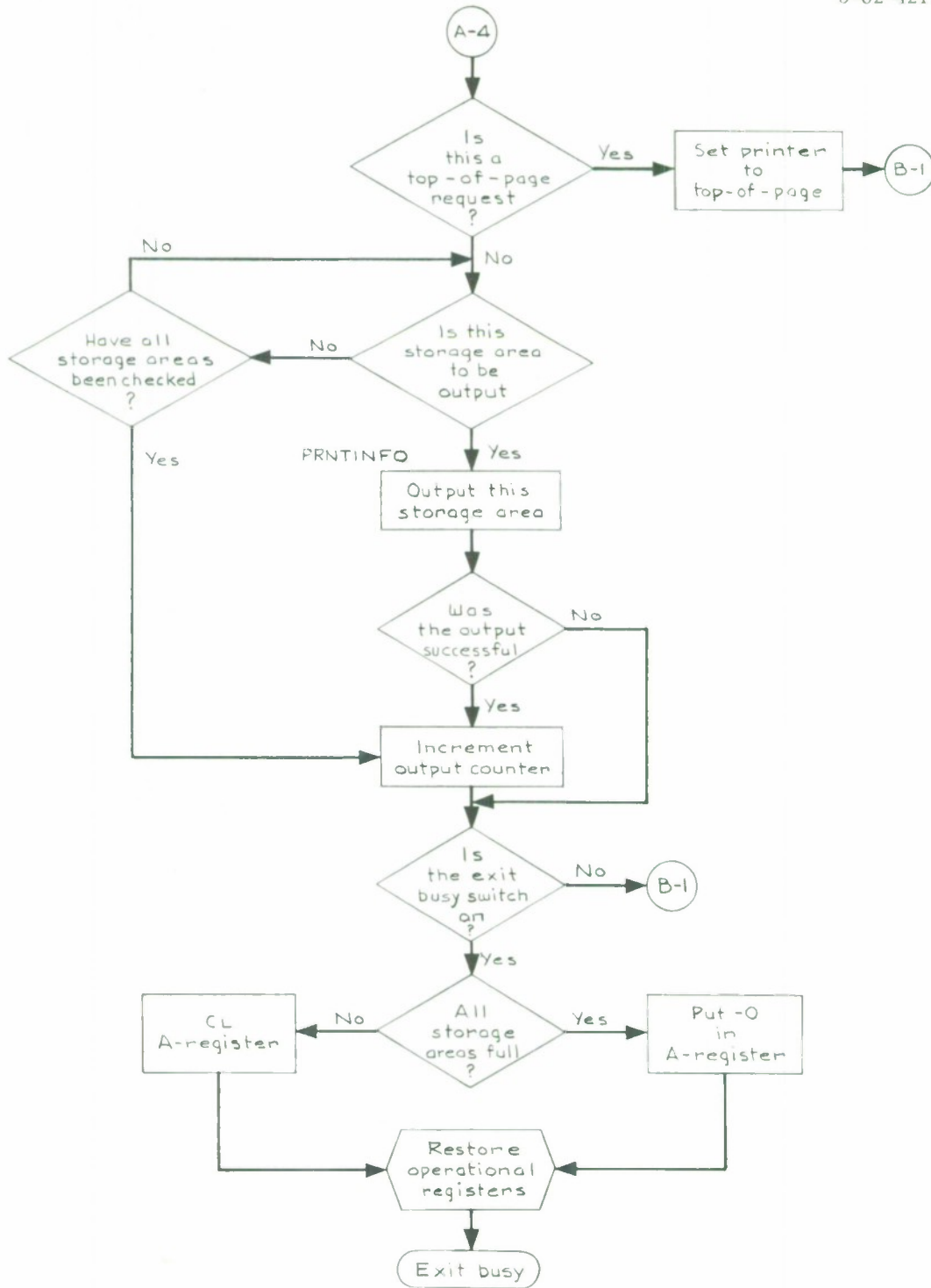
3-62-4214



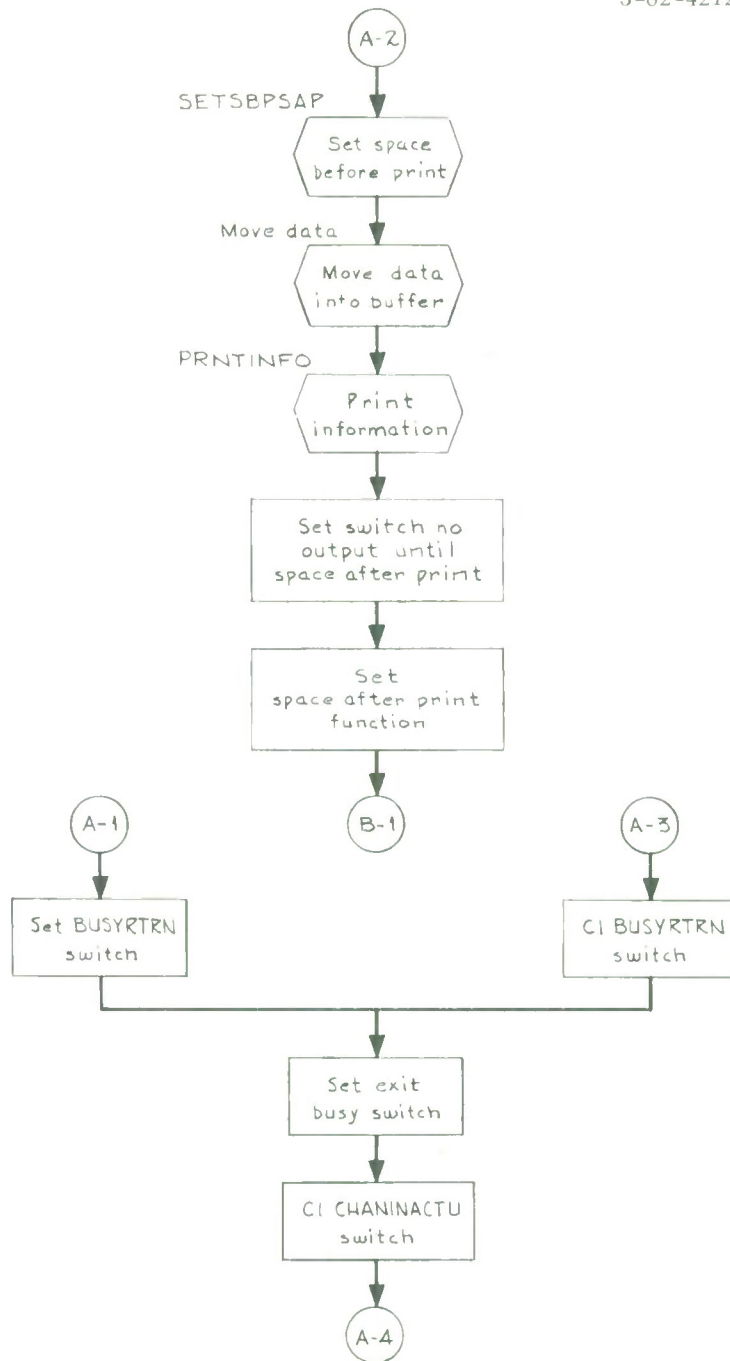
PRLOG PROGRAM INITIALIZATION SECTION



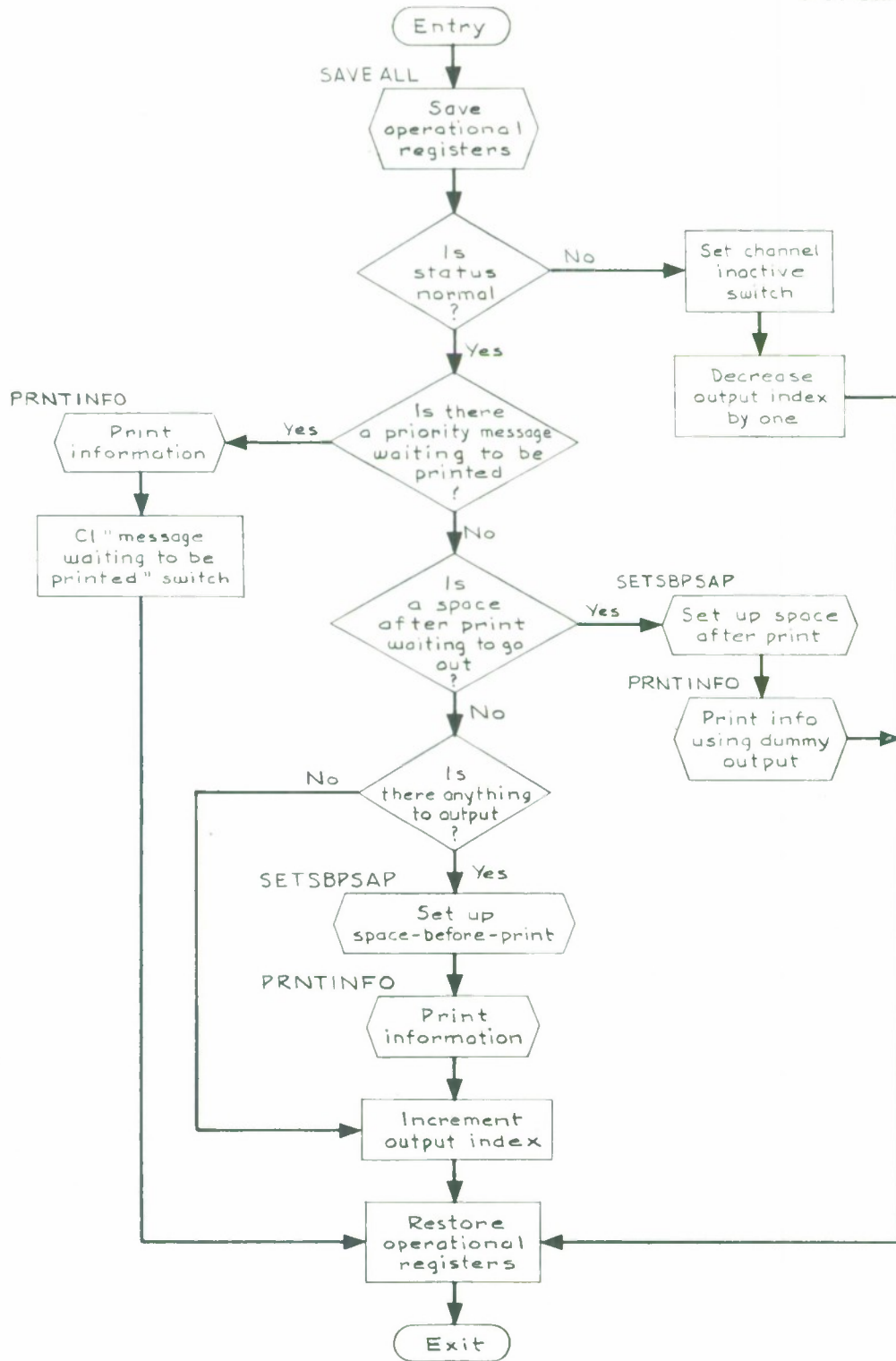
PRLOG PROGRAM WORKING SECTION



PRLOG PROGRAM WORKING SECTION (con't)



PRLOG PROGRAM WORKING SECTION (con't)



PRLOG PROGRAM INTERRUPT SECTION

RECORDING

INTRODUCTION

The Recording Program of the Haystack Antenna Pointing System records data on magnetic tape in binary, high density. These data are provided by the user programs in the form of initial and terminal addresses of blocks to be recorded. The Recording Program does no interpretation of data. Rather it is a central facility for handling recording as requested by a number of user programs. In doing this, it provides for the handling of tape status codes of various kinds, such as parity and end of tape, and for the proper heading of an experiment.

BUFFER CONTROL WORD SET UP

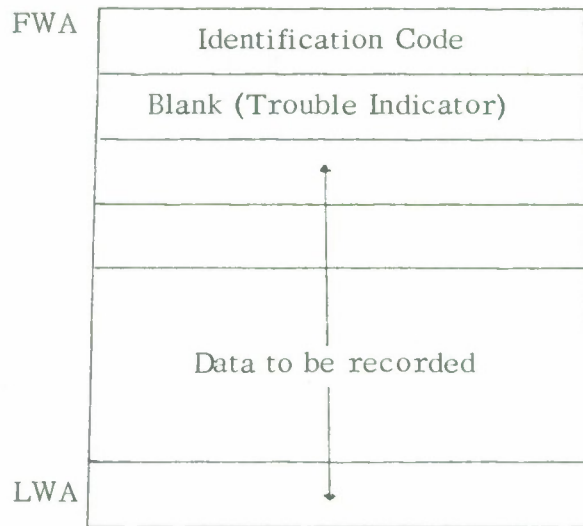
A block of 50 registers in Common Storage (C/S) starting at RECFILE is set aside for the user programs to set up recording requests. A user program is assigned one or more register numbers in that block. Let n be one such register. When the user program wishes to record a block of data starting at say FWA and ending at LWA, the user program sets up $\text{RECFILE} + n$ to the proper buffer control word.



When the Recording Program is in the process of writing the block specified in $\text{RECFILE} + n$, it issues an OUT command with this word as the buffer control word (BCW). $\text{RECFILE} + n$ is set to -0 at this time. When the block has been completely written $\text{RECFILE} + n$ is set to $+0$. A user program may, therefore, set up the appropriate RECFILE register whenever it contains $+0$. It may also change that RECFILE register whenever it does not contain ± 0 taking note of the fact that the recording program may interrupt and begin output of the data specified by that register. Thus, a user program which changes RECFILE must provide suitable interrupt lockout while inspecting and changing the RECFILE register.

FORMAT OF BLOCKS TO BE RECORDED

The block to be recorded starting at FWA and ending at LWA must be of the following form:



The Identification Code is assigned to each program arbitrarily. It usually would be the 5 character Fielddata System Name of the program. The Trouble Indicator is a blank register used by the recording program to indicate that some sort of trouble was encountered in writing the previous record. The data to be recorded occupy the remaining registers of the block.

OPERATION

A. Initialization

When recording is initialized, C/S KYBRDLEVEL is first examined to ascertain whether or not the teleprinter may be used during the sequence. If use of this device is denied, Recording simply indicates that a new heading record is in order and normally exists without further ado.

If the teleprinter is available, Recording will ask the user (via Intercom) how much system data recording is desired. If the user elects "complete recording" the entire contents of common storage including all values that are computed directly as well as all incoming data and outgoing interpolated data will be recorded (currently

6000₈ words). On the other hand, a request for a "partial recording" will result in the recording of only the directly computed values (currently recorded in this mode are 151₈ words). As a third choice, the user may elect no system data recording. The user's decision is communicated via C/S RECORDSWITCH to the control program, MCP, which sets up the appropriate buffer control word in the RECFILE block. Irrespective of the amount of system recording desired, the working section of Recording is entered once each frame, since programs other than MCP are free to exercise the recording option.

If the amount of data recording requested was "none" and if the system is cycling (reinitialization) the program exits. If, however, the amount of data recording requested was "complete" or "partial", an indication is made that a new heading record is required and then if the program is being reinitialized, an exit is made.

If the system is not cycling, an initialization is assumed and Recording sets all its indicators and switches to normal.

B. Finalization

When the Recording program is entered in the initialization section with the A register set to non zero, Recording waits for any output-to-tape in progress to finish and then writes an end-of-file on the tape and rewinds it with interlock. An indication that this finalization procedure has been carried out is made in C/S SYSTATD.

C. Working Section

Each frame the control program enters the working section of the Recording Program to initiate recording for that frame. Successive records are written by the interrupt answering routine of the Recording Program until RECFILE has been exhausted.

A heading record is written as the first record of a tape, and the first record of a new experiment. If an experiment takes more than one tape, the tape number is indexed in the heading.

Data records are recorded from locations specified by the buffer control words in RECFILE. If an abnormal condition occurs in writing a record (the most common being a parity), the record is not rewritten. Rather an indication of such a trouble (-0) is written in the second word of the next record to be written. If the record is written normally, the second word of the next record is set to +0.

If a buffer control word brings the number of words to be recorded in a frame past a set limit*, this fact will be logged on the high-speed printer, and this word in RECFILE will be cleared, and no recording will take place of this data block.

If an end-of-tape is reached, the unit is rewound with interlock, the tape number is indexed, and a heading record is written on the next tape unit which is set up for recording. †

If a tape unit is interlocked, and noted in C/S INTERLCKSW, this fact is logged on the high-speed printer. When the unit is readied, the first record written will be the heading record.

If a unit is rewinding, another attempt at writing a heading record is made.

COMMON STORAGE REGISTERS SET

Common Storage Registers Set

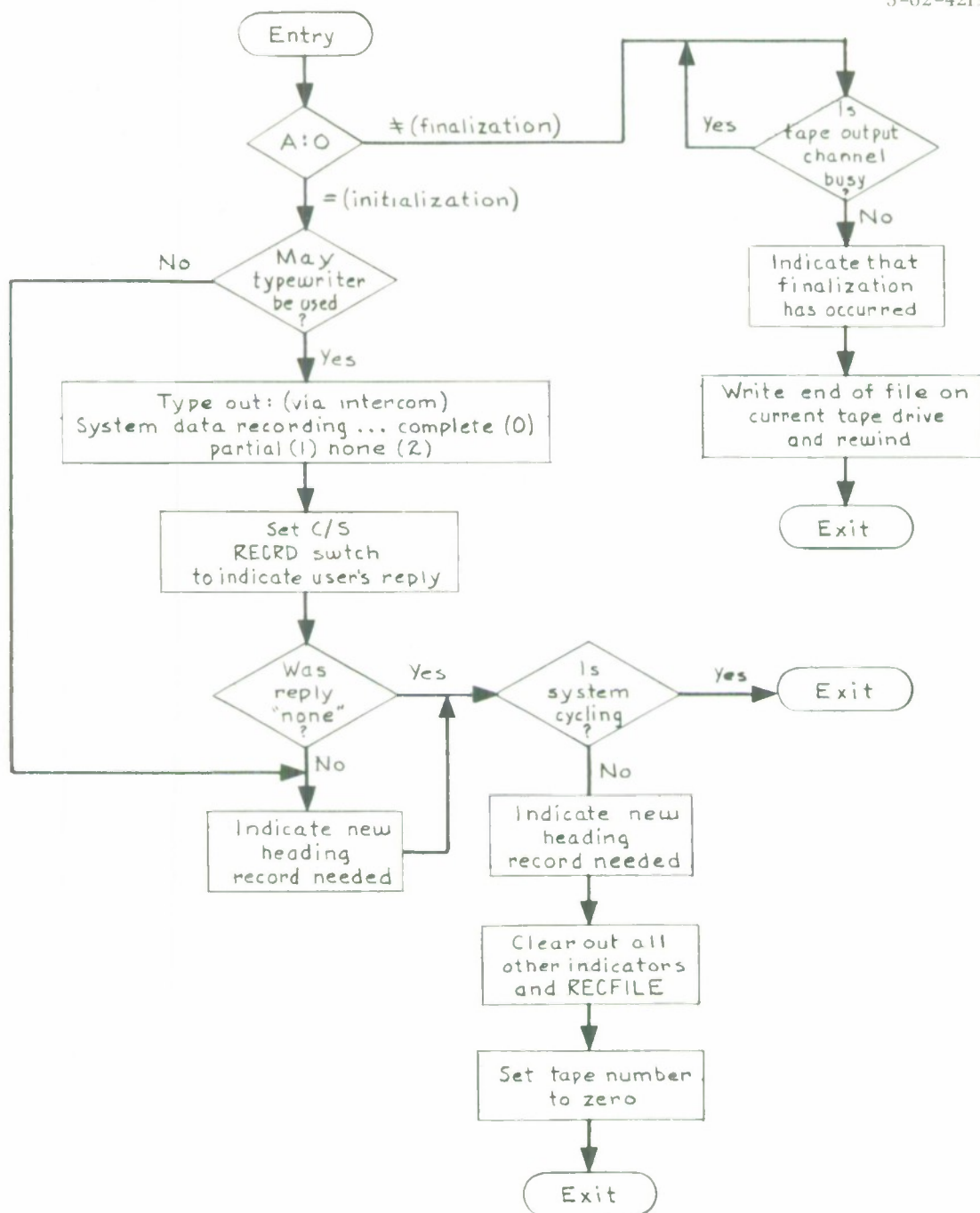
L(RECRDSWTCH)	to 0, 1 or 2 for complete, partial or no recording respectively
U(INTERLCKSW)	to +0 → interlock on magnetic tape; + ∅ → no interlock
W(RELEASESW)	to +0 → recording finished; -0 → recording not finished
W(SYSTATD)	to +0 finalization not done -0 → finalization done
W(RECFILE) (50 registers)	to +0 recording of this data done -∅ recording of this data is in progress

Common Storage Registers Read

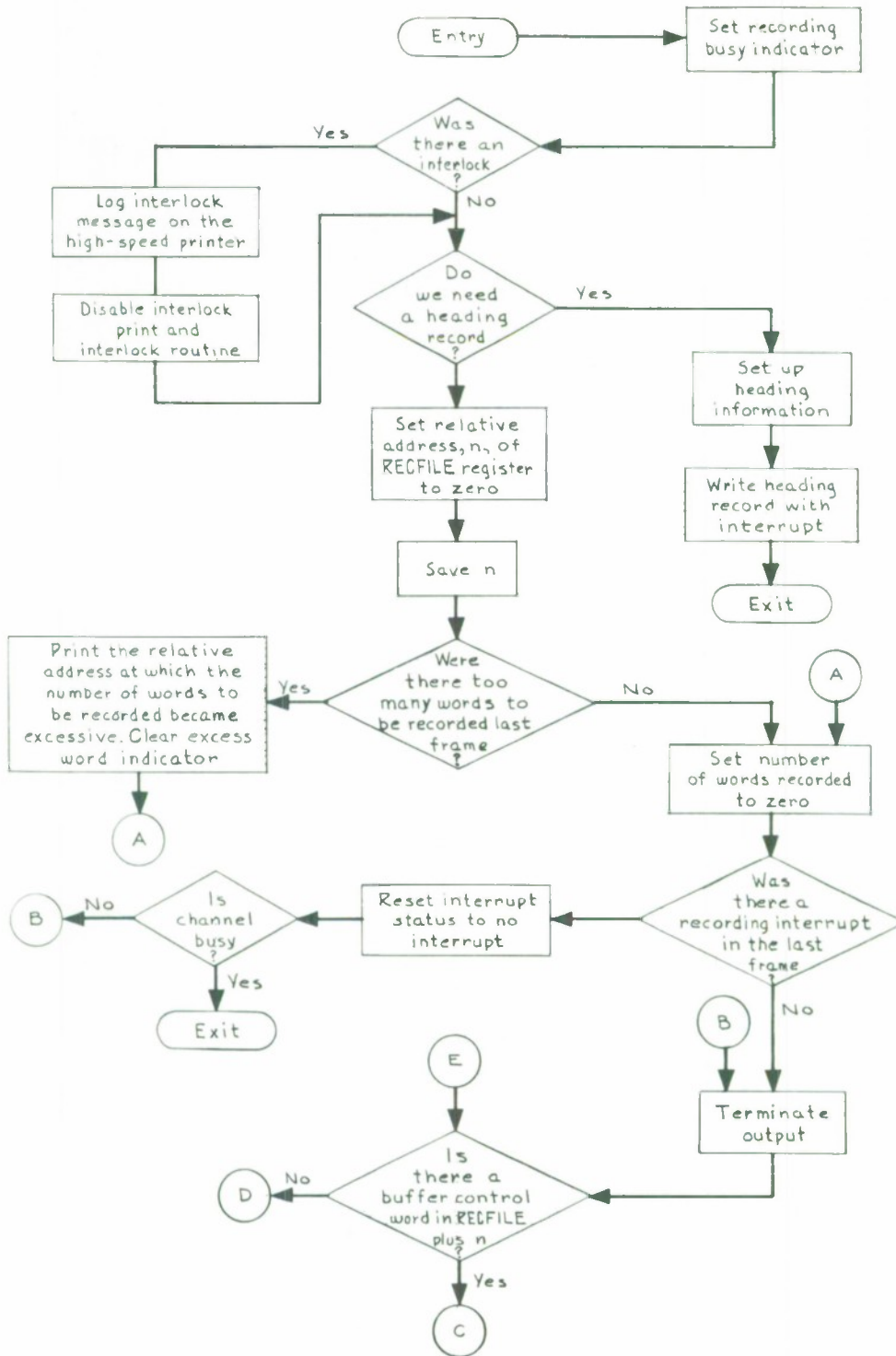
W(KYBRDLEVEL)
W(EXPNAME) (16 registers)
W(YEARMONTH)
W(DAY)
W(CELBODY) (3 registers)
W(SYSTAT 2)
L(SYSTAT 1)

*This limit is now set at 10000_d words.

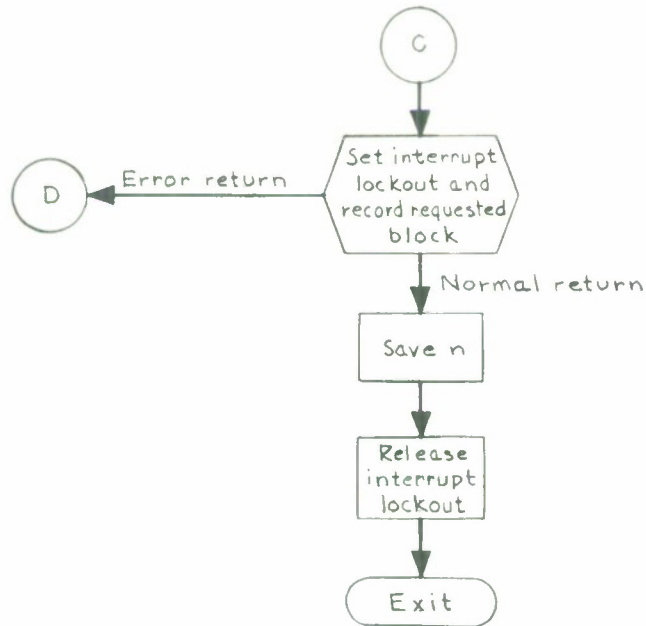
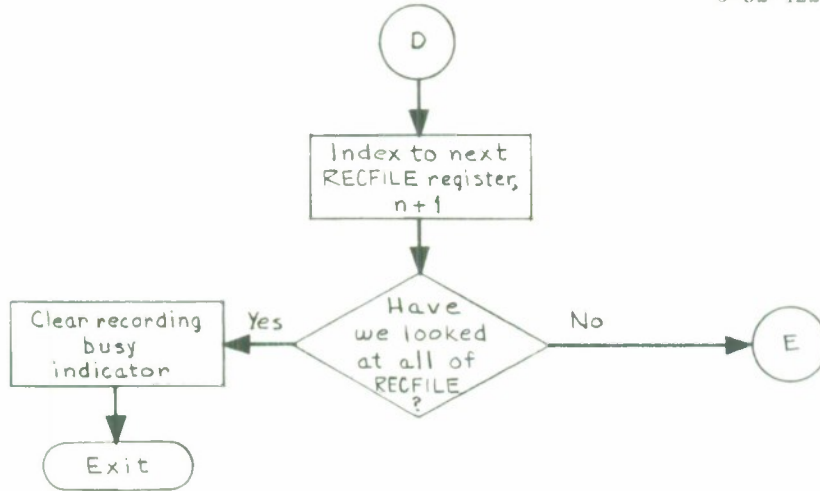
†Recording begins on servo 2, switches to servo 3 then back to servo 2 etc. indefinitely as required.

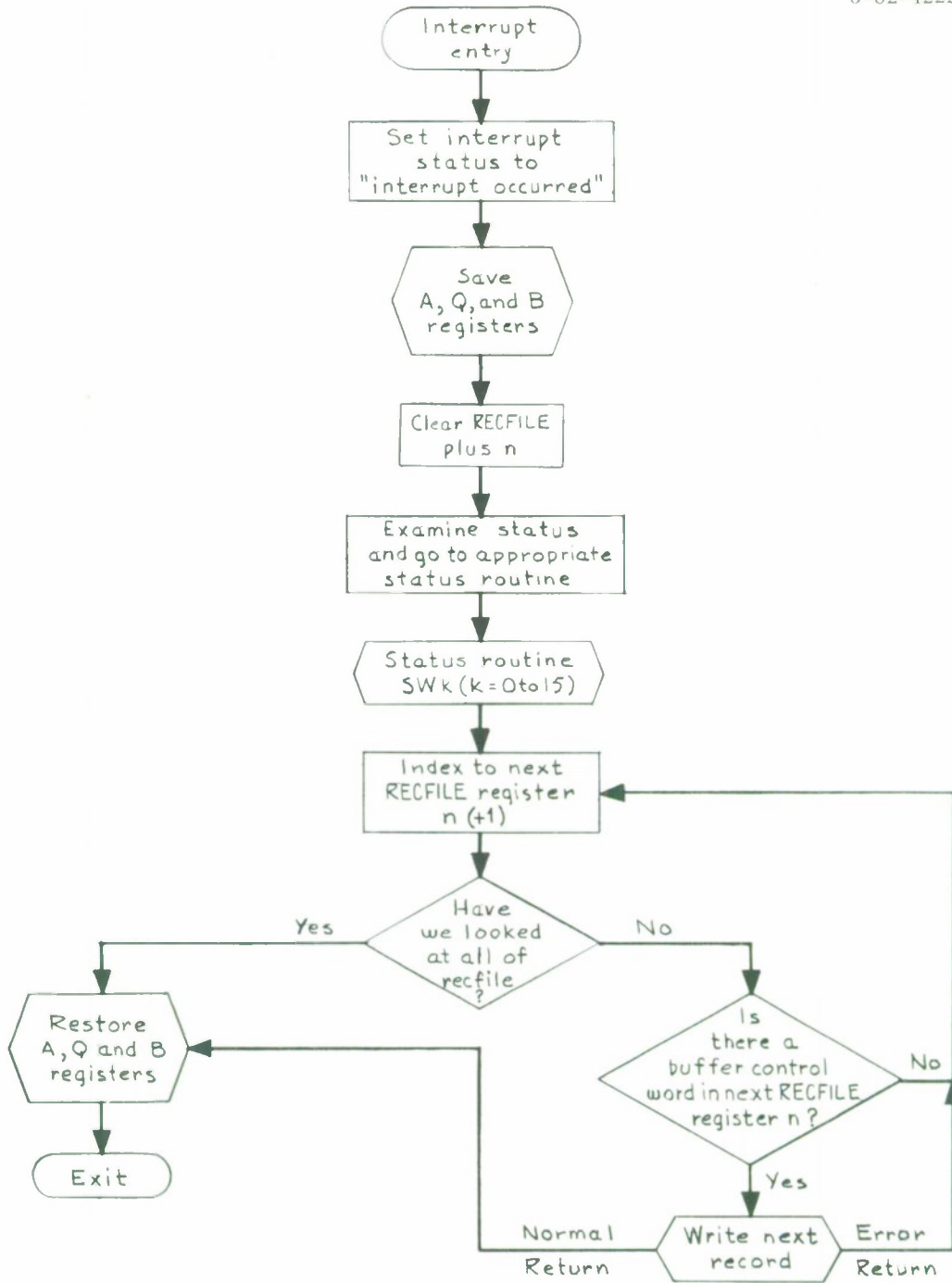


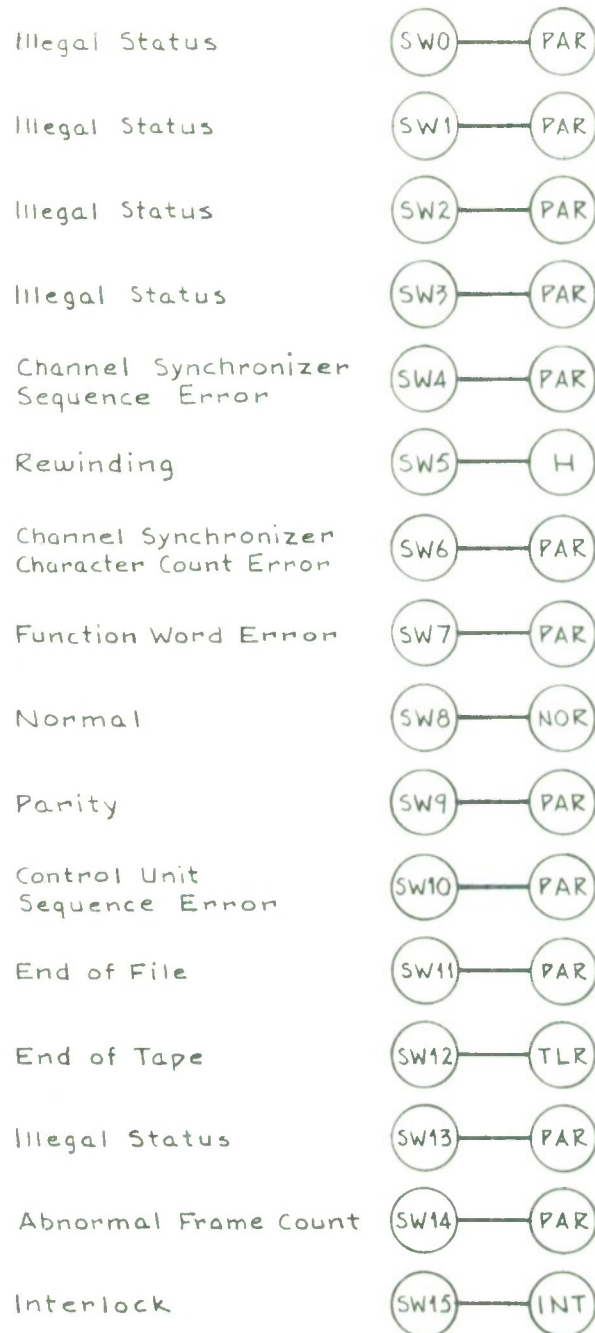
RECORDING PROGRAM INITIALIZATION AND FINALIZATION SECTIONS



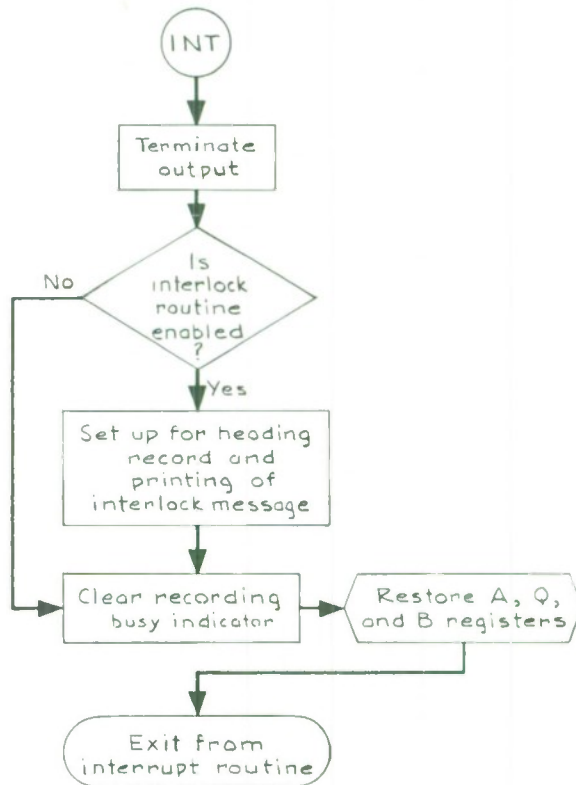
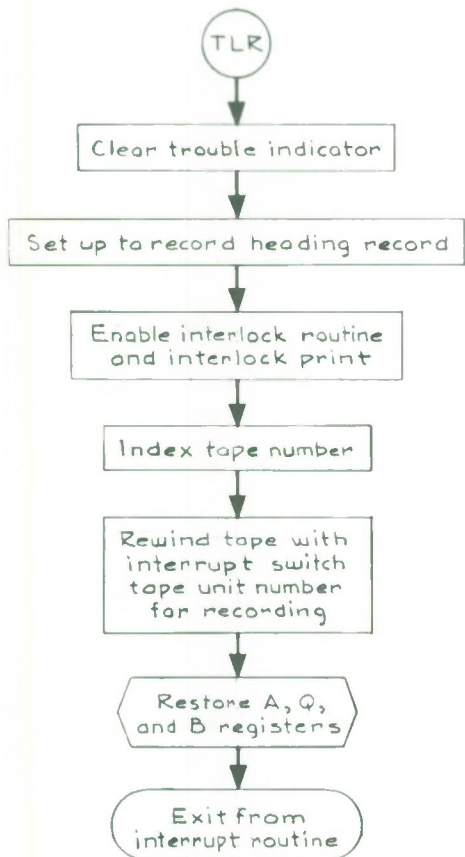
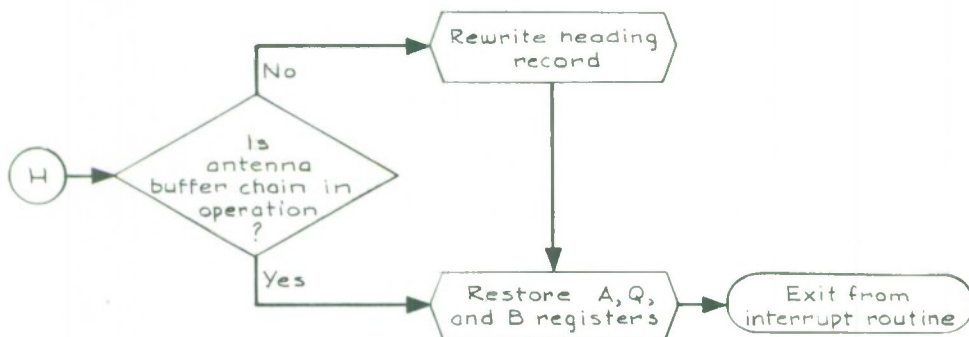
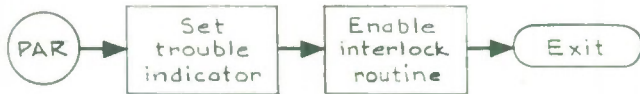
RECORDING PROGRAM : WORKING SECTION





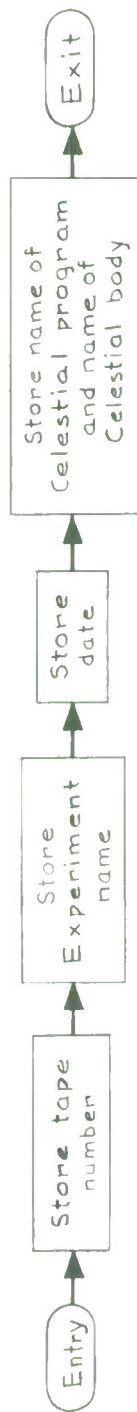


STATUS SWITCHES

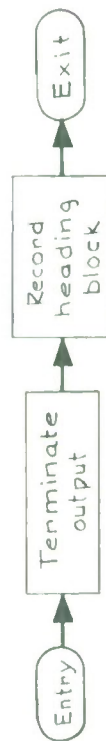


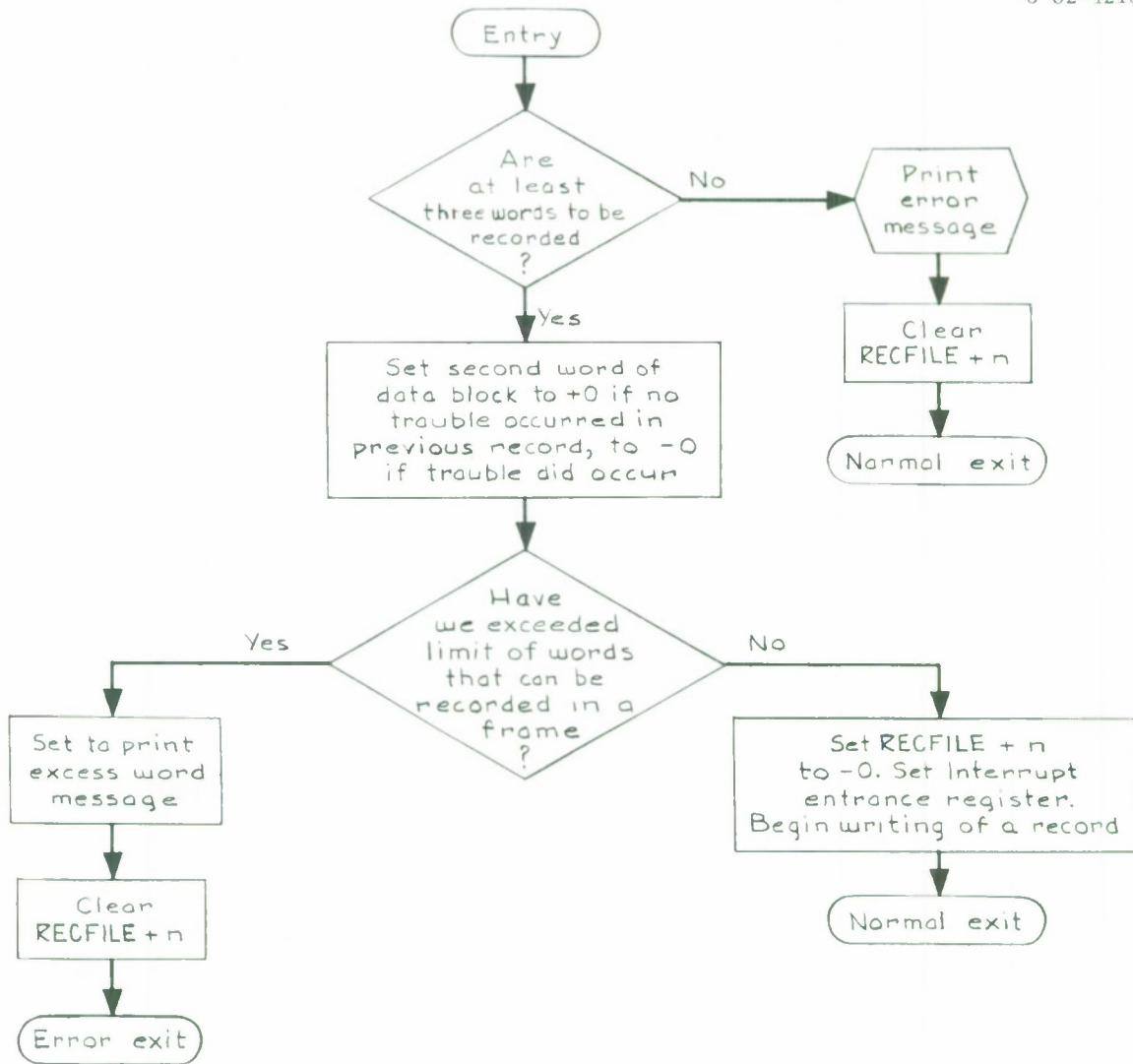


Set Up of Heading Block



Heading Block Recording





WRITE

WFORD/MSTONE INTERSITE COUPLING

INTRODUCTION

As the Haystack Pointing System (HPS) cycles, pointing information in the form of azimuth, elevation, range, and doppler data is automatically output to the equipment interfacing both the West Ford* site and the Millstone[†] site.

Because historically the West Ford site was first to be coupled to Haystack, the program in the system which prepares these data for output is known as the West Ford program (WFORD).

This program, then, services the system intersite coupling requirements connected with going from Haystack to the two remote sites. Purely as a matter of convenience for the present, WFORD also initiates input from the Millstone site, but in fact does nothing with these incoming data.

INPUT

WFORD uses information in Common Storage (C/S) Registers FREQUENCY, WFFREQ, MSFREQ, WFADD, MILLSTNADD, AZIMADD, ELEVADD, DOPPADD and RANGEADD as well as the actual Haystack interpolated values of azimuth, elevation, and doppler, and the mid-interval value for range.

OUTPUT

Every system frame WFORD prepares a buffer table of values of azimuth, elevation, range, and doppler for each site; Fig. 1 shows the word format for West Ford; Fig. 2 for Millstone. Each datum is separated from the next by 50 ms in time. Each of the two buffer tables for each site contains data for a two-second interval (the HPS cycle rate). Hence each West Ford buffer requires 120 words of storage while 160 words are needed by each Millstone buffer. The WFORD

* Haystack-West Ford Intersite Coupling Link, Group Report 1964-25 dated 14 May 1964 by J. E. Gillis, DDC 601143, H-585.

† Haystack-Millstone Intersite Coupling System, 18 May 1964 (private communication).

program prepares the data for output, but the actual OUT (using an externally specified index) is issued by the control program at the time that the Haystack interface signals that it needs more data.

INITIALIZATION

The doppler frequency to be output to each of the two sites must be in the ratio of the site frequency to the Haystack frequency. Additionally the West Ford doppler must be in units of kilocycles as opposed to cycles for Millstone and Haystack. The initialization section computes these ratios and saves them as multiplicative factors to be used by the working section of WFORF to modify the doppler computed for Haystack. The initialization section presently issues the original IN command to the Millstone input interface equipment. Subsequent IN's are issued by the WFORF interrupt section.

OPERATION

In the operation section of WFORF, the azimuth, elevation, range, and doppler data prepared for output to the Haystack system for the next frame are suitably manipulated and adjusted to conform to each site's word format and data rate.

In the case of azimuth and elevation every 12.5^{th} ($12.5 \times 4 \text{ ms} = 50 \text{ ms}$) Haystack datum is used with the least significant bit being made $360^{\circ}/2^{15}$ rounded ($\sim .011^{\circ}$) rather than $360^{\circ}/2^{19}$

In the case of doppler, the value valid for Haystack at the mid-point of the interval is used. First the +750 kc Haystack bias is removed and the resultant frequency is multiplied by the appropriate pre-computed ratio to yield doppler in cycles per second for Millstone and kilocycles per second for West Ford. This quantity is now converted to quasi-BCD and is used as the doppler for the entire two-second interval. For West Ford this value is output as both monostatic and bistatic doppler.

For range, the value computed for Haystack at the mid-point of the interval is converted to nautical miles (binary) for West Ford and to units of 1 microsecond (BCD) for Millstone. The single value is used over the entire two-second interval.



DATA SET: HAYSTACK TO WESTFORD
U490 COMPUTER WORD FORMAT

Fig. 1. Data set; Haystack to Westford U490 computer word format.

Data Set: Haystack to Millstone
U490 Computer Word

Bit No.	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Word No. 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2 ¹⁴															2 ⁰
2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2 ¹⁴														2 ⁰	
3	1	0	0	0	0	0	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ^{3*}	2 ⁰		
4	1	1	0	0	0	0	<u>+2</u> ²		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ³		2 ⁰	2 ^{3*}	2 ⁰		

*Least Significant Digit (LSD)

A. Haystack to Millstone

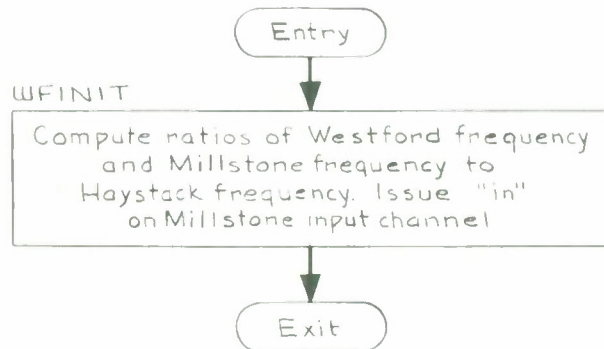
The data to be sent from Haystack to Millstone will be at a 3-kc rate and in the form of a set of four 30-bit words containing information as follows:

- Word 1: Azimuth; 15 bits, LSB = $360^0/2^{15}$
- Word 2: Elevation; 15 bits, LSB = $360^0/2^{15}$
- Word 3: Range; 6 BCD characters, LSD = 1 μ sec.
- Word 4: Doppler; 6 BCD characters, LSD = 1 cps

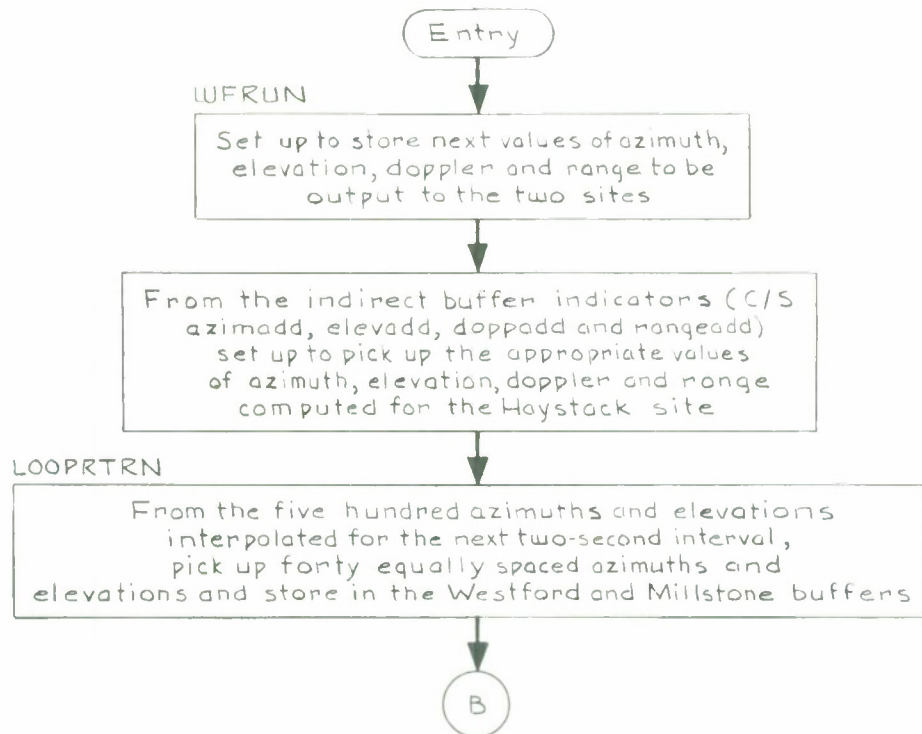
The data set will be transmitted 20 times per second.

Fig. 2

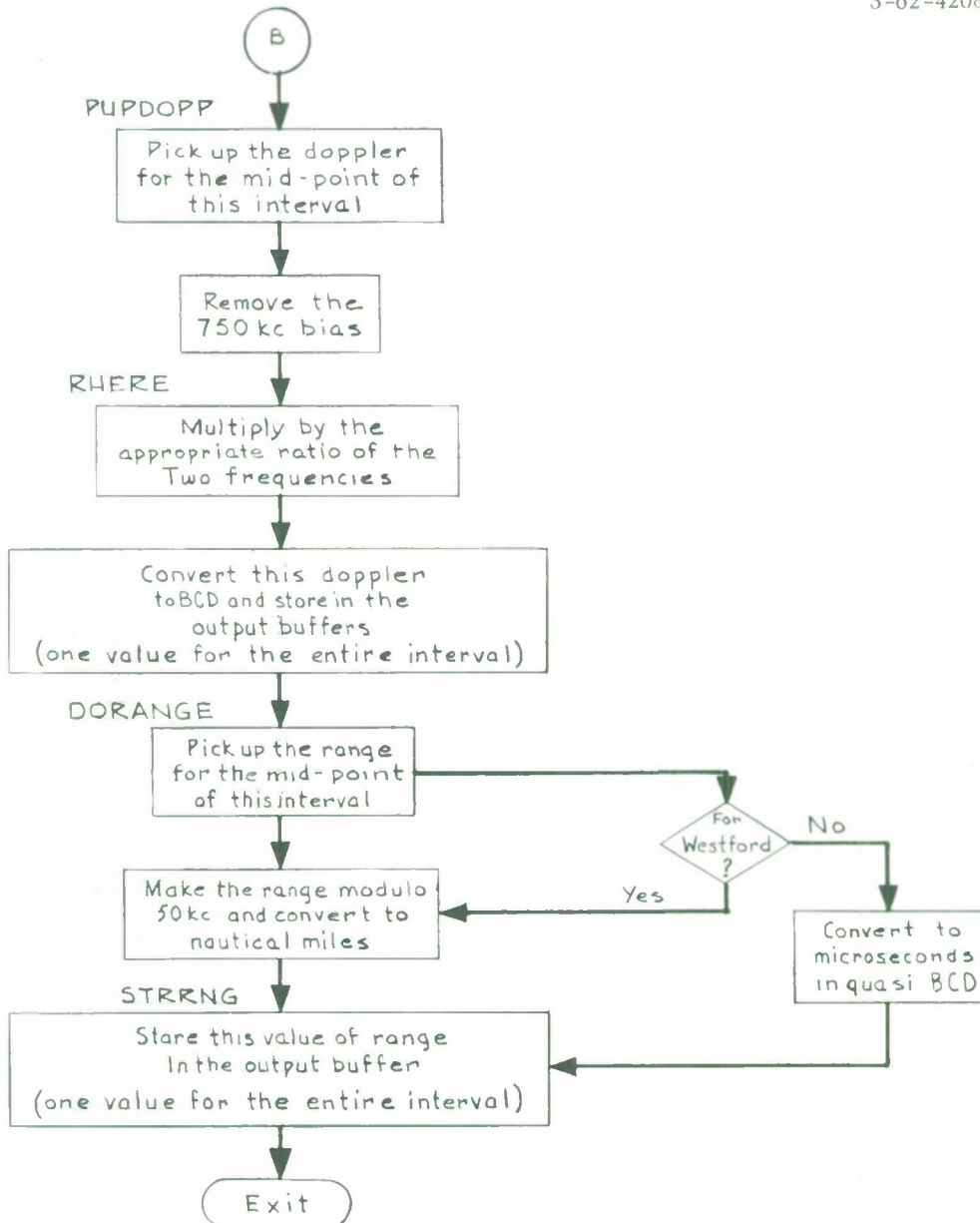
Initialization Section



Working Section



INTERSITE COUPLING PROGRAM: FLOW CHART



CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0000	CHANGECORE PROGRAM S.J. WHITE* MAR. 25*64	00000	00002	00002	00002	
.	C0001	CHANGECORE U-TAG CHANCORE*CHANCORE	00001	10151	02427		
.	C0002	FO 1*CHCOR	00002	61000	00000		
.	C0003	CHANCORE ENTRY	00003	16030	00103		
.	C0004	BEGIN CL W(WHISCNT)	00004	10040	77777		
.	C0005	PUT -0*W(LOCNUM)	00005	14030	00102		
.	C0006	RJP U(INTERCOM)	00006	65020	63426		
.	C0007	U-TAG ASK*ADDRESS	00007	00055	00057		
.	C0010	ENT A*U(LOCNUM)*AZERO	00010	11420	00102		
.	C0011	EXIT RJP U(INTERCOM)	00011	61010	00002		
.	C0012	RJP U(INTERCOM)	00012	65020	63426		
.	C0013	O CONTENTS	00013	00000	00066		
.	C0014	ENT Q*L(LOCNUM)	00014	10010	00102		
.	C0015	STR Q*L(AHEAD)	00015	14010	00022		
.	C0016	STR Q*L(AHEAD1)	00016	14010	00025		
.	C0017	STR Q*L(AHEAD2)	00017	14010	00037		
.	C0020	RJP CONVQ	00020	65000	00043		
.	C0021	STR A*W(MESS2)	00021	15030	00072		
.	C0022	ENT Q*U(O)	00022	10020	00000		
.	C0023	RJP CONVQ	00023	65000	00043		
.	C0024	STR A*W(PLUS1)	00024	15030	00074		
.	C0025	ENT Q*L(O)	00025	10010	00000		
.	C0026	RJP CONVQ	00026	65000	00043		
.	C0027	STR A*W(PLUS1+1)	00027	15030	00075		
.	C0030	ENT Q*U(WHISCNT)	00030	10020	00103		
.	C0031	RJP CONVQ	00031	65000	00043		
.	C0032	STR A*W(PLUS2)	00032	15030	00077		
.	C0033	ENT Q*L(WHISCNT)	00033	10010	00103		
.	C0034	RJP CONVQ	00034	65000	00043		
.	C0035	STR A*W(PLUS2+1)	00035	15030	00100		
.	C0036	ENT A*W(WHISCNT)	00036	11030	00103		
.	C0037	STR A*W(O)	00037	15030	00000		
.	C0040	RJP U(INTERCOM)	00040	65020	63426		
.	C0041	U-TAG KOUTCONT*0	00041	00070	00000		
.	C0042	JP BEGIN	00042	61000	00003		
.	C0043	ENTRY	00043	61000	00000		
.	C0044	CL A*	00044	11000	00000		
.	C0045	CL B4*	00045	12400	00000		
.	C0046	LSH Q*150	00046	05000	00017		
.	C0047	LOOP LSH A*3	00047	06000	00003		
.	C0050	LSH AQ*3	00050	07000	00003		
.	C0051	A00 A*60	00051	20000	00060		
.	C0052	BSK B4*4	00052	71400	00004		
.	C0053	JP LOOP	00053	61000	00047		
.	C0054	EXIT	00054	61010	00043		
.	C0055	FO 0*A	00055	06050	50505		
.	C0056	-0 MESS1	00056	77777	00063		
.	C0057	ADDRESS FO 0*0	00057	24050	50505		
.	C0060	11 LOCNUM	00060	00011	00102		
.	C0061	0 0	00061	00000	00000		
.	C0062	0 -0	00062	00000	77777		
.	C0063	MESS1 FO 2*E.L.+C.	00063	12752	17542		

CAROS	LI IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	CC064	-0	00064	10750	50505		
.	CC065	F0 0*0	00065	77777	77777		
.	CC066	01 WHISCONT	00066	24050	50505		
.	CC067	F0 0*A	00067	00001	00103		
.	CC070	-0 MESS2	00070	06050	50505		
.	CC071	F0 1*	00071	77777	00072		
.	CC072	F0 1*	00072	05050	50505		
.	CC073	F0 2*	00073	05050	50505		
.	CC074	F0 1*	00074	05050	50505		
.	CC075	F0 2*	00075	05050	50505		
.	CC076	-0 -0	00076	05050	50505		
.	CC077	0 0	00077	05050	50505		
.	CC100	RESERVE 1	00100	05050	50505		
.	CC101		00101	77777	77777		
.	CC102		00102	00000	00000		
.	CC103		00103	00000	00000		
.	CC104		00104	00000	00000		

END OF LISTING

SPURT OUTPUT NO. 211

S. J. WHITE • MAR. 25 • 64

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CHANGE CORE

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
ACQAZIM	63071	ACOELEV	63075	ACQUI	63427	ACQUI	63427
ACTUALTIME	63142	ADDRESS	00057	AOSCN	63416	AOSCN	63416
AESCN	63417	AHEAO	00022	AHEAO1	00025	AHEAO1	00025
AHEAO2	00037	ALNGOFFSET	63517	ARCOFAZIM	63524	ARCOFAZIM	63524
ARCOFOEC	63526	ARCOFELEV	63522	ARCOFRA	63530	ARCOFRA	63530
ASK	00055	ASTRODEC	63106	ASTORA	63105	ASTORA	63105
AUPEREQUAT	63341	AZELOTIME	63532	AZELBXSCAN	63500	AZELBXSCAN	63500
AZIM	63053	AZIMOFFSET	63512	AZIMOUT	64000	AZIMOUT	64000
AZIMOVER	63325	AZIMA00	63442	AZIMIN	75000	AZIMIN	75000
AZMTHSCAN	63501	BOOYSIZE	63462	BEGIN	00003	BEGIN	00003
BLASTOFF	63146	COCON	63414	CONTENTS	00066	CONTENTS	00066
CONVERTIME	63135	CONVQ	00043	CORDT	63420	CORDT	63420
COSORIENT	63065	COSAZEL	63070	CAZIM	63060	CAZIM	63060
CELBOOY	63113	CELCOMPGM	63424	CELEV	63061	CELEV	63061
CELTIME	63133	CHANCORE	00002	CHANGE CORE	00000	CHANGE CORE	00000
CHCOR	63422	CHPAR	63431	CHANGE	63057	CHANGE	63057
CRSSOFFSET	63516	OOPPOUT	66000	OOPPA00	63444	OOPPA00	63444
DATANALYZE	63425	OAY	63150	OEC	63003	OEC	63003
OECOFFSET	63515	OECOOT	63010	OELINSCAN	63505	OELINSCAN	63505
OELTATEE	63316	OSEC0N05	63141	OUMSECTTG	63154	OUMSECTTG	63154
OYDMP	63421	ELEV	63054	ELEVOFFSET	63513	ELEVOFFSET	63513
ELEVOUT	65000	ELEVA00	63443	ELEVIN	76000	ELEVIN	76000
ELVTNSCAN	63502	EQUATOR	63323	ESTSHIFTED	63143	ESTSHIFTED	63143
EXPNAME	63350	FIRSTELEV	63104	FIRSTTHRU	63153	FIRSTTHRU	63153
FLATTENING	63337	FRAME SIZE	63101	FREQUENCY	63317	FREQUENCY	63317
GEOENLAT	63322	GEOETLAT	63321	GTM00U24	63145	GTM00U24	63145
GMSHIFTED	63144	HOLDN0H0LD	63511	HOURMINUTE	63137	HOURMINUTE	63137
HOURREG	63151	HEIGHT	63326	I010RA010	66777	I010RA010	66777
I011RAD10	67776	I012RA010	67777	I013RA010	70775	I013RA010	70775
I014RA010	70776	I015RA010	71776	I016RA010	71777	I016RA010	71777
I017RA010	72776	I018RA010	72777	I019RA010	73776	I019RA010	73776
I01CELCOR	63000	I01ENTPNT	63410	I01RA0COR	63050	I01RA0COR	63050
I01RA010	63440	I01RECR0	63210	I01SYSENT	77576	I01SYSENT	77576
I01SYSNAM	77676	I01SYSPAR	63310	I01TIME	63130	I01TIME	63130
I020RA010	73777	I021RA010	74776	I022RA010	74777	I022RA010	74777
I023RA010	75776	I024RA010	75777	I025RA010	76775	I025RA010	76775
I026RA010	76776	I02CELCOR	63001	I02ENTPNT	63411	I02ENTPNT	63411
I02RA0COR	63051	I02RA010	63441	I02RECR0	63211	I02RECR0	63211
I02SYSENT	77577	I02SYSNAM	77677	I02SYSPAR	63311	I02SYSPAR	63311
I02TIME	63131	I03RA010	63776	I04RA010	63777	I04RA010	63777
I08RA010	64776	I06RA010	64777	I07RA010	65776	I07RA010	65776
INELEVA00	65777	I09RA010	66776	INAZIMA00	63446	INAZIMA00	63446
INTERCOM	63447	INTER	63413	INTERAZIM	72000	INTERAZIM	72000
INTERLOCKSW	63426	INTEROOPP	74000	INTERELEV	73000	INTERELEV	73000
KMPERNM	63460	INTERRANGE	76777	KOUTCONT	00070	KOUTCONT	00070
LOCNUM	63342	KYBROLEVEL	63110	LOOP	00047	LOOP	00047
MAINSWITCH	00102	LONGITUDE	63320	LSPERAU	63336	LSPERAU	63336
MESS1	63334	MCPFILLER	71000	MCPGM	63412	MCPGM	63412
MINREG	00063	MESS2	00072	MILLSTNA00	63451	MILLSTNA00	63451
POLE	63152	MSFREQ	63332	NMPERAU	63340	NMPERAU	63340
	63324	PERI00AZIM	63523	PERI00DEC	63525	PERI00DEC	63525

CHANGE SCORE		S. J. WHITE * MAR. 25 * 64	
LABEL	LOC	LABEL	LOC
PERIOELEV	63521	PERIOORA	63527
PLAMP	63434	PLUS1	00074
PREVIOUS TM	63461	PRLOG	63423
ROTATERADN	63506	ROTATER08X	63510
RAOFFSET	63514	RAOOT	63007
RAOCBXCAN	63503	RAOECOTIME	63531
RAIOMETER	63102	RAIORA	63540
RAIUSOOT	63011	RANGE	63052
RANGEAO	63445	RANGE00T	63062
ROMTR	63430	ROXXX	63433
RECAZIM	67000	RECELEV	70000
RECR0	63415	RECR0SWTCH	63155
SAZIM	63055	SCELTIME	63134
SECONOS	63140	SELEV	63056
SINORIENT	63064	SINAZEL	63066
SRA	63004	SRAOTIME	63136
SYSCOMREG1	63452	SYSCOMREG2	63453
SYSCOMREG4	63455	SYSCOMREG5	63456
SYSENTRIES	77600	SYSNAMES	77700
SYSTAT2	63314	SYSTAT0	63315
TIMEMO0E	63103	TIMEP	63435
TRUERANGE	63063	TRUETIME	63132
TWOSECCOOP	63017	VELOFLIGHT	63335
VIZOEC2	63016	VIZRA1	63013
WFORO	63432	WFA00	63450
WHISCONT	00103	YEARMONTH	63147
ZRTRAN	63330		
		PLOT P	63436
		PLUS2	00077
		ROTATEAEBX	63507
		RA	63002
		RADARMO0E	63312
		RAOIOOEC	63541
		RAIUS	63006
		RANGE0UT	70777
		RASCTNSCAN	63504
		RECOR0SIZE	63112
		RECFILE	63212
		RELEASESW	63156
		SOEC	63005
		SIDERTIME	63012
		SKIP	63331
		SYNCTIMING	63542
		SYSCOMREG3	63454
		SYSCOMREG6	63457
		SYSTAT1	63313
		TIMECORR	63107
		TIMETOHOLO	63520
		TTYSTATUS	63111
		VIZOEC1	63014
		VIZRA2	63015
		WFFREQ	63333
		YRTRAN	63327

END OF LISTING

S.J.WHITE*MAR*25*64

..... CHANGECORE S.....

LABEL	LOC	LABEL	LOC	LABEL	LOC
CHANGECORE	00000	CHANGCORE	00002	BEGIN	00003
AHEAD	00022	AHEAD01	00025	AHEAD2	00037
CONVQ	00043	LOOP	00047	ASK	00055
ADDRESS	00057	MESS1	00063	CONTENTS	00066
KOUTCONT	00070	MESS2	00072	PLUS1	00074
PLUS2	00077	LOCNUM	00102	WHISCONT	00103
IOICELCOR	63000	ID2CELCOR	63001	RA	63002
DEC	63003	SRA	63004	SOEC	63005
RAOIUS	63006	RADOT	63007	DEC DOT	63010
RAOJUSDOT	63011	SIOERTIME	63012	VIZRA1	63013
VIZOEC1	63014	VIZRA2	63015	VIZOEC2	63016
TWOSECCOOP	63017	IO1RADCOR	63050	IO2RADCOR	63051
RANGE	63052	AZIM	63053	ELEV	63054
SAZIM	63055	SELEV	63056	CRANGE	63057
CAZIM	63060	CELEV	63061	RANGEDOT	63062
TRUERANGE	63063	SINORIENT	63064	COSORIENT	63065
SINAZEL	63066	COSAZEL	63070	ACQAZIM	63071
ACQELEV	63075	FRAMESIZE	63101	RADIOHETER	63102
TIMEMOE	63103	FIRSTELEV	63104	ASTRORA	63105
ASTRODEC	63106	TIMCORR	63107	KYBRDLEVEL	63110
TYSTATUS	63111	RECORDSIZE	63112	CELBODY	63113
IOITIME	63130	IO2TIME	63131	TRUETIME	63132
CELTIME	63133	SCELTIME	63134	CONVERTIME	63135
SRAOTIME	63136	HOURLMINUTE	63137	SECONDS	63140
OSECONOS	63141	ACTUALTIME	63142	ESTSHIFTEO	63143
GMTSHIFTEO	63144	GMTMOU24	63145	BLASTOFF	63146
YEARMONTH	63147	OAY	63150	HOURREG	63151
HINREG	63152	FIRSTTHRU	63153	OUMSECTTG	63154
REGCROSSWICH	63155	RELEASESW	63156	IOIREGRO	63210
IO2REGRO	63211	RECFILE	63212	IOISYSPAR	63310
IO2SYSPAR	63311	RAARMODE	63312	SYSTAT1	63313
SYSTAT2	63314	SYSTATO	63315	DELTAEE	63316
FREQUENCY	63317	LONGITUOE	63320	GEOEETLAT	63321
GEOENLAT	63322	EQUATOR	63323	POLE	63324
AZIMOVER	63325	HEIGHT	63326	YRTRAN	63327
ZRTRAN	63330	SKIP	63331	MSFREQ	63332
WFFREQ	63333	MAINSWITCH	63334	VELOFLIGHT	63335
LSPERAU	63336	FLATTENING	63337	NMPERAU	63340
AUPEREQUAT	63341	KMPERNM	63342	EXPNAME	63350
IOIENTPNT	63410	IO2ENTPNT	63411	MCPGM	63412
INTER	63413	COCN	63414	RECRO	63415
AOSCN	63416	AESCN	63417	CORCT	63420
OYOMP	63421	CHCOR	63422	PRLOG	63423
CELCOMPGH	63424	DATANALYZE	63425	INTERCOM	63426
ACQU1	63427	ROMTR	63430	CHPAR	63431
WFORO	63432	ROXXX	63433	PLANP	63434
TIMEP	63435	PLOTP	63436	IOIRAIOI	63440
ID2RADIO	63441	AZIMADD	63442	ELEVAOO	63443
OOPPADO	63444	RANGEADD	63445	INAZIMADD	63446
INLEVAOD	63447	WFAOO	63450	MILLSTNADO	63451
SYSCOMREG1	63452	SYSCOMREG2	63453	SYSCOMREG3	63454

SPURT OUTPUT NO. 212

S - J. WHITE * MAR. 25 * 64

CHANGE CORE

LABEL	LOC	LABEL	LOC	LABEL	LOC
SYSCOMREG4	63455	SYSCOMREG5	63456	SYSCOMREG6	63457
INTERLCKSW	63460	PREVIOUSM	63461	BODYSIZE	63462
AZELBXSCAN	63500	AZMTHSCAN	63501	ELVTNSCAN	63502
RAOCBXSCAN	63503	RASCTNSCAN	63504	OECLINSCAN	63505
ROTATERADN	63506	ROTATEAEBX	63507	ROTATERDBX	63510
HOLONHOLD	63511	AZIMOFFSET	63512	ELEVOFFSET	63513
RAOFFSET	63514	OECOFFSET	63515	CRSSOFFSET	63516
ALNGOFFSET	63517	TIMETHOLD	63520	PERIOELEV	63521
ARCOFELEV	63522	PERIOAZIM	63523	ARCOFAZIM	63524
PERIODDEC	63525	ARCOFOEC	63526	PERIODRA	63527
ARCOFRA	63530	RAECOTIME	63531	AZELOTIME	63532
RAIORA	63540	RADIODEC	63541	SYNCTIMING	63542
I03RA010	63776	ID4RADIO	63777	AZIMOUT	64000
I05RA010	64776	I06RADIO	64777	ELEVOUT	65000
ID7RA010	65776	I08RA010	65777	OPPOUT	66000
I09RADIO	66776	I010RADIO	66777	RECAZIM	67000
ID11RA010	67776	I012RADIO	67777	RANGEV	70000
ID13RA010	70775	I014RADIO	70776	RANGEOUT	70777
MCPFILLER	71000	ID15RADIO	71776	I016RADIO	71777
INTERAZIM	72000	I017RADIO	72776	I018RADIO	72777
INTERELEV	73000	I019RADIO	73776	I020RADIO	73777
INTEROOPP	74000	I021RADIO	74776	I022RADIO	74777
AZIMIN	75000	ID23RADIO	75776	ID24RADIO	75777
ELEVIN	76000	ID25RADIO	76775	ID26RADIO	76776
INTERRANGE	76777	I01SYSENT	77576	ID27RADIO	77577
SYSENTRIES	77600	I01SYSNAM	77676	ID28RADIO	77677
SYSNAMES	77700				

END OF LISTING

CAROS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C0C00		PARAMETER	PROGRAM	MATHIASSEN*3/26/65	00000	00002	00C0C4		
.	C0C01		PARAMETER	U-TAE	MSTART*ISTART	00001	10152	50C627		PARAMETER PROGRAM WORKER
.	C0C02			FO	1*CHPAR					
.	C0C03			COMMENT	CHANGE					
.	C0C04			COMMENT	OUMMY					
.	C0C05		MSTART	ENTRY		00002	61000	00C0C0		
.	C0C06			EXIT		00003	61010	00C0C2		
.	C0C07			COMMENT	INITIALIZATION					
.	C0C0C		ISTART	ENTRY		00004	6100C	00C0C0		
.	C0C011			RJP	U(INTERCOM)	00005	65020	63426		PRINT OUT HEADING
.	C0C012			U-TAG	HEADING*0	00006	00045	00C0C0		
.	C0C013		READPAR	CL	W(PARNAME)	00007	16030	00114		SET NAME OF PARAMETER TO +0
.	C0C014			RJP	U(INTERCOM)	00010	65020	63426		READ IN PARAMETER NAME
.	C0C015			C	ANSWER1	00011	00000	00C112		
.	C0C016			ENT	A*W(PARNAME)*ANOT	00012	11530	00C114		WAS A NAME READ IN
.	C0C017			JP	L(SYSCOMREG1)	00013	61010	63452		BACK TO REINT SYSTEM
.	C0C020			STR	A*Q	00014	15000	00C0C0		
.	C0C021			ENT	A*ENDOFFTABLE	00015	11000	00C221		
.	C0C022			SUB	A*TABLE	00016	21000	00C133		
.	C0C023			SUB	A*1	00017	21000	00C0C1		
.	C0C024			ENT	B5*A	00020	12570	00C0C0		INDEX SETTING FOR SEARCH
.	C0C025		SEARCH	ENT	Y-Q*(TABLE-5+B5)*ANOT	00021	31535	00C126		DOES NAME MATCH FIRST 5 CHARACTERS
.	C0C026			JP	MATCH1+3	00022	61000	000034		YES, (TEMPORARY INSTRUCTION)
.	C0C027			COMMENT	AFTER					INTERCOM GETS FIXED, REPLACE ABOVE BY JP MATCH1
.	C0C030		NEXTENTRY	ENT	B5*B5-4	00023	12505	77773		NO. INDEX TO NEXT NAME IN TABLE
.	C0C031			RJP	B5*\$+1	00024	72500	00C025		
.	C0C032			RJP	B5*SEARCH	00025	72500	00C021		HAVE WE SEARCHED THROUGH WHOLE TABLE.
.	C0C033			RJP	U(INTERCOM)	00026	65020	63426		YES. PRINT ERROR MESSAGE
.	C0C034			U-TAG	ERRORMSG*0	00027	00117	00C0C0		
.	C0C035			JP	READPAR	00030	61000	00C0C7		READ IN NEW PARAMETER NAME
.	C0C036		MATCH1	ENT	A*W(PARNAME+1)	00031	11030	00115		LOOK AT SECOND 5 CHARACTERS
.	C0C037			SUB	A*W(TABLE-4+B5)*AZERO	00032	21435	00C127		DO THESE MATCH
.	C0C040			JP	NEXTENTRY	00033	61000	000023		NO. TRY NEXT NAME IN TABLE.
.	C0C041			MOVE	4*W(TABLE-3+B5)*W(ANSWER2)	00034	10005	00130		SET UP FOR INPUT OF CONTENTS
.	C0C035					00035	14010	00C037		
.	C0C036					00036	12700	00C0C3		
.	C0C037					00037	10037	00C0C0		
.	C0C040					00040	14037	00C127		
.	C0C041					00041	7270C	00C037		
.	C0C042			RJP	U(INTERCOM)	00042	65020	63426		READ IN DESIRED CONTENTS
.	C0C043			C	ANSWER2	00043	00000	00C127		
.	C0C044			JP	READPAR	00044	61000	00C0C7		READ IN NEW PARAMETER NAME
.	C0C045		HEADING	FO	1*A	00045	0605C	50C5C5		
.	C0C046			-O	\$+1	00046	77777	00C047		
.	C0C047			FO	4*CHANGE PARAMETERS.	00047	10150	62314		
.	C0C050					00050	12052	50627		
.	C0C051					00051	06221	23112		

CARD	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	C0C50		C405C50303	00052	27307	505C5		
	C0C51		FO 110*NAME OF PARAMETER, CARRIAGE RETURN, NEW VALUE, CARRIAGE	00053	04050	503C3		
				00054	23062	212C5		
				00055	24130	525C6		
				00056	27062	21231		
				00057	12275	60510		
				00060	06272	716C6		
				00061	14120	52712		
				00062	31322	72356		
				00063	05231	234C5		
				00064	33062	13212		
				00065	56051	00627		
				00066	27160	61412		
				00067	05271	23132		
				00070	27237	505C5		
				00071	04050	505C3		
				00072	34151	223C5		
				00073	13162	31630		
				00074	15121	1C510		
				00075	15062	31416		
				00076	23140	525C6		
				00077	27062	21231		
				00100	12273	056C5		
				00101	25271	23030		
				00102	05100	62727		
				00103	16061	412C5		
				00104	27123	13227		
				00105	23050	623C5		
				00106	12353	127C6		
				00107	05311	62212		
				00110	75050	505C5		
				00111	77777	77777		
				00112	22612	405C5		
				00113	00001	0C114		
				00114	05050	505C5		
				00115	0505C	505C5		
				00116	00000	0C0C0		
				00117	06050	505C5		
				00120	77777	0C121		
				00121	25062	70622		
				00122	12311	227C5		
				00123	23243	1C516		
				00124	23053	1C6C7		
				00125	21120	505C5		
				00126	77777	77777		
				00127	0505C	505C5		
				00130	00000	0C0C0		
				00131	00000	000C0		

NEXT INSTRUCTION AFTER INTERCO
 M IS FIXED

LIMIT CHECK, MARGIN, LOCATION
 LOWER LIMIT, UPPER LIMIT

CARDS	LI	IO LABEL	TA STATEMENT	PARAMETER	LOC	F	JKB	Y	NOTES
.	C0C73		COMMENT TABLE						OF PARAMETERS THAT MAY BE CHAN
.	C0C74		COMMENT EPHMERIS						GEO
.	C0C75	TABLE	FD 2*DELTAEE		00133	11122	131C6		TIME - UNIVERSAL TIME
.	C0C76		FD 1*X28		00134	31121	2C5C5		
.	C0C77		11 DELTAEE		00135	35627	0C5C5		
.	C01C0		77777*5622		00136	00011	63316		LIMIT CHECK, MARGIN. LOCATION
.	C01C1		C001C14223		00137	77777	45622		DEC -.00005828 LO
.	C01C2		COMMENT HAYSTACK		00140	00010	14223		WER LIMIT +.001828 UP
.	C01C3		FD 2*FREQUENCY						PER LIMIT
.	C01C4		FD 1*X14		00141	13271	22632		RADAR FREQUENCY
.	C01C5		11 FREQUENCY		00142	12231	036C5		
.	C01C6		CC0CGC0000		00143	35616	4C5C5		
.	C01C7		1161C00000		00144	00011	63317		DEC 0.814
.	C011C		COMMENT WESTFORD		00146	11610	0C0C0		DEC 10000.814
.	C0111		FD 2*WFFREQ						FREQUENCY
.	C0112		FD 1*X14		00147	34131	32712		
.	C0113		11 WFFREQ		00150	26050	5C5C5		
.	C0114		000DC00000		00151	35616	4C5C5		
.	C0115		1161C00000		00152	00011	63333		DEC 0.814
.	C0116		COMMENT HAYSTACK		00153	00000	0C0C0		DEC 10000.814
.	C0117		FD 2*LONGITUDE						LONGITUDE
.	C0120		FD 1*X20		00155	21242	31416		
.	C0121		11 LONGITUDE		00156	31321	112C5		
.	C0122		5137777777		00157	35622	405C5		
.	C0123		2640C00000		00160	00011	63320		DEC -360.820
.	C0124		COMMENT HAYSTACK		00161	51377	77777		DEC +360.820
.	C0125		FD 2*GEO0ETLAT						LATITUDE
.	C0126		FD 1*X20		00163	14122	41112		
.	C0127		11 GEO0ETLAT		00164	31210	631C5		
.	C0130		7227777777		00165	35622	405C5		
.	C0131		C550G00000		00166	00011	63321		DEC -90.820
.	C0132		COMMENT HAYSTACK		00167	72277	77777		DEC +90.820
.	C0133		FD 2*HEIGHT		00170	05500	0C0C0		DEC +90.820
.	C0134		FD 1*CD		00171	15121	61415		HEIGHT
.	C0135		11 HEIGHT		00172	31050	5C5C5		
.					00173	11050	5C5C5		
.					00174	00011	63326		

CARDS	LL IO LABEL	TA STATEMENT	PARAMETER	LOC	F	JKB	Y	NOTES
.	C0136	777777323		00175	77777	77323	OEC	-300.80
.	C0137	C00072460		00176	00000	72460	OEC	30000.80
.	C0140	COMMENT EQUATORIAL		00177	12263	20631	RADIUS	
.	C0141	FO 2*EQUATOR		00200	24270	50505		
.	C0142	FO 1*X17		00201	35616	70505		
.	C0143	11 EQUATOR		00202	00011	63323		
.	C0144	2734C00000		00203	27340	00000	OEC	3000.817
.	C0145	3720C00000		00204	37200	00000	OEC	4000.817
.	C0146	COMMENT POLAR		00205	25242	11205	RADIUS	
.	C0147	FO 2*POLE		00206	05050	50505		
.	C0150	FO 1*X17		00207	35616	70505		
.	C0151	11 POLE		00210	00011	63324		
.	C0152	2734C00000		00211	27340	00000	OEC	3000.817
.	C0153	3720C00000		00212	37200	00000	OEC	4000.817
.	C0154	FO 2*AZIMOVER		00213	06371	62224		
.	C0155	FO 1*0		00214	33122	70505		
.	C0156	01 AZIMOVER		00215	24050	50505		
.	C0157	RESERVE 2		00216	00001	63325		
.	C0160	ENOOFTABLE		00217	00000	00000		
.	C0161	NO-OP		00221	57575	75757	ATTENTION CHARACTERS	
.				00222	12000	00000	DUMMY	

END OF LISTING

SPURT OUTPUT NO. 211

MATHIASSEN*3/26/65

PARAMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC
A\$\$\$\$1111	00037	ACQAZIM	63071	ACQLEV	63075
ACQOI	63427	ACTUAL TIME	63142	ADSCN	63416
AESCN	63417	ALNGOFFSET	63517	ANSWER1	00112
ANSWER2	00127	ARCOFAZIM	63524	ARCOFDEC	63526
ARCFELEV	63522	ARCOFRA	63530	ASTRODEC	63106
ASTRORA	63105	AUPEREQUAT	63341	AZELOTIME	63532
AZELBXSCAN	63500	AZIM	63053	AZIMOFFSET	63512
AZIMDUT	64000	AZIMOVER	63325	AZIMADD	63442
AZIMIN	75000	AZMTHSCAN	63501	BODYSIZE	63462
BLASTDFF	63146	COCON	63414	CONVERTIME	63135
CCRD1	63420	COSORTENT	63085	COSAZEL	63070
CAZIM	63060	CELBODY	63113	CELCOMPGM	63424
CELEV	63061	CELTIME	63133	CHCDR	63422
CHPAR	63431	CRANGE	63057	CRSSOFFSET	63516
DCRPDUT	66000	DOPPAD0	63444	DATANALYZE	63425
CAY	63150	DEC	63003	DELTAEE	63316
DECCOT	63010	DECLINSCAN	63505	DYDMP	63421
DSECONDS	63141	DUMSECTTG	63154	ELEVOOT	65000
ELEV	63054	ELEVDFSET	63513	ELVTNSCAN	63502
ELEVADD	63443	ELEVIN	76000	ERRORMSG	00117
ENDGFTABLE	00221	EQUATR	63323	FIRSTLEV	63104
ESTSHIFTED	63143	EXPNAME	63350	FRAMESIZE	63101
FIRSTHRU	63153	FLATTENING	63337	GEODETLAT	63321
FREQUENCY	63317	GEODEVLAT	63322	HOLDNOLHLD	63511
GMTWCD024	63145	GMTSHIFTED	63144	HEADING	00045
HCURMINUTE	63137	HOUREG	63151	ID11RADIO	67776
HEIGHT	63326	ID0RADIO	66777	ID14RADIO	70776
ID12RADIO	67777	ID13RADIO	70775	ID17RADIO	72776
ID15RADIO	71776	ID16RADIO	71777	ID1CELCOR	63000
ID18RADIO	72777	ID19RADIO	73776	ID1RADIO	63440
ID1ENTPNT	63410	ID1RADCDR	63050	ID1SYSNAM	77676
ID1RECDR	63210	ID1SYSENT	77576	ID20RADIO	73777
ID1SYSPAR	63310	IDITIME	63130	ID23RADIO	75776
ID21RADIO	74776	ID22RADIO	74777	ID26RADIO	76776
ID24RADIO	75777	ID25RADIO	76775	ID2RADCUR	63051
ID2CELCOR	63001	ID2ENTPNT	63411	ID2SYSENT	77577
ID2RADIO	63441	ID2RECDR	63211	ID2TIME	63131
ID2SYSNAM	77677	ID2SYSPAR	63311	ID5RADIO	64776
ID3RADIO	63776	ID4RADIO	63777	ID8RADIO	65777
ID6RADIO	64777	ID7RADIO	65776	INFEVADD	63447
ID9RADIO	66776	INAZIMADD	63446	INTERCDM	63426
INTER	63413	INTERAZIM	72000	INTERLCKSW	63460
INTEROPP	74000	INTERELEV	73000	KMPERNM	63342
INTERRANGE	76777	ISTART	00004	LSPERAU	63336
KYBRCLEVEL	63110	LONGITUDE	63320	MCPFILLER	71000
MAINSWITCH	63334	MATCHI	00031	MINREG	63152
MCPGM	63412	MILLSTNADD	63451	NEXTENTRY	00023
MSEREQ	63332	MSTART	00002	PARAMETER	00000
NMPERAU	63340	POLE	63324	PERIODDEC	63525
PARNAME	00114	PERIODAZIM	63523	PL01P	63436
PERICDELEV	63521	PERIODORA	63527		

SPURT OUTPUT NO. 211

MATHIASSEN*3/26/65

PARAMETER

LABEL	LCC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PLAMP	63434	PREVIDUSTM	63461	PRLOG	63423		
RC1ATEAEBX	63507	ROTATERADN	63506	ROTATERDBX	63510		
RA	63002	RADFFSET	63514	RADOT	63007		
RACARMODE	63312	RADCBXSCAN	63503	RADECOTIME	63531		
RAC10DEC	63541	RADIOMETER	63102	RAD10RA	63540		
RADIUS	63006	RAD10SDOT	63011	RANGE	63052		
RANGEDOT	70777	RANGEADD	63445	RANGEDDOT	63062		
RASC1NSCAN	63504	RD1TR	63430	R0XXX	63433		
READPAR	00007	RECDR0SIZE	63112	RECAZIM	67000		
RECELEV	70000	RECF1LE	63212	RECRD	63415		
RECROSWTCH	63155	RELEASESM	63156	SAZIM	63055		
SELT1ME	63134	SDEC	63005	SEARCH	00021		
SECCND0	63140	SELEV	63056	S1DERT1ME	63012		
S1NOR1ENT	63064	S1NAZEL	63066	SK1P	63331		
SRA	63004	SRADT1ME	63136	SYNCT1M1NG	63542		
SYS0MREG1	63452	SYS0MREG2	63453	SYS0MREG3	63454		
SYS0MREG4	63455	SYS0MREG5	63456	SYS0MREG6	63457		
SYSENTR1ES	77600	SYSNAMES	77700	SYSSTAT1	63313		
SYSSTAT2	63314	SYSSTAT0	63315	TABLE	00133		
T1MECDRR	63107	T1MEMDDE	63103	T1MEP	63435		
T1METDHDLD	63520	TR0ERANGE	63063	TRUET1ME	63132		
TTYSSTAT0S	63111	TW0SEC00P	63017	VELOFL1GHT	63335		
V1ZDECL	63014	V1Z0EC2	63016	V1ZRAL	63013		
V1ZRA2	63015	WFDRO	63432	WFAD0	63450		
WFFREQ	63333	YEAR0MNT0	63147	YR1TRAN	63327		
ZR1TRAN	63330						

END OF LISTING

SPURT OUTPUT NU. 212

MATHIASSEN#3/26/65

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PARAMETER

PARAMETER	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PARAMETER	C00U0		00002	MSTART	00002	ISTART	00004
READPAR	D00C7		00021	SEARCH	00021	NEXTENTRY	00023
MATCH1	C0031	A\$\$\$\$1111				HEADING	00045
ANSWER1	C0112	PARNAME	00114		00114	ERRORMSG	00117
ANSWER2	C0127	TABLE	00133		00133	ENDOFFTABLE	00221
ID1CELCOR	63000	ID2CELCOR	63001		63001	RA	63002
DEC	630U3	SRA	63004		63004	SDEC	63005
RADIUS	63006	RADDT	63007		63007	DECDOT	63010
RADIUSDOT	63011	SIDERTIME	63012		63012	V1ZRAL	63013
V1ZDEC1	63014	V1ZRA2	63015		63015	V1ZDEC2	63016
TWOSECDP	63017	ID1RADCOR	63050		63050	ID2RADCUR	63051
RANGE	63052	AZIM	63053		63053	ELEV	63054
SAZIM	63055	SELEV	63056		63056	CRANGF	63057
CAZIM	63060	CELEV	63061		63061	RANGEDOT	63062
TRUERANGE	63063	SINORIENT	63064		63064	COSORTENT	63065
ACQLEV	63075	COSAZEL	63070		63070	ACQAZIM	63071
TIMEMODE	63103	FRAMESIZE	63101		63101	RADIOMETER	63102
ASTRODEC	63106	FIRSTELEV	63104		63104	ASTRORA	63105
TYSTATUS	63111	TIMECORR	63107		63107	KYBROLEVEL	63110
ID1TIME	63130	RECORDSIZE	63112		63112	CELBODY	63113
SRADTIME	63136	ID2TIME	63131		63131	TRUETIME	63132
DSECONDS	63141	SCELTIME	63134		63134	CONVERTIME	63135
GMTSHIFTED	63144	HOURLMINUTE	63137		63137	SECONDS	63140
YEARMONTH	63147	ACTUALTIME	63142		63142	ESTSHIFTED	63143
MINREG	63152	GMTMODU24	63145		63145	BLASTOFF	63146
REGROSSWICH	63155	DAY	63150		63150	HOURREC	63151
ID2REGRD	63211	FIRSTTHRU	63153		63153	DUMSECTIG	63154
ID2SYSRPAR	63311	RELEASESW	63156		63156	ID1REGRD	63210
FREQUENCY	63314	RECFILE	63212		63212	ID1SYSRPAR	63310
GECCENLAT	63322	RADARMODE	63312		63312	SYSTATI	63313
AZIMDVER	63325	SYSTATO	63315		63315	DELTATEE	63316
ZRTRAN	63330	LONGITUDE	63320		63320	GFODELAT	63321
WFEREQ	63333	EQUATOR	63323		63323	POLE	63324
LSPERAU	63336	HEIGHT	63326		63326	YRTRAN	63327
AUPEREQUAT	63341	SKIP	63331		63331	MSFREQ	63332
ID1ENTPNT	63410	MAINSWITCH	63334		63334	VELOFLIGHT	63335
ADSCN	63413	FLATTENING	63337		63337	NMPERAU	63340
DYDMP	63421	KMPERVM	63342		63342	EXPNAME	63350
CELCOMPOM	63424	ID2ENTPNT	63411		63411	MCPGM	63412
ACQUI	63427	COCON	63414		63414	REGRD	63415
WFORO	63432	AESCN	63417		63417	CORCT	63420
TIMEP	63435	CHCOR	63422		63422	PRLOG	63423
IC2RADIC	63441	DATANALYZE	63425		63425	INTERCOM	63426
DGPPADD	63444	RDIMR	63430		63430	CHPAR	63431
INLELVAD	63447	RDXXX	63433		63433	PLANP	63434
SYSKOMREG1	63452	PLOTP	63436		63436	ID1RADIU	63440
SYSKOMREG4	63455	AZIMADD	63442		63442	ELEVAOD	63443
		RANGEADD	63445		63445	INAZIMADD	63446
		WFADD	63450		63450	MILLSTNADD	63451
		SYSKOMREG2	63453		63453	SYSKOMREG3	63454
		SYSKOMREG5	63456		63456	SYSKOMREG6	63457

MATHIASSEN*3/26/65

PARAMETER

LABEL	LOC	LABEL	LOC	LABEL	LOC
INTERLCKSW	63460	PREVIDJUSTM	63461	BODYSIZE	63462
AZELBXSCAN	63500	AZMTHSCAN	63501	ELVNSCAN	63502
RADCXSCAN	63503	RASCTN SCAN	63504	DECLINSCAN	63505
RCTATERADN	63506	ROTATEAERX	63507	RDATERUBX	63510
HCLONDHOLC	63511	AZIMOFFSET	63512	ELEVOFFSET	63513
RAOFFSET	63514	DECOFFSET	63515	CRSSOFFSET	63516
ALNGDOFFSET	63517	TIMETHOLD	63520	PERIODELEV	63521
ARCOFELEV	63522	PERIODAZIM	63523	ARCOFAZIM	63524
PERIODDEC	63525	ARCOFDEC	63526	PERIODRA	63527
ARCOFRA	63530	RADECJTIME	63531	AZELUTIME	63532
RADIDRA	63540	RADIDDEC	63541	SYNCTIMING	63542
ID3RADID	63776	ID4RADID	63777	AZIMDUT	64000
ID5RADID	64776	ID6RADID	64777	ELEVOUT	65000
IC7RADID	65776	ID8RADID	65777	ODPPDUT	66000
IC9RADID	66776	ID10RADID	66777	RECAZIM	67000
IC11RADID	67776	ID12RADID	67777	RECELEV	70000
IC13RADID	70775	ID14RADID	70776	RANGEDUT	70777
MCPFILLER	71000	ID15RADID	71776	ID16RADID	71777
INTERAZIM	72000	ID17RADID	72776	ID18RADID	72777
INTERELEV	73000	ID19RADID	73776	ID20RADID	73777
INTERDDPP	74000	ID21RADID	74776	ID22RADID	74777
AZIMIN	75000	ID23RADID	75776	ID24RADID	75777
ELEVIN	76000	ID25RADID	76775	ID26RADID	76776
INTERRANGE	76777	ID1SYSENT	77576	ID2SYSENT	77577
SYSENTRIES	77600	ID1SYSNAM	77676	ID2SYSNAM	77677
SYSNAMES	77700				

END OF LISTING

CARDS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0000	OYOMPPGM		00000	00002	00164	
.	C0001	U-TAG		00001	11361	12225	
.	C0002	FO I*OYOMP		00002	61000	00000	
.	C0003	OYOWORK		00003	12500	00000	
.	C0004	CL B5*		00004	12600	00000	
.	C0005	CL B6*		00005	12700	00000	
.	C0006	CL B7*		00006	11430	00163	
.	C0007	ENT A*(STACK+250)AZERO		00007	61000	00067	
.	C0010	JP GLOG		00010	70100	00021	
.	C0011	RPT 170*AOV		00011	16030	00105	CLEAR WOROBLOCK
.	C0012	STR 80*(WOROBLOCK)		00012	14030	00105	
.	C0013	STR 0*(WOROBLOCK)		00013	11000	00002	
.	C0014	AGAIN		00014	15030	00126	SET COUNT TO PROCESS 2 HALFS W
.	C0015	STR A*(TWOCT)		00015	11415	00335	ORO
.	C0016	ENT A*(A0ORBUF+B5)*AZERO		00016	61000	00026	ENT A W/AADDRESS TO FINO CONTEN
.	C0017	JP CONTON		00017	11035	00351	TS
.	C0020	ENT A*(A0ORBUF+B5)		00020	21430	00420	
.	C0021	SUB A*777700000*AZERO		00021	61000	00026	
.	C0022	JP CONTON		00022	12606	00002	
.	C0023	ENT B6*B6+2		00023	71500	00007	
.	C0024	BSK B5*7		00024	61000	00013	
.	C0025	JP AGAIN		00025	61000	00045	
.	C0026	JP FILLBUFFER-2		00026	11015	00351	
.	C0027	ENT A*(A0ORBUF+B5)		00027	15010	00030	
.	C0030	STR A*(S+)		00030	10030	00000	PICK UP CONTENTS
.	C0031	ENT 0*(0)		00031	11000	00000	CONVERT FROM OCT TO FO
.	C0032	CL A*		00032	07000	00003	
.	C0033	LSH AQ*3		00033	20000	00060	
.	C0034	A00 A*60		00034	15030	00127	
.	C0035	STR A*(SAVEA)		00035	11036	00106	
.	C0036	ENT A*(WOROBLOCK+1+B6)		00036	06000	00006	
.	C0037	LSH A*6		00037	20030	00127	
.	C0040	A00 A*(SAVEA)		00040	15036	00106	
.	C0041	STR A*(WOROBLOCK+1+B6)		00041	11700	00004	
.	C0042	BSK B7*4		00042	61000	00031	
.	C0043	JP MOREQ		00043	71600	00017	
.	C0044	BSK B6*150		00044	61000	00101	
.	C0045	JP MOREWROS		00045	12500	00000	
.	C0046	CL B5*		00046	12600	00001	
.	C0047	ENT B6*		00047	11036	00104	STORE WOROS CONVERTEO FROM OCT
.	C0050	FILLBUFFER		00050	15035	00132	TO
.	C0051	STR A*(STACK+B5)		00051	11000	00000	
.	C0052	CL A*		00052	10036	00105	
.	C0053	ENT 0*(WOROBLOCK+B6)		00053	07000	00006	
.	C0054	LSH AQ*6		00054	15035	00133	
.	C0055	STR A*(STACK+1+B5)		00055	07000	00036	
.	C0056	LSH AQ*300		00056	15035	00134	
.	C0057	STR A*(STACK+2+B5)		00057	12505	00003	
.	C0060	ENT B5*B5+3		00060	12606	00001	
.	C0061	ENT B6*B6+1		00061	12606	00001	

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0062	BSK B6*160	00061	71600	00020		
.	C0063	JP FILLBUFFER	00062	61000	00047		
.	C0064	ENT A*WIMOROBLOCK+16D)	00063	11030	00125		LAST WORO 125TH WORO1
.	C0065	STR A*WISTACK+B51	00064	15035	00132		
.	C0066	PUT LISTKBUFF)*L1\$+2)	00065	10010	00131		
.	C0067	RJP UIPRLOG1	00066	14010	00070		
.	C0070	260 0	00067	65020	63423		
.	C0071	-1 0	00070	00032	00000		
.	C0072	JP CHANACTV	00071	77776	00000		
.	C0073	RPT 260*AOV	00072	61000	00076		
.	C0074	CL WISTACK)	00073	70100	00032		
.	C0075	EXIT	00074	16030	00132		
.	C0076	PUT WIMARKBUFF1*WISTACK+2501	00075	61010	00002		
.	C0077	EXIT	00076	10030	00130		
.	C0100	RPL Y-1*WITWOCT)*AZERO	00077	14030	00163		
.	C0101	JP MOREQ	00100	61010	00002		
.	C0102	ENT B5*B5+1	00101	37430	00126		HAS BOTH HALFS WORO BEEN PROCE
.	C0103	JP AGAIN	00102	61000	00031		SSEO
.	C0104	RESERVE 170	00103	12505	00001		NO
.	C0105	RESERVE 1	00104	61000	00013		YES
.	C0106	RESERVE 1	00105	00000	00000		
.	C0107	3535350000	00126	00000	00000		
.	C0110	U-TAG STACK+250*STACK	00127	00000	00000		
.	C0111	RESERVE 260	00130	35353	50000		
.	C0112	ENTRY	00131	00163	00132		
.	C0113	CL B5*	00132	00000	00000		
.	C0114	CL B6*	00132	00000	00000		
.	C0115	ENT A*WIKOUTPUTSW)*ANOT	00164	61000	00000		
.	C0116	JP NOOUT	00165	12500	00000		
.	C0117	RJP UIINTERCOM1	00166	12600	00000		
.	C0120	U-TAG STOP*YORN	00167	11530	00362		
.	C0121	ENT A*UJANS)	00170	61000	00273		NO
.	C0122	SUB A*36000*AZERO	00171	65020	63426		YES
.	C0124	JP CONT1	00172	00313	00315		STOP YES OR NO
.	C0125	STR BO*UIOYOMP1	00173	11020	00347		
.	C0126	STR BO*WIKOUTPUTSW)	00174	21400	36000		
.	C0127	EXIT	00175	61000	00201		NO
.	C0130	ENT A*-0	00176	16020	63421		YES
.	C0131	STR A*UJANS)	00177	16030	00362		EXIT
.	C0132	RJP UIINTERCOM1	00200	61010	00164		
.	C0133	U-TAG CHANCOL*WHCOL	00201	11040	77777		SET ANS TO -0
.	C0134	ENT A*UJANS)*AZERO	00202	15030	00347		
.	C0135	JP CONT2	00203	65020	63426		
.	C0136	RJP UIINTERCOM)	00204	00317	00321		
.	C0137	U-TAG ASK*ADDRESS	00205	11420	00347		YES
.	C0140	ENT A*WILOCNUM1	00206	61000	00216		NO
.	C0141	ENT B5*L1ANS)	00207	65020	63426		
.	C0142	STR A*WIAORRBUF+B5)	00210	00325	00327		PICK UP NEW O/P ADDRESS
.	C0143	BSK B6*7	00211	11030	00350		SET B TO NO-O/P AORR TO BE CHA
.	C0144		00212	12510	00347		NGEO
.	C0145		00213	15035	00351		STORE NEW O/P AORR.
.	C0146		00214	71600	00007		

CAROS	LI	IO	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00143			JP CONT1	00215	61000	00201		
.	00144		CONT2	CL B5*	00216	12500	00000		
.	00145			CL B6*	00217	12600	00000		
.	00146			CL B7*	00220	12700	00000		
.	00147			ENT A*W(PROG1	00221	11030	00363		
.	00150			STR A*W(PRINTAREA1	00222	15030	00365		FILL PRINTOUT BUFFER
.	00151		LOOP2	CL A*	00223	11000	00000		
.	00152			STR A*W(PRINTAREA*1+B61	00224	15036	00366		
.	00153			ENT A*L(AOORBUF+B51*AZERO	00225	11415	00351		IS L(AOORBUF1=0
.	00154			JP GOF0	00226	61000	00236		NO
.	00155		MAYBEO	ENT A*W(AOORBUF+B51	00227	11035	00351		YES
.	00156			SUB A*7777700000*AZERO	00230	21430	00420		REALY 0
.	00157			JP GOF0	00231	61000	00236		NO
.	00160			ENT B6*B6+3	00232	12606	00003		
.	00161			BSK B5*7	00233	71500	00007		
.	00162			JP LOOP2+2	00234	61000	00225		
.	00163			JP PUTOUT	00235	61000	00256		
.	00164		GOF0	ENT Q*L(AOORBUF+B51	00236	10015	00351		CONVERT AOORBUF TO FO
.	00165			LSH Q*150	00237	05000	00017		
.	00166			CL A*	00240	11000	00000		
.	00167		LOOP1	LSH A*3	00241	06000	00003		
.	00170			LSH AQ*3	00242	07000	00003		
.	00171			A00 A*60	00243	20000	00060		
.	00172			BSK B7*4	00244	71700	00004		
.	00173			JP LOOP1	00245	61000	00241		
.	00174			ENT Q*A	00246	10070	00000		
.	00175			CL A*	00247	11000	00000		
.	00176			LSH AQ*1B0	00250	07000	00022		
.	00177			STR A*W(PRINTAREA*2+B61	00251	15036	00367		SET UP HEADING PRINT OUT AREA
.	00200			STR Q*W(PRINTAREA*3+B61	00252	14036	00370		
.	00201			ENT B6*B6+3	00253	12606	00003		
.	00202			BSK B5*7	00254	71500	00007		
.	00203			JP LOOP2	00255	61000	00223		
.	00204		PUTOUT	PUT L(PRINTOUT1*L(\$+21	00256	10010	00364		
.	00205			RJP U(PL0G1	00257	14010	00261		
.	00206			260 0	00260	65020	63423		
.	00207			-1 0	00261	00032	00000		
.	00210			JP PUTOUT	00262	77776	00000		
.	00211			PUT 1*W(KOUTPUTSW1	00263	61000	00256		
.	00212			PUT OYOWORK*U(OYOHPI	00264	10000	00001		
.	00213			RPT 260*AOV	00265	14030	00362		
.	00214			CL W(STACK1	00266	10000	00002		
.	00215			EXIT	00267	14020	63421		
.	00216		NOOUT	ENT A*7777700000	00270	70100	00032		
.	00217			RPT B0*AOV	00271	16030	00132		
.	00220			STR A*W(AOORBUF1	00272	61010	00164		
.	00221			RPT 260*AOV	00273	11030	00420		
.	00222			STR B0*W(PRINTAREA1	00274	70100	00010		STR ALL 1 U(AOORBUF1 BUFFER
.	00223		WHOS10	ENT A*-0	00275	15030	00351		
.					00276	70100	00032		
.					00277	16030	00365		CLEAR PRINTAREA
.					00300	11040	77777		

CAROS	L1	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	00224				STR A*(LOCNUM1	00301	15030	00350		SET W(LOCNUM)=-0
.	00225				RJP U(INTERCOMI	00302	65020	63426		
.	00226				U-TAG ASK*ADDRESS	00303	00325	00327		
.	00227				ENT A*(LOCNUM1*AZERO	00304	11420	00350		
.	00230				JP CONT2	00305	61000	00216		YES
.	00231				ENT A*(LOCNUM)	00306	11030	00350		NO
.	00232				STR A*(AORRBUF+861	00307	15036	00351		
.	00233				BSK B6*7	00310	71600	00007		
.	00234				JP WHOSIO	00311	61000	00300		
.	00235				JP CONT2	00312	61000	00216		YES
.	00236		STOP		FO 0*A	00313	06050	50505		
.	00237				-0 MESS1	00314	77777	00333		
.	00240		YORN		FO 1*LL1	00315	21610	50505		
.	00241				1 ANS	00316	00001	00347		
.	00242		CHANCOL		FO 0*A	00317	06050	50505		
.	00243				-0 MESS2	00320	77777	00336		
.	00244		WHCOL		FO 0*0	00321	24050	50505		
.	00245				11 ANS	00322	00011	00347		
.	00246				0	00323	00000	00000		
.	00247				0 7	00324	00000	00007		
.	00250		ASK		FO 0*A	00325	06050	50505		
.	00251				-0 MESS3	00326	77777	00343		
.	00252		ADDRESS		FO 0*0	00327	24050	50505		
.	00253				11 LOCNUM	00330	00011	00350		
.	00254				0	00331	00000	00000		
.	00255				0 77777	00332	00000	77777		
.	00256		MESS1		FO 0*STOP (Y-NI	00333	30312	42505		
.	00257				-0 -0	00334	51364	12340		
.	00260		MESS2		FO 0*CHANGE O/P (0-7)	00335	77777	77777		
.	00261				-0 -0	00336	10150	62314		
.	00262		MESS3		FO 0*ENTER LOCATION	00337	12052	47425		
.	00263				-0 -0	00340	05512	44167		
.	00264		ANS		RESERVE 1	00341	40050	50505		
.	00265		LOCNUM		RESERVE 1	00342	77777	77777		
.	00266		ACORRBUF		RESERVE 80	00343	12233	11227		
.	00267				-0 -0	00344	05212	41006		
.	00270		KOUTPUTSW		RESERVE 1	00345	31162	42305		
.	00271		PROG		FO 1*PGM	00346	77777	77777		
.	00272		PRINTOUT		U-TAG PRINTAREA+250*PRINTAREA	00347	00000	00000		
.	00273		PRINTAREA		RESERVE 260	00350	00000	00000		
.	00274				RESERVE 1	00351	00000	00000		
.						00361	77777	77777		
.						00362	00000	00000		
.						00363	25142	20505		
.						00364	00416	00365		
.						00365	00000	00000		
.						00417	00000	00000		
.						00420	77777	00000		

END OF LISTING

SPURT OUTPUT NO. 211

S-J-WHITE*06/23/64

OYDMPGGM

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
\$\$\$\$1111	00420	ACQAZIM	63071	ACQLEV	63075		
ACQJ	63427	ACTUAL TIME	63142	AORBUF	00351		
AORESS	00327	AOSCN	63416	AESCN	63417		
AGAIN	00013	ALNGOFFSET	63517	ANS	00347		
ARCOFAZIM	63524	ARCOFOEC	63526	ARCOFELEV	63522		
ARCOFRA	63530	ASK	00325	ASTRODEC	63106		
ASTRORA	63105	AUPEREQUAT	63341	AZELOTIME	63532		
AZELBXSCAN	63500	AZIM	63053	AZIMOFFSET	63512		
AZIMOUT	64000	AZIMOVER	63325	AZIMAO	63442		
AZIMIN	75000	AZMTHSCAN	63501	BOOYSIZE	63462		
BLASTOFF	63146	COCON	63414	CDNTON	00026		
CONTI	00201	CONT2	00216	CONVERTIME	63135		
CORCT	63420	COSORIENT	63065	COSAZEL	63070		
CAZIM	63060	CELBOOY	63113	CELCORPGM	63424		
CELEV	63061	CELTIME	63133	CHANACTV	00076		
CHANCDL	00317	CHCOR	63422	CHPAR	63431		
CRANGE	63057	CRSSOFFSET	63516	OOPPOUT	66000		
OOPPAO	63444	OATANALYZE	63425	OAY	63150		
OEC	63003	OECOFFSET	63515	OECOOT	63010		
OECINSCAN	63505	OELTATEE	63316	OSECONOS	63141		
OUNSFCTTG	63154	OYGINIT	00164	OYOMP	63421		
OYOMPGM	00000	OYOWORK	00002	ELEV	63054		
ELEVOFFSET	63513	ELEVOUT	65000	ELEVAO	63443		
ELEVIN	76000	ELVNSCAN	63502	EQUATOR	63323		
ESTSHIFTEO	63143	EXNAME	63350	FILLBUFFER	00047		
FILLBUFFJR	00063	FIRSTELEV	63104	FIRSTHRU	63153		
FLATTENING	63337	FRAMESIZE	63101	FREQUENCY	63317		
GFOF	00236	GLOG	00067	GEOENLAT	63322		
GEOETLAT	63321	GMTMOU24	63145	GMTSHIFTEO	63144		
HOLONHOL0	63511	HOURLINUTE	63137	HOURREG	63151		
HEIGHT	63326	I010RAO10	66777	I011RAO10	67776		
I012RAO10	67777	I013RAO10	70775	I014RAO10	70776		
I015RAO10	71776	I016RAO10	71777	I017RAO10	72776		
I018RAO10	72777	I019RAO10	73776	I01CELCOR	63000		
I01ENTPNT	63410	I01RAOCOR	63050	I01RAO10	63440		
I01RECR0	63210	I01SYSENT	77576	I01SYSNAM	77676		
I01SYSPAR	63310	I01TIME	63130	I020RAO10	73777		
I021RAO10	74776	I022RAO10	74777	I023RAO10	75776		
I024RAO10	75777	I025RAO10	76775	I026RAO10	76776		
I02CELCOR	63001	I02ENTPNT	63411	I02RAOCOR	63051		
I02RAO10	63441	I02RECR0	63211	I02SYSENT	77577		
I02SYSNAM	77677	I02SYSPAR	63311	I02TIME	63131		
I03RAO10	63776	I04RAO10	63777	I05RAO10	64776		
I06RAO10	64777	I07RAO10	65776	I08RAO10	65777		
I09RAO10	66776	INAZIMAO	63446	I09LEVAO	63447		
INTER	63413	INTERAZIM	72000	INTERCOM	63426		
INTERODPP	74000	INTERELEV	73000	INTERLCKSM	63460		
INTERRANGE	76777	KOUTPUTSW	00362	KMPERNM	63342		
KYBROLEVEL	63110	LOOP1	00241	LOOP2	00223		
LOCNUM	00350	LONGITUDE	63320	LSPERAU	63336		
MOREQ	00031	MOREHROS	00101	MAINSWITCH	63334		

SPURT OUTPUT NO. 211

S. J. WHITE*06/23/64

DYDMPPGM

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
MARKBUFF	00130	MAYBEO	00227	MCPFILLER	71000		
MCPGM	63412	MESS1	00333	MESS2	00336		
MESS3	00343	MILLSTNADO	63451	MINREG	63152		
MSPREQ	63332	NOOUT	00273	NMPERAU	63340		
POLE	63324	PERIOAZIM	63523	PERIOODEC	63525		
PERIODELEV	63521	PERIOORA	63527	PLOTP	63436		
PLANP	63434	PROG	00363	PREVIOUSM	63461		
PRINTOUT	00364	PRINTAREA	00365	PRLOG	63423		
PUTOUT	00256	ROTATEAEBX	63507	ROTATERADN	63506		
ROTATERDBX	63510	RA	63002	RAOFFSET	63514		
RADOT	63007	RAOARMODE	63312	RADCBXSCAN	63503		
RADECOTIME	63531	RADIODEC	63541	RAIOMETER	63102		
RADIORA	63540	RADIUS	63006	RADIUSDOT	63011		
RANGE	63052	RANGEOUT	70777	RANGEADD	63445		
RANGEDOT	63062	RASCTNSCAN	63504	RDMTR	63430		
RDXXX	63433	RECOROSIZE	63112	RECAZIM	67000		
RECELEV	70000	RECFILE	63212	RECRO	63415		
RECRDSWITCH	63155	RELEASESM	63156	SAVEA	00127		
SAZIM	63055	SCELTIME	63134	SDEC	63005		
SECONDS	63140	SELEV	63056	SETRG	00165		
SIDERTIME	63012	SINORIENT	63064	SINAZEL	63066		
SKIP	63331	SRA	63004	SRADTIME	63136		
STOP	00313	STACK	00132	STKBUFF	00131		
SYNCTIMING	63542	SYSCOMREG1	63452	SYSCOMREG2	63453		
SYSCOMREG3	63454	SYSCOMREG4	63455	SYSCOMREG5	63456		
SYSCOMREG6	63457	SYSENTRIES	77600	SYSNAMES	77700		
SYSTAT1	63313	SYSTAT2	63314	SYSTATD	63315		
TIMECORR	63107	TIMEMODE	63103	TIMEP	63435		
TIMETOLO	63520	TRUERANGE	63063	TRUETIME	63132		
TTYSTATUS	63111	TWOCT	00126	TWOSECDOP	63017		
VELOFLIGHT	63335	VIZOEC1	63014	VIZOEC2	63016		
VIZRA1	63013	VIZRA2	63015	WORDBLOCK	00105		
WFORO	63432	WFADO	63450	WFFREQ	63333		
WHOSIO	00300	WHCOL	00321	YORN	00315		
YEAR,MONTH	63147	YRTRAN	63327	ZRTRAN	63330		

END OF LISTING

SPURT OUTPUT NO. 212

S. J. WHITE*06/23/64

OYOMPPGM

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
OYOMPPGM	00000	OYOWORK	00002	AGAIN	00013		
CONTON	00026	MOREQ	00031	FILLBUFFER	00047		
FILLBUFF-JR	00063	GOLOG	00067	CHANACTV	00076		
MOREWROS	00101	WORARLOCK	00105	TWOCT	00126		
SAVEA	00127	MARKBUFF	00130	STRKBUF	00131		
STACK	00132	OYOINIT	00164	STREG	00165		
CONT1	00201	CONT2	00216	LOOP2	00223		
MAYBEO	00227	GOF0	00236	LOOP1	00241		
PUTOUT	00256	NOOUT	00273	WHOSIO	00300		
STOP	00313	YORN	00315	CHANCOL	00317		
WHCOL	00321	ASK	00325	ADDRESS	00327		
MESS1	00333	MESS2	00336	MESS3	00343		
ANS	00347	LOCNUM	00350	AORRBUF	00351		
KOUTPUTSW	00362	PROG	00363	PRINTOUT	00364		
PRINTAREA	00365	AS\$\$\$\$1111	00420	I01CELCOR	63000		
I02CELCOR	63001	RA	63002	OEC	63003		
SRA	63004	SOEC	63005	RAOIUS	63006		
RAOOT	63007	OE00T	63010	RAOIUSOOT	63011		
SIOERTIME	63012	VIZRA1	63013	VIZOEC1	63014		
VIZRA2	63015	VIZOEC2	63016	TWOSEC00P	63017		
I01RACOR	63050	I02RACOR	63051	RANGE	63052		
AZIM	63053	ELEV	63054	SAZIM	63055		
SELEV	63056	CRANGE	63057	CAZIM	63060		
CELEV	63061	RANGE00T	63062	TRUERANGE	63063		
SINORIENT	63064	COSORIENT	63065	SINAZEL	63066		
COSAZEL	63070	ACQAZIM	63071	ACQLEV	63075		
FRAMESIZE	63101	RAIOMETER	63102	TIMEMO0E	63103		
FIRSTELEV	63104	ASTORA	63105	ASTRO0EC	63106		
TIMECORR	63107	KYBROLEVEL	63110	TTYSTATUS	63111		
RECOROSIZE	63112	CELBO0Y	63113	I01TIME	63130		
I02TIME	63131	TRUETIME	63132	CELTIME	63133		
SCELTIME	63134	CONVERTIME	63135	SRAOTIME	63136		
HOURLMINUTE	63137	SECONOS	63140	OSECONOS	63141		
ACTUALTIME	63142	ESTSHIFTE0	63143	GMSHIFTE0	63144		
GMTMOU24	63145	BLASTOFF	63146	YEARMONTH	63147		
DAY	63150	HOUREG	63151	MINREG	63152		
FIRSTTHRU	63153	0UMSECTTG	63154	RECR0SWTCH	63155		
RELEASESW	63156	I01RECR0	63210	I02RECR0	63211		
RECFILE	63212	I01SYSPAR	63310	I02SYSPAR	63311		
RA0ARM0DE	63312	SYSTAT1	63313	SYSTAT2	63314		
SYSTAT0	63315	DELTAEE	63316	FREQUENCY	63317		
LONGITUDE	63320	GE00ETLAT	63321	GE0CENLAT	63322		
EQUATOR	63323	POLE	63324	AZIM0VER	63325		
HEIGHT	63326	YRTRAN	63327	ZRTRAN	63330		
SKIP	63331	MSFREQ	63332	WFFREQ	63333		
MAINSWITCH	63334	VELOFLIGHT	63335	LSPERAU	63336		
FLATTENING	63337	NMPERAU	63340	APUPEREQUAT	63341		
KMPERNM	63342	EXPNAME	63350	I01ENTPNT	63410		
I02ENTPNT	63411	MCPGM	63412	INTER	63413		
COCON	63414	RECR0	63415	A0SCN	63416		
AESCN	63417	CORCT	63420	OY0MP	63421		

OYOMPPGH		S..J.WHITE*06/23/64	
LABEL	LOC	LABEL	LOC
CHCOR	63422	PRLDG	63423
DATANALYZE	63425	INTERCDM	63426
RDMPTR	63430	CHPAR	63431
RDXXX	63433	PLANP	63434
PLDTP	63436	ID1RADIO	63440
AZIMADO	63442	ELEVADO	63443
RANGEADD	63445	INAZIMADO	63446
WFAO	63450	MILLSTNADD	63451
SYSCDMREG2	63453	SYSCDMREG3	63454
SYSCDMREG5	63456	SYSCDMREG6	63457
PREVIDUSTM	63461	BODYSIZE	63462
AZMTHSCAN	63501	ELVTNSCAN	63502
RASCTNSCAN	63504	DECLINSCAN	63505
ROTATEAEBX	63507	ROTATEROBX	63510
AZIMOFFSET	63512	ELEVDFSET	63513
DECOFFSET	63515	CRSSOFFSET	63516
TIMETHDLD	63520	PERIDDELEV	63521
PERIODAZIM	63523	ARCDFAZIM	63524
ARCOFDEC	63526	PERIODRA	63527
RADECGTIME	63531	AZELDTIME	63532
RADIODEC	63541	SYNCTIMING	63542
ID6RADIO	63777	AZIMOUT	64000
ID6RADIO	64777	ELEVOUT	65000
ID6RADIO	65777	DDPPOUT	66000
ID10RADIO	67777	RECAZIM	67000
ID12RADIO	67777	RECELEV	70000
ID14RADIO	70776	RANGEOUT	70777
ID15RADIO	71776	ID16RADIO	71777
ID17RADIO	72776	ID18RADIO	72777
ID19RADIO	73776	ID20RADIO	73777
ID21RADIO	74776	ID22RADIO	74777
ID23RADIO	75776	ID24RADIO	75777
ID25RADIO	76775	ID26RADIO	76776
ID1SYSNT	77576	ID2SYSNT	77577
ID1SYSNAM	77676	ID2SYSNAM	77677
		CELCDMPGH	63424
		ACQUI	63427
		WFDRO	63432
		TIMEP	63435
		ID2RAOIO	63441
		DOPPADO	63444
		INELEVADO	63447
		SYSCDMREG1	63452
		SYSCDMREG4	63455
		INTERLCKSM	63460
		AZELBXCAN	63500
		RADCBCXSCAN	63503
		ROTATERADN	63506
		HDLONHDLD	63511
		RAOFFSET	63514
		ALNGDFSET	63517
		ARCOFELEV	63522
		PERIDODEC	63525
		ARCOFRA	63530
		RAOIDRA	63540
		ID3RADIO	63776
		ID5RADIO	64776
		ID7RADIO	65776
		ID9RADIO	66776
		ID11RADIO	67776
		ID13RADIO	70775
		MCPFILLER	71000
		INTERAZIM	72000
		INTERELEV	73000
		INTEROOPP	74000
		AZIMIN	75000
		ELEVIN	76000
		INTERRANGE	76777
		SYSENTRIES	77600
		SYSNAMES	77700

END OF LISTING

CARD	LI	IO	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	0000		FXAZEL	PROGRAM MATHIASEN*04/20/65	0000				
	0001		FXANE	U-TAG MSTART*ISTART	0001		0002	00005	
	0002			FO 1*FXANE	0001		13350	62312	BUFFER LOOP FIXEO AZ-EL
	0003			COMMENT ANTENNA					PROGRAM
	0004		MSTART	ENTRY	0002		61000	00000	
	0005			RPL Y+1*(MSTART)	0003		36010	00002	
	0006			EXIT	0004		61010	00002	
	0007			COMMENT INITIALIZATION					SECTION
	0010		ISTART	ENTRY	0005		61000	00000	INITIALIZATION SECTION
	0011			RPL Y+1*(ISTART)	0006		36010	00005	
	0012			ENT A*(KYBROLEVEL1*AZERO	0007		11420	63110	OO WE USE CONSOLE TYPEWRITER
	0013			EXIT	0010		61010	00005	NO
	0014			ENT A*(L*(SYSTAT11*ANEQ	0011		11750	63313	SKIP IF NOT IN ANTENNA BUFFER
	0015			JP HOLOUP	0012		61000	00024	MODE
	0016			RJP U(INTERCOM1	0013		65020	63426	KEYBOARD/TYPERWRITER COMMUNICAT
	0017			U-TAG QUESTION1*ANSWER1	0014		01106	00115	IONS
	0020			ENT A*(AZIMAOOR1	0015		11030	00221	AZIMUTH INPUT
	0021			RJP OEGTOREV	0016		65000	00062	
	0022			RJP U(INTERCOM1	0017		65020	63426	
	0023			U-TAG QUESTION2*ANSWER2	0020		01121	00130	ELEVATION INPUT
	0024			ENT A*(ELEVAOOR1	0021		11030	00222	
	0025			RJP OEGTOREV	0022		65000	00062	
	0026			EXIT	0023		61010	00005	WHEN COMPUTER IS IN BUFFER MOO
	0027			COMMENT INITIALIZATION					E
	0030		HOLOUP	RJP U(INTERCOM1	0024		65020	63426	KEYBOARD/TYPERWRITER COMMUNICAT
	0031			U-TAG QUESTION3*0	0025		01134	00000	IONS
	0032			RJP U(INTERCOM1	0026		65020	63426	
	0033			U-TAG QUESTION4*0	0027		01151	00000	
	0034			RJP U(INTERCOM1	0030		65020	63426	
	0035			U-TAG MORON*0	0031		01164	00000	
	0036		HGLOUP2	RJP U(INTERCOM1	0032		65020	63426	
	0037			O ANSWER3	0033		00000	00147	
	0040			ENT Q*7700000000	0034		10030	00226	MASK FOR CHARACTER INPUT
	0041			ENT A*05050505	0035		11030	00227	SPACES FOR REMAINING 4 CHARACT
	0042			RPL A*LP*(CHOICE1*AP0S	0036		45630	00220	ERS
	0043			JP ERROR	0037		61000	00057	SET LAST 4 CHAR. OF INPUT WORD
	0044			STR A*Q	0040		15000	00000	TO SPACES
	0045			SUB A*(IA1*ANOT	0041		21530	00216	ERROR IF FIRST CHARACTER NOT L
	0046			JP ACCEPTAZIM	0042		61000	00052	ETTER
	0047			SUB Q*(IE1*QZERO	0043		27430	00217	
	0050			JP ERROR	0044		61000	00057	
	0051			RJP U(INTERCOM1	0045		65020	63426	
	0052			O ANSWER2	0046		00000	00130	
	0053			ENT A*(ELEVAOOR1	0047		11030	00222	
	0054			RJP OEGTOREV	0050		65000	00062	

CARD	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
	00055	ACCEPTAZIM	JP HOLOUP2	00051	61000	00032		
	00056		RJP U(INTERCOM1	00052	65020	63426		
	00057		O ANSWER1	00053	00000	00115		
	00060		ENT A*W(AZIMAOOR1	00054	11030	00221		
	00061		RJP OEGTOREV	00055	65000	00062		
	00062		JP HOLOUP2	00056	61000	00032		
	00063	ERROR	RJP U(INTERCOM1	00057	65020	63426		
	00064		U-TAG QUESTIONS	00060	00202	00000		
	00065		JP HOLOUP2	00061	61000	00032		
	00066	OEGTOREV	ENTRY	00062	61000	00000		
	00067		STR A*L(OESTINY1	00063	15010	00102		ADDRESS OF ANGLE IN REVOLUTION
	00070		RSH A*150	00064	02000	00017		S
	00071		STR A*L(OIVIOENO1	00065	15010	00070		ADDRESS OF INPUT ANGLE IN OEGREES
	00072		STR A*L(SIGNCHECK)	00066	15010	00100		
	00073		CL A*	00067	11000	00000		SET A TO 0
	00074	OIVIOENO	ENT Q*W(O1*QPOS	00070	10230	00000		IS OIVIOENO POSITIVE
	00075		A00 Q*W(O360B201*QNEG	00071	26730	00104		NO. A00 360 OEGREES. IS IT POSITIVE
	00076		JP \$+2	00072	61000	00074		YES.
	00077		JP \$-2	00073	61000	00071		NO.
	00100		LSH AQ*7	00074	07000	00007		OEGREES B27
	00101		OIV 3600	00075	23000	00550		REVOLUTIONS B27
	00102		SUB A*1B00*ANEQ	00076	21700	00264		IS REMAINDER GREATER THAN OIVI
	00103		A00 Q*1	00077	26000	00001		SOR/2
	00104	SIGNCHECK	ENT A*W(O1*APOS	00100	11630	00000		YES. ROUND OFF QUOTIENT.
	00105		SUB Q*W(REV1B271	00101	27030	00105		WAS ORIGINAL OIVIOENO NEGATIVE
	00106	OESTINY	STR Q*W(O1	00102	14030	00000		YES. MAKE QUOTIENT NEGATIVE
	00107		EXIT	00103	61010	00062		STORE REVOLUTIONS B27
	00110	0360B20	26400000000	00104	26400	00000		OEC 360.B20 36
	00111	REV1B27	10000000000	00105	10000	00000		OEC 360.B20 36
	00112	QUESTION1	F0 1*A	00106	06050	50505		OEC 1.B27 1
	00113	STATEMENT1	-0 STATEMENT1	00107	77777	00110		REVOLUTION
	00114	STATEMENT1	F0 4*AZIMUTH (OEGREES1	00110	06371	62232		
	00115		-0	00111	31150	55111		
	00116	ANSWER1	F0 1*X20	00112	12142	71212		
	00117		10 AZIMUTH	00113	30400	50505		
	00120		00000000000	00115	35622	40505		
	00121		26400000000	00116	00010	00223		
	00122	QUESTION2	F0 1*A	00117	00000	00000		OEC 0B20
	00123	STATEMENT2	-0 STATEMENT2	00120	26400	00000		OEC 360.B20
	00124	STATEMENT2	F0 4*ELEVATION (OEGREES1	00121	06050	50505		
				00122	77777	00123		
				00123	12211	23306		
				00124	31162	42305		
				00125	51111	21427		
				00126	12123	04005		

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00125	-0	00127	77777	77777		
.	00126	F0 1*X20	00130	35622	40505		
.	00127	I0 ELEVATION	00131	00010	00224		
.	00130	0000000000	00132	00000	00000		OEC
.	00131	0550000000	00133	05500	00000		OEC
.	00132	F0 QUESTION3	00134	06050	50505		0820
.	00133	F0 1*A	00135	77777	00136		90.820
.	00134	-0 STATEMENTS3					
.		F0 80*AZIMUTH (DEGREES) PREFIXING WITH00136	00135	77777	00136		
.		A, OR					
.			00137	31150	55111		
.			00140	12142	71212		
.			00141	30400	52527		
.			00142	12131	63516		
.			00143	23140	53416		
.			00144	31150	50656		
.			00145	05242	70505		
.			00146	77777	77777		
.	00135	-0	00147	21610	50505		
.	00136	F0 1*L1	00150	00001	00220		
.	00137	O1 CHOICE	00151	06050	50505		
.	00140	F0 QUESTION4	00152	77777	00153		
.	00141	-0 STATEMENTS4					
.	00142	F0 80*ELEVATION (DEGREES) PREFIXING WITH00153	00152	77777	00153		
.		TH E.					
.			00154	31162	42305		
.			00155	51111	21427		
.			00156	12123	04005		
.			00157	25271	21316		
.			00160	35162	31405		
.			00161	34163	11505		
.			00162	12750	50505		
.	00143	-0	00163	77777	77777		
.	00144	F0 1*A	00164	06050	50505		
.	00145	-0 IOIOT	00165	77777	00166		
.	00146	F0 110*A CARRIAGE RETURN IS NECESSARY AFTER PREFIXED LETTER.	00166	06051	00627		
.			00167	27160	61412		
.			00170	05271	23132		
.			00171	27230	51630		
.			00172	05231	21012		
.			00173	30300	62736		
.			00174	05061	33112		
.			00175	27052	52712		
.			00176	13163	51211		
.			00177	05211	23131		
.			00200	12277	50505		
.			00201	77777	77777		
.	00147	-0	00202	06050	50505		
.	00150	F0 1*A	00203	77777	00204		
.	00151	-0 STATEMENTS5	00204	36243	20515		
.	00152	F0 90*YOU HAVE TYPED ILLEGAL PREFIX. TRY AGAIN.	00205	06331	20531		
.			00206	36251	21105		
.			00207	16212	11214		

CAROS	LI 10 LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00153	-0	00210	06210	52527		
.	00154 A	FO 1*A	00211	12131	63575		
.	00155 E	FO 1*E	00212	05053	12736		
.	00156 CHOICE	0	00213	05061	40616		
.			00214	23750	50505		
.			00215	77777	77777		
.			00216	06050	50505		
.			00217	12050	50505		
.			00220	00000	00000		
.			00221	00223	63053		
.			00222	00224	63054		
.			00223	00000	00000		RE
.			00224	00000	00000		RE
.			00225	00000	00000		
.			00226	77000	00000		
.			00227	00050	50505		

CONTAINS A FOR AZIMUTH OR E FO
R ELEVATION

OC EC OB20 RE
QUESTED AZIMUTH IN O
OC EC OB20 RE
QUESTED ELEVATION IN

END OF LISTING

MATHIASSEN*04/20/65

FXAZEL

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
A	00216	A\$\$\$\$1111	00226	A\$\$\$\$1112	00227		
ACCEPTAZIM	00052	ACQAZIM	63071	ACQELLEV	63075		
ACQUI	63427	ACTUAL TIME	63142	AOSCN	63416		
AESCN	63417	ALNGOFFSET	63517	ANSWER1	00115		
ANSWER2	00130	ANSWER3	00147	ARCOFAZIM	63524		
ARCOFDEC	63526	ARCOFELEV	63522	ARCOFRA	63530		
ASTRODEC	63106	ASTRORA	63105	AUPEREQUAT	63341		
AZELOTIME	63532	AZELBXSCAN	63500	AZIM	63053		
AZIMOFFSET	63512	AZIMOUT	64000	AZIMOVER	63325		
AZIMADD	63442	AZIMADDR	00221	AZIMIN	75000		
AZIMUTH	00223	AZMTHSCAN	63501	BODYSIZE	63462		
BLASTOFF	63146	COCN	63414	CONVERTIME	63135		
CORCT	63420	COSORIEN	63065	COSAZEL	63070		
CAZIM	63060	CELBODY	63113	CELCOMPGM	63424		
CELEV	63061	CELTIME	63133	CHOICE	00220		
CHCOR	63422	CHPAR	63431	CRANGE	63057		
CRSSOFFSET	63516	OPOPUT	66000	OOPPADO	63444		
D360820	00104	DATANALYZE	63425	DAY	63150		
DEC	63003	DECOFFSET	63515	DECOOT	63010		
DECLINSCAN	63505	DEGTREY	00062	DELTATEE	63316		
DESTINY	00102	DIVIDENO	00070	OSECONDS	63141		
DUMSECTTG	63154	DYDMP	63421	E	00217		
ELEV	63054	ELEVOFFSET	63513	ELEVOUT	65000		
ELEVADD	63443	ELEVADDR	00222	ELEVATION	00224		
ELEVIN	76000	ELVTNSCAN	63502	EQUATOR	63323		
ERROR	00057	ESTSHIFTED	63143	EXPNAME	63350		
FIRSTELEV	63104	FIRSTHRU	63153	FLATTENING	63337		
FRAMESIZE	63101	FREQUENCY	63317	FXANE	00000		
GEOENLAT	63322	GEODETLAT	63321	GMTMODU24	63145		
GMTSHIFTED	63144	HOLDNOHOLD	63511	HOLDUP	00024		
HOLDUP2	00032	HOURLMINUTE	63137	HOUREG	63151		
HEIGHT	63326	I01ORADIO	66777	ID11RADIO	67776		
ID12RADIO	67777	ID13RADIO	70775	ID14RADIO	70776		
ID15RADIO	71776	ID16RADIO	71777	ID17RADIO	72776		
ID18RADIO	72777	ID19RADIO	73776	ID1CELCOR	63000		
ID1ENTPNT	63410	ID1RADCOR	63050	ID1RADIO	63440		
ID1RECRD	63210	ID1SYSENT	77576	ID1SYSNAM	77676		
ID1SYSPAR	63310	I01TIME	63130	ID20RADIO	73777		
ID21RADIO	74776	ID22RADIO	74777	ID23RADIO	75776		
ID24RADIO	75777	ID25RADIO	76775	ID26RADIO	76776		
ID2CELCOR	63001	ID2ENTPNT	63411	ID2RADCOR	63051		
ID2RADIO	63441	ID2RECRD	63211	ID2SYSENT	77577		
ID2SYSNAM	77677	ID2SYSPAR	63311	ID2SYTIME	63131		
ID3RADIO	63776	ID4RADIO	63777	ID5RADIO	64776		
ID6RADIO	64777	ID7RADIO	65776	ID8RADIO	65777		
ID9RADIO	66776	ID10T	00166	INAZIMADD	63446		
INELEVADD	63447	INTER	63413	INTERAZIM	72000		
INTERCOM	63426	INTERDOPP	74000	INTERELEV	73000		
INTERLCKSH	63460	INTERRRANGE	76777	ISTART	00005		
KMPERNM	63342	KYBRLEVEL	63110	LONGITUOE	63320		
LSPERAU	63336	MORON	00164	MAINSWITCH	63334		

FXAZEL		MATHIASEN*04/20/65	
LABEL	LOC	LABEL	LOC
MCPFILLER	71000	MCPGM	63412
MINREG	63152	MSFREQ	63332
NMPERAU	63340	POLE	63324
PERIOOEC	63525	PERIOOLEV	63521
PLOP	63436	PLANP	63434
PRLOG	63423	QUESTION1	00106
QUESTION3	00134	QUESTION4	00151
ROTATFAEBX	63507	ROTATERAON	63506
RA	63002	RAOFFSET	63514
RAOARMODE	63312	RAOQBXSAN	63503
RAIODEC	63541	RAOIONETER	63102
RAIUS	63006	RAIUSOOT	63011
RANGEOUT	70777	RANGEA00	63445
RASCTNSCAN	63504	ROMTR	63430
RECOROSIZF	63112	RECAZIM	67000
RECFILE	63212	RECRO	63415
RELEASESW	63156	REVIB27	00105
SECLTIME	63134	SOEC	63005
SELEV	63056	SIOERTIME	63012
SINORIENT	63064	SINAZEL	63066
SRA	63004	SRAOTIME	63136
STATEMENT2	00123	STATEMENT3	00136
STATEMENT5	00204	SYNCTIMING	63542
SYSCOMREG2	63453	SYSCOMREG3	63454
SYSCOMREG5	63456	SYSCOMREG6	63457
SYSNAMES	77700	SYSTAT1	63313
SYSTATO	63315	TIMECORR	63107
TIMEP	63435	TIMETOHOLO	63520
TRUETIME	63132	TTYSTATUS	63111
VELOFLIGHT	63335	VIZOEC1	63014
VIZRA1	63013	VIZRA2	63015
WFA00	63450	WFFREQ	63333
YRTRAN	63327	ZRTRAN	63330

LABEL	LOC
MILLSTNA00	63451
MSTART	00002
PERIOOAZIM	63523
PERIOORA	63527
PREVIOUS1M	63461
QUESTION2	00121
QUESTIONS	00202
ROTATEROBX	63510
RAO0T	63007
RAOECOTIME	63531
RAOIORA	63540
RANGE	63052
RANGE00T	63062
ROXXX	63433
RECELEV	70000
RECROSWTCH	63155
SAZIM	63055
SECONOS	63140
SIGNCHECK	00100
SKIP	63331
STATEMENT1	00110
STATEMENT4	00153
SYSCOMREG1	63452
SYSCOMREG4	63455
SYSENTRIES	77600
SYSTAT2	63314
TIMEMO0E	63103
TRUERANGE	63063
TWOSECOOP	63017
VIZOEC2	63016
WFORO	63432
YEARMONTH	63147

END OF LISTING

FXAZEL		MATHIASSEN*04/20/65			
LABEL	LOC	LABEL	LOC	LABEL	LOC
FXANE	00000	MSTART	00002	I START	00005
HOLOUP	00024	HOLDUP2	00032	ACCEPTAZIM	00052
ERROR	00057	DEGTORREV	00062	OIVIOEND	00070
SIGNCHECK	00100	QESTINY	00106	D360820	00104
REV1827	00105	QUESTION1	00121	STATEMENT1	00110
ANSWER1	00115	QUESTION2	00134	STATEMENT2	00123
ANSWER2	00130	QUESTION3	00151	STATEMENT3	00136
ANSWER3	00147	QUESTION4	00166	STATEMENT4	00153
MORON	00164	TOIOT	00216	QUESTIONS	00202
STATEMENTS5	00204	A	00221	E	00217
CHOICE	00220	AZIMAOOR	00224	ELEVAOOR	00222
AZIMUTH	00223	ELEVATION	00227	A\$\$\$\$1111	00226
A\$\$\$\$1112	00227	TOICELCOR	63000	IO2CELCOR	63001
RA	63002	DEC	63003	SRA	63004
SDEC	63005	RAIUS	63006	RAOOT	63007
DECOOT	63010	RADIUSOOT	63011	SIDERTIME	63012
VIZRA1	63013	VIZOEC1	63014	VIZRA2	63015
VIZOEC2	63016	TWSECOOP	63017	IOIRAOCOR	63050
IO2RAOCOR	63051	RANGE	63052	AZIM	63053
ELEV	63054	SAZIM	63055	SEV	63056
CRANGE	63057	CAZIM	63060	CEV	63061
RANGEOOT	63062	TRUERANGE	63063	SINORIENT	63064
COSORIENT	63065	SINAZEL	63066	COSAZEL	63070
ACQAZIM	63071	ACQEV	63075	FRAMESIZE	63101
RADIOHETER	63102	TIMEMODE	63103	FIRSTELEV	63104
ASTORA	63105	ASTRODEC	63106	TIMECORR	63107
KYBROLEVEL	63110	TYSTATUS	63111	RECOROSIZE	63112
CELBOY	63113	IOITIME	63130	IO2TIME	63131
TRUETIME	63132	CELTIME	63133	SCELTIME	63134
CONVERTIME	63135	SRAOTIME	63136	HOURLMINUTE	63137
SECONOS	63140	OSECONOS	63141	ACTUALTIME	63142
ESTSHIFTED	63143	GMTSHIFTED	63144	GMTMOOU24	63145
BLASTOFF	63146	YEARMONTH	63147	DAY	63150
HOUREG	63151	MINREG	63152	FIRSTTHRU	63153
OUMSECTTG	63154	RECROSSWTC	63155	RELEASESM	63156
IO1REGD	63210	IO2REGRO	63211	RECFILE	63212
IO1SYSAPAR	63310	IO2SYSAPAR	63311	RADARMODE	63312
SYSTAT1	63313	SYSTAT2	63314	SYSTATO	63315
DELTAEE	63316	FREQUENCY	63317	LONGITUOE	63320
GEODETLAT	63321	GEOCENLAT	63322	EQUATOR	63323
POLE	63324	AZIMOVER	63325	HEIGHT	63326
YRTRAN	63327	ZRTRAN	63330	SKIP	63331
MSFREQ	63332	WFFREQ	63333	MAINSWITCH	63334
VELOFLIGHT	63335	LSPERAU	63336	FLATTENING	63337
NMPERAU	63340	AUPEREQUAT	63341	KMPERNM	63342
EXPNAME	63350	IO1ENTPNT	63410	IO2ENTPNT	63411
HCPGM	63412	INTER	63413	COCON	63414
RECRO	63415	AOSCN	63416	AESCN	63417
CORCT	63420	OYOMP	63421	CHCOR	63422
PRLOG	63423	CELCOMPGM	63424	DATANALYZE	63425
INTERCOM	63426	ACQUI	63427	RDTR	63430

MATHIASEN*04/2D/65

FXAZEL

LABEL	LDC	LABEL	LDC	LABEL	LDC
CHPAR	63431	WFRD	63432	RDXX	63433
PLANP	63434	TIMEP	63435	PLOTP	63436
ID1RADID	63440	ID2RADID	63441	AZIMADD	63442
ELEVADD	63443	DPPADD	63444	RANGEADD	63445
INAZIMADD	63446	INELEVADD	63447	WFADD	63450
MILLSTNADD	63451	SYSCDMREG1	63452	SYSCDMREG2	63453
SYSCDMREG3	63454	SYSCDMREG4	63455	SYSCDMREG5	63456
SYSCDMREG6	63457	INTERLCKSW	63460	PREVIDUSTH	63461
BODYSIZE	63462	AZELBXSCAN	63500	AZMTHSCAN	63501
ELVTNSCAN	63502	RADCBXSCAN	63503	RASCNSCAN	63504
DECLINSCAN	63505	RTATERADN	63506	RDTEAEABX	63507
RTATERDBX	63510	HOLDNOHOLD	63511	AZIMDFSET	63512
ELEVOFFSET	63513	RADFFSET	63514	DECDFFSET	63515
CRSSOFFSET	63516	ALNGDFFSET	63517	TIMEHOLD	63520
PERIDDELEV	63521	ARCDFFLEV	63522	PERIDDAZIM	63523
ARCOFAZIM	63524	PERIODDEC	63525	ARCFDEC	63526
PERIDRA	63527	ARCOFRA	63530	RADEGDTIME	63531
AZELDTIME	63532	RADIDRA	63540	RADIDDEC	63541
SYNCTIMING	63542	ID3RADID	63776	ID4RADID	63777
AZIMDUT	64000	ID5RADID	64776	ID6RADID	64777
ELEVOUT	65000	ID7RADID	65776	ID8RADID	65777
DPPDUT	66000	ID9RADID	66776	ID10RADID	66777
RECAZIM	67000	ID11RADID	67776	ID12RADID	67777
RECELEV	70000	ID13RADID	70775	ID14RADID	70776
RANGEOUT	70777	MCPFILLER	71000	ID15RADID	71776
ID16RADID	71777	INTERAZIM	72000	ID17RADID	72776
ID18RADID	72777	INTERELEV	73000	ID19RADID	73776
ID20RADID	73777	INTERDPP	74000	ID21RADID	74776
ID22RADID	74777	AZIMIN	75000	ID23RADID	75776
ID24RADID	75777	ELFVIN	76000	ID25RADID	76775
ID26RADID	76776	INTERRANGE	76777	ID26RADID	77576
ID27RADID	77577	SYSENTRIES	77600	ID27RADID	77576
ID28RADID	77677	SYSNAMES	77700	ID28RADID	77676
ID29RADID	77777			ID29RADID	

END OF LISTING

CARD	LINE	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	0000	FXRAOEC	PROGRAM MATHIASEN*2/17/65					
.	0001	FXRAOEC	U-TAG MSTART*ISTART	0000	0002	0000		
.	0002		FO 1*FRAOC	0001	13270	61110		BUFFER LOOP FIXEO RT. ASCE
.	0003		COMMENT ANTENNA					NSION-DECLINATION PGM
.	0004	MSTART	ENTRY	0002	61000	00000		
.	0005		RPL Y+1*L(MSTART)	0003	36010	00002		INDEX RETURN POINT
.	0006		EXIT	0004	61010	00002		
.	0007		COMMENT INITIALIZATION					SECTION
.	0010	ISTART	ENTRY	0005	61000	00000		INITIALIZATION SECTION
.	0011		RPL Y+1*L(ISTART)	0006	36010	00005		
.	0012		ENT A*(KYBROLEVEL)*AZERO	0007	11420	63110		OO WE USE CONSOLE TYPEWRITER
.	0013		EXIT	0010	61010	00005		NO
.	0014		ENT A*LX(SYSTAT1)*ANEG	0011	11750	63313		SKIP IF NOT IN ANTENNA BUFFER
.	0015		JP HOLOUP	0012	61000	00026		MODE
.	0016		CL B3*	0013	12300	00000		
.	0017	NEXTQUERY	ENT A*B3	0014	11003	00000		
.	0020		LSH A*1	0015	06000	00001		
.	0021		A00 A*QUESTION1	0016	20000	00233		
.	0022		STR A*(QUESTMARK1	0017	15020	00021		
.	0023		RJP U(INTERCOM1	0020	65020	63426		
.	0024	QUESTMARK	O O	0021	00000	00000		
.	0025		RJP L(WHITHER+83)	0022	65013	00072		
.	0026		BSK B3*5	0023	71300	00005		
.	0027		JP NEXTQUERY	0024	61000	00014		
.	0030		EXIT	0025	61010	00005		
.	0031		COMMENT INITIALIZATION					WHEN COMPUTER IS IN BUFFER MOO
.	0032	HOLOUP	RJP U(INTERCOM)	0026	65020	63426		E
.	0033		U-TAG QUESTION3*0	0027	00314	00000		KEYBOARD/TYPewriter COMMUNICAT
.	0034		RJP U(INTERCOM1	0030	65020	63426		IONS
.	0035		U-TAG QUESTION4*0	0031	00330	00000		
.	0036		RJP U(INTERCOM1	0032	65020	63426		
.	0037		U-TAG QUESTION6*0	0033	00357	00000		
.	0040		RJP U(INTERCOM)	0034	65020	63426		
.	0041		U-TAG QUESTION7*0	0035	00372	00000		
.	0042		RJP U(INTERCOM)	0036	65020	63426		
.	0043		U-TAG QUESTION8*0	0037	00405	00000		
.	0044		RJP U(INTERCOM)	0040	65020	63426		
.	0045		U-TAG QUESTION9*0	0041	00421	00000		
.	0046		RJP U(INTERCOM1	0042	65020	63426		
.	0047		U-TAG MORON*0	0043	00434	00000		
.	0050	HOLOUP2	RJP U(INTERCOM)	0044	65020	63426		
.	0051		O ANSWER3	0045	00000	00465		
.	0052		ENT Q*7700000000	0046	10030	00634		MASK FOR CHARACTER INPUT
.	0053		ENT A*0505050505	0047	11030	00635		SPACES FOR REMAINING 4 CHARACT
.	0054		RPL A*LP*(CHOICE)*APOS	0050	45630	00467		SET LAST 4 CHAR. OF INPUT WORD
.	0055		JP ERROR	0051	61000	00230		TO SPACES
.								ERROR IF FIRST CHARACTER NOT L
.								ETTER

CARDS	LI	ID	LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	CC056			CL B3*	00052	12300	00000		
.	C0057		NEXTLETTER	ENT A*(CHOICE)	00053	11030	00467		
.	C0060			SUB A*(FDA+B3)*ANOT	00054	21533	00063		
.	CC061			JP ACCEPTA00	00055	61000	00061		
.	CC062			BSK R3*6	00056	71300	00006		
.	CC063			JP NEXTLETTER	00057	61000	00053		
.	CC064			JP ERROR	00060	61000	00230		
.	CC065		ACCEPTA00	RJP L(WHITHER+B3)	00061	65013	00072		
.	CC066			JP HOLDUP2	00062	61000	00044		
.	CC067		FOA	FD 1*A	00063	06050	50505		
.	CC070			FD 1*D	00064	11050	50505		
.	CC071			FD 1*R	00065	27050	50505		
.	CC072			FD 1*B	00066	07050	50505		
.	CC073			FO 1*E	00067	12050	50505		
.	CC074			FO 1*S	00070	30050	50505		
.	CC075			FD 1*N	00071	23050	50505		
.	CC076		WHITHER	0 ACCEPTA	00072	00000	00103		
.	CC077			0 ACCEPTDEC	00073	00000	00112		
.	CC100			0 ACCEPTRHO	00074	00000	00134		
.	CC101			0 ACCRA00T	00075	00000	00142		
.	CC102			0 ACCDECOOT	00076	00000	00155		
.	CC103			0 ACCRHODOT	00077	00000	00164		
.	CC104		NOMORE	0 NOMORE	00100	00000	00101		
.	CC105			ENTRY L(I START)	00101	61000	00000		
.	CC106			JP	00102	61010	00005		
.	CC107		ACCEPTRA	ENTRY	00103	61000	00000		
.	CC110			RJP U(INTERCOM)	00104	65020	63426		
.	CC111			0 ANSWER1	00105	00000	00452		RIGHT ASCENSION INPUT IN DEGREES
.	CC112			ENT A*(RAADDR)	00106	11030	00111		ES
.	CC113			RJP OEGTOREY	00107	65000	00172		RE
.	CC114			EXIT	00110	61010	00103		
.	CC115		RAADDR	U-TAG RIGHTASC*RA	00111	00456	63002		
.	CC116		ACCEPTDEC	ENTRY	00112	61000	00000		
.	CC117			RJP U(INTERCOM)	00113	65020	63426		DECLINATION INPUT IN DEGREES
.	CC120			0 ANSWER2	00114	00000	00460		
.	CC121			ENT A*(OECADOR)	00115	11030	00131		
.	CC122			RJP OEGTOREY	00116	65000	00172		RE
.	CC123			MUL W(TWOPI)	00117	22030	00132		CONVERT TO REVOLUTIONS AND STO
.	CC124			LSH A*3	00120	06000	00003		RADIANS B23
.	CC125			ENT Q*26D	00121	10000	00032		B26
.	CC126			RJP COS	00122	65000	00514		COS(DECLINATION) B2B
.	CC127			STR A*(COSOSEC)	00123	15030	00133		
.	CC130			ENT Q*(PURERAOOT)	00124	10030	00154		D(ALPHA)/OT B37,RAOIAN/SEC
.	CC131			MUL W(COSOSEC)	00125	22030	00133		RE
.	CC132			LSH A*2	00126	06000	00002		CONVERT TO REVOLUTIONS AND STO
.	CC133			STR A*(RADOT)	00127	15030	63007		RADIANS B23
.	CC134			EXIT	00130	61010	00112		COS(DECLINATION) B2B
.	CC135		OECADOR	U-TAG DECLIN*OEC	00131	00464	63003		D(ALPHA)/OT B37,RAOIAN/SEC
.	CC136		TWOPI	3110375523	00132	31103	75523		DECLINATION INPUT AND OUTPUT

SPURT OUTPUT NO. 210
MATHIASSEN*2/17/65

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00137	COSOE C	2000000000	00133	20000	00000		PI OEC S(OECLINATION) CO
.	00140	ACCEPTRHO	ENTRY	00134	61000	00000		
.	00141		RJP U(INTERCOM)	00135	65020	63426		RADIUS INPUT IN NAUTICAL MILES OR A.U.
.	00142		O ANSWER4	00136	00000	00470		
.	00143		ENT A*(MYRAOIUS)	00137	11030	00474		
.	00144		STR A*(RAOIUS)	00140	15030	63006		
.	00145		EXIT	00141	61010	00134		
.	00146	ACCRAO0T	ENTRY	00142	61000	00000		
.	00147		RJP U(INTERCOM)	00143	65020	63426		O(ALPHA)/OT INPUT IN DEGREES/S EC
.	00150		O ANSWERS	00144	00000	00475		
.	00151		ENT A*(RAOOTAOR)	00145	11030	00153		
.	00152		RJP OEGTORAO	00146	65000	00216		CONVERT TO RADIANS/SEC AND STO
.	00153		MUL W(COSOE C)	00147	22030	00133		RE (O(ALPHA)/OT\$COS(OE C) B65 B37
.	00154		LSH A*2	00150	06000	00002		
.	00155		STR A*(RAO0T)	00151	15030	63007		
.	00156		EXIT	00152	61010	00142		
.	00157	RAOOTAOR	U-TAG MYRAO0T*PURA00T	00153	00501	00154		OEC ALPHA)/OT* RADIANS/S
.	00160	PURA00T	0000000000	00154	00000	00000		O(DELTA)/OT INPUT IN DEGREES/SEC
.	00161	ACC0ECD0T	ENTRY	00155	61000	00000		
.	00162		RJP U(INTERCOM)	00156	65020	63426		
.	00163		O ANSWER6	00157	00000	00502		
.	00164		ENT A*(OEC00TAOR)	00160	11030	00163		
.	00165		RJP OEGTORAO	00161	65000	00216		CONVERT TO RADIANS/SEC AND STO
.	00166		EXIT	00162	61010	00155		RE
.	00167	OEC00TAOR	U-TAG MYOEC00T*OEC00T	00163	00506	63010		O(DELTA)/OT INPUT AND OUTPUT
.	00170	ACCRH000T	ENTRY	00164	61000	00000		
.	00171		RJP U(INTERCOM)	00165	65020	63426		O(RHO)/OT INPUT IN N.M./SEC
.	00172		O ANSWER7	00166	00000	00507		
.	00173		ENT A*(MYRH000T)	00167	11030	00513		
.	00174		STR A*(RAOIS00T)	00170	15030	63011		
.	00175		EXIT	00171	61010	00164		
.	00176	OEGTOREV	ENTRY	00172	61000	00000		ADDRESS OF ANGLE IN REVOLUTION
.	00177		STR A*(OESTINY)	00173	15010	00212		S
.	00200		RSH A*150	00174	02000	00017		ADDRESS OF INPUT ANGLE IN OEGR
.	00201		STR A*(OIVIOENO)	00175	15010	00200		EES
.	00202		STR A*(SIGNCHECK)	00176	15010	00210		
.	00203		CL A*	00177	11000	00000		SET A TO 0
.	00204	OIVIOENO	ENT Q*(O1*QPOS	00200	10230	00000		IS OIVIOENO POSITIVE
.	00205		A00 Q*(O360B20)*QNEG	00201	26730	00214		NO. A00 360 DEGREES. IS IT P OSITIVE
.	00206		JP \$+2	00202	61000	00204		YES.
.	00207		JP \$-2	00203	61000	00201		NO.
.	00210		LSH AQ*7	00204	07000	00007		DEGREES B27

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	J	K	B	Y	NOTES
.	00211	OIV 3600	00205	23000	00550				REVOLUTIONS B27
.	00212	SUB A*1800*ANEG	00206	21700	00264				IS REMAINDER GREATER THAN OIVI
.	00213	A00 Q*1	00207	26000	00001				SQR/2
.	00214	ENT A*W(O1)*APOS	00210	11630	00000				YES. ROUND OFF QUOTIENT. WAS ORIGINAL DIVIDEND NEGATIVE
.	00215	SUB Q*W(REV1B271)	00211	27030	00215				YES. MAKE QUOTIENT NEGATIVE
.	00216	STR Q*W(O1)	00212	14030	00000				STORE REVOLUTIONS B27
.	00217	EXIT	00213	61010	00172				
.	00220	2640000000	00214	26400	00000				DEC 360*B20
.	00221	1000000000	00215	10000	00000				DEC 1*B27
.	00222	ENTRY	00216	61000	00000				CONVERT DEGREES/SEC TO RADIANS /SEC.
.	00223	STR A*L(FATE1)	00217	15010	00225				
.	00224	RSH A*150	00220	02000	00117				
.	00225	STR A*L(WHENCE1)	00221	15010	00222				
.	00226	ENT Q*W(O1)	00222	10030	00000				O(THETA)/OT B29 OEGREES/SEC
.	00227	MUL W(OEGRAO1)	00223	22030	00227				RADIANS PER OEGREE B34
.	00230	LSH AQ*4	00224	07000	00004				
.	00231	STR A*W(O1)	00225	15030	00000				O(THETA)/OT B37 RADIANS/SEC
.	00232	EXIT	00226	61010	00216				
.	00233	2167643242	00227	21676	43242				
.	00234	RJP U(INTERCOM1)	00230	65020	63426				
.	00235	U-TAG QUESTIONS	00231	00343	00000				
.	00236	JP HOLOUP2	00232	61000	00044				
.	00237	FO 1*A	00233	06050	50505				
.	00240	-O STATEMENT1	00234	77777	00247				
.	00241	FO 1*A	00235	06050	50505				
.	00242	-O STATEMENT2	00236	77777	00255				
.	00243	FO 1*A	00237	06050	50505				
.	00244	-O STATE1	00240	77777	00263				
.	00245	FO 1*A	00241	06050	50505				
.	00246	-O STATE2	00242	77777	00270				
.	00247	FO 1*A	00243	06050	50505				
.	00250	-O STATE3	00244	77777	00276				
.	00251	FO 1*A	00245	06050	50505				
.	00252	-O STATE4	00246	77777	00304				
.	00253	FO 5*RIGHT ASCENSION (OEGREES)	00247	27161	41531				
.			00250	05063	01012				
.			00251	23301	62423				
.			00252	05511	11214				
.			00253	27121	23040				
.	00254	-O	00254	77777	77777				
.	00255	FO 5*OECCLINATION (OEGREES)	00255	11121	02116				
.			00256	23063	11624				
.			00257	23055	11112				
.			00260	14271	21230				
.			00261	40050	50505				
.	00256	-O	00262	77777	77777				
.	00257	FO 4*RADIUS (EARTH RAO111)	00263	27061	11632				
.			00264	30055	11206				
.			00265	27311	50527				
.			00266	06111	61640				

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00260	-0	00267	77777	77777	77777	
.	00261 STATE2	F0 5*R.A. 00T (DEGREES/SEC)	00270	27750	67505		
.			00271	11243	10551		
.			00272	11121	42712		
.			00273	12307	43012		
.			00274	10400	50505		
.	00262	-0	00275	77777	77777		
.	00263 STATE3	F0 5*0EC. 00T (DEGREES/SEC)	00276	11121	07505		
.			00277	11243	10551		
.			00300	11121	42712		
.			00301	12307	43012		
.			00302	10400	50505		
.	00264	-0	00303	77777	77777		
.	00265 STATE4	F0 7*RA01US 00T (NAUTICAL MILES/SEC)	00304	27061	11632		
.			00305	30051	12431		
.			00306	05512	30632		
.			00307	31161	00621		
.			00310	05221	62112		
.			00311	30743	01210		
.			00312	40050	50505		
.	00266	-0	00313	77777	77777		
.	00267 QUESTION3	F0 1*A	00314	06050	50505		
.	00270	-0	00315	77777	00316		
.	00271 STATEMENT3	F0 90*RIGHT ASCENTION (DEGREES), PREF100316 XING WITH A.	00317	05063	01012		
.			00320	23311	62423		
.			00321	05511	11214		
.			00322	27121	23040		
.			00323	56052	52712		
.			00324	13163	51623		
.			00325	14053	41631		
.			00326	15050	65605		
.	00272	-0	00327	77777	77777		
.	00273 QUESTION4	F0 1*A	00330	06050	50505		
.	00274	-0	00331	77777	00332		
.	00275 STATEMENT4	F0 80*OECLINATION (DEGREES), PREF1XING00332 WITH 0.	00333	23063	11624		
.			00334	23055	11112		
.			00335	14271	21230		
.			00336	40560	52527		
.			00337	12131	63516		
.			00340	23140	53416		
.			00341	31150	51156		
.			00342	77777	77777		
.	00276	-0	00343	06050	50505		
.	00277 QUESTION5	F0 1*A	00344	77777	00345		
.	00300	-0	00344	77777	00345		
.	00301 STATEMENTS	F0 90*YOU HAVE TYPE0 ILLEGAL PREF1X. TRY AGAIN.	00345	36243	20515		
.			00346	06331	20531		
.			00347	36251	21105		

CARDS	LT IO LABEL	TA STATEMENT	LOC	F	J	K	Y	NOTES
.	CC302	-0	00350	16212	11214			
.	CC303 QUESTION6	F0 1*A	00351	06210	52527			
.	CC304	-0 STATEMENT6	00352	12131	65575			
.	CC305 STATEMENT6	F0 80*RADIUS (EARTH RA011), PREFIXING WITH R,	00353	05053	12736			
			00354	05061	40616			
			00355	23750	50505			
			00356	77777	77777			
			00357	06050	50505			
			00360	77777	00361			
			00361	27061	11632			
			00362	30055	11206			
			00363	27311	50527			
			00364	06111	61640			
			00365	56052	52712			
			00366	13163	51623			
			00367	14053	41631			
			00370	15052	75605			
			00371	77777	77777			
.	CC306	-0	00372	06050	50505			
.	CC307 QUESTION7	F0 1*A	00372	06050	50505			
.	CC310	-0 STATEMENT7	00373	77777	00374			
.	CC311 STATEMENT7	F0 80*RA00T (0EGREES/SEC), PREFIXING WITH R, 1TH B,	00374	27061	12431			
			00375	05511	11214			
			00376	27121	23074			
			00377	30121	04056			
			00400	05252	71213			
			00401	16351	62314			
			00402	05341	63115			
			00403	05075	60505			
			00404	77777	77777			
			00405	06050	50505			
			00406	77777	00407			
			00407	11121	01124			
			00410	31055	11112			
			00411	14271	21230			
			00412	74301	21040			
			00413	56052	52712			
			00414	13163	51623			
			00415	14053	41631			
			00416	15051	25605			
			00417	24270	50505			
			00420	77777	77777			
			00421	06050	50505			
			00422	77777	00423			
			00423	27061	11632			
			00424	30112	43105			
			00425	51237	52275			
			00426	74301	21040			
			00427	56052	52712			
			00430	13163	51623			
.	CC316	-0	00410	31055	11112			
.	CC317 QUESTION9	F0 1*A	00411	14271	21230			
.	CC320	-0 STATEMENT9	00412	74301	21040			
.	CC321 STATEMENT9	F0 80*RADIUS00T (N.M./SEC), PREFIXING WITH S.	00413	56052	52712			
			00414	13163	51623			
			00415	14053	41631			
			00416	15051	25605			
			00417	24270	50505			
			00420	77777	77777			
			00421	06050	50505			
			00422	77777	00423			
			00423	27061	11632			
			00424	30112	43105			
			00425	51237	52275			
			00426	74301	21040			
			00427	56052	52712			
			00430	13163	51623			

CAROS	L1 ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00322	-0	00431	14053	41631		
.	00323	FO 1+A	00432	15053	07505		
.	00324	-0 IDIOT	00433	77777	77777		
.	00325	FD 110+A CARRIAGE RETURN IS NECESSARY AFTER PREFIXED LETTER.	00434	06050	50505		
			00435	77777	00436		
			00436	06051	00627		
			00437	27160	61412		
			00440	05271	23132		
			00441	27230	51630		
			00442	05231	21012		
			00443	30300	62736		
			00444	05061	33112		
			00445	27052	52712		
			00446	13163	51211		
			00447	05211	23131		
			00450	12277	50505		
			00451	77777	77777		
			00452	35622	40505		
			00453	00010	00456		
			00454	00000	00000		
			00455	26400	00000		
			00456	00000	00000		
			00457	00000	00000		
			00460	35622	40505		
			00461	00010	00464		
			00462	72277	77777		
			00463	05500	00000		
			00464	00000	00000		
			00465	21610	50505		
			00466	00001	00467		
			00467	00000	00000		
			00470	35626	20505		
			00471	00010	00474		
			00472	70014	63146		
			00473	21400	00000		
			00474	00000	00000		
			00475	35627	10505		
			00476	00010	00501		
			00477	75605	07534		
			00500	02172	70243		
			00501	00000	00000		
			00502	35627	10505		
			00503	00010	00506		
			00504	75605	07534		
			00505	02172	70243		
			00506	00000	00000		

DEC 0B20
 DEC 36D.82D
 DEC 0B20
 QUESTED RIGHT ASCENS
 DEC DB27
 GHT ASCENSION IN REV
 RE
 RI
 DEC -90.82D
 DEC 90.82D
 DEC 0B20
 QUESTEO OECLINATION
 RE
 CDNTAINS A FOR RIGHT ASCENSIDN
 DR O FOR OECLINATION
 DEC -31.9822
 DEC 7D.822
 DEC D.822
 DIUS (+ IF E.R.* - I
 RA
 DEC -.07829
 DEC .07829
 DEC D.829
 ALPHA)/DT DEGREES/S
 DI
 DEC -.07829
 DEC .07829
 DEC 0.829
 DI

SPURT OUTPUT NO. 210
MATHIASSEN*2/17/65

FXRADEC

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
								DELTA1/OT DEGREES/S
	00364	ANSWERT	F0 1*X24	00507	35626	40505		
	00365		10 MYRH000T	00510	00010	00513		
	00366		07077777777	00511	70777	77777		-7.824
	00367		07000000000	00512	07000	00000		+7.824
	00370	MYRH000T	00000000000	00513	00000	00000		0.
	00371	COS	JP COS	00514	61000	00514		NAUTICAL M
	00372		ENT 87*(COS)	00515	12710	00514		ARBITRARY
	00373		STR 87*(SIN)	00516	16710	00525		STORE EXIT
	00374		ENT 87*1	00517	12700	00001		FLAG
	00375		STR 87*(SIN+420)	00520	16710	00577		
	00376		JP COS+7*APOS	00521	60600	00523		
	00377		CP A*	00522	15040	00000		
	00400		JP SIN+2*ANOT	00523	60500	00527		
	00401		ENT A*(SIN+600)	00524	11030	00621		COS (0) 1
	00402	SIN	JP SIN	00525	61000	00525		ARBITRARY
	00403		STR 80*(SIN+420)	00526	16010	00577		FLAG
	00404		STR A*(SIN+680)*APOS	00527	15630	00631		
	00405		CP A*	00530	15040	00000		SET POSITIVE
	00406		RPT 290	00531	70000	00035		
	00407		LSH A*I*ANEG	00532	06700	00001		SHIFT UNTIL BIT 29 1
	00410		JP L(SIN)	00533	61010	00525		SIN(X) 0
	00411		LSH A*290	00534	06000	00035		SHIFT RIGHT 1
	00412		SUB Q*87*QPOS	00535	27607	00000		QNEG IMPLIES X EXCEEDS PI/2
	00413		JP SIN+340	00536	61000	00567		
	00414		COM Q*300*YMORE	00537	04300	00036		PREVENT ILLEGITIMATE SHIFT
	00415		ENT Q*300	00540	10000	00036		MAX SHIFT 30
	00416		STR Q*L(SIN+130)	00541	14010	00542		SOTRE SHIFT COUNT
	00417		RSH A*0	00542	02000	00000		SCALE ARGUMENT AT 28
	00420		COM A*(SIN+590)*YMORE	00543	04730	00620		COMPARE WITH PI/2
	00421		JP SIN+370	00544	61000	00572		REOUCE TO 1ST QUORANT
	00422		BSK 80*(SIN+420)	00545	71010	00577		SKIP IF SINE
	00423		SUB A*(SIN+590)*SKIP	00546	21130	00620		PI/2-X TO A
	00424		ENT Q*(SIN+680)*QPOS	00547	10230	00631		CHECK SIGN
	00425		CP A*	00550	15040	00000		A BEARS PROPER SIGN
	00426		STR A*(SIN+680)	00551	15030	00631		STORE SIGNED ARGUMENT
	00427		ENT Q*A	00552	10070	00000		SCALED AT 28
	00430		MUL W(SIN+680)	00553	22030	00631		X 2 AT 28+28.56
	00431		RSH AQ*290	00554	03000	00035		SQUARED AT 27
	00432		STR Q*(SIN+690)	00555	14030	00632		STORE X 2
	00433		ENT Q*(SIN+640)	00556	10030	00625		C9
	00434		ENT 87*3	00557	12700	00003		LOOP 4 TIMES
	00435		MUL W(SIN+690)	00560	22030	00632		SUM POLYNOMIAL
	00436		ENT Q*A	00561	10070	00000		
	00437		A00 Q*(SIN+600*87)	00562	26037	00621		
	00440		BJP 87*(SIN+270)	00563	72700	00560		
	00441		MUL W(SIN+680)	00564	22030	00631		
	00442		LSH AQ*2	00565	07000	00002		SCALE AT 28
	00443		JP L(SIN)	00566	61010	00525		RETURN
	00444		COM Q*X77741*YLESS	00567	04240	77741		CHECK FOR LEGIT SHIFT
	00445		ENT Q*X77741	00570	10040	77741		-30

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F JK8 Y	NOTES
•	00446	STR Q=CPL(SIN+130)	00571	14050 00542	
•	00447	RSH AQ*2	00572	03000 00002	
•	00450	OIV W(SIN+590)	00573	23030 00620	FORM X/(PI/2)
•	00451	ENT A=0	00574	11000 00000	CLEAR A
•	00452	LSH AQ*L(SIN+130)	00575	07010 00542	
•	00453	LSH AQ*2	00576	07000 00002	INTEGER TO A, FRACTION IN Q
•	00454	A00 A=0	00577	20000 00000	
•	00455	RSH AQ*2	00600	03000 00002	0 FOR SIN , 1 FOR COS
•	00456	ENT LP*W(SIN+670)*ANOT	00601	40530 00630	
•	00457	ENT LP*W(SIN+600)*ANOT	00602	40530 00621	
•	00460	JP SIN+510	00603	61000 00610	
•	00461	SUB LP*W(SIN+660)	00604	42030 00627	
•	00462	ENT Q*W(SIN+680)*QPOS	00605	10230 00631	ACCORD SIGN
•	00463	CP A*	00606	15040 00000	
•	00464	JP L(SIN)	00607	61010 00525	
•	00465	ENT LP*W(SIN+650)*000	00610	40330 00626	
•	00466	JP SIN+560	00611	61000 00615	
•	00467	14200 0	00612	14200 00000	CP+Q+QPOS
•	00470	SUB Q*W(SIN+660)*SKIP	00613	27130 00627	
•	00471	A00 Q*W(SIN+660)	00614	26030 00627	
•	00472	MUL W(SIN+590)	00615	22030 00620	
•	00473	LSH AQ*2	00616	07000 00002	SCALE AT 28
•	00474	JP SIN+180	00617	61000 00547	RETURN
•	00475	31103 75524	00620	31103 75524	PI/2 AT 28
•	00476	20000 00000	00621	20000 00000	CI 1\$0 AT 28
•	00477	52525 25600	00622	52525 25600	C3-0.81666 665669E00831
•	00500	10420 71732	00623	10420 71732	C5 0.833302518E-2834
•	00501	76301 15701	00624	76301 15701	C7-.1980741431E-3837
•	00502	00127 23405	00625	00127 23405	C9 0.2601886909E-5840
•	00503	60000 00000	00626	60000 00000	
•	00504	40000 00000	00627	40000 00000	
•	00505	17777 77777	00630	17777 77777	TEMPORARY
•	00506	0 0	00631	00000 00000	TEMPORARY
•	00507	0 0	00632	00000 00000	TEMPORARY
•	00510	RESERVE 1	00633	00000 00000	
•			00634	77000 00000	
•			00635	00050 50505	

END OF LISTING

MATHIASEN*2/17/65

FXRADEC

LABEL	LOC	LABEL	LOC	LABEL	LOC
ACQZIM	63071	ACQLEEV	63075	ACQLEEV	63075
ACTUALTIME	63142	ADSCN	00452	ADSCN	00452
ALNGDFFSET	63517	ANSWER1	00475	ANSWER1	00475
ANSWER3	00465	ANSWER4	00507	ANSWER4	00507
ANSWER6	00502	ANSWER7	63522	ANSWER7	63522
ARCOFDEC	63526	ARCOFELEV	63105	ARCOFELEV	63105
ASTRODEC	63106	ASTRORA	63500	ASTRORA	63500
AZELDIME	63532	AZELBXSCAN	64000	AZELBXSCAN	64000
AZIMOFFSET	63442	AZIMOUT	75000	AZIMOUT	75000
AZIMADD	63442	AZIMIN	63146	AZIMIN	63146
BODYSIZE	63135	BLASTOFF	63070	BLASTOFF	63070
CONVERTIME	63065	CDRCT	63113	CDRCT	63113
COSORIENT	63060	CDSAZEL	63133	CDSAZEL	63133
CAZIM	63061	CELBOOY	63431	CELBOOY	63431
CELEV	63422	CELTIME	66000	CELTIME	66000
CHCOR	63516	CHPAR	63425	CHPAR	63425
CRSSOFFSET	00214	OOPPOUT	63515	OOPPOUT	63515
D360B20	63003	DATANALYZE	00163	DATANALYZE	00163
DEC	63010	DECDFFSET	00227	DECDFFSET	00227
DECOOT	63505	DECOOTADDR	63141	DECOOTADDR	63141
DECLINSCAN	00172	DEGRAO	63054	DEGRAO	63054
DEGTOROV	00200	DELTATEE	63443	DELTATEE	63443
DIVIOENO	63421	OSECONOS	63323	OSECONOS	63323
DYDMP	65000	ELEV	63350	ELEV	63350
ELEVOUT	63502	ELEVAO	63104	ELEVAO	63104
ELVTNSCAN	63143	EQUADR	63322	EQUADR	63322
ESTSHIFTED	00063	EXPNAME	63144	EXPNAME	63144
FOA	63337	FIRSTELEV	00044	FIRSTELEV	00044
FLATTENING	00000	FRAME SIZE	67777	FRAME SIZE	67777
FXRAOEC	63145	GEOCENLAT	71776	GEOCENLAT	71776
GMTMODU24	00026	GMTSHIFTED	72777	GMTSHIFTED	72777
HOLDUP	63151	HOLOUP2	63410	HOLOUP2	63410
HOURREG	63151	HEIGHT	63310	HEIGHT	63310
I011RA010	70776	ID12RADIO	74776	ID12RADIO	74776
I014RADIO	70776	ID15RADIO	75777	ID15RADIO	75777
I017RADIO	72776	ID1BRADIO	63001	ID1BRADIO	63001
I01CELCOR	63000	IDIENTPNT	63441	IDIENTPNT	63441
I01RA010	63440	IDIRECRO	77677	IDIRECRO	77677
I01SYSNAM	77676	ID1SYSPAR	63310	ID1SYSPAR	63310
ID20RA010	73777	ID21RADIO	74776	ID21RADIO	74776
ID23RADIO	75776	ID24RADIO	75777	ID24RADIO	75777
ID26RADIO	76776	ID2CELCOR	63001	ID2CELCOR	63001
I02RADCDR	63051	I02RA010	63441	I02RA010	63441
ID2SYSENT	77577	I02SYSNAM	77677	I02SYSNAM	77677
ID2TIME	63131	ID3RA010	63776	ID3RA010	63776
I05RA010	64776	I06RA010	64777	I06RA010	64777
ID8RA010	65777	ID9RADIO	66776	ID9RADIO	66776
INAZIMADD	63446	INELEVADD	63447	INELEVADD	63447
ACCOECOOT	00155	ACCOECOOT	00635	ACCOECOOT	00635
ACCEPTRA	00103	ACCEPTDEC	00112	ACCEPTDEC	00112
ACCRHODDT	00164	ACCRADOT	00142	ACCRADOT	00142
ACQUI	63427	ACQLEEV	63075	ACQLEEV	63075
AESC	63417	ADSCN	00452	ADSCN	00452
ANSWER2	00460	ANSWER1	00475	ANSWER1	00475
ANSWERS	00475	ANSWER4	00507	ANSWER4	00507
ARCOFAZIM	63524	ANSWER7	63522	ANSWER7	63522
ARCOFRA	63530	ARCOFELEV	63105	ARCOFELEV	63105
63341	63531	ASTRORA	63500	ASTRORA	63500
63053	63053	AZELBXSCAN	64000	AZELBXSCAN	64000
63325	63325	AZIMOUT	75000	AZIMOUT	75000
63501	63501	AZIMIN	63146	AZIMIN	63146
63414	63414	BLASTOFF	63070	BLASTOFF	63070
00514	00514	CDRCT	63113	CDRCT	63113
00133	00133	CDSAZEL	63133	CDSAZEL	63133
63424	63424	CELBOOY	63431	CELBOOY	63431
00467	00467	CELTIME	66000	CELTIME	66000
63057	63057	CHPAR	63425	CHPAR	63425
63444	63444	OOPPOUT	63515	OOPPOUT	63515
63150	63150	DATANALYZE	00163	DATANALYZE	00163
00131	00131	DECDFFSET	00227	DECDFFSET	00227
00464	00464	DECOOTADDR	63141	DECOOTADDR	63141
00216	00216	DEGRAO	63054	DEGRAO	63054
00212	00212	DELTATEE	63443	DELTATEE	63443
63154	63154	OUMSECTTG	63054	OUMSECTTG	63054
63513	63513	ELEV	63443	ELEV	63443
76000	76000	ELEVAO	63323	ELEVAO	63323
00230	00230	EQUADR	63350	EQUADR	63350
00225	00225	EXPNAME	63104	EXPNAME	63104
63153	63153	FIRSTELEV	63322	FIRSTELEV	63322
63317	63317	FRAME SIZE	63144	FRAME SIZE	63144
63321	63321	GEOCENLAT	00044	GEOCENLAT	00044
63511	63511	GMTSHIFTED	67777	GMTSHIFTED	67777
63137	63137	HOLOUP2	71776	HOLOUP2	71776
66777	66777	HEIGHT	72777	HEIGHT	72777
70775	70775	ID12RADIO	63410	ID12RADIO	63410
71777	71777	ID15RADIO	63310	ID15RADIO	63310
73776	73776	ID1BRADIO	74776	ID1BRADIO	74776
63050	63050	IDIENTPNT	75777	IDIENTPNT	75777
77576	77576	IDIRECRO	63001	IDIRECRO	63001
63130	63130	ID1SYSPAR	63441	ID1SYSPAR	63441
74777	74777	ID21RADIO	77677	ID21RADIO	77677
76775	76775	ID24RADIO	63310	ID24RADIO	63310
63411	63411	ID2CELCOR	74776	ID2CELCOR	74776
63211	63211	I02RA010	75777	I02RA010	75777
63311	63311	I02SYSNAM	63001	I02SYSNAM	63001
63777	63777	ID3RA010	63441	ID3RA010	63441
65776	65776	I06RA010	77677	I06RA010	77677
00436	00436	ID9RADIO	63776	ID9RADIO	63776
63413	63413	INELEVADD	64777	INELEVADD	64777

FXRAOEC		MATHIASEN*2/17/65	
LABEL	LOC	LABEL	LOC
INTERAZIM	72000	INTERCOM	63426
INTERLEV	73000	INTERLCKSM	63460
ISTART	00005	KMPERNM	63342
LONGITUDE	63320	LSPERAU	63336
MAINSWITCH	63334	MCPFILLER	71000
MILLSTNA00	63451	MINREG	63152
MSTART	00002	MYOEC00T	00506
MYRAIUS	00474	MYRH00T	00513
NEXTLETTER	00053	NEXTQUERY	00014
POLE	63324	PERI00AZIM	63523
PERI00ELEV	63521	PERI00RA	63527
PLANP	63434	PREVIOUSM	63461
PURERA00T	00154	QUESTION1	00233
QUESTION4	00330	QUESTIONS	00343
QUESTION7	00372	QUESTION8	00405
QUESTMARK	00021	ROTATERAEBX	63507
ROTATER0BX	63510	RA	63002
RAA00R	00111	RA00T	63007
RA0ARM00E	63312	RA0CBXSCAN	63503
RAI00EC	63541	RAI0METER	63102
RAIUS	63006	RAIUS00T	63011
RANGE0UT	70777	RANGEA00	63445
RASCTNSCAN	63504	ROMTR	63430
REC0ROSIZ	63112	RECAZIM	67000
REFILE	63212	RECRO	63415
RELEASESM	63156	REV1B27	00215
RIGHTASCEN	00457	SAZIM	63055
SOEC	63005	SECONOS	63140
SIOERTIME	63012	SIGNCHECK	00210
SINORIENT	63004	SINAZEL	63066
SRA	63004	SRA0TIME	63136
STATE2	00270	STATE3	00276
STATEMENT1	00247	STATEMENT2	00255
STATEMENT4	00332	STATEMENT5	00345
STATEMENT7	00374	STATEMENT8	00407
SYNCTIMING	63542	SYSCOMREG1	63452
SYSCOMREG3	63454	SYSCOMREG4	63455
SYSCOMREG6	63457	SYSENTRIES	77600
SYSTAT1	63313	SYSTAT2	63314
TIMECORR	63107	TIMEMO0E	63103
TIMETOHOLO	63520	TRUERANGE	63063
TTYSTATUS	63111	TWOPI	00132
VELOFLIGHT	63335	VIZOEC1	63014
VIZRA1	63013	VIZRA2	63015
WFA00	63450	WFFREQ	63333
WHITHER	00072	YEARMONTH	63147
ZRTRAN	63330		
		INTEROPP	74000
		INTERRANGE	76777
		KYBROLEVEL	63110
		MORON	00434
		MCPGM	63412
		MSFREQ	63332
		MYRA00T	00501
		NOMORE	00101
		NMPERAU	63340
		PERI000EC	63525
		PLOTP	63436
		PRLOG	63423
		QUESTION3	00314
		QUESTION6	00357
		QUESTION9	00421
		ROTATERA0N	63506
		RAOFFSET	63514
		RA00TA00R	00153
		RAOEC0TIME	63531
		RAI0ORA	63540
		RANGE	63052
		RANGE00T	63062
		ROXXX	63433
		RECELEV	70000
		RECROSWTCH	63155
		RIGHTASC	00456
		SCELTIME	63134
		SELEV	63056
		SIN	00525
		SKIP	63331
		STATE1	00263
		STATE4	00304
		STATEMENT3	00316
		STATEMENT6	00361
		STATEMENT9	00423
		SYSCOMREG2	63453
		SYSCOMREG5	63456
		SYSNAMES	77700
		SYSTAT0	63315
		TIMEP	63435
		TRUETIME	63132
		TWOSEC00P	63017
		VIZOEC2	63016
		WFORO	63432
		WHENCE	00222
		YRTRAN	63327

SPURT OUTPUT NO. 212

MATHIASSEN#2/17/65

FXRADEC

LABEL	LOC	LABEL	LOC	LABEL	LOC
FXRADEC	00000	MSTART	00002	ISTART	00005
NEXQUERY	00014	QUESTMARK	00021	HOLoup	00026
HOLoup2	00044	NEXtLETTER	00053	ACCEPTAO	00061
FOA	00063	WHITHER	00072	NOMORE	00101
ACCEPTRA	00103	RAOOR	00111	ACCEPtoEC	00112
ECACoor	00131	TWOPI	00132	COSoEC	00133
ACCEPTRHO	00134	ACCRAoOT	00142	RAOoTAAoOR	00153
PURERAOOT	00154	ACCoECooT	00155	oECDoTAAoOR	00163
ACCRHooT	00164	oEGToREV	00172	OIVIoENo	00200
SIGNcHECK	00210	oESTINY	00212	o36oB2o	00214
REVIb27	00215	oEGToRAo	00216	WHENcE	00222
FATE	00225	oEGRAo	00227	ERRoR	00230
QUESTION1	00233	STATEMEnT1	00247	STATEMEnT2	00255
STATE1	00263	STATE2	00270	STATE3	00276
STATE4	00304	QUESTION3	00314	STATEMEnT3	00316
QUESTION4	00330	STATEMEnT4	00332	QUESTION5	00343
STATEMEnT5	00345	QUESTION6	00357	STATEMEnT6	00361
QUESTION7	00372	STATEMEnT7	00374	QUESTION8	00405
STATEMEnT8	00407	QUESTION9	00421	STATEMEnT9	00423
MORoN	00434	IoIoT	00436	ANSWER1	00452
RIGHTASC	00456	RIGHTASCEN	00457	ANSWER2	00460
oECLIN	00464	ANSWER3	00465	CHOICE	00467
ANSWER4	00470	HYRAIoUS	00474	ANSWER5	00475
MYRAoOT	00501	ANSWER6	00502	MYoECooT	00506
ANSWER7	00507	MYRHooT	00513	COS	00514
SIN	00525	A\$\$\$\$1111	00634	A\$\$\$\$1112	00635
IoICELCOR	63000	Io2CELCOR	63001	RA	63002
oEC	63003	SRA	63004	SoEC	63005
RAIoUS	63006	RAoOT	63007	oECooT	63010
RAIoUSooT	63011	SIoERTIME	63012	VIZRAI	63013
VIZoEC1	63014	VIZRA2	63015	VIZoEC2	63016
TWoSECooP	63017	IoIRAoCOR	63050	Io2RAoCOR	63051
RANGE	63052	AZIM	63053	ELEV	63054
SAZIM	63055	SELEV	63056	CRANGE	63057
CAZIM	63060	CELEV	63061	RANGEooT	63062
TRUERANGE	63063	SINoRIENT	63064	COSoRIENT	63065
SINAZEL	63066	COSAZEL	63070	ACQAZIM	63071
ACoELEV	63075	FRAMESIZE	63101	RAIoMETER	63102
TIMEMooE	63103	FIRSTELEV	63104	ASTRoRA	63105
ASTRoECC	63106	TIMECORR	63107	KYBoRoLEVEL	63110
TYSTATUS	63111	RECoRoSIZE	63112	CELBooY	63113
IoITIME	63130	Io2TIME	63131	TRUETIME	63132
CELTIME	63133	ScELTIME	63134	CoNVERTIME	63135
SPRoTIME	63136	HoURMINUTE	63137	SECoNOS	63140
oSECoNOS	63141	ACTUALTIME	63142	ESTSHIFTEo	63143
GMTSHIFTEo	63144	GMTMoO24	63145	BLASToFF	63146
YEARMoNTH	63147	OAY	63150	HoURREG	63151
MINREG	63152	FIRSTHRU	63153	oUMSECTTG	63154
RECoRSMoTCH	63155	RELEASeSW	63156	Io1RECo	63210
Io2RECo	63211	RECFILE	63212	Io1SYSPAR	63310
Io2SYSPAR	63311	RAoARMooE	63312	SYSTAT1	63313

SPURT OUTPUT NO. 212

FXRAOEC		MATHIASSEN*2/17/65	
LABEL	LOC	LABEL	LOC
SYSTAT2	63314	SYSTATO	63315
FREQUENCY	63317	LONGITUDE	63320
GEOENLAT	63322	EQUATOR	63323
AZIMOVER	63325	HEIGHT	63326
ZRTRAN	63330	SKIP	63331
WFFREQ	63333	MAINSWITCH	63334
LSPERAU	63336	FLATTENING	63337
AUPEREQUAT	63341	KMPERNM	63342
I01ENTPNT	63410	IOZENTPNT	63411
INTER	63413	COCON	63414
AOSCN	63416	AESCN	63417
OYOMP	63421	CHCOR	63422
CELCOMPGM	63424	OATANALYZE	63425
ACQUI	63427	ROMTR	63430
WFORO	63432	ROXXX	63433
TIMEP	63435	PLOTP	63436
I02RAOIO	63441	AZIMAOO	63442
OOPPAOO	63444	RANGEAOO	63445
INELEVAOO	63447	WFAOO	63450
SYSCOMREG1	63452	SYSCOMREG2	63453
SYSCOMREG4	63455	SYSCOMREG5	63456
INTERLCKSW	63460	PREVIOUSM	63461
AZELBXSCAN	63500	AZMTHSCAN	63501
RAOGBXSCAN	63503	RASCTNSCAN	63504
ROTATERAON	63506	ROTATEAEBX	63507
HOLONOHOO	63511	AZIMOFFSET	63512
RAOFFSET	63514	OECOFFSET	63515
ALNGOFFSET	63517	TIMETOHOLO	63520
ARCOFELEV	63522	PERIOOAZIM	63523
PERIOOEC	63525	ARCOFOEC	63526
ARCOFRA	63530	RAOECOTIME	63531
RAOIORA	63540	RAOIOOEC	63541
I03RAOIO	63776	I04RAOIO	63777
I05RAOIO	64776	I06RAOIO	64777
I07RAOIO	65776	I08RAOIO	65777
I09RAOIO	66776	I010RAOIO	66777
I011RAOIO	67776	I012RAOIO	67777
I013RAOIO	70775	I014RAOIO	70776
MCPPILLER	71000	I015RAOIO	71776
INTERAZIM	72000	I017RAOIO	72776
INTERELEV	73000	I019RAOIO	73776
INTEROOPP	74000	I021RAOIO	74776
AZIMIN	75000	I023RAOIO	75776
ELEVIN	76000	I025RAOIO	76775
INTERRANGE	76777	I01SYSENT	77576
SYSENTRIES	77600	I01SYSNAM	77676
SYSNAMES	77700		
		OELTATEE	63316
		GEOETLAT	63321
		POLE	63324
		YRTRAN	63327
		MSFREQ	63332
		VELOFLIGHT	63335
		NMPERAU	63340
		EXPNAM	63350
		MPCOH	63412
		RECR0	63415
		CORCT	63420
		PRLOG	63423
		INTERCOM	63426
		CHPAR	63431
		PLANP	63434
		IDIRADIO	63440
		ELEVADD	63443
		INAZIMADD	63446
		MILLSTNADD	63451
		SYSCOMREG3	63454
		SYSCOMREG6	63457
		BODYSIZE	63462
		ELVTNSCAN	63502
		DECLINSCAN	63505
		ROTATERDBX	63510
		ELEVOFFSET	63513
		CRSSOFFSET	63516
		PERTODELEV	63521
		ARCOFAZIM	63524
		PERIODRA	63527
		AZELOTIME	63532
		SYNCTIMING	63542
		AZIMOUT	64000
		ELEVOUT	65000
		DOPPOUT	66000
		RECAZIM	67000
		RECELEV	70000
		RANGEOUT	70777
		ID16RADIO	71777
		ID18RADIO	72777
		ID20RADIO	73777
		ID22RADIO	74777
		ID24RADIO	75777
		ID26RADIO	76776
		ID2SYSENT	77577
		ID2SYSNAM	77677

ENO OF LISTING

CAROS	LI IO LABEL	TA STATEMENT	LOC	F JKB Y	NOTES
.	0000 PLANNER	PROGRAM J00*6/25/65	00000	00006 00002	
.	0001 PLANNER	U-TAG PLRUN*PLINIT	00001	25210 62325	
.	0002	FO I*PLANP	00002	61000 00000	
.	0003 PLINIT	ENTRY	00003	10030 63054	
.	0004	PUT W(ELEV)*W(FIRSTELEV)	00004	14030 63104	
.	0005	EXIT	00005	61010 00002	
.	0006 PLRUN	ENTRY \$*2*KEY2	00006	61000 00000	
.	0007	JP	00007	61200 00011	
.	0010	EXIT	00010	61010 00006	
.	0011	ENT Q*(FIRSTELEV)	00011	10030 63104	OLO EL IN Q
.	0012	ENT A*(ELEV)	00012	11030 63054	
.	0013	STR A*(FIRSTELEV)*QNEG	00013	15330 63104	
.	0014	JP ELOLOPOS	00014	61000 00017	
.	0015	JP RISET*APOS	00015	60600 00034	
.	0016	EXIT	00016	61010 00006	
.	0017 ELOLOPOS	JP L(PLRUN)*APOS	00017	60610 00006	BOTH NEG NO RISE YET
.	0020 SETTING	RJP FIGTIME	00020	65000 00071	BOTH POS NO SET YET
.	0021	MOVE 3*ANS*ST	00021	10030 00062	WHAT IS TRUE TIME
.			00022	14030 00052	
.			00023	10030 00063	
.			00024	14030 00053	
.			00025	10030 00064	
.			00026	14030 00054	
.	0022	RJP U(PRLOG)	00027	65020 63423	
.	0023	5 SAYSET	00030	00005 00050	
.	0024	2 -260	00031	00002 77745	
.	0025	NO-OP	00032	12000 00000	
.	0026	EXIT	00033	61010 00006	
.	0027 RISET	RJP FIGTIME	00034	65000 00071	
.	0030	MOVE 3*ANS*RT	00035	10030 00062	
.			00036	14030 00057	
.			00037	10030 00063	
.			00040	14030 00060	
.			00041	10030 00064	
.			00042	14030 00061	
.	0031	RJP U(PRLOG)	00043	65020 63423	
.	0032	5 SAYRISE	00044	00005 00055	
.	0033	2 -260	00045	00002 77745	
.	0034	NO-OP	00046	12000 00000	
.	0035	EXIT	00047	61010 00006	
.	0036 SAYSET	FO 0*SET AT	00050	30123 10506	
.			00051	31050 50505	
.	0037 ST	RESERVE 3	00052	00000 00000	
.	0040 SAYRISE	FO 0*ROSE AT	00055	27243 01205	
.			00056	06310 50505	
.	0041 RT	RESERVE 3	00057	00000 00000	
.	0042 ANS	RESERVE 3	00062	00000 00000	
.	0043 HH	0	00065	00000 00000	
.	0044 MM	0	00066	00000 00000	
.	0045 SS	0	00067	00000 00000	
.	0046 TEMP	0	00070	00000 00000	
.	0047 FIGTIME	ENTRY	00071	61000 00000	

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PLANNER
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CARDS	L1 10 LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00050	ENT Q*(CELTIME)	00072	10030	63133		
.	00051	MUL 240	00073	22000	00030		EXTRACT HOURS
.	00052	STR Q*(TEMP)	00074	14030	00070		
.	00053	LSH AQ*2	00075	07000	00002		
.	00054	STR A*(HH)	00076	15030	00065		
.	00055	ENT A*(TEMP)	00077	11030	00070		
.	00056	SEL CL*6000000000	00100	52030	00143		
.	00057	STR A*Q	00101	15000	00000		
.	00060	MUL 600	00102	22000	00074		
.	00061	STR Q*(TEMP)	00103	14030	00070		
.	00062	LSH AQ*2	00104	07000	00002		
.	00063	STR A*(MM)	00105	15030	00066		
.	00064	ENT A*(TEMP)	00106	11030	00070		
.	00065	SEL CL*6000000000	00107	52030	00143		
.	00066	STR A*Q	00110	15000	00000		
.	00067	MUL 600	00111	22000	00074		
.	00070	LSH AQ*2*QPOS	00112	07200	00002		
.	00071	AOO A*1	00113	20000	00001		
.	00072	STR A*(SS)	00114	15030	00067		
.	00073	SUB A*600*AZERO	00115	21400	00074		
.	00074	JP CHECKMIN	00116	61000	00121		
.	00075	STR A*(SS)	00117	15030	00067		
.	00076	RPL Y+1*(MM)	00120	36010	00066		
.	00077	ENT A*(MM)	00121	11030	00066		
.	00100	SUB A*600*AZERO	00122	21400	00074		
.	00101	JP \$+3	00123	61000	00126		
.	00102	STR A*(MM)	00124	15030	00066		
.	00103	RPL Y+1*(HH)	00125	36030	00065		
.	00104	CL B3*	00126	12300	00000		
.	00105	LOOP	00127	11000	00000		
.	00106	ENT Q*(HH+B3)	00130	10033	00065		
.	00107	OIV 100	00131	23000	00012		
.	00110	AOO A*60	00132	20000	00060		
.	00111	AOO Q*60	00133	26000	00060		
.	00112	LSH A*240	00134	06000	00030		
.	00113	LSH AQ*240	00135	07000	00030		
.	00114	STR Q*(ANS+B3)	00136	14033	00062		
.	00115	BSK B3*2	00137	71300	00002		
.	00116	JP LOOP	00140	61000	00127		
.	00117	EXIT	00141	61010	00071		
.	00120	NO-OP	00142	12000	00000		DUMMY
.			00143	60000	00000		

END OF LISTING

SPURT OUTPUT NO. 211

JD0*6/25/65

PLANNER

LABEL	LOC	LABEL	LDC	LABEL	LDC	LABEL	LDC
A\$\$\$\$1111	00143	ACQAZIM	63071	ACQZEV	63075	ACQZEV	63075
ACQUI	63427	ACTUALTIME	63142	AOSCN	63416	AOSCN	63416
AESCN	63417	ALNGOFFSET	63517	ANS	00062	ANS	00062
ARCOFAZIM	63524	ARCOFOEC	63526	ARCOFELEV	63522	ARCOFELEV	63522
ARCOFRA	63530	ASTRODEC	63106	ASTRDR	63105	ASTRDR	63105
AUPEREQUAT	63341	AZELOTIME	63532	AZELBXSCAN	63500	AZELBXSCAN	63500
AZIM	63053	AZIMOFFSET	63512	AZIMOUT	64000	AZIMOUT	64000
AZIMOVER	63325	AZIMAOD	63442	AZIMIN	75000	AZIMIN	75000
AZMTHSCAN	63501	BOOYSIZE	63462	BLASTOFF	63146	BLASTOFF	63146
COCON	63414	CONVERTIME	63135	CORCT	63420	CORCT	63420
COSDRIENT	63065	COSAZEL	63070	CAZIM	63060	CAZIM	63060
CELBODY	63113	CELCOMPGR	63424	CELEV	63061	CELEV	63061
CELTIME	63133	CHCOR	63422	CHECKMIN	00121	CHECKMIN	00121
CHPAR	63431	CRANGE	63057	CRSSOFFSET	63516	CRSSOFFSET	63516
DOPPDUT	66000	DDPPAOD	63444	DATANALYZE	63425	DATANALYZE	63425
OAY	63150	DEC	63003	DECOFFSET	63515	DECOFFSET	63515
DECODET	63010	DECLINSCAN	63505	DELTATEE	63316	DELTATEE	63316
DSECONOS	63141	UUMSECTTG	63154	OYDMP	63421	OYDMP	63421
ELDLDPS	00017	ELEV	63054	ELEVDFSET	63513	ELEVDFSET	63513
ELEVOUT	65000	ELEVA00	63443	ELEVIN	76000	ELEVIN	76000
EVTNSCAN	63502	EQUATOR	63323	ESTSHIFTED	63143	ESTSHIFTED	63143
EXNAME	63350	FIGTIME	00071	FIRSTELEV	63104	FIRSTELEV	63104
FIRSTTHRU	63153	FLATTENING	63337	FRAMESIZE	63101	FRAMESIZE	63101
FREQUENCY	63317	GEOCENLAT	63322	GEDDELAT	63321	GEDDELAT	63321
GMTMODU24	63145	GMTSHIFTED	63144	HOLDNDH0L0	63511	HOLDNDH0L0	63511
HOURMINUTE	63137	HOURREG	63151	HEIGHT	63326	HEIGHT	63326
HH	00065	ID10RA0ID	66777	ID11RA0ID	67776	ID11RA0ID	67776
ID12RA0ID	67777	ID13RA0ID	70775	ID14RA0ID	70776	ID14RA0ID	70776
ID15RA0ID	71776	ID16RA0ID	71777	ID17RA0ID	72776	ID17RA0ID	72776
ID18RA0ID	72777	ID19RA0ID	73776	ID1CELCDR	63000	ID1CELCDR	63000
ID1ENTPNT	63410	ID1RA0COR	63050	ID1RA0ID	63440	ID1RA0ID	63440
ID1RECR0	63210	ID1SYSENT	77576	ID1SYSNAM	77676	ID1SYSNAM	77676
ID1SYSPAR	63310	ID1TIME	63130	ID2DRA0ID	73777	ID2DRA0ID	73777
ID21RA0ID	74776	ID22RA0ID	74777	ID23RA0ID	75776	ID23RA0ID	75776
ID24RA0ID	75777	ID25RA0ID	76775	ID26RA0ID	76776	ID26RA0ID	76776
ID2CELCOR	63001	ID2ENTPNT	63411	ID2RACDR	63051	ID2RACDR	63051
ID2RADIO	63441	ID2RECRD	63211	ID2SYSENT	77577	ID2SYSENT	77577
ID2SYSNAM	77677	ID2SYSPAR	63311	ID2TIME	63131	ID2TIME	63131
ID3RADIO	63776	ID4RA0ID	63777	ID5RADIO	64776	ID5RADIO	64776
ID6RA0ID	64777	ID7RADIO	65776	ID8RA0ID	65777	ID8RA0ID	65777
ID9RADIO	66776	INAZIMA0D	63446	INELVADD	63447	INELVADD	63447
INTER	63413	INTERAZIM	72000	INTERCOM	63426	INTERCOM	63426
INTERODPP	74000	INTERELEV	73000	INTERLCKSW	63460	INTERLCKSW	63460
INTERRRANGE	76777	KMPERNM	63342	KYBRDLEVEL	63110	KYBRDLEVEL	63110
LOOP	00127	LONGITUDE	63320	LSPERAU	63336	LSPERAU	63336
MAINSWITCH	63334	MCPFILLER	71000	MCPGM	63412	MCPGM	63412
MILLSTNADD	63451	MINREG	63152	MH	00066	MH	00066
MSFREQ	63332	MPERAU	63340	PDLE	63324	PDLE	63324
PERIODAZIM	63523	PERIODDEC	63525	PERIDDELEV	63521	PERIDDELEV	63521
PERIODRA	63527	PLDTP	63436	PLANNER	00000	PLANNER	00000
PLAMP	63434	PLINIT	00002	PLRUN	00006	PLRUN	00006

SPURT OUTPUT NO. 211

J00*6/25/65

PLANNER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PREVIOUSM	63461	PRLOG	63423	ROTATEAEBX	63507	ROTATEAEBX	63507
ROTATERAON	63506	ROTATEROBX	63510	RA	63002	RA	63002
RAOFFSET	63514	RAOOT	63007	RAARMOOE	63312	RAARMOOE	63312
RAOCBXSCAN	63503	RAOECOTIME	63531	RAIOOEC	63541	RAIOOEC	63541
RAIOMETER	63102	RAIORA	63540	RAIUS	63006	RAIUS	63006
RAIUSOOT	63011	RANGE	63052	RANGEOUT	70777	RANGEOUT	70777
RANGEAOO	63445	RANGEOOT	63062	RASCTNSCAN	63504	RASCTNSCAN	63504
ROMTR	63430	ROXXX	63433	RECOROSIZE	63112	RECOROSIZE	63112
RECAZIM	67000	RECELEV	70000	RECFILE	63212	RECFILE	63212
RECRO	63415	RECROSWTCH	63155	RELEASESM	00055	RELEASESM	00055
R1SET	00034	RT	00057	SAYRISE	63134	SAYRISE	63134
SAYSET	00050	SAZIM	63055	SCELTME	63056	SCELTME	63056
SOEC	63005	SECONOS	63140	SELEV	63064	SELEV	63064
SETTING	00020	SIOERTIME	63012	SIMORIENT	63004	SIMORIENT	63004
SINAZEL	63066	SKIP	63331	SRA	00052	SRA	00052
SRAOTIME	63136	SS	00067	ST	63453	ST	63453
SYNCTIMING	63542	SYSCOMREG1	63452	SYSCOMREG2	63456	SYSCOMREG2	63456
SYSCOMREG3	63454	SYSCOMREG4	63455	SYSCOMREG5	77700	SYSCOMREG5	77700
SYSCOMREG6	63457	SYSENTRIES	77600	SYSNAMES	63315	SYSNAMES	63315
SYSTAT1	63313	SYSTAT2	63314	SYSTATO	63103	SYSTATO	63103
TEMP	00070	TIMECORR	63107	TIMEMOOE	63017	TIMEMOOE	63017
TIMEP	63435	TIMETOHOLO	63520	TRUERANGE	63016	TRUERANGE	63016
TRUETIME	63132	TTYSTATUS	63111	THOSECOOP	63432	THOSECOOP	63432
VELOFLIGHT	63335	VIZOEC1	63014	VIZOEC2	63147	VIZOEC2	63147
VIZRA1	63013	VIZRA2	63015	WFORO	63432	WFORO	63432
WFAOO	63450	WFFREQ	63333	YEARMONTH	63147	YEARMONTH	63147
YRTRAN	63327	ZRTRAN	63330				

END OF LISTING

JOD*6/25/65

PLANNER

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PLANNER	00000	PLINIT	00002	PLRUN	00006	PLINIT	00002
ELODPOS	00017	SETTING	00020	RASET	00034	SETTING	00020
SAYSET	00050	ST	00052	SAYRISE	00055	ST	00052
RT	00057	ANS	00062	HH	00065	ANS	00062
HM	00066	SS	00067	TEMP	00070	SS	00067
FIGTIME	00071	CHECKMIN	00121	LOOP	00127	CHECKMIN	00071
A\$\$\$\$1111	00143	TOICELCOR	63000	ID2CELCOR	63001	TOICELCOR	00143
RA	63002	OE	63003	SRA	63004	OE	63002
SOEC	63005	RADIUS	63006	RAOOT	63007	RADIUS	63005
OE00T	63010	RADIUSOOT	63011	SI0ERTIME	63012	RADIUSOOT	63010
VIZRA1	63013	VIZOEC1	63014	VIZRA2	63015	VIZOEC1	63013
VIZOEC2	63016	TWOSECOOP	63017	IDIRAOCOR	63050	TWOSECOOP	63016
ID2RAOCOR	63051	RANGE	63052	AZIM	63053	RANGE	63051
ELEV	63054	SAZIM	63055	SELEV	63056	SAZIM	63054
CRANGE	63057	CAZIM	63060	CELEV	63061	CAZIM	63057
RANGE00T	63062	TRUERANGE	63063	SINORIENT	63064	TRUERANGE	63062
COSORIENT	63065	SINAZEL	63066	COSAZEL	63070	SINAZEL	63065
ACQAZIM	63071	ACQELV	63075	FRAMESIZE	63101	ACQELV	63071
RADIOMETER	63102	TIMEMODE	63103	FIRSTELEV	63104	TIMEMODE	63102
ASTORA	63105	ASTRODEC	63106	TIMECORR	63107	ASTRODEC	63105
KYBRDLEVEL	63110	TYSTATUS	63111	RECOROSIZE	63112	TYSTATUS	63110
CELBOOY	63113	IDTIME	63130	IO2TIME	63131	IDTIME	63113
TRUETIME	63132	CELTIME	63133	SCELTIME	63134	CELTIME	63132
CONVERTIME	63135	SRAOTIME	63136	HOURLMINUTE	63137	SRAOTIME	63135
SECONOS	63140	DSECONDS	63141	ACTUALTIME	63142	DSECONDS	63140
ESTSHIFTED	63143	GMTSHIFTED	63144	GTH00024	63145	GMTSHIFTED	63143
BLASTOFF	63146	YEARMONTH	63147	DAY	63150	YEARMONTH	63146
HOURREG	63151	MINREG	63152	FIRSTTHRU	63153	MINREG	63151
00MSECTTG	63154	RECROSWTCH	63155	RELEASESM	63156	RECROSWTCH	63154
101RECRD	63210	IO2RECRD	63211	RECFILE	63212	IO2RECRD	63210
101SYSPAR	63310	IO2SYSPAR	63311	RADARMODE	63312	IO2SYSPAR	63310
SYSTAT1	63313	SYSTAT2	63314	SYSTATD	63315	SYSTAT1	63313
DELTAEE	63316	FREQUENCY	63317	LNGITUOE	63320	DELTAEE	63316
GEOETLAT	63321	GEOENLAT	63322	EQUATOR	63323	GEOETLAT	63321
POLE	63324	AZIMOVER	63325	HEIGHT	63326	POLE	63324
YRTRAN	63327	ZRTRAN	63330	SKIP	63331	YRTRAN	63327
MSREQ	63332	WFFREQ	63333	MAINSWITCH	63334	MSREQ	63332
VELOFLIGHT	63335	LSPERAU	63336	FLATTENING	63337	VELOFLIGHT	63335
NMPERAU	63340	AUPEREQUAT	63341	KMPERNM	63342	NMPERAU	63340
EXPNAME	63350	IO1ENTPNT	63410	IO2ENTPNT	63411	EXPNAME	63350
MCPGM	63412	INTER	63413	COCN	63414	MCPGM	63412
RECRD	63415	AOSCN	63416	AESC	63417	RECRD	63415
CORCT	63420	OYDMP	63421	CHCOR	63422	CORCT	63420
PRLOG	63423	CELCOMPGM	63424	OATANALYZE	63425	PRLOG	63423
INTERCOM	63426	ACQUI	63427	ROHTR	63430	INTERCOM	63426
CHPAR	63431	WFORO	63432	ROXX	63433	CHPAR	63431
PLANP	63434	TIMEP	63435	PLOTP	63436	PLANP	63434
101RA010	63440	IO2RAD10	63441	AZIMA0D	63442	101RA010	63440
ELEVA00	63443	OOPPAD0	63444	RANGEAD0	63445	ELEVA00	63443
INAZIMA0D	63446	INELEVA00	63447	WFA0D	63450	INAZIMA0D	63446
HILLSTNA0D	63451	SYSCOMREG1	63452	SYSCOMREG2	63453	HILLSTNA0D	63451

SPURT OUTPUT NO. 212

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JDD*6/25/65

PLANNER

LABEL	LDC	LABEL	LOC	LABEL	LOC	LABEL	LOC
SYSCOMREG3	63454	SYSCDMREG4	63455	SYSCDMREG5	63456		
SYSCOMREG6	63457	INTERLCKSW	63460	PREVIDUSTM	63461		
BDOYSIZE	63462	AZELBXSCAN	63500	AZMTHSCAN	63501		
ELVTNSCAN	63502	RAOCBXSAN	63503	RASCTNSCAN	63504		
OECLENSCAN	63505	RDATERADN	63506	ROTATEAEBX	63507		
ROTATERDBX	63510	HOLONOHOLD	63511	AZIMOFFSET	63512		
ELEVOFFSET	63513	RADFFSET	63514	DECOFFSET	63515		
CRSSOFFSET	63516	ALNGOFFSET	63517	TIMETOHOLD	63520		
PERIDOELEV	63521	ARCDFFLEV	63522	PERI00AZIM	63523		
ARCOFAZIM	63524	PERID00EC	63525	ARCOFOEC	63526		
PERIOORA	63527	ARCOFRA	63530	RAOECDTIME	63531		
AZELOTIME	63532	RAOIDRA	63540	RAOID00EC	63541		
SYNCTIMING	63542	I03RADIO	63776	I04RAOIO	63777		
AZIMOUT	64000	ID5RAOIO	64776	ID6RAOIO	64777		
ELEVOUT	65000	I07RAOIO	65776	ID8RAOIO	65777		
OOPPOUT	66000	I09RAOIO	66776	I010RAOIO	66777		
RECAZIM	67000	ID11RAOIO	67776	I012RAOIO	67777		
RECELEV	70000	I013RAOIO	70775	ID14RAOIO	70776		
RANGEDUT	70777	MCPFILLER	71000	ID15RAOIO	71776		
I016RADIO	71777	INTERAZIM	72000	ID17RADIO	72776		
I01BRAOIO	72777	INTERELEV	73000	ID19RADIO	73776		
I02DRADID	73777	INTERDOPP	74000	ID21RADIO	74776		
I022RAOIO	74777	AZIMIN	75000	ID23RAOIO	75776		
I024RAOIO	75777	ELEVIN	76000	ID25RAOIO	76775		
I026RADIO	76776	INTERRANGE	76777	I01SYSNT	77576		
I025YSNT	77577	SYSENTRIES	77600	I01SYSNAM	77676		
I02SYSNAM	77677	SYSNAMES	77700				

END OF LISTING

CARD	IO LABEL	TA STATEMENT	LOC	F	J	K	Y	NOTES
0000	PLOTP	PROGRAM R.TEOSTE*4/9/65	0000	00216	00002			
0001	PLOT	U-TAG PLOTWORK*PLOT(NIT	0001	25212	43125			
0002		FO 1*PLOTP	0002	61000	00000			
0003	PLOTIN(T	ENTRY	0003	11730	63112			IS SYS CYCLING AT H(SPO
0004		ENT A*(RECOROSIZE)*ANEQ	0004	61000	00011			NO
0005		JP GOPLOTGO	0005	16020	63436			PLOT NOT TO OPERATE
0006		CL U(PLOTP)	0006	10000	60000			SET TO RIL
0007		PUT 60000*U(521	0007	14020	00052			
0010		EX(T	0010	61010	00002			BACK TO MCP
0011	GOPLOTGO	PUT U(PLOT)*U(PLOTP)	0011	10020	00000			SET UP WORKING ENTRY
0012		ENT A*(PLOTTRJP)	0012	14020	63436			SET INTERRUPT REGISTER
0013		STR A*(521	0013	11030	00065			
0014		CL L(PLOTB)	0014	15030	00052			
0015		ENT A*(LX(SYSTAT))*APOS	0015	16010	00156			
0016		JP L(PLOTINIT)	0016	11650	63313			
0017		RJP U(INTERCOM)	0017	61010	00002			
0020		U-TAG PLOTQUEST*PLOTANSW	0020	65020	63426			CALIBRATION PROCEDURE
0021		ENT A*(PCALCOOE)*ANOT	0021	00032	00050			
0022		JP ADJSTOP	0022	11530	00052			
0023		JP ADJSTOP	0023	61000	00027			
0024		STR A*(L(PLOTB)	0024	15010	00156			
0025		RJP U(INTERCOM)	0025	65020	63426			
0025		U-TAG PLOTQUEST*PLOTANSW	0026	00053	00050			
0026	ADJSTOP	PUT 2*L(PLOTB)	0027	10000	00002			
0027		JP L(PLOT(NIT)	0030	14010	00156			
0030	PLOTQUEST	FO 0*A	0031	61010	00002			
0031		-0 \$+1	0032	06050	50505			
0032		FO 0*00 YOU WANT TO ADJUST STR(P CHART00034	0033	77777	00034			
		RECORDER (Y OR N)	0034	11240	53624			
			0035	32053	40623			
			0036	31053	12405			
			0037	06111	73230			
			0040	31053	03127			
			0041	16250	51015			
			0042	06273	10527			
			0043	12102	42711			
			0044	12270	55136			
			0045	05242	70523			
			0046	40050	50505			
			0047	77777	77777			
			0050	36050	50505			
			0051	00001	00052			
			0052	00000	00001			
			0053	06050	50505			
			0054	77777	00055			
			0055	10062	72716			
			0056	06141	20527			
			0057	12313	22723			
			0060	05312	40530			
			0061	31242	50506			

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00042	PLOTRJP	-O	00062	11173	23031		
.	00043	PLOTRJP	RJP PLOTINTER	00063	22122	33105		
.	00044	PLOTINTER	ENTRY	00064	77777	77777		
.	00045		JP \$+2*C13*ACTIVEOUT	00065	65000	00066		PLOT ROUTINE
.	00046		RILJP L(PLOTINTER)	00066	61000	00000		OPERATE ONLY IF AZ OUT IS ACTI
.	00047		STR A*(PLOTAI)	00067	63540	00071		VE
.	00050		STR Q*(PLOTQ)	00070	60110	00066		
.	00051		STR R*(PLOTB)	00071	15030	00154		
.	00052		ENT A*LX(SYSTAT1)*APOS	00072	14030	00155		
.	00053		JP PLOTSTOP	00073	16720	00156		
.	00054		ENT A*(SECONOS)	00074	11650	63313		
.	00055		SUB A*5*ANOT	00075	61000	00152		SYSTEM NOT CYCLING
.	00056		JP PLOTMIO	00076	11020	63140		
.	00057	PLOTVALUES	ENT A*(1121)	00077	21500	00005		
.	00060		A00 A*100	00100	61000	00211		
.	00061		STR A*(1121)	00101	11020	00112		
.	00062		IN C12*(1121)*MONITOR	00102	20000	00012		
.	00063	PLOTERRORS	ENT B*(1131)	00103	15020	00112		
.	00064		ENT A*(77776*87)	00104	75530	00112		
.	00065		RSH A*(170)	00105	12710	00113		
.	00066		ENT A*(77776*87)	00106	11037	77776		
.	00067		ENT A*(77776*87)	00107	03000	00021		
.	00070		SUB A*(77776*87)	00110	11037	77776		
.	00071		RSH A*1	00111	12710	00133		
.	00072		A00 A*40	00112	21037	77776		
.	00073		RSH A*(1121)	00113	02000	00001		
.	00074		ENT B*(1131)	00114	20000	00040		
.	00075		ENT A*(77776*87)	00115	03000	00006		
.	00076		RSH A*(110)	00116	12710	00112		
.	00077		RSH A*(6)	00117	11037	77776		
.	00100		ENT A*(77776*87)	00120	02000	00013		
.	00101		ENT B*(1132)	00121	03000	00006		
.	00102		SUB A*(77776*87)	00122	11037	77776		
.	00103		RSH A*1	00123	12710	00132		
.	00104		A00 A*40	00124	21037	77776		
.	00105		RSH A*(6)	00125	02000	00001		
.	00106		ENT A*(77776*87)	00126	20000	00040		
.	00107		RSH A*(6)	00127	03000	00006		
.	00110		EX-FACT C5*(PLOTWOR0)	00130	11000	00025		
.	00111	ENDPLOT	ENT A*(PLOTAI)	00131	03000	00006		
.	00112		ENT Q*(PLOTWOR0)	00132	14030	00140		
.	00113		ENT Q*(PLOTB)	00133	13270	00140		
.	00114		RILJP L(PLOTINTER)	00134	11030	00154		
.	00115		0	00135	10030	00155		
.	00116	PLOTWOR0	0	00136	12720	00156		
.	00117	PLOTJPTAB	0	00137	60110	00066		
.	00120		0	00140	00000	00000		
.	00121		0	00141	00000	00221		
.	00122	TIMEMARK1	0	00142	00000	00157		
.	00123		0	00143	00000	00171		
.			0	00144	11020	00112		
.			0	00145	20000	00074		

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00124		STR A*U(1121	00146	15020	00112		
.	00125		IN C12*W(1121*MONITOR	00147	75530	00112		
.	00126	PLOTHACK	EX-FCT C5*2540404040	00150	13270	00241		
.	00127		JP ENDPLOT	00151	61000	00134		
.	00130	PLOTSTOP	EX-FCT C5*2440404040	00152	13270	00242		
.	00131		JP ENDPLOT	00153	61000	00134		
.	00132	PLOTA	0	00154	00000	00000		
.	00133	PLOTQ	0	00155	00000	00000		
.	00134	PLOTB	0	00156	00000	00000		
.	00135	ACJUSTCASE		00157	11030	00210		
.	00136		ENT A*(AOJJI	00160	21400	00002		
.	00137		SUB A*2*AZERO	00161	36130	00210		
.	00140		RPL Y*1*WIAOJ11*SKIP	00162	16030	00210		
.	00141		CL WIAOJ11	00163	12710	00210		
.	00142		ENT B7*L1AOJ11	00164	13277	00166		
.	00143		EX-FCT C5*W(AOJTABLE+B71	00165	61010	00216		
.	00144	ADJTABLE	JP L(PLOTWORK1	00166	25000	00000		
.	00145		250000000	00167	25404	04040		
.	00146		2577777777	00170	25777	77777		
.	00147	CALCASE	ENT A*WIPLOTWOR011	00171	11030	00207		
.	00150		SUB A*(AOJTABLE+21*ANOT	00172	21530	00170		
.	00151		JP PLOTENO	00173	61000	00202		
.	00152		ENT A*WIPLOTWOR011	00174	11030	00207		
.	00153		A00 A*(PLITINCREM1	00175	20030	00201		
.	00154		STR A*WIPLOTWOR011	00176	15030	00207		
.	00155		EX-FCT C5*WIPLOTWOR011	00177	13270	00207		
.	00156		JP L(PLOTWORK1	00200	61010	00216		
.	00157	PLITINCREM	0001010101	00201	00010	10101		
.	00160	PLOTENO	ENT A*WIPLOTWOR011	00202	11030	00232		
.	00161		STR A*WIPLOTWOR011	00203	15030	00207		
.	00162		PUT 0*L1PLOTBI	00204	10000	00000		
.	00163		JP L(PLOTWORK1	00205	14010	00156		
.	00164	PLOTWOR01	2476767677	00206	61010	00216		
.	00165	AOJ1	0	00207	24767	67677		
.	00166	PLOTMIO		00210	00000	00000		
.	00167		ENT A*U(1121	00211	11020	00112		
.	00170		SUB A*U(INELEVA001	00212	21020	63447		
.	00171		SUB A*2490*AZERO	00213	21400	00371		
.	00172		JP PLOTVALUES	00214	61000	00101		
.	00173	PLOTWORK	JP TIMEMARK1	00215	61000	00144		
.	00174		ENTRY	00216	61000	00000		
.	00175		ENT B7*L1PLOTBI	00217	12710	00156		
.	00176	PLOTCASE	JP L(PLOTJPTAB+B71	00220	61017	00141		
.	00177		ENT A*U(INELEVA001	00221	11020	63447		
.	00200		A00 A*90	00222	20000	00011		
.	00201		STR A*U(1121	00223	15020	00112		
.	00202		ENT A*(SECONOSI	00224	11020	63140		
.	00203		SUB A*4*ANOT	00225	21500	00004		
.	00204		JP PLOTPATCH	00226	61000	00000		
.	00205		ENT A*L1PLOTWOR011	00227	11010	00216		
.	00206		STR A*L1PLOTINTERI	00230	15010	00066		
.	00207	PLOTWOR011	JP ENDPLOT-1	00231	61000	00133		
.			2476767677	00232	24767	67677		

..... SPURT OUTPUT NO. 210
 R. TEOSTE*4/9/65

..... PLOTP

CAROS	L1 IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	00210	PLOTPATCH					
.	00211	EX-FCT C5*2540404040	00233	13270	00241		
.	00212	ENT A*U(112)	00234	11020	00112		
.	00213	A00 A*500	00235	20000	00062		
.	00214	STR A*U(112)	00236	15020	00112		
.	00215	JP L(PLOTWORK)	00237	61010	00216		
.		RESERVE 1	00240	00000	00000		
			00241	25404	04040		
			00242	24404	04040		

END OF LISTING

R. TEOSTE*4/9/65

PLOTP

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
A\$\$\$\$1111	00241	A\$\$\$\$1112	00242	ACQAZIM	63071	ACQAZIM	63071
ACQELEV	63075	ACQUI	63427	ACTUALTIME	63142	ACTUALTIME	63142
AQJ	00210	AQJSTOP	00027	AOJTABLE	00166	AOJTABLE	00166
AQJSTCASE	00157	AQJSTOP	63416	AESN	63417	AESN	63417
ALNGOFFSET	63517	AOSCN	63524	ARCOFAC	63526	ARCOFAC	63526
ARCOFELEV	63522	ARCOFAZIM	63530	ASTROFEC	63106	ASTROFEC	63106
ARCOFEV	63105	ARCOFRA	63341	AZELOTIME	63532	AZELOTIME	63532
AZELBXSCAN	63500	AUPEREQUAT	63053	AZIMOFFSET	63442	AZIMOFFSET	63442
AZIMOUT	64000	AZIM	63325	AZIMADD	63462	AZIMADD	63462
AZIMIN	75000	AZIMOVER	63501	BOOYSIZE	63135	BOOYSIZE	63135
BLASTOFF	63146	AZMTHSCAN	63414	CONVERTIME	63070	CONVERTIME	63070
CORCT	63420	COCON	63065	COSAZEL	63113	COSAZEL	63113
CALCASE	00171	COSORIENT	63060	CELBOOY	63133	CELBOOY	63133
CELCOMPGH	63424	CAZIM	63061	CRANGE	63057	CRANGE	63057
CHCOR	63422	CELEV	63061	OOPPAD	63444	OOPPAD	63444
CRSSOFFSET	63516	CHPAR	63431	OECLINSCAN	63003	OECLINSCAN	63003
OATANALYZE	63425	OOPDUT	66000	OUMSECTTG	63154	OUMSECTTG	63154
OECOFFSET	63515	OAY	63150	ELEVOFFSET	63513	ELEVOFFSET	63513
OELTATEE	63316	OECOOT	63010	ELEVIN	76000	ELEVIN	76000
DYOMP	63421	OSECNOS	63141	EQUATOR	63323	EQUATOR	63323
ELEVOUT	65000	ELEV	63054	FIRSTELEV	63104	FIRSTELEV	63104
ELVTNSCAN	63502	ELEVA00	63443	FRAMESIZE	63101	FRAMESIZE	63101
ESTSHIFTEO	63143	ENOPLOT	00134	GEOCENLAT	63322	GEOCENLAT	63322
FIRSTTHRU	63153	EXNAME	63350	HOURREG	63151	HOURREG	63151
FREQUENCY	63317	FLATTENING	63337	I011RADIO	67776	I011RADIO	67776
GEOMETLAT	63321	GOPLOTG0	00011	I014RADIO	70776	I014RADIO	70776
HOLONOHOLE	63511	GMTDOU24	63145	I017RADIO	72776	I017RADIO	72776
HEIGHT	63326	HOURMINUTE	63137	I01CELCOR	63000	I01CELCOR	63000
I012RADIO	67777	I010RADIO	66777	I01RA010	63440	I01RA010	63440
I015RADIO	71776	I013RADIO	70775	I01SYSNAM	77676	I01SYSNAM	77676
I01BRA010	72777	I016RADIO	71777	I020RADIO	73777	I020RADIO	73777
I01ENTPNT	63410	I019RADIO	73776	I023RADIO	75776	I023RADIO	75776
I01RECR0	63210	I01RADCOR	63050	I026RADIO	76776	I026RADIO	76776
I01SYSPAR	63310	I01SYSENT	77576	I02RAOCOR	63051	I02RAOCOR	63051
I021RADIO	74776	I01TIME	63130	I02SYSENT	77577	I02SYSENT	77577
I024RADIO	75777	I022RADIO	74777	I02TIME	63131	I02TIME	63131
I02CELCOR	63001	I025RADIO	76775	I05RADIO	64776	I05RADIO	64776
I02RA010	63441	I02ENTPNT	63411	I08RADIO	65777	I08RADIO	65777
I02SYSNAM	77677	I02RECR0	63211	I08RA010	63447	I08RA010	63447
I03RADIO	63776	I02SYSPAR	63311	INELEVA00	63426	INELEVA00	63426
I06RADIO	64777	I04RADIO	63777	INTERCOM	63460	INTERCOM	63460
I09RADIO	64776	I07RADIO	65776	INTERLCKSW	63110	INTERLCKSW	63110
INTER	63413	INAZIMAO0	63446	KYBROLEVEL	63334	KYBROLEVEL	63334
INTERDOPP	74000	INTERAZIM	72000	MILLSTNA00	63451	MILLSTNA00	63451
INTERRANGE	76777	INTERELEV	73000	NMPERAU	63340	NMPERAU	63340
LONGITUOE	63320	KMPERNM	63342	PERI00AZIM	63523	PERI00AZIM	63523
MCPFILLER	71000	LSPERAU	63336	PERI00RA	63527	PERI00RA	63527
MINREG	63152	MCPGH	63412	PLOTANSW	00050	PLOTANSW	00050
POLE	63324	MSFREQ	63332				
PERI000EC	63525	PCALCOOE	00052				
PLOT	00000	PERI00ELEV	63521				
		PLOTA	00154				

..... SPURT OUTPUT NO. 211 R. TEOSTE*4/9/65

PLOTP		LABEL		LOC		LABEL		LOC	
LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
PLOTB	00156	PLOTGASE	00221	PLOTENO	00202	PREVIOUS™	63461	ROTATERAON	63506
PLOTERRORS	00105	PLOTGACK	00021	PLOTINIT	00202	ROTATERAON	63506	RAOFFSET	63514
PLOTINTER	00066	PLOTJPTAB	00150	PLOTMIO	00211	RAOCBXSAN	63503	RAOIMETER	63102
PLOTP	63436	PLOTPATCH	00141	PLOTQ	00155	RAOIUSOOT	63011	RANGEAOO	63011
PLOTQUEST	00032	PLOTQUST	00053	PLOTQJP	00065	RANGEOO	63445	ROMTR	63430
PLOTSTOP	00152	PLOTVALUES	00101	PLOTWORO	00140	ROMTR	63430	RECAZIM	67000
PLOTWOR01	00207	PLOTWOR011	00232	PLOTWORK	00216	RECAZIM	67000	RECR0	63415
PLANP	63434	PLITINCREM	00201	PREVIOUS™	63461	SAZIM	63055	SECONOS	63140
PROG	63423	ROTATEAEBX	63507	ROTATERAON	63506	SINORIENT	63064	SRA	63004
ROTATERORX	63510	RA	63002	ROTATERAON	63506	SRA	63004	SYSCOMREG1	63452
RAOOT	63007	RAOARMOOE	63312	RAOFFSET	63514	SYSCOMREG4	63455	SYSCOMREG6	77600
RAOECOTIME	63531	RAOIOOEC	63541	RAOIMETER	63102	SYSTAT2	63314	TIMEHOOE	63103
RAOIORA	63540	RAOIUS	63006	RAOIUSOOT	63011	TIMEHOLO	63520	TTYSSTATUS	63111
RANGE	63052	RANGEOUT	70777	RANGEOO	63011	VIZOEC1	63014	VIZRA2	63015
RANGE00T	63062	RASCTNSCAN	63504	ROMTR	63430	VIZRA2	63015	WFFREQ	63333
ROXXX	63433	RECOROSIZE	63112	ROMTR	63430	WFFREQ	63333	ZRTRAN	63330
RECELEV	70000	RECFILE	63212	RECAZIM	67000	ZRTRAN	63330		
RECROSWTCH	63155	RELEASESH	63156	RECR0	63415				
SELETIME	63134	SOEC	63005	SAZIM	63055				
SELEV	63056	SIOERTIME	63012	SECONOS	63140				
SINAZEL	63066	SKIP	63331	SINORIENT	63064				
SRAOTIME	63136	SYNCTIMING	63542	SRA	63004				
SYSCOMREG2	63453	SYSCOMREG3	63454	SYSCOMREG1	63452				
SYSCOMREG5	63456	SYSCOMREG6	63457	SYSCOMREG4	63455				
SYSCOMREG6	77700	SYSTAT1	63313	SYSCOMREG6	77600				
SYSCOMREGS	77700	SYSTAT1	63313	SYSTAT2	63314				
SYSTATO	63315	TIMECORR	63107	SYSTAT2	63314				
TIMEMARK1	00144	TIMEP	63435	TIMEHOOE	63103				
TRUERANGE	63063	TRUETIME	63132	TIMEHOLO	63520				
TWOSECOOP	63017	VELOFLIGHT	63335	TTYSSTATUS	63111				
VIZDEC2	63016	VIZRA1	63013	VIZOEC1	63014				
WFORO	63432	WFAOO	63450	VIZRA2	63015				
YEARMONTH	63147	YRTRAN	63327	WFFREQ	63333				
				ZRTRAN	63330				

END OF LISTING

SPURT OUTPUT NO. 212

R. TEOSTE*4/9/65

PLOT P		L		R	
LABEL	LOC	LABEL	LOC	LABEL	LOC
PLOT	00000	PLOTINIT	00002	GOPLOTGO	00011
ADJUSTOP	00027	PLOTQUEST	00032	PLOTANSW	00050
PCALC00E	00052	PLOTQUEST	00053	PLOTTRJP	00065
PLOTINTER	00066	PLOTVALUES	00101	PLOTERRORS	00105
ENOPLOT	00134	PLOTWORO	00140	PLOTJPTAB	00141
TIMEMARKI	00144	PLOTHACK	00150	PLOTSTOP	00152
PLOTA	00154	PLOTQ	00155	PLOTB	00156
ADJUSTCASE	00157	A0JTABLE	00166	CALCASE	00171
PLITINCREM	00201	PLOTENO	00202	PLOTWOR01	00207
A0JI	00210	PLOTM10	00211	PLOTWORK	00216
PLOTCASE	00221	PLOTWORD11	00232	PLOTPATCH	00233
A\$\$\$\$1111	00241	A\$\$\$\$1112	00242	IOICELCOR	63000
IOZCELCOR	63001	RA	63002	OEC	63003
SRA	63004	SOEC	63005	RAOIUS	63006
RAO0T	63007	OEC00T	63010	RAOIUS00T	63011
S1OERTIME	63012	VIZRA1	63013	VIZOECI	63014
VIZRA2	63015	VIZOEC2	63016	TWOSECOOP	63017
IOIRAOCOR	63050	IOZRAOCOR	63051	RANGE	63052
AZIM	63053	ELEV	63054	SAZIM	63055
SELEV	63056	CRANGE	63057	CAZIM	63060
CELEV	63061	RANGE00T	63062	TRURANGE	63063
SINORIENT	63064	COSORIENT	63065	SINAZEL	63066
COSAZEL	63070	ACQAZIM	63071	ACQELV	63075
FRAMESIZE	63101	RAOIMETER	63102	TIMEMO0E	63103
FIRSTELEV	63104	ASTRORA	63105	ASTROOEC	63106
TIMECORR	63107	KYBROLEVEL	63110	TYSTATUS	63111
RECORDSIZE	63112	CELBO0Y	63113	IOITIME	63130
IOZTIME	63131	TRUETIME	63132	CELTIME	63133
SCELTIME	63134	CONVERTIME	63135	SRAOTIME	63136
HOURMINUTE	63137	SECONOS	63140	OSECONOS	63141
ACTUALTIME	63142	ESTSHIFTEO	63143	GMTSHIFTEO	63144
GHTMO0U24	63145	BLASTOFF	63146	YEARMONTH	63147
DAY	63150	HOURREG	63151	MINREG	63152
FIRSTHRU	63153	OUMSECTTG	63154	RECROSSWICH	63155
RELEASESW	63156	IOIRECRO	63210	IO2RECRO	63211
RECFILE	63212	IOISYSPAR	63310	IO2SYSPAR	63311
RAOARMOOE	63312	SYSTAT1	63313	SYSTAT2	63314
SYSTATO	63315	OELTATEE	63316	FREQUENCY	63317
LONGITUOE	63320	GEOOETLAT	63321	GEOCENLAT	63322
EQUATOR	63323	POLE	63324	AZIMOVER	63325
HEIGHT	63326	YRTRAN	63327	ZRTRAN	63330
SKIP	63331	MSFREQ	63332	WFFREQ	63333
MAINSWITCH	63334	VELOFLIGHT	63335	LSPERAU	63336
FLATTENING	63337	NMPERAU	63340	AUPEREQUAT	63341
KMPERNM	63342	EXPNAME	63350	IOIENTPNT	63410
IOZENTPNT	63411	MCPGM	63412	INTER	63413
COCON	63414	RECRO	63415	AOSCN	63416
AESCN	63417	CORCT	63420	OYOMP	63421
CHCOR	63422	PRLOG	63423	CELCOMPGM	63424
OATANALYZE	63425	INTERCOM	63426	ACQUI	63427
RDMT	63430	CHPAR	63431	WFORO	63432

SPURT OUTPUT NO. 212

R. TEOSTE*4/9/65

PLOTP

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
ROXXX	63433	PLANP	63434	TIMEP	63435		
PLOTP	63436	IOIRADIO	63440	IO2RADIO	63441		
AZIMADD	63442	ELEVADD	63443	ODPPA00	63444		
RANGEADD	63445	INAZIMADD	63446	I NELEVADD	63447		
WFADD	63450	MILLSTNADO	63451	SYSCOMREG1	63452		
SYSCOMREG2	63453	SYSCOMREG3	63454	SYSCOMREG4	63455		
SYSCOMREG5	63456	SYSCOMREG6	63457	INTERLCKSM	63460		
PREVIDUSTM	63461	BODYSIZE	63462	AZELBXSCAN	63500		
AZMTHSCAN	63501	ELVTNSCAN	63502	RAOCBSCAN	63503		
RASCTNSCAN	63504	DECLINSCAN	63505	ROTATERAON	63506		
ROTATEAEBX	63507	ROTATERDBX	63510	HOLONOHOLD	63511		
AZIMOFFSET	63512	ELEVOFFSET	63513	RAOFFSET	63514		
DECDFFSET	63515	CRSROFFSET	63516	ALNGOFFSET	63517		
TIMETOHOLD	63520	PERIODELEV	63521	ARCOFELEV	63522		
PERIODAZIM	63523	ARCOFAZIM	63524	PERIODDEC	63525		
ARCOFDEC	63526	PERIODRA	63527	ARCOFRA	63530		
RADECOTIME	63531	AZELOTIME	63532	RADIORA	63540		
RADIODEC	63541	SYNCTIMING	63542	IO3RADIO	63776		
IO4RADIO	63777	AZIMOUT	64000	IO5RADIO	64776		
IO6RADIO	64777	ELEVOUT	65000	IO7RADIO	65776		
IO8RADIO	65777	DOPPOUT	66000	IO9RADIO	66776		
IO10RADIO	66777	RECAZIM	67000	IO11RADIO	67776		
IO12RADIO	67777	RECELEV	70000	IO13RADIO	70775		
IO14RADIO	70776	RANGEOUT	70777	MCPFILLER	71000		
IO15RADIO	71776	IO16RADIO	71777	INTERAZIM	72000		
IO17RADIO	72776	IO18RADIO	72777	INTERELEV	73000		
IO19RADIO	73776	IO20RADIO	73777	INTERDOPP	74000		
IO21RADIO	74776	IO22RADIO	74777	AZIMIN	75000		
IO23RADIO	75776	IO24RADIO	75777	ELEVIN	76000		
IO25RADIO	76775	IO26RADIO	76776	INTERRANGE	76777		
IO15YSENT	77576	IO25YSENT	77577	SYSENTRIES	77600		
IO15YSNAM	77676	IO25YSNAM	77677	SYSNAMES	77700		

END OF LISTING

CARDS	LL	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
•	C0C00		LCGGING	PROGRAM	S-J.WHITE*06/29/65					
•	C0C01		LCGGING	U-TAG	LOGWORK*LOGINIT	00000	00017	0C0C2		
•	C0C02			FC	I*PRL0G	00001	25272	12414		
•	C0C03		LCGINIT	ENTRY		00002	61000	0C0C0		
•	C0C04			RPT	6250*ADV	00003	70100	01161		
•	C0C05			CL	W(STKPLBK)	00004	16030	0C456		
•	C0C06			CL	B5*	00005	12500	0C0C0		
•	C0C07			CL	B6*	00006	12600	0C0C0		
•	C0C10			ENT	A*(FDRPLUG)	00007	11030	0C431		
•	C0C11			STR	A*(STACK01-2+B6)	00010	15036	0C5C2		
•	C0C12			ENT	B6*B6+280	00011	12606	0C034		
•	C0C13			BSK	B5*190	00012	71500	0C023		
•	C0C14			JP	\$-3	00013	61000	0C010		
•	C0C15			STR	A*(EMRGAREA-2)	00014	15030	01605		
•	C0C16			TERM	C3*OUTPUT	00015	67140	0C0C0		
•	C0C17			EXIT		00016	61010	0C0C2		
•	C0C20		LCGCRK	ENTRY		00017	61000	0C0C0		
•	C0C21			SIL		00020	64000	0C0C0		
•	C0C22			RJP	WKS AV	00021	65000	00272		SET INTERRUPT RETURN
•	C0C23			PUT	W(INTRGO)*W(23)	00022	10030	00430		
•	C0C24			CL	B5	00023	14030	0C023		
•	C0C25			ENT	B3*(SAVEB)	00024	12500	0C0C0		
•	C0C26			ENT	B4*(SAVEB)	00025	12320	01574		RESTORE INPUT INDEX
•	C0C27			ENT	A*(LOGWORK)	00026	12410	01574		RESTORE OUTPUT INDEX
•	C0C30			STR	A*(L(\$+1))	00027	11010	0C017		SET FWA AND NO. WRDS REG.
•	C0C31			PUT	W(0)*W(NOWROSEFWA)	00030	15010	0C031		
•	C0C32			RPL	Y+1*(LOGWORK)	00031	10030	0C0C0		
•	C0C33			STR	A*(L(\$+1))	00032	14030	01570		
•	C0C34			PUT	W(0)*W(SBPSAP)	00033	36010	00017		
•	C0C35			RPL	Y+1*(LOGWORK)	00034	15010	0C035		
•	C0C36			ENT	A*(CHANINACTV)*AZERO	00035	10030	0C0C0		
•	C0C37			JP	BUSY	00036	14030	01571		
•	C0C40			ENT	A*(X(SBPSAP))*APOS	00037	36010	0C017		
•	C0C41			JP	EMER00T	00040	11430	01566		IS THIS EMERGENCY DATA
•	C0C42			ENT	A*(RADIO METER)*ANOT	00041	61000	00151		YES
•	C0C43			JP	NORMP	00042	11650	01571		
•	C0C44			ENT	A*(X(SBPSAP))*ANEG	00043	61000	00151		
•	C0C45			JP	BUSY	00044	11510	63102		
•	E0C46		NCRMP	ENT	A*(0)(STKPLBK*B3)*AZERO	00045	61000	0C050		
•	C0C47			ENT	B3*B3-1	00046	11760	01571		
•	C0C50			ENT	A*(STKPLBF*B3)	00047	61000	00167		PICK UP FWA OF BUF TO BE FILLE
•	C0C51			RJP	MOVE DATA	00050	11423	0C456		D
•	C0C52			PUT	W(SBPSAP)*W(STKPLBK*B3)	00051	12303	77776		MOVE DATA INTO PROPER BUF AREA
•	C0C53			BSK	B3*190	00052	11013	0C432		
•	C0C54			JP	\$+1	00053	65000	CC356		
•	C0C55			STR	B3*(SAVEB)	00054	10030	01571		STO SBPSAP WD FOR RUF JUST FIL
						00055	14033	0C456		LED
						00056	71300	CC023		STEP INPUT INDEX
						00057	61000	0C060		
						00060	14320	01574		

CARDS	LI	ID	LABEL	TA	STATEMENT	LOGGING	LOC	F	JKB	Y	NOTES
	C0C56			CL	U(PRNB)		00061	16020	01573		CLEAR BUSY SWITCH
	C0C57			ENT	A*(L(PRNB)*AZERO		00062	11410	01573		
	C0C60			JP	\$+3		00063	61000	00066		
	C0C61			ENT	A*(PGCNT)*ANOT		00C64	11520	01563		
	C0C62			JP	SEEIFOOT		00065	61000	00067		
	C0C63			JP	NORMLEAVE		00066	61000	00164		
	C0C64		SEEIFGUT	ENT	A*(STKPLBK+R4)*ANOT		00067	11514	00456		ISTHIS A TOP REQUEST
	C0C65			JP	NOTTOP		00070	61000	00117		NO
	C0C66			ENT	A*(PGCNT)		00071	11010	01563		YES
	C0C67			SUB	A*3*APDS		00072	21600	00003		IS THERE 63 OR LESS LINES TO B E_SKI+
	C0C70			JP	ISNEGITIVE		00073	61000	00107		NO;MORE
	C0C71			RPL	Y+1*U(PGCNT)		00074	36020	01563		SET,NO OUTPUT UNTILL TOP
	C0C72			ENT	A*660		00075	11000	00102		MAX LINES
	C0C73			SUB	A*(PGCNT)		00076	21010	01563		HOW MANY LINES TO TOP
	C0C74			CL	L(CURRENTSAP)		00077	16010	01567		
	C0C75		UPSET	PUT	W(SAPBFCNT)*W(PRNDT)		00100	10030	00426		SET FAKE OUTPUT
	C0C76			RJP	SETSBSAP		00101	14030	01572		
	C0C77			CL	L(STKPLBK+R4)		00102	65000	00312		SET SBP
	C0100			RJP	PRINTINFO		00103	16014	00456		CL TOP MARK
	C0101			RPL	Y+1*(PRNB)		00104	65000	00322		INITIATE TOP
	C0102			JP	NORMLEAVE		00105	36010	01573		SET U NO OUTPUT UNTILL TOP
	C0103		ISNEGITIVE	ENT	A*(PGCNT)		00106	61000	00164		
	C0104		AD0	A*630			00107	11010	01563		
	C0105			STR	A*(CURRENTSAP)		00111	20000	00077		
	C0106			ENT	A*660		00112	11000	00102		
	C0107			RPL	A-Y*(CURRENTSAP)		00113	25010	01567		
	C0110			RPL	Y+1*(PGCNT)		00114	36020	01563		
	C0111			ENT	A*630		00115	11000	00077		
	C0112			JP	UPSET		00116	61000	00100		NO
	C0113		NCTTCP	ENT	A*(STKPLBK+R4)*AZERO		00117	11464	00456		
	C0114			JP	F0UND		00120	61000	00126		
	C0115			BSK	04*190		00121	71400	00023		
	C0116			JR	\$+1		00122	61000	00123		
	C0117			ASK	B5*190		00123	71500	00023		
	C0120			JP	NCTTUP		00124	61000	00117		
	C0121			JP	BEFO		00125	61000	00136		
	C0122		F0UNC	PUT	W(STKPLBK+R4)*W(RRNOT)		00126	10034	00432		
	C0123			RJP	SETSBSAP		00127	14030	01572		
	C0124			RJP	PRINTINFO		00130	65000	00312		SET UP SPACE BEFORE PRINT
	C0125			JP	CHAVACTV		00131	65000	00322		PRINT INFORMATION
							00132	61000	00140		CHAN ACTIVE COULD NOT PRINT
	C0126			CL	U(STKPLBK+R4)		00133	16024	00456		CLEAR SBP MARK BUFF JUST EMPTI EO
	C0127			RUT	W(STKPLBK+R4)*W(CURRENTSAR)		00134	10034	00456		
	C0130		BEFC	BSK	B4*190		00135	14030	01567		INDEX OUTPUT
	C0131			JP	\$+1		00136	71400	00023		
	C0132		CFANACTV	STR	B4*(SAVER)		00137	61000	00140		SAVE OUTPUT INOEX
	C0133			ENT	A*(PRNB)*ANOT		00140	16410	01574		
	C0134			JP	NORMLEAVE		00141	11520	01573		
							00142	61000	00164		YES NORMAL RETURN

CARCS	LI ID LABEL	TA STATEMENT	LOC	F	JK8	Y	NOTES
	C0135	CL U(PRNB)	00143	16020	01573		
	C0136	ENT A*(BUSYTRN)*AZERO	00144	11430	01565		
	C0137	ENT A*-0	00145	11040	77777		
	C0140	CL W(BUSYTRN)	00146	16030	01565		
	C0141	RJP WKRSU	00147	65000	0G3C2		
	C0142	RILJP L(LOGWCRK)	00150	60110	0C017		
	C0143	STR 80*CPW(EMERSW)	00151	16070	01562		
	C0144	ENT A*U(SBPSAP)	00152	11060	01571		
	C0145	RJP SETSBPSAP	00153	65000	0C312		SET SBP
	C0146	ENT A*(EMERBUF)	00154	1101C	0C427		MOVE EMERGENCY DATA INTO BUF A REA
	C0147	RJP MCVEDATA	00155	65000	00356		
	C0150	PUT W(EMERBUF)*W(PRNOT)	00156	10030	0C427		SET UP TO UTPOT EMERGENCY DAT A
	C0151	RJP PPNTINFO	00157	14030	01572		
	C0152	RPL Y+1*L(PRNB)	00160	65000	00322		OUTPUT EMERGENCY DATA
	C0153	PUT W(SBPSAP)*W(CURRENTSAP)	00161	3601C	01573		NO OUTPUT CHAN ACTV
	C0154	NCRMLEAVE	00162	10030	01571		
	C0155	RPL Y+1*L(LOGWORK)	00163	14030	01567		
	C0156	RJP WKRSU	00164	36010	0C017		
	C0157	RILJP L(LOGWORK)	00165	65000	0G3C2		
	C0160	RPL Y+1*W(BUSYTRN)*SKIP	00166	60110	0C017		
	C0161	CL W(BUSYTRN)	00167	36130	01565		
	C0162	RPL Y+1*U(PRNB)	00170	16030	01565		
	C0163	CL W(CHANINACTV)	00171	36020	01573		SET BUF FULL RETURN BUSY SW
	C0164	JP SEEIFUOT	00172	16030	01566		
	C0165	ENTRY	00173	61000	00067		NO TRY OUTPUT NORMAL DATA
	C0166	RJP SAVEALL	00174	6100C	0C0C0		
	C0167	CL W(INTROCC)	00175	65000	0C260		SAVE CONTENTS
	C0170	STR C3*W(SAVECHAN)	00176	16030	01575		CLEAR PRINTER BUSY SWITCH
	C0171	ENT A*U(SAVECHAN)	00177	17170	01576		STORE CHANNEL
	C0172	RSH A*11D	00200	11020	01576		
	C0173	SUB A*10*AND	00201	02000	00013		
	C0174	JP SOK	00202	2150C	00010		
	C0175	PUT 1*W(CHANINACTV)	00203	61000	00217		
	C0176	RPL Y-1*L(SAVEB)*ANEG	00204	10000	0C0C1		
	C0177	JP \$+3	00205	14030	01566		
	C0200	PUT 19C*L(SAVEB)	00206	37710	01574		
	C0201	ENT B4*L(SAVEB)	00207	61000	0C212		
	C0202	PUT 1*U(STKPLBK*84)	00210	1000C	0C023		
	C0203	TERM C3*OUTPUT	00211	14010	01574		
	C0204	JP GHOUT	00212	12410	01574		
	C0205	CL W(CHANINACTV)	00213	10000	0C0C1		
	C0206	ENT A*(PRNB)*AZERO	00214	14024	00456		
	C0207	JP PRINTNOW	00215	67140	0C0C0		
	C0208	ENT A*L(CURRENTSAP)*AND	00216	61000	0C232		
	C0209	JP STADOUT	00217	16030	01566		
	C0210		00220	11410	01573		WAS CHAN ACTIV LAST OUTPUT ATTE MPT
	C0211		00221	61000	0C254		YES
	C0212		00222	11550	01567		
	C0213		00223	61000	0C234		NO

CARDS	LL	ID	LARCL	TA	STACMENT	LOGGING	IUC	F	JKB	Y	NOTES
•	C0211			RJP	SETS8PSAP		00224	65000	CC312		SET OP EMER SAP
•	C0212			POT	W(SAPBFCN1)*W(PRNOT)		00225	10030	0C426		SET OP DUMMY OUTPUT
•	C0213			RJP	PRINTINFO		00226	14030	01572		EXECUTE SAP
•	C0214			NO-OP			00227	65000	00322		NO BUSY RETURN
•	C0215			CL	W(CORRCNTSAP)		00231	16030	01567		RESTORE OLD CONTENTS
•	C0216		GFCUT	RJP	RCSTOALL		00233	60110	00174		RIL EXI1
•	C0217			RILJP	L(LOGINTR)		00234	12410	01574		
•	C0220		STACOUT	CNT	B4*L(SAVEB)		00235	11564	0C456		
•	C0221			ENT	A*O(X(STKPLBK+B4))*A*NOT		00236	61000	00252		
•	C0222			JP	WIFFEL		00237	65000	00312		
•	C0223		NCPNTSAP	RJP	SETS8PSAP		00240	10034	0C432		SET PRINT OUTPUT FROM BUF
•	C0224			POT	W(STKPLBF+B4)*W(PRNOT)		00241	14030	01572		
•	C0225			RJP	PRINTINFO		00242	65000	00322		
•	C0226			NO-OP			00243	12000	00000		NO BUSY RETURN
•	C0227			CL	U(PGCNT)		00244	16020	01563		
•	C0230			CL	U(STKPLBK+B4)		00245	16024	0C456		CL S8P
•	C0231			POT	W(STKPLRK+B4)*W(CORRCNTSAP)		00246	10034	0C456		
•	C0232			BSK	B4*190		00247	14030	01567		
•	C0233			JP	\$+1		00250	71400	00023		INCREMENT OUTPUT INDEX
•	C0234		WIFFEL	STR	B4*L(SAVCB)		00251	61000	00252		
•	C0235			JP	GHCUT		00252	16410	01574		
•	C0236		PRINTNO	RJP	PRINTINFO		00253	61000	00232		
•	C0237			NO-OP			00254	65000	00322		
•	C0240			CL	L(PRNBY)		00255	12000	00000		
•	C0241			JP	GHCUT		00256	16010	01573		EXIT
•	C0242		SAVEALL	ENTRY			00257	61000	00232		
•	C0243			STR	A*W(ISAVC)		00261	15030	01577		
•	C0244			STR	Q*W(ISAVE+1)		00262	14030	01600		
•	C0245			STR	B4*O(ISAVE+2)		00263	16420	01601		
•	C0246			EXIT			00264	61010	00260		
•	C0247		RESTCALL	ENTRY			00265	61000	00000		
•	C0250			CNT	A*W(ISAVE)		00266	11030	01577		
•	C0251			ENT	Q*W(ISAVE+1)		00267	10030	01600		
•	C0252			ENT	B4*O(ISAVC+2)		00270	12420	01601		
•	C0253			EXIT			00271	61010	00265		
•	C0254		WKSAP	ENTRY			00272	61000	00000		
•	C0255			STR	B6*L(ISAVC+2)		00273	16610	01601		
•	C0256			STR	A*W(ISAVE+3)		00274	15030	01602		
•	C0257			STR	Q*W(ISAVE+4)		00275	14030	01603		
•	C0260			STR	B3*U(ISAVC+5)		00276	16320	01604		
•	C0261			STR	B4*L(ISAVC+5)		00277	16410	01604		
•	C0262			STR	B5*U(ISAVE+6)		00300	16520	01605		
•	C0263			EXIT			00301	61010	00272		
•	C0264		WKRSTC	ENTRY			00302	61000	00000		
•	C0265			CNT	B6*L(ISAVC+2)		00303	12610	01601		
•	C0266			CNT	A*W(ISAVE+3)		00304	11030	01602		
•	C0267			ENT	Q*W(ISAVE+4)		00305	10030	01603		
•	C0270			ENT	B3*O(ISAVC+5)		00306	12320	01604		
•	C0271			CNT	B4*L(ISAVC+5)		00307	12410	01604		
•	C0272			CNT	B5*O(ISAVC+6)		00310	12520	01605		

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0273		EXIT	00311	61010	003C2		
.	C0274	SETSBSAP	ENTRY	00312	61000	00C00		
.	C0275		ENT A*A*APOS	00313	11670	00C00		WAS A REG NEG
.	C0276		CP A*	00314	15040	00C00		
.	C0277		STR A*LI(SAVFOWL)	00315	15010	01564		
.	C0300		LSH A*3	00316	06000	00C03		SET O(PRINTER)
.	C0301		ADD A*12000	00317	20000	12000		
.	C0302		STR A*U(PRINTER)	00320	15020	00424		
.	C0303		EXIT	00321	61010	00312		EXIT
.	C0304	PNTINFC	ENTRY	00322	61000	00C00		
.	C0305		BSK B0*(INTROCC)	00323	71030	01575		IS CHANNEL BUSY
.	C0306		JP ACTVTRN	00324	61000	00344		YES BUSY RETURN
.	C0307		JP ACTVTRN*C3*ACTIVE00T	00325	63140	00344		
.	C0310		EX-FCI C3*(PRINTER)	00326	13170	00424		
.	C0311		NO-OP	00327	12000	00C00		
.	C0312		CUI C3*(PRNOT)	00330	74170	01572		
.	C0313		ENT A*LI(SAVFOWL)	00331	11010	01564		
.	C0314		ADD A*LI(PGNT)	00332	20010	01563		
.	C0315		SUB A*60*ANOT	00333	21500	00102		
.	C0316		JP TOORIG	00334	61000	00341		
.	C0317		ENT Q*A*ANEG	00335	10770	00C00		
.	C0320		JP TOORIG	00336	61000	00341		
.	C0321		ENT A*LI(SAVFOWL)	00337	11010	01564		
.	C0322		ADD A*LI(PGNT)	00340	20010	01563		
.	C0323	TCCBIG	STR A*LI(PGNT)	00341	15010	01563		
.	C0324		STR B0*CPW(INTROCC)	00342	16070	01575		SET CHANNEL BUSY SW
.	C0325		RPL Y+1*(PRNTINFO)	00343	36010	00322		NORMAL RETURN
.	C0326	ACTVTRN	ENT Q*(PRNOT)	00344	10030	01572		
.	C0327		SUB Q*2	00345	27000	00002		
.	C0330		RPT 380*ADV	00346	70100	00046		
.	C0331		ENT A*(RECFILE+120)*AZERO	00347	11430	63226		
.	C0332		JP FULLUP	00350	61000	00355		
.	C0333		ENT A*87	00351	11007	00C00		
.	C0334		ADD A*380	00352	20000	00046		
.	C0335		ENT 87*A	00353	12770	00C00		
.	C0336		STR C*(RECFILE+120+87)	00354	14037	63226		
.	C0337	FLLUP	EXIT	00355	61010	00322		
.	C0340	MVECAT	ENTRY	00356	61000	00C00		
.	C0341		PSK B0*(EMERSW)	00357	71030	01562		
.	C0342		JP ISEMER	00360	61000	00366		
.	C0343		ENT Q*STKPLRF*83	00361	10003	00432		
.	C0344		STR Q*LI(PUT1)	00362	14010	00404		
.	C0345		STR Q*LI(PUT2)	00363	14010	00406		
.	C0346		STR Q*LI(WHERE*1)	00364	14010	00411		
.	C0347		JP ISEMER*4	00365	61000	00372		
.	C0350	ISEMER	ENT Q*FMERBUF	00366	10000	00427		
.	C0351		STR Q*LI(PUT1)	00367	14010	00404		
.	C0352		STR Q*LI(PUT2)	00370	14010	00406		
.	C0353		STR Q*LI(WHERE*1)	00371	14010	00411		
.	C0354		CL 86*	00372	12600	00C00		
.	C0355		STR A*LI(LOADCONT+1)	00373	15010	00417		
.	C0356		ADD A*U(NDWRD5FWA)	00374	20020	01570		ADD NO. WRDS TO FWA TO BE FILL

EO

CARDS	LL ID LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0357	STR A*(WHERE+3)	00375	15010	00413		
.	C0360	ENT A*(NOWROSFWA)	00376	11020	01570		
.	C0361	SUB A*1	00377	21000	00001		SET OP BSK NO. WROS TO BE PICK
.	C0362	STR A*(BSKWRDS)	00400	15010	00420		ED UP
.	C0363	SUB A*250*ANOT	00401	21500	00031		
.	C0364	JP \$+2	00402	61000	00404		
.	C0365	JP WHERE	00403	61000	00410		
.	C0366	ENT Q*(L(O)	00404	10010	00000		
.	C0367	ADO Q*250	00405	26000	00031		
.	C0370	STR Q*(U(O)	00406	14020	00000		
.	C0371	JP GETFWA	00407	61000	00414		
.	CC372	PUT L(\$+3)*U(O)	00410	10010	00413		
.	C0373	PUT -O*(W(O)	00411	14020	00000		
.	C0374	PUT L(NOWROSFWA)*L(\$+1)	00412	10040	77777		
.	C0375	POT W(O+86)*W(O+86)	00413	14030	00000		
.			00414	10010	01570		SET FWA WHERE TO FIND DATA
.			00415	14010	00416		
.			00416	10036	00000		LOAD DATA IN PROPER BUFFER ARE
.			00417	14036	00000		A
.	C0376	BSK B6*0	00420	71600	00000		
.	C0377	JP LOADCONT	00421	61000	00416		
.	C0400	CL W(EMERSW)	00422	16030	01562		
.	C0401	FALT	00423	61010	00356		
.	C0402	I201C 1	00424	1201C	00001		
.	C0403	-O -O	00425	77777	77777		
.	C0404	SAPPRNT*SAPPRNT	00426	00425	00425		
.	C0405	U-TAG EMRCAREA*250*EMRGAREA	00427	01640	01607		
.	C0406	U-TAG	00430	65000	00174		
.	C0407	RJP LOCINTR	00431	25272	12414		
.	C0408	FO O*PRL0G	00432	00535	00504		
.	C0409	U-TAG STACK01+250*STACK01	00433	00571	00540		
.	C0410	U-TAE STACK02+250*STACK02	00434	00625	00574		
.	C0411	U-TAG STACK03+250*STACK03	00435	00661	00630		
.	C0412	U-TAG STACK04+250*STACK04	00436	00715	00664		
.	C0413	U-TAG STACK05+250*STACK05	00437	00751	00720		
.	C0414	U-TAG STACK06+250*STACK06	00440	01005	00754		
.	C0415	U-TAG STACK07+250*STACK07	00441	01041	01010		
.	C0416	U-TAG STACK08+250*STACK08	00442	01075	01044		
.	C0417	U-TAG STACK09+250*STACK09	00443	01131	01100		
.	C0418	U-TAG STACK10+250*STACK10	00444	01165	01134		
.	C0419	U-TAG STACK11+250*STACK11	00445	01221	01170		
.	C0420	U-TAG STACK12+250*STACK12	00446	01255	01224		
.	C0421	U-TAG STACK13+250*STACK13	00447	01311	01260		
.	C0422	U-TAG STACK14+250*STACK14	00450	01345	01314		
.	C0423	U-TAG STACK15+250*STACK15	00451	01401	01350		
.	C0424	U-TAG STACK16+250*STACK16	00452	01435	01404		
.	C0425	U-TAG STACK17+250*STACK17	00453	01471	01440		
.	C0426	U-TAG STACK18+250*STACK18	00454	01525	01474		
.	C0427	U-TAG STACK19+250*STACK19	00455	01561	01530		
.	C0428	U-TAG STACK20+250*STACK20	00456	00000	00000		
.	C0429	RESERVE 20	00502	00000	00000		
.	C0430	RESERVE 2					
.	C0431						
.	C0432						
.	C0433						
.	CC434	STKPLBK					
.	CC435						

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C0436		STACKC1		RESERVE 260	00504	00000	00000	00000	
.	C0437		STACKC2		RESERVE 2	00536	00000	00000	00000	
.	C0440		STACKC2		RESERVE 260	00540	00000	00000	00000	
.	C0441		STACKC3		RESERVE 2	00572	00000	00000	00000	
.	C0442		STACKC3		RESERVE 260	00574	00000	00000	00000	
.	C0443		STACKC4		RESERVE 2	00626	00000	00000	00000	
.	C0444		STACKC4		RESERVE 260	00630	00000	00000	00000	
.	C0445		STACKC5		RESERVE 2	00662	00000	00000	00000	
.	C0446		STACKC5		RESERVE 260	00664	00000	00000	00000	
.	C0447		STACKC6		RESERVE 2	00716	00000	00000	00000	
.	C0450		STACKC6		RESERVE 260	00720	00000	00000	00000	
.	C0451		STACKC7		RESERVE 2	00752	00000	00000	00000	
.	C0452		STACKC7		RESERVE 260	00754	00000	00000	00000	
.	C0453		STACKC8		RESERVE 2	01006	00000	00000	00000	
.	C0454		STACKC8		RESERVE 260	01010	00000	00000	00000	
.	C0455		STACKC9		RESERVE 2	01042	00000	00000	00000	
.	C0456		STACKC9		RESERVE 260	01044	00000	00000	00000	
.	C0457		STACKIC		RESERVE 2	01076	00000	00000	00000	
.	C0460		STACKIC		RESERVE 260	01100	00000	00000	00000	
.	C0461		STACK11		RESERVE 2	01132	00000	00000	00000	
.	C0462		STACK11		RESERVE 260	01134	00000	00000	00000	
.	C0463		STACK12		RESERVE 2	01166	00000	00000	00000	
.	C0464		STACK12		RESERVE 260	01170	00000	00000	00000	
.	C0465		STACK13		RESERVE 2	01222	00000	00000	00000	
.	C0466		STACK13		RESERVE 260	01224	00000	00000	00000	
.	C0467		STACK14		RESERVE 2	01256	00000	00000	00000	
.	C0470		STACK14		RESERVE 260	01260	00000	00000	00000	
.	C0471		STACK15		RESERVE 2	01312	00000	00000	00000	
.	C0472		STACK15		RESERVE 260	01314	00000	00000	00000	
.	C0473		STACK16		RESERVE 2	01346	00000	00000	00000	
.	C0474		STACK16		RESERVE 260	01350	00000	00000	00000	
.	C0475		STACK17		RESERVE 2	01402	00000	00000	00000	
.	C0476		STACK17		RESERVE 260	01404	00000	00000	00000	
.	C0477		STACK18		RESERVE 2	01436	00000	00000	00000	
.	C0500		STACK18		RESERVE 260	01440	00000	00000	00000	
.	C0501		STACK19		RESERVE 2	01472	00000	00000	00000	
.	C0502		STACK19		RESERVE 260	01474	00000	00000	00000	
.	C0503		STACK20		RESERVE 2	01526	00000	00000	00000	
.	C0504		STACK20		RESERVE 260	01530	00000	00000	00000	
.	C0505		EMERSW		C 0	01562	00000	00000	00000	
.	C0506		PCCNT		C 0	01563	00000	00000	00000	
.	C0507		SAVFGWL		C 0	01564	00000	00000	00000	
.	C0510		BLSYTRN		C 0	01565	00000	00000	00000	
.	C0511		CPANINACTV		C 0	01566	00000	00000	00000	
.	C0512		CLRRNTYSAP		C 0	01567	00000	00000	00000	
.	C0513		NCRDSEFWA		C 0	01570	00000	00000	00000	
.	C0514		SBPSAR		C 0	01571	00000	00000	00000	
.	C0515		PFNDT		C 0	01572	00000	00000	00000	
.	C0516		PRNBY		C 0	01573	00000	00000	00000	
.	C0517		SAVEB		C 0	01574	00000	00000	00000	
.	C0520		INTRCCC		C 0	01575	00000	00000	00000	
.	C0521		SAVECHAN		C 0	01576	00000	00000	00000	
.	C0522		ISAVE		RESERVE 6	01577	00000	00000	00000	

SPURT OUTPUT NO. 210
S.J.WHITE#06/29/65

LOGGING

CARDS	LI TO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0523	RESERVE 2	01605		00000	00000	
.	C0524	RESERVE 260	01607		00000	00000	
.	C0525	NO-OP	01641		12000	00000	DUMMY

END OF LISTING

S.-J. WHITE*06/29/65

LOGGING

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
ACQAZIM	63071	ACQLEVV	63075	ACQUI	63427		
ACTUALTIME	63142	ACTVTRN	00344	ADSCN	63416		
AESCN	63417	ALNGOFFSET	63517	ARCOFAZIM	63524		
ARCODEC	63526	ARCOFELEV	63522	ARCOFRA	63530		
ASTRODEC	63106	ASTROA	63105	AUPEREQUAT	63341		
AZELTIME	63532	AZELBXSCAN	63500	AZIM	63053		
AZIMOFFSET	63512	AZIMOUT	64000	AZIMOVER	63325		
AZIMADD	63442	AZIMIN	75000	AZMTHSCAN	63501		
BODYSIZE	63462	REFO	00136	BLASTOFE	63146		
BKWRDS	00420	BUSV	00167	BUSYTRN	01565		
BUSYX	00170	CUCUN	63414	CONVERTIME	63135		
CCRCT	63420	CUSORIENT	63065	COSAZEL	63070		
CAZIM	63060	CELBOUY	63113	CELCOMPGM	63424		
CELEV	63061	CELTIME	63133	CHANACTV	00140		
CHANINACTV	01566	CHCOR	63422	CHPAR	63431		
CRANGE	63057	CRSSOFFSET	63516	CURRENTSAP	01567		
DCPPDUT	66000	DOPPAD	63444	DATANALYZE	63425		
DAY	63150	DEC	63003	DECOESET	63515		
CECOT	63010	DECLINSCAN	63505	DELTATEE	63316		
DSECONDS	63141	DUMSECTTG	63154	DYDMP	63421		
ELEV	63054	ELEVDFSET	63513	ELEVOUT	65000		
ELEVADD	63443	ELEVIN	76000	ELVTNSCAN	63502		
EMEROUT	00151	EMERRUF	00427	EMERSH	01562		
EMGAREA	01607	EQUATOR	63323	ESTSHIETEO	63143		
EXPNAME	63350	FOUND	00126	EOPRLOG	00431		
FIRSTLEV	63104	FIRSTHRU	63153	FLATTENING	63337		
FRAMESIZE	63101	FREQUENCY	63317	EULLUP	00355		
GEOGENLAT	63322	GEUDELAT	63321	GETEWA	00414		
GHOUT	00232	GMTMODU24	63145	GMTSHIETED	63144		
HCLDNOHCLC	63511	HOURLMINUTE	63137	HOURREG	63151		
HEIGHT	63326	ID1ORADIO	66777	ID11RADIO	67776		
IC12RADIO	67777	ID13RADIO	70775	ID14RADIO	70776		
ID15RADIO	71776	ID16RADIO	71777	ID17RADIO	72776		
ID18RADIO	72777	ID19RADIO	73776	ID1CELCOR	63000		
IC1ENTPNT	63410	ID1RADIOCOR	63050	ID1RADIO	63440		
IC1RECRD	63210	ID1SYSTEM	77576	ID1SYSNAM	77676		
ID1SYSPAR	63310	ID1TIME	63130	ID2ORADIO	73777		
ID21RADIO	74776	ID22RADIO	63130	ID23RADIO	75776		
IC24RADIO	75777	ID25RADIO	74777	ID26RADIO	76776		
IC2CELCOR	63001	ID2ENTPNT	63411	ID2RADIOCOR	63051		
ID2RADIO	63441	ID2RECRD	63211	ID2SYSTEM	77577		
ID2SYSNAM	77677	ID2SYSPAR	63311	ID2TIME	63131		
IC3RADIO	63776	ID4RADIO	63777	ID5RADIO	64776		
IC6RADIO	64777	ID7RADIO	65776	ID8RADIO	65777		
ID9RADIO	66776	INAZIMADD	63446	INELEVADD	63447		
INTER	63413	INTERAZIM	72000	INTERCOM	63426		
INTERDOPP	74000	INTERELEV	73000	INTERLCKSW	63460		
INTERRRANGE	76777	INTRCC	01575	INTRGO	00430		
ISAVE	01577	ISEMER	00366	ISNEGATIVE	00107		
KMPERVM	63342	KYBRDLEVEL	63110	LOADCONT	00416		
LCGGING	00000	LUGINIT	00002	LOGINTR	00174		

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
LGGWORK	00017	LONGITUDE	63320	LSPERAU	63336	ROTATERDBX	63510
MCVEDATA	00356	MAINSWITCH	63334	MCPFILLER	71000	RADOT	63007
MCPGM	63412	MILLSTNAD0	63451	MINREG	63152	RADECOTIME	63531
MSREQ	63332	NOPRINTSAP	00237	NORMLEAVE	00164	RADIORA	63540
NCRPP	63050	NOTTOP	00117	NOMROSFWA	01570	RANGE	63052
NPERAU	63340	POLE	63324	PERIOOAZIM	63523	RANGEDOT	63062
PERIODEC	63525	PERIODELEV	63521	PERIOORA	63527	RDXXX	63433
PGCNT	01563	PLOTP	63436	PLANP	63434	RECELEV	70000
PREVIOUSM	63461	PRINTER	00424	PRLOG	63423	RECRDSWICH	63155
PRNCT	01572	PRNBY	01573	PRNTINFU	00322	SOK	00217
PRNTNOM	00254	PUT1	00404	PUT2	00406	SAVEALL	00260
RCTATEAERP	63507	ROTATERADN	63506	ROTATERDBX	63510	SAVFWL	01564
RA	63002	RAOFFSET	63514	RADOT	63007	SEEIFOUT	00067
RADARMODE	63312	RADCBXSCAN	63503	RADECOTIME	63531	SIDERTIME	63012
RADICDEC	63541	RADIOMETER	63102	RADIORA	63540	SKIP	63331
RADIUS	63006	RADIUSDOT	63011	RANGE	63052	STACK01	00504
RANGEOUT	70777	RANGEADD	63445	RANGEDOT	63062	STACK04	00630
RASCTNSCAN	63504	RDTR	63430	RDXXX	63433	STACK07	00754
RECCROSSIZE	63112	RECAZIM	67000	RECELEV	70000	STACK10	01100
RECFILE	63212	RECRD	63415	RECRDSWICH	63155	STACK13	01224
RELEASESW	63156	RESTOALL	00265	SOK	00217	STACK16	01350
SARBFONT	00426	SAPRPT	00425	SAVEALL	00260	STACK19	01474
SAVEB	01574	SAVECHAN	01576	SAVFWL	01564	STKPLBF	00432
SAZIM	63055	SBSAP	01571	SAVFWL	01564	SYSCMPREG1	63452
SOEC	63005	SECONDS	63140	SEEIFOUT	00067	SYSCMPREG4	63455
SELEV	63056	SETSBSAP	00312	SIDERTIME	63012	SYSENTRIES	77600
SINCRIENT	63064	SINAZEL	63066	SKIP	63331	SYSTAT2	63314
SRA	63004	SRADTIME	63136	STACK01	00504	TIMECORR	63107
STACK02	00540	STACK03	00574	STACK04	00630	TIMETHOLD	63520
STACK05	00664	STACK06	00720	STACK07	00754	TTYSTATUS	63111
STACK08	01010	STACK09	01044	STACK10	01100	VELOFLIGHT	63335
STACK11	01134	STACK12	01170	STACK13	01224	VIZRAL	63013
STACK14	01260	STACK15	01314	STACK16	01350	WFAAD	63450
STACK17	01404	STACK18	01440	STACK19	01474	WIFFEL	00252
STACK20	01530	STADOUT	00234	STKPLBF	00432	YEARMONTH	63147
STKPLRK	00456	SYNCTIMING	63542	SYSCMPREG1	63452		
SYSCMPREG2	63453	SYSCMPREG3	63454	SYSCMPREG4	63455		
SYSCMPREG5	63456	SYSCMPREG6	63457	SYSENTRIES	77600		
SYSNAMES	77700	SYSTAT1	63313	SYSTAT2	63314		
SYSTAT0	63315	TOOBLS	00341	SYSTAT2	63314		
TIMEMODE	63103	TIMEP	63435	TIMECORR	63107		
TRUERANGE	63663	TRUETIME	63132	TIMETHOLD	63520		
TWCSECCP	63017	UPSET	00100	TTYSTATUS	63111		
VIZRA2	63014	VIZDEC2	63016	VELOFLIGHT	63335		
VIZRAZ	63015	WFORD	63432	VIZRAL	63013		
WFFREQ	63333	WHERE	00410	WFAAD	63450		
WKPSTO	00302	WKSAV	00272	WIFFEL	00252		
YRTRAN	63327	ZRTRAV	63330	YEARMONTH	63147		

S.J. WHITE 06/29/65

LOGGING

LABEL	LCC	LABEL	LOC	LABEL	LOC
LOGGING	COCUU	LOGINIT	00002	LOGWORK	00017
NCRMP	COC50	SEEIFDUT	00067	UPSET	00100
ISNEGITIVE	C0107	NOTTOP	00117	FOUND	00126
BEFC	C0136	CHANACTV	00140	EMEROUT	00151
NCRMLEAVE	C0164	BUSY	00167	BUSYX	00170
LOGINTR	C0174	SOK	00217	GHOUT	00232
STADOUT	C0234	NOPRNTSAP	00237	WIFFEL	00252
PRNTNDM	C0254	SAVEALL	00260	RESTOALL	00265
WKSAV	00272	WKRSTO	00302	SETSBPSAP	00312
PRNTINFO	00322	TOOBIG	00341	ACTVTRN	00344
FULLUP	00355	MOVEDATA	00356	ISEMER	00366
PUTI	00404	PUTZ	00406	WHERE	00410
GETFWA	C0414	LOADCONT	00416	BSKWRDS	00420
PRINTER	C0424	SAPRNT	00425	SAPBFCNT	00426
EMERBUF	C0427	INTRGO	00430	FDPRLOG	00431
STKPLBF	C0432	STKPLBK	00456	STACK01	00504
STACK02	C0540	STACK03	00574	STACK04	00630
STACK05	C0664	STACK06	00720	STACK07	00754
STACK08	C0100	STACK09	01044	STACK10	01100
STACK11	C0134	STACK12	01170	STACK13	01224
STACK14	C01260	STACK15	01314	STACK16	01350
STACK17	C01404	STACK18	01440	STACK19	01474
STACK20	C01530	EMERSW	01562	PGCNT	01563
SAVFWL	C01564	BUSYTRN	01565	CHANINACTV	01566
CURRENTSAP	C1567	NOMRDSFMA	01570	SBPSAP	01571
PRNT	C1572	PRNBY	01573	SAVEB	01574
INTROCC	C1575	SAVECHAN	01576	ISAVE	01577
EMRGAREA	C01607	ID1CELCCOR	63000	ID2CELCCOR	63001
RA	C3002	OEC	63003	SRA	63004
SDEC	C3005	RADIUS	63006	RADOT	63007
CECCOT	C3010	RADIUSDOT	63011	SIDERTIME	63012
VIZRAL	C3013	VIZOECI	63014	VIZRA2	63015
V17CEC2	C3016	TWOSECCOOP	63017	ID1RADCOR	63050
ID2RADCOR	C3051	RANGE	63052	AZIM	63053
ELEV	C3054	SAZIM	63055	SELEV	63056
CRANGE	C3057	CAZIM	63060	CELEV	63061
RANGE00T	C3062	TRUERANGE	63063	SINORIENT	63064
CCSGRIENT	C3065	SINAZEL	63066	COSAZEL	63070
ACGAZIM	C3071	ACQELEV	63075	FRAMESIZE	63101
RADIOMETER	C3102	TIMEMODE	63103	FIRSTELEV	63104
ASTRORA	C3105	ASTRODEC	63106	TIMECORR	63107
KYBRDLEVEL	C3110	TTYSTATUS	63111	RECORDSIZE	63112
CELBDY	C3113	ID1TIME	63130	ID2TIME	63131
TRUETIME	C3132	CELTIME	63133	SCELTIME	63134
CCVERTIME	C3135	SRADTIME	63136	HOURLMINUTE	63137
SECCNDS	C3140	OSECCNDS	63141	ACTUALTIME	63142
ESTSHIFTEC	C3143	GMTSHIFTED	63144	GMTMODU24	63145
BLASTOFF	C3146	YEARMONTH	63147	DAY	63150
HOURREG	C3151	MINREG	63152	FIRSTTHRU	63153
DUMSECTTG	C3154	RECRDSWTCH	63155	RELEASESW	63156
ID1REGRD	C3210	ID2RECRD	63211	RECFILE	63212

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LOGGING

LABEL	LOC	LABEL	LOC	LABEL	LOC
ICISYSPAR	6331U	ID2SYSPAR	6331I	RADARMODE	63312
SYSTAT1	63313	SYSTAT2	63314	SYSTATD	63315
DELTATEE	63316	FREQUENCY	63317	LONGITUDE	63320
GEODETLAT	63321	GEDEVENLAT	63322	EQUATOR	63323
PCLE	63324	AZIMOVER	63325	HEIGHT	63326
YRTRAN	63327	ZRTRAN	63330	SKIP	63331
MSPREQ	63332	WFFREQ	63333	MAINSWITCH	63334
VELCFLIGHT	63335	LSPERAU	63336	FLATTENING	63337
NMPERAU	6334U	AUPEREQUAT	6334I	KMPERNM	63342
EXPNAME	6335D	ID2ENTPNT	63410	ID2ENTPNT	63411
MCPGM	63412	INTER	63413	COCOD	63414
REGRD	63415	ADSCN	63416	AESCN	63417
CDPCT	6342D	DYDMP	6342I	CHCOR	63422
PRLOGG	63423	CELCOMPGM	63424	OATANALYZE	63425
INTERCOM	63426	ACQU	63427	RDTR	63430
CHPAR	6343I	WFURO	63432	RDXX	63433
PLANP	63434	TIMEP	63435	PLDTP	63436
IC1RAOIC	6344D	ID2RAOIC	6344I	AZIMADD	63442
ELEVADD	63443	OMPADD	63444	RANGEADD	63445
INAZIMACC	63446	INELEVADD	63447	WFADD	6345D
MILLSTNADD	6345I	SYSCOMREG1	63452	SYSCOMREG2	63453
SYSCOMREG3	63454	SYSCOMREG4	63455	SYSCOMREG5	63456
SYSCOMREG6	63457	INTERLCKSW	6346D	PREVIDUSTM	6346I
BODYSIZE	63462	AZELBXSCAN	6350D	AZMTHSCAN	6350I
ELVTNSCAN	63502	RADCXSCAN	63503	RASCNTNSCAN	63504
DECLINSCAN	63505	ROTATERADN	63506	ROTATEAEBX	63507
ROTATERDBX	6351D	HOLDNOHOLD	6351I	AZIMUFFSET	63512
ELEVDFSET	63513	RADFFSET	63514	DECOFFSET	63515
CRSOFFSET	63516	ALNGOFFSET	63517	TIMEIDHOLD	6352D
PERIDDELV	6352I	ARCOFFLEV	63522	PERIODAZIM	63523
PERIODRA	63524	PERIODDEC	63525	ARCOFDEC	63526
AZELUTIME	63527	ARCOFRA	6353D	RADEGOTIME	6353I
SYNCTIMING	63532	RADIORA	6354D	RADIODEC	6354I
AZIMOUT	63542	ID3RAOIC	63776	I04RAOIC	63777
ELVOUT	640DU	I05RAOIC	64776	I06RAOIC	64777
DCPPUT	65C0D	ID7RAOIC	65776	I08RAOIC	65777
RECAZIM	66C0D	I09RAOIC	66776	I010RAOIC	66777
RECELEV	67C0D	ID11RAOIC	67776	ID12RAOIC	67777
RANGEOUT	70C0D	I013RAOIC	70775	ID14RAOIC	70776
IC16RAOIC	70777	MCPFILLER	7100D	ID15RAOIC	71776
IC18RAOIC	71777	INTERAZIM	7200D	ID17RAOIC	72776
ID2CRADIC	72777	INTERELEV	7300D	ID19RAOIC	73776
IC22RAOIC	73777	INTEROPP	7400D	ID21RAOIC	74776
ID24RAOIC	74777	AZIMIN	7500D	ID23RAOIC	75776
ID26RAOIC	75777	ELEVIN	7600D	ID25RAOIC	76775
ID28RAOIC	76776	INTERANGE	76777	ID1SYSNT	77576
ID29RAOIC	77577	SYSENTRIS	7760D	ID1SYSNAM	77676
IC2SYSNAM	77677	SYSNAMES	7770D		

END OF LISTING

CARDS	LI	ID	LAPEL	TA STATEMENT	LCC	F	JKB	Y	NTES
.	CC000	RECORDING	PROGRAM	JDD*AM#04/28/65					
.	CC001	TPCHN	MEANS	C15					MAGNETIC TAPE OUTPUT BUFFER CO
.	CC002	BC#	EQUALS	135					MAGNETIC TAPE EXTERNAL INTERRUPT
.	CC003	TAPEEXTINT	CGUALS	35					
.	CC004	RECORDING	U-TAG	RCORC#MRECINT	CC072			CCCC	
.	CC005		FC	L#REGRD	27121			C2711	
.	CC006	MRECINT	ENTRY		61000			CCCC	INITIALIZATION OF RECORDING
.	CC007		JP	FINAL#ANOT	60500			CCC33	C FOR INIT AND 1 FOR FINAL
.	CC008		ENT	C#(KYBRELEVEL)*CPOS	10230			63110	
.	CC009		JP	TELL#HEAD	10230			63110	
.	CC010		CL	W(DR#SGREPLY)	16000			CC016	SET FOR FULL RECORDING
.	CC011		RJP	U(INTERCOM)	16000			CC021	ASK HOW MUCH RECORDING
.	CC012		U-TAG	DRMSG#DRANS	65020			63426	
.	CC013		ENT	A#L(DRMSGREPLY)	CC076			CC0515	
.	CC014		STR	A#L(RECRD#SWTCH)	11010			CC021	
.	CC015		SUB	A#2#AZERO	15010			63150	
.	CC016		STR	BC#CPL(MSGSWTCH)	21400			CCCC	RECORDING STOPPED
.	CC017		ENT	A#L(SYSTAT1)*APCS	CC013			CCCC	INDICATE NEW HEADLINE NEEDED
.	CC018		STR	BC#CPL(MSGSWTCH)	16050			CC043	IS SYSTEM CYCLING
.	CC019		ENT	A#L(SYSTAT1)*APCS	11650			63130	
.	CC020	TELL#HEAD	STR	BC#CPL(MSGSWTCH)	CC016			CC043	PCS IS CYCLING#EXIT
.	CC021		JP	L(MRECINT)*APOS	60610			CCCC	
.	CC022		CL	W(RELGASE#W)	16000			63150	CLEAR CLT INTERLOCK INDICATOR
.	CC023		CL	U(MSGSWTCH)	16020			CC043	ENABLE INTERLOCK PRINTING
.	CC024		CL	U(INTERLOCK#W)	16020			63460	CLEAR CLT FINALIZATION INDICAT
.	CC025		CL	W(SYSTAD1)	16030			63315	CR
.	CC026		RPT	500#ADV	70100			CCCC	
.	CC027		CL	W(RECFILE)	00025			63210	CLEAR CLT RECFILE
.	CC028		CL	W(BCW)	16030			CC135	CLEAR MAGNETIC TAPE OUTPUT BCM
.	CC029		CL	W(BUSYSSTATUS)	00027			CC043	SET STATLS TO INTERRUPT OCCUR
.	CC030		CL	W(TAPE#0)	16030			CC045	ED LAST FRAME
.	CC031		CL	W(KEEP#B3)	00030			CC052	SET TAPE NUMBER TO C
.	CC032		EXIT		00031			CC052	SET TO BEGINNING OF RECFILE
.	CC033		JP	\$*TPCHN#ACTIVEOUT	00032			CCCC	LATER ASK TITLE INFO FOR HEADI
.	CC034	FINAL	STR	RC#CP#(SYSTAD1)	63640			CCC33	NG BLCK
.	CC035		ENT	A#L(FCWRITE)	16070			63315	WAIT FOR CHANNEL TO BE FREE
.	CC036		RSH	A#3	11010			CC030	SET FINALIZATION INDICATOR
.	CC037		JP	TAPE3#AZERC	00036			CCCC	
.	CC038	TAPE2	RIL		00037			CC055	
.	CC039		PUT	W(TEMP#3)*W(TAPEEXTINT)	60040			CCCC	SET UP INTERRUPT ENTRANCE
.	CC040		EX-FCT	TPCHN#W(ECFCN3)	00041			CC045	
.	CC041		JP	\$	14030			CC035	
.	CC042	TEMP#3	RILJP	TEWRT3	13670			CC046	WAIT
.	CC043	TEWRT3	STR	TPCHN#W(NOTUSE)	00044			10000	
.	CC044		PUT	TEWOUT3#L(TAPEEXTINT)	00045			61000	
.	CC045		EX-FCT	TPCHN#W(REW#D3)	00046			17670	
.	CC046		JP	\$	00047			10000	
.	CC047		STR	TEWOUT3#L(TAPEEXTINT)	00050			14010	
.	CC048		EX-FCT	TPCHN#W(REW#D3)	00051			13670	
.	CC049		JP	\$	00052			61000	
.	CC050	TEWOUT3	STR	TPCHN#W(NOTUSE)	17670			CC053	WAIT

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKR	Y	NCES
.	CC056	TAPE3	JP L(MRECINT)	00054	61C1C	CCCC2		
.	CC057		RIL	00055	6CCCC	CCCCC		
.	CC06C		PUT W(TEWJP2)*W(TAPEEXTINT)	00056	1CC3C	CCC62		SET UP INTERRUPT ENTRANCE
.	CC061		EX-FCT TPCHN*W(ECFCN2)	00057	14C3C	CCC35		
.	CC062		JR \$	00061	61CCC	CCC61		WAIT
.	CC063	TEWJP2	RILJR TEWRT2	00062	6C1CC	CCC63		
.	CC064	TEWRT2	STR TPCHN*W(NOTUSE)	00063	1767C	CC453		
.	CC065		PUT TEWCUT2*L(TAREEXTINT)	00064	1CCCC	CCC7C		
.	CC066		EX-FCT TPCHN*W(REWMD2)	00065	14C1D	CCC35		
.	CC067		JR \$	00066	1367C	CC451		
.	CC07C	TEWOUT2	STR TPCHN*W(NOTUSE)	00067	61CCC	CCC67		WAIT
.	CC071		JR L(MRECINT)	00070	1767C	CC453		
.	CC072	RECORD	ENTRY	00071	61C1C	CCCC2		
.	CC073		STR BC*CPW(RELEASESW)	00072	61CCC	CCCCC		SEARCH AND RECRC 1ST BLOCK
.	CC074	GOCN	ENT A*U(MSGSWITCH)*ANDT	00073	16C7C	63156		NEG SAYS RECRCING BUSY IN SIM
.	CC075		JR ASKHEAD					. PCCC
.	CC076		RJP U(PRLOG)	00074	1152C	CC463		WAS THERE AN INTERLCK
.	CC077		7 INTERLCKH	00075	61CCC	CC1C4		NC
.	CC10C		2 -26C	00076	65C2C	63423		YES. PRINT INTERLOCK MESSAGE
.	CC101		JR \$+3	CC077	CCCC7	CC464		
.	CC102		CL U(MSGSWITCH)	CC100	CCCC2	77745		
.	CC103		STR PC*CPU(INTERLCKSW)	CC101	61CCC	CC1C4		DISABLE INTERLCK PRINT
.	CC104	ASKHEAD	ENT A*L(MSGSWITCH)	CC102	16C2C	CC463		DISABLE INTERLCK RCUTINE
.	CC105		JR NCHEAD*AZERO	CC103	16C60	6346C		DC WE NEED A HEADING RECORD
.	CC106		RJP SETUPHEAD	CC104	11C1C	CC463		
.	CC107		RJP HEAD	CC105	6C4CC	CC111		NC
.	CC11C		EXIT	CC106	65CCC	CC352		YES*SET LR HEADING RECORD
.	CC111	NOFEAD	CL B3*	CC107	65CCC	CC426		WRITE HEADING RECCRC
.	CC112		STR B3*W(KEEPB3)	CC110	61C1C	CCC72		
.	CC113		ENT A*U(EXCESS)*AZERC	CC111	123CC	CCCCC		
.	CC114		RJP LOGNOWRITE	CC112	1633C	CC523		WERE TCC MANY WCRCs TO BE RECO
.	CC115		CL W(THEREGS)	CC113	1142C	CC227		RDEC
.	CC116		ENT A*W(BUSYSSTATUS)*AZERC	00114	65CCC	CC23C		YES. PRINT RECFILE RELATIVE L
.	CC117		JR ENDSOME	CC115	16C3C	CC445		SET NUMBER OF WCRCs RECORDED TH
.	CC12C		STR BC*CPW(BUSYSSTATUS)	CC116	1143C	CC473		IS FRAME TC C
.	CC121		JP L(RECORD)*TPCHN*ACTIVEOUT	CC117	61CCC	CC122		HAS INTERRUPT ANSWERED LAST FR
.	CC122	ENDSOME	TERM TPCHN*OUTPUT	CC118	16C7C	CC473		AME
.	CC123	LCCF1	ENT A*W(RECFILE+B3)*ANDT	CC119	61CCC	CC122		NC
.	CC124		JP NCWRITE	CC120	16C7C	CC473		YES. SET STATUS TO NO INTERRU
.	CC125		SILRJP WRITE	CC121	6365C	CCC72		RT
.	CC126		JR NCWRITE	CC122	6764C	CCCCC		LEAVE IF CHANNEL BUSY
.	CC127		STR B3*W(KEEPB3)	CC123	11533	63212		
.	CC13C		RILJP L(RECRC)	CC124	61CCC	CC131		RCW=C
.				CC125	641CC	CC161		
.				CC126	61CCC	CC131		
.				CC127	1633C	CC523		
.				CC13C	6C11C	CCC72		RETURN TC MAIN CONTROL

CARDS	LI ID LABEL	TA STATEMENT	LCC	F	JKB	Y	NOTES
.	CC131 NC*WRITE	BSK B3*490	CC131	713CC	CCC61		NC RECCRC
.	CC132	JP LCCP1	CC132	61CCC	CC123		CCNTINUE SEARCH CF FILE
.	CC133	CL W(RELEASESW)	CC133	16C30	63156		MCP FREE TC RECYCLE IN SIM. MO DE
.	CC134	EXIT	CC134	61C1C	CCC72		ALL BCM=C SO NC RECORING
.	CC135 RECINTRPT	ENTRY	CC135	61CCC	CCCC		WHEN INTERRUPT OCCURS
.	CC136	CL W(BUSYSTATUS)	CC136	16C30	CC473		SET TC INTERRUPT OCCURRED
.	CC137	RJP SAVEREG	CC137	65CCC	CC551		
.	CC140	ENT B3*(KEEPB3)	CC140	1233C	CC523		
.	CC141	CL W(RECFILE+B3)	CC141	16C33	63212		
.	CC142	STR TPCN*WISTATUS)	CC142	1767C	CC522		
.	CC143	ENT A*U(STATUS)	CC143	11C2C	CC522		EXAMINE STATUS WORD CF
.	CC144	RSH A*110	CC144	C2CCC	CCC13		BLCKC JUST RECORDED
.	CC145	ENT B4*A	CC145	1247C	CCCC		
.	CC146	RJP L(SWTABLE+B4)	CC146	65C14	CC531		
.	CC147 DO*WRIT	BSK B3*490	CC147	713CC	CCC61		
.	CC15C	JP CCNTINU	CC150	61CCC	CC153		
.	CC151	CL W(RELEASESW)	CC151	16C30	63156		MCP FREE TC RECYCLE IN SIM. MO DE
.	CC152	JP CCNE	CC152	61CCC	CC157		
.	CC153 CCNTINU	ENT A*W(RECFILE+B3)*ANDI	CC153	11533	63212		CCNTINUE FILE SEARCH
.	CC154	JP CC*WRIT	CC154	61CCC	CC147		BCM=C
.	CC155	RJP WRITE	CC155	65CCC	CC161		BCM AND C WRITE BLOCK
.	CC156	JP CC*WRIT	CC156	61CCC	CC147		
.	CC157 DUNE	RJP PUTBACK	CC157	65CCC	CC557		
.	CC16C	RILJP L(RECINTRPT)	CC160	6011C	CC135		EXIT
.	CC161	ENTRY	CC161	61CCC	CCCC		WRITE A BLOCK WITH EXT INT
.	CC162	ENT A*U(RECFILE+B3)	CC162	11C23	63212		LWA
.	CC163	SUB A*L(RECFILE+B3)	CC163	21C13	63212		
.	CC164	SUB A*3*ANEG	CC164	217CC	CCCC3		IS RECCRC 3 CR MORE WORDS
.	CC165	JP AMPL	CC165	61CCC	CC173		YES
.	CC166	STR BC*CPU(EXCESS)	CC166	16C6C	CC227		
.	CC167	STR B3*L(EXCESS)	CC167	1631C	CC227		NC. PRINT RECFILE RELATIVE LO CATION
.	CC17C	RJP LCGN*WRITE	CC170	65CCC	CC23C		CLEAR CUT BUFFER CONTRL WORD
.	CC171	CL W(RECFILE+B3)	CC171	16C33	63212		
.	CC172	EXIT	CC172	61C1C	CC161		
.	CC173 AMFILE	ENT A*L(RECFILE+B3)	CC173	11013	63212		SET UP PARITY INDICATOR ADDRES S
.	CC174	ACC A*1	CC174	2CCCC	CCCC1		
.	CC175	STR A*L(PUTSEVN)	CC175	15C10	CC2C2		
.	CC176	STR A*L(PUTONES)	CC176	15C10	CC2C4		
.	CC177	ENT A*W(INDPARITY)*AZERC	CC177	1143C	CC475		EXAMINE FARITY INCICATOR
.	CC2CC	JP PUTSEVN	CC200	61CCC	CC2C2		
.	CC2D1	JP PUTONES	CC201	61CCC	CC2C4		
.	CC2C2	STR BC*CPW(0)	CC202	16C7C	CCCC		
.	CC2C3	JP RETNWR	CC203	61CCC	CC2C5		GCCC PARITY
.	CC2C4	PUTONES	CC204	16C3C	CCCC		
.	CC2C5	CL W(0)	CC205	11C23	63212		
.	CC2D5	ENT A*U(RECFILE+B3)	CC205	11C23	63212		TCTAL WCRCRS IN THIS FRAME
.	CC2D6	SUB A*L(RECFILE+B3)	CC206	21C13	63212		HAVE WE EXCECCEC LIMIT FRAME
.	CC2D7	ACC A*W(ITEREGS)	CC207	21C3C	CC445		
.	CC21C	CCM A*W(LIMIT)*VMORE	CC210	C473C	CC444		

CARDS	LI	IO	LABEL	TA	STATEMENT	LCC	F	JKB	Y	NCTES
.	CC211	.		JP	CANTWRITE	CC211	61CCC	CC223		YES
.	CC212	.		STR	A*(THEREGS)	CC212	1603C	CC445		NC+STORE NEW TOTAL
.	CC213	.	KWRITE	EX-FCI	TPCPN*(FCTWRITE)	00213	1367C	CC53C		SET UP INTERRUPT ENTRANCE
.	CC214	.		PUT	W(SWHRJP)*W(TAPEEXTINT)	00214	10030	CC474		
.	CC215	.		OUT	TPCPN*(RECFILE+B3)	00215	1403C	CC335		
.	CC216	.		STR	BC*CPW(RECFILE+B3)	00216	74673	63212		SET TC -C
.	CC217	.		STR	B3*L(KEEPB3)	00217	16073	63212		
.	CC220	.		RPL	Y+1*L(WRITE)	00220	1631C	CC523		
.	CC221	.		EXIT		00221	3601C	CC161		
.	CC222	.	CANTWRITE	EXIT	BO*CPU(EXCESS)	00222	6101C	CC161		SET TC PRINT
.	CC223	.		STR	B3*L(EXCESS)	00223	1606C	CC227		STORE RELATIVE LOCATION IN REC FILE
.	CC224	.		CL	W(RECFILE+B3)	00224	16310	CC227		CLEAR CUT BUFFER CONTROL WORD
.	CC225	.		EXIT		00225	16033	63212		
.	CC226	.	EXCESS	0	C	00226	6101C	CC161		U() IS -C IF LIMIT EXCEEDED, L
.	CC227	.	LCCNWRITE	ENTRY		00227	0000C	CCCCC		() HAS RECFILE SLCT
.	CC230	.		ENTRY		00230	6100C	CCCCC		LCG WHEN TCC MUCH RECORDING RE GUEST
.	CC231	.		CL	A*	00231	1100C	CCCCC		
.	CC232	.		CL	B6*	00232	1260C	CCCCC		
.	CC233	.		ENT	C*L(EXCESS)	00233	1001C	CC227		RELATIVE LOCATION IN RECFILE
.	CC234	.		ACD	C*1	00234	2600C	CCCC1		
.	CC235	.	MCVCOVER	LSH	C*150	00235	0500C	CC117		
.	CC236	.		LSH	A*3	00236	0600C	CC003		
.	CC237	.		SEL	SET*60	00237	0700C	CC003		
.	CC240	.		BSK	B6*4	00240	0500C	CC06C		
.	CC241	.		JP	MCVCOVER	00241	7160C	CC004		
.	CC242	.		STR	A*(BCWNO)	00242	6100C	CC236		PRINT ERRCR MESSAGE
.	CC243	.		RJP	U(PRLOG)	00243	1503C	CC261		
.	CC244	.		8C	LCGLIMIT	00244	65020	63423		
.	CC245	.		1	C	00245	0001C	CC252		
.	CC246	.		JP	\$+1	00246	0000C	CCCCC		
.	CC247	.		CL	W(EXCESS)	00247	6100C	CC25C		
.	CC250	.		EXIT		00250	1603C	CC227		
.	CC251	.	LGGLIMIT	FC	7*10000 DEC WORD MAXIMUM REACHED	00251	6101C	CC23C		
.	CC252	.		FC	7*10000 DEC WORD MAXIMUM REACHED	00252	61242	42424		
.	CC253	.				00253	05111	21005		
.	CC254	.				00254	34242	71105		
.	CC255	.				00255	22063	51622		
.	CC256	.				00256	3222C	52712		
.	CC257	.				00257	06101	51211		
.	CC260	.				00260	05063	10505		
.	CC261	.		0	C	00261	0000C	CCCCC		
.	CC262	.		ENTRY		00262	6100C	CCCCC		PARITY CR MACHINE ERROR
.	CC263	.		PUT	1*(INDPARITY)	00263	1000C	CCCC1		
.	CC264	.				00264	1403C	CC475		
.	CC265	.		CL	W(MSGSWITCH)	00265	1603C	CC463		
.	CC266	.		CL	U(INTERLCKSW)	00266	1602C	6346C		ENABLE INTERLCK ROUTINE
.	CC267	.		EXIT		00267	6101C	CC262		
.	CC268	.	NORMAL	ENTRY		00270	6100C	CCCCC		NORMAL COMPLETION

CARDS	L1 IC LABEL	TA STATEMENT	LCC	F	J	K	Y	ACTIES
•	CC261	CL W(INDPARITY)	CC271	16C3C	CC475			
•	CC262	CL W(MSGSWITCH)	CC272	16C3C	CC463			HEADING RECCRC IS WRITTEN
•	CC263	CL U(INTERLCKSW)	CC273	16C2C	6346C			ENABLE INTERLCK ROUTINE
•	CC264	EXIT	CC274	61C1C	CC27C			
•	CC265	ENTRY	CC275	61C0C	CCCC			TAPE LIMIT REACHEE
•	CC266	CL W(INDPARITY)	CC276	16C3C	CC475			
•	CC267	STR RC*CPL(MSGSWITCH)	CC277	16C5C	CC463			E.C.T. NEXT RECCRC MUST BE PEA UING
•	CC270	CL U(MSGSWITCH)	CC30C	16C2C	CC463			SET INTERLCK PRINT ENABLE
•	CC271	CL U(INTERLCKSW)	CC301	16C2C	6346C			ENABLE INTERLCK ROUTINE
•	CC272	ENT A*(TAPENO)	CC302	11C3C	CC452			
•	CC273	ACC A*1	CC303	2C0C0	CCCCI			
•	CC274	STR A*(TAPENO)	CC304	15C3C	CC452			EXAMINE PRESENT UNIT NUMBER
•	CC275	ENT A*(FCTWRITE)	CC305	11C1C	CC53C			
•	CC276	RSH A*3	CC306	2C0C0	CCCC3			
•	CC277	JP UNIT3*AZERC	CC307	6C4C0	CC331			SET TC SERVC 2
•	CC300	PUT 4*(FCTWRITE)	CC310	1C0C0	CCCC4			SET TC PRINT 2 FOR UNIT NUMBER
•	CC301	PUT 5C562*L(UNITNO)	CC311	14C1C	CC53C			SET UP INTERRUPT ENTRANCE
•	CC302	PUT W(REWINT3)*W(TAPEEXTINT)	CC312	1C0C0	5C562			
•	CC303	EX-FCT TPCHN*(REWIND3)	CC313	14C1C	CC472			
•	CC304	RJP PUTBACK	CC314	1C03C	CC321			
•	CC305	RILJP L(RECINTRPT)	CC315	14C3C	CCC35			
•	CC306	RJP REWOUT3	CC316	1367C	CC45C			
•	CC307	ENTRY	CC317	65C0C	CC557			
•	CC310	CL W(RUSYSSTATUS)	CC320	6C11C	CC135			
•	CC311	RJP SAVEREG	CC321	65C0C	CC322			
•	CC312	STR TPCHN*(NOTUSE)	CC322	61C0C	CCCC			
•	CC313	RJP FEAD	CC323	16C3C	CC473			
•	CC314	RJP PUTBACK	CC324	65C0C	CC551			
•	CC315	RILJP L(REWOUT3)	CC325	1747C	CC453			
•	CC316	PUT 1C*(FCTWRITE)	CC326	65C0C	CC426			
•	CC317	PUT 5C563*L(UNITNO)	CC330	6C11C	CC322			SET TC SERVC 3
•	CC320	PUT W(REWINT2)*W(TAPEEXTINT)	CC331	1C0C0	CCCC			SET TC PRINT 3 FOR UNIT NUMBER
•	CC321	EX-FCT TPCHN*(REWIND2)	CC332	14C1C	CC53C			SET UP INTERRUPT ENTRANCE
•	CC322	RJP PUTBACK	CC333	1C0C0	5C563			
•	CC323	RILJP L(RECINTRPT)	CC334	14C1C	CC472			
•	CC324	RJP REWOUT2	CC335	1C03C	CC342			
•	CC325	ENTRY	CC336	14C3C	CCC35			
•	CC326	CL W(RUSYSSTATUS)	CC337	1367C	CC451			
•	CC327	RJP SAVEREG	CC340	65C0C	CC557			
•	CC330	STR TPCHN*(NOTUSE)	CC341	6C11C	CC135			
•	CC331	RJP FEAD	CC342	65C0C	CC343			
•	CC332	RJP PUTBACK	CC343	61C0C	CCCC			
•	CC333	RILJP L(REWOUT2)	CC344	16C3C	CC473			
•	CC334	SETUPHEAC	CC345	65C0C	CC551			
•	CC335	PUT W(TAPENO)*W(HEADBLOCK)	CC346	1747C	CC453			
•			CC347	65C0C	CC426			
•			CC350	65C0C	CC557			
•			CC351	6C11C	CC343			
•			CC352	61C0C	CCCC			
•			CC353	1C03C	CC452			
•			CC354	14C3C	CC377			

..... SPUPT CLIPUT NO. 21C
 RECORDING JDD+AAM*04/2E/65

CARDS	LI	ID	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
	CC336		AGAIN		MCVE 16D*EXPNAM*HEADBLOCK*1	00355	12700	CCCC	17	
						00356	10037	6335C		
						00357	14037	CC4CC		
	CC337		VERIT		PUT W(YEARMONTH)*W(HEADBLOCK*17D)	00360	72700	CC356		
						00361	10030	63147		
						00362	14030	CC42C		
	CC340				PUT W(DAY)*W(HEADBLOCK*1ED)	00363	10030	6315C		
						00364	14030	CC421		WHICH CEL PGM.
	CC341				PUT W(SYSTAT2)*W(HEADBLOCK*190)	00365	10030	63314		
						00366	14030	CC422		
	CC342				PUT W(CELLBODY)*W(HEADBLOCK*200)	00367	10030	63113		
						00370	14030	CC423		
	CC343				PUT W(CELLBODY*1)*W(HEADBLOCK*210)	00371	10030	63114		
						00372	14030	CC424		
	CC344				PUT W(CELLBODY*2)*W(HEADBLOCK*220)	00373	10030	63115		
						00374	14030	CC425		
	CC345				EXIT	00375	61010	CC352		
	CC346		FORKEY		FC 1*TITLE	00376	31163	12112		
	CC347		HEADBLOCK		RESERVE 23D	00377	00000	CCCC		
	CC350		HEAD		ENTRY	00426	61000	CCCC		
	CC351				TERM TPCN*OUTPUT	00427	67640	CCCC		
	CC352				PLT W(SHRJP)*W(TAPEEXTINT)	00430	10030	CC474		SET UP INTERRUPT ENTRANCE
						00431	14030	CC335		
	CC353				EX-FCI TPCN*W(FCIWRITE)	00432	13670	CC530		
	CC354				NC-OP	00433	12000	CCCC		
	CC355				CUT TPCN*W(FCWHEAD)	00434	74670	CC443		
	CC356				EXIT	00435	61010	CC426		
	CC357		HEADAGAIN		ENTRY	00436	61000	CCCC		
	CC360				ENT A*LX(SYSTAT1)*APLS	00437	11650	63313		
	CC361				RJP HEAD	00440	65000	CC426		
	CC362				RJP PUTBACK	00441	65000	CC557		
	CC363				RILJP L(RECINTRPT)	00442	60110	CC135		
	CC364		HC*HEAD		U-TAG HEADBLOCK*22D*FCRKEY	00443	CC425	CC376		
	CC365		LIMIT		CC00023*20	00444	CCCC	2342C		DFC 100000*BC MAX. NO. 0 F WCRDS THAT CAN BE WCRS RECCDEC THIS FRAME
	CC366		THEREGS		O C	00445	CCCC	CCCC		
	CC367		E0FCN3		12300	00446	12300	CCCC		
	CC370		E0FCN2		12300	00447	12300	CCCC		
	CC371		RE*NO3		3110000010	00450	31100	CCCC		
	CC372		RE*NO2		3110000004	00451	31100	CCCC		
	CC373		TAFEND		O C	00452	CCCC	CCCC		TAPE NUMBER
	CC374		NOTUSE		O C	00453	CCCC	CCCC		
	CC375		INTERLOCK		ENTRY	00454	61000	CCCC		SET UP FOR PRINTING INTERLOCK MESSAGE
	CC376				TERM TPCN*OUTPUT	00455	67640	CCCC		
	CC377				ENT A*(INTERLOCKSW)*ANDT	00456	11520	6346C		SKIP IF INTERLOCK ROUTINE DISA BLEC
	CC400				STR PC*CPW(MSGSWITCH)	00457	16670	CC463		SET UP FOR TITLE AND FOR PRINT ING
	CC401				RJP PUTBACK	00460	65000	CC557		
	CC402				CL WIRELEASESW	00461	16030	63156		MCP FREE TO RECYCLE (N SIM. MO DE
	CC403				RILJP L(RECINTRPT)	00462	60110	CC135		

CAROS	LI	IO LABEL	TA STATEMENT	LOC	F	JKR	Y	NCIES
.	CC404	MSGSWITCH	0 C	CC463	CCCC	CCCC		
.	CC405	INIERLCKM	FC 6*CORRECT INTERLCK CN TAPE UNIT	CC464	1C242	72712		
				CC465	1C310	51623		
				CC466	31122	72124		
				CC467	1C2CC	52423		
				CC470	C531C	62512		
.	CC406	UNITNO	FC 1* 2	CC471	C5322	31631		
.	CC407	BUSYSSTATUS	0	CC472	C5C5C	5C562		
				CC473	CCCC	CCCC		
.	CC41C	SWPRJP	RJP RECINTRPT	CC474	65CCC	CC135		
.	CC411	INIPARITY	0 C	CC475	CCCC	CCCC		
.	CC412	DRMSG	FC 1*A	CC476	C6C5C	5C5C5		
.	CC413		-C \$+1	CC477	77777	CC5CC		
.	CC414		FC C*SYSTEM DATA RECORCING...COMPLETE(0C500	CC478	3C363	C3112		
			0) PARTIAL(1) NONE(2) 0					
				CC501	22C51	1C631		
				CC502	C6C52	7121C		
				CC503	24271	11623		
				CC504	14757	5751C		
				CC505	24222	52112		
				CC506	31125	1244C		
				CC507	C525C	62731		
				CC510	16C62	15161		
				CC511	4CC52	32423		
				CC512	12516	24CC5		
				CC513	24C5C	5C5C5		
				CC514	77777	77777		
				CC515	11C5C	5C505		
				CC516	CC011	CC521		
				CC517	CCCC	CCCC		
				CC520	CCCC	CCCC		
				CC521	CCCC	CCCC		
				CC522	CCCC	CCCC		
				CC523	CCCC	CCCC		
				CC524	CCCC	CCCC		
				CC525	CCCC	CCCC		
				CC526	CCCC	CCCC		
				CC527	CCCC	CCCC		
				CC530	12C0C	CCCC4		
				CC531	CCCC	CC262		
				CC532	CCCC	CC262		
				CC533	CCCC	CC262		
				CC534	CCCC	CC262		
				CC535	CCCC	CC262		
				CC536	CCCC	CC436		
				CC537	CCCC	CC262		
				CC540	CCCC	CC262		
				CC541	CCCC	CC27C		
				CC542	CCCC	CC262		
				CC543	CCCC	CC262		
				CC544	CCCC	CC262		
				CC545	CCCC	CC275		

SET TO 0 BY INTERRUPT, -0 BY M
 CRKER
 FCR EXT INT

HIGH DENSITY BINARY(UNIT 2)
 SW=C ILLEGAL
 SW=1 ILLEGAL
 SW=2 ILLEGAL
 SW=3 ILLEGAL
 SW=4 (2C) CSSE
 REWINDING
 SW=6 (3C) SCCE
 SW=7 (34) FWE
 SW=8 (4C)
 SW=9 (44) REPEATCP
 SW=1C (5C) CSUE
 SW=11 (54) ECF
 SW=12 (6C)

SPURT CLIPUT NO. 21C
 JDD+AA#04/28/65

RECORDING

CARDS	LI	ID	LAPEL	TA STATEMENT	LUC	F	JKB	Y	NOTES
•	CC447			O PAREPROR	00546	CCCC	CC262		SW=13 ILLLEGAL
•	CC450			O PAREPROR	00547	CCCC	CC262		SW=14 (7C) AFC
•	CC451			O INTERLOCK	00550	CCCC	CC454		SW=15 (74) ILF
•	CC452		SAVEREG	ENTRY	00551	61CC	CCCC		
•	CC453			STR A*(MPA)	00552	15C3C	CC524		
•	CC454			STR G*(MPQ)	00553	14C3C	CC525		
•	CC455			STR R3*(MPB3)	00554	1631C	CC527		
•	CC456			STR P4*(MPB4)	00555	1641C	CC526		
•	CC457			EXIT	00556	61C1C	CC551		
•	CC460		PUTRACK	ENTRY	00557	61C0C	CCCC		
•	CC461			ENT A*(MPA)	00560	11C3C	CC524		
•	CC462			ENT G*(MPQ)	00561	10C3C	CC525		
•	CC463			ENT R3*(MPB3)	00562	1231C	CC527		
•	CC464			ENT P4*(MPB4)	00563	1241C	CC526		
•	CC465			EXIT	00564	61C1C	CC557		
•	CC465			RESERVE I	00565	CCCC	CCCC		

END OF LISTING

RECORDING

LABEL	LCC	LABEL	LCC	LABEL	LCC	LABEL	LCC
A\$88881111	CC356	ACQAZIM	63071	ACCELEV	63075	ACQAZIM	63071
ACCUI	63427	ACTUALTIME	63142	ADSCN	63416	ACTUALTIME	63142
AESCN	63417	AGAIN	CC355	ALNGCFSEET	63517	AGAIN	CC355
AMBLE	CC173	ARCOFAZIM	63524	ARCCFDEC	63526	ARCOFAZIM	63524
ARCCFELEV	63522	ARCOFRA	63530	ASKHEAC	CC104	ARCOFRA	63530
ASTRCDEC	63106	ASTRORA	63105	ALPERECUAT	63341	ASTRORA	63105
AZELCTIME	63532	AZELBXSCAN	63500	AZIM	63053	AZELBXSCAN	63500
AZIMCFSEET	63512	AZIMOUT	64000	AZIMCYER	63325	AZIMOUT	64000
AZIMADD	63442	AZIMIN	75000	AZMTHSCAN	63501	AZIMIN	75000
BODYSIZE	63462	RCW	CC135	BGMHEAC	CC443	RCW	CC135
BCMNC	CC261	BLASTOFF	63146	BUSYSSTATLS	CC473	BLASTOFF	63146
COCCN	63414	CCNTINU	CC153	CONVERTIME	63135	CCNTINU	CC153
CORCT	63420	COSORIENT	63065	CGSAZEL	6307C	COSORIENT	63065
CANTWRITE	CC223	CAZIM	6306C	CELECCY	63113	CAZIM	6306C
CELCMPGM	63424	CELEV	63061	CELTIME	63133	CELEV	63061
CHCCR	63422	CHPAR	63431	CRANGE	63057	CHPAR	63431
CRSSCFSEET	63516	CDNE	CC157	CCNRIT	CC147	CDNE	CC157
DOPPCUT	66000	COPPAD	63444	DATANALYZE	63425	COPPAD	63444
DAY	63150	CEC	63003	DECCFSEET	63515	CEC	63003
DECOCT	63010	DECLINSCAN	63505	DELTATEE	63316	DECLINSCAN	63505
DRANS	CC515	CRM5G	CC476	DPM5GREPLY	CC521	CRM5G	CC476
DSECCNDS	63141	CUMSECTTG	63154	DYDPR	63421	CUMSECTTG	63154
E0FCN2	CC047	E0FN3	CC446	ELEV	63054	E0FN3	CC446
ELEVCFSEET	63513	ELEVOUT	65000	ELEVADD	63443	ELEVOUT	65000
EQUATOR	76000	ELVNSCAN	63502	ENCSGPE	CC122	ELVNSCAN	63502
EXPNAME	63350	ESTSHIFTED	63143	EXCESS	CC227	ESTSHIFTED	63143
FINAL	CC033	FORKEY	CC376	FCTWRITE	CC53C	FORKEY	CC376
FLATTENING	CC074	FIRSTELEV	63104	FIRSTHRU	63153	FIRSTELEV	63104
GCCN	63145	FRAMESIZE	63101	FREQUENCY	63317	FRAMESIZE	63101
GTMCDU24	63137	GEOCENLAT	63322	GFCCELAT	63321	GEOCENLAT	63322
HOURMINUTE	CC436	GMTSHIFTED	63144	HCLCNCFCLC	63511	GMTSHIFTED	63144
HEADGAIN	66777	FOURREG	63151	HEAC	CC426	FOURREG	63151
ID1RADIC	70775	HEADLOCK	CC377	HEIGHT	63326	HEADLOCK	CC377
ID13RADIC	71777	ID11RADIO	67776	IC12RACIC	67777	ID11RADIO	67776
ID16RADIC	71777	ID14RADIO	70776	IC15RADIC	71776	ID14RADIO	70776
ID19RADIO	73776	ID17RADIO	72776	ID18RADIC	72777	ID17RADIO	72776
ID1RADCOR	63050	ID1CELCOR	63000	IC1ENTPNT	6341C	ID1CELCOR	63000
ID1SYSENT	77576	ID1RADIC	63440	ID1RECR	6331C	ID1RADIC	63440
ID1TIME	63130	ID1SYSNAM	77676	ID1SYSPAR	6331C	ID1SYSNAM	77676
ID22RADIC	74777	ID2ORADIO	73777	ID2IRADIC	74776	ID2ORADIO	73777
ID25RADIC	76775	ID23RADIO	75776	IC24RADIC	75777	ID23RADIO	75776
ID2ENTPNT	63411	ID26RADIO	76776	IC24RADCOR	63C0I	ID26RADIO	76776
ID2RECRD	63211	ID2RADCCR	63051	IC2RACIC	63441	ID2RADCCR	63051
ID2SYSPAR	63311	ID2SYSENT	77577	IC2SYSNAM	77677	ID2SYSENT	77577
ID4RADIO	63777	IC2TIME	63131	IC3RACIC	63776	IC2TIME	63131
ID7RADIO	65776	ID5RADIO	64776	IC6RADIC	64777	ID5RADIO	64776
INAZIMADD	63446	ID8RADIC	65777	ID9RACIC	66776	ID8RADIC	65777
INTER	63413	INDPARITY	CC475	INELEVACC	63447	INDPARITY	CC475
INTERDOPR	74000	INTERAZIM	72000	INTERCOM	63426	INTERAZIM	72000
INTERLOCKM	CC464	INTERELEV	73000	INTERLCK	CC454	INTERELEV	73000
		INTERLCKSW	63460	INTERRANG	76777	INTERLCKSW	63460

RECORDING		SPURT CLUTPUT NO. 211		JCD+AAM*04/28/65	
LABEL	LCC	LABEL	LCC	LABEL	LCC
KEEPB3	CC523	KMPERNH	63342	KWRITE	CC213
KYBRDLEVEL	63110	LOOP1	00123	LCGLIMIT	CC252
LOGNWRITE	CC230	LONGITUDE	63320	LIMIT	CC444
LSPERAU	63336	MOVEOVER	00236	MAINSWITCH	63334
MCPFILLER	71000	MCPGM	63412	MILLSTNADC	63451
MINREG	63152	MPA	00524	MPB3	CC527
MPB4	CC526	MPQ	00525	MRECINT	CC002
MSFREQ	63332	MSGSWITCH	00463	NCHEAC	CC111
NGRMAL	CC270	NOIUSE	00453	NCWRITE	CC131
NMPERAU	63340	POLE	63324	PARERRCR	CC262
PERIODAZIM	63523	PERIODDEC	63525	PERIDCLEV	63521
PERIODRA	63527	PLOTP	63436	PLAMP	63434
PREVIOUSM	63461	PRLOG	63423	PUTCHES	CC204
PUTBACK	CC557	PUTSEV	00202	RCTATEAEBX	CC204
RCTATERACN	63506	ROTATERCRX	00202	RA	63507
RACFFSET	63514	RAOT	63510	RACARMCE	63312
RACBRSCAN	63503	RADECTIME	63007	RACIDCEC	63541
RACIMETER	63102	RADIORA	63531	RADIUS	63C06
RADIUSDOT	63011	RANGE	63052	RANGECUT	7C777
RANGEADO	63445	RANGEDOT	63062	RASCTNSCAN	63504
RDTR	63430	ROXXX	63433	RECRD	CC072
RECORDING	CC000	RECORDSIZE	63112	RECAZIM	67CC0
RECELEV	7C000	REFILE	63212	RECINTRPT	CC135
RECRD	63415	RECRDSWICH	63155	RELEASESW	63156
RETNWR	CC205	REWOUT2	00343	REWCUT3	CC322
REWINT2	CC342	REWINT3	00321	REWNC2	CC451
REWNC3	CC450	SAVEREG	00551	SAZIM	63C55
SELETIME	63134	SECC	63005	SECCNDS	6314C
SELEV	63056	SETUPHEAD	00352	SIDERTIME	63C12
SINCRIENT	63064	SINHAZEL	63066	SKIP	63331
SRA	63004	SRADTIME	63136	STATUS	CC522
SWHRJP	CC474	SWTABLE	00531	SYACTIMING	63542
SYSCCMREG1	63452	SYSOOMREG2	63453	SYSCCMREG3	63454
SYSCCMREG4	63455	SYSOOMREG5	63456	SYSCCMREG6	63457
SYSTEMRIES	77600	SYSNAMES	77700	SYSTAT1	63313
SYSTAT2	63314	SYSTATD	63315	TAPE2	CC04C
TAPE3	CC055	TAPEEXTINT	00035	TAPENC	CC452
TELLNHEAD	CC016	TEWOUT2	00070	TEWCUT3	CC053
TEWJP2	CC062	TEWJP3	00045	TEWRY2	CC063
TEWRT3	CC046	THEREGS	00445	TIMECRR	63107
TIMECODE	63103	TIMEP	63435	TIMEICHLG	6352C
TLR	CC275	TRUERANGE	63063	TRUETIME	63132
TTYSTATUS	63111	TWOSECCOP	63017	UNIT2	CC31C
UNIT3	CC331	UNITNO	CC472	VELCFLIGHT	63335
VERIT	CC361	VIZDECI	63014	VIZDEC2	63C16
VIZRAL	63C13	VIZRA2	63015	WFCRD	63432
WFADD	63450	WFFREQ	63333	WRITE	CC161
YEARMONTH	63147	YRTRAN	63327	ZRTRAN	6333C

RECORDING

LABEL	LCC	LABEL	LCC	LABEL	LCC	LABEL	LCC
RECFILE	63212	ID1SYSPAR	63310	ID2SYSPAR	63311	SYSTAT2	63314
RACARMODE	63312	SYSTAT1	63313	SYSTAT2	63314	FREQUENCY	63317
SYSTAT0	63315	CELTATEE	63316	FREQUENCY	63317	GECCENLAT	63322
LONGITUDE	63320	GEOETLAT	63321	GECCENLAT	63322	AZIMOVER	63325
EQUATOR	63323	POLE	63324	AZIMOVER	63325	ZRTRAN	63330
HEIGHT	63326	YRTRAN	63327	ZRTRAN	63330	WFFREQ	63333
SKIP	63331	MSFREQ	63332	WFFREQ	63333	LSPERAU	63336
MAINSWITCH	63334	VELOFLIGHT	63335	LSPERAU	63336	AUPERECUAT	63341
FLATTENING	63337	NPERAU	63340	AUPERECUAT	63341	IC1ENTPNT	63410
KMPERNM	63342	EXPNAME	63350	IC1ENTPNT	63410	INTER	63413
ID2ENTPNT	63411	MCPGM	63412	INTER	63413	ACSCN	63416
COCEN	63414	REGRO	63415	ACSCN	63416	DYCPM	63421
AESCN	63417	CORCT	63420	DYCPM	63421	GELCCMPGM	63424
CHCCR	63422	PRLOG	63423	GELCCMPGM	63424	ACCU	63427
DATANALYZE	63425	INTERCOM	63426	ACCU	63427	WFCRD	63432
RCMTR	63430	CHPAR	63431	WFCRD	63432	TIMEP	63435
RDXXX	63433	PLANP	63434	TIMEP	63435	IC2RADIO	63441
PLCTP	63436	IC1RADIO	63440	IC2RADIO	63441	OCPPADC	63444
AZIMADO	63442	ELEVADO	63443	OCPPADC	63444	INELEVACC	63447
RANGEADD	63445	INAZIMADO	63446	INELEVACC	63447	SYSCCMREG1	63452
WFACC	63450	MILLSTNADO	63451	SYSCCMREG1	63452	SYSCCMREG4	63455
SYSCCMREG2	63453	SYSCCMREG3	63454	SYSCCMREG4	63455	INTERLCKSM	63460
SYSCCMREG5	63456	SYSCCMREG6	63457	INTERLCKSM	63460	AZELRXSCAN	63500
PREVIOUS TM	63461	POOYSIZE	63462	AZELRXSCAN	63500	RACCBXSCAN	63503
AZTHSCAN	63501	ELVTNSCAN	63502	RACCBXSCAN	63503	RCATATERALN	63506
RASCTNSCAN	63504	DECLNSCAN	63505	RCATATERALN	63506	HCLDNCCHCLD	63511
ROTATEAEBX	63507	ROTATERORX	63510	HCLDNCCHCLD	63511	RACFFSET	63514
AZIMCFSET	63512	ELEVOFFSET	63513	RACFFSET	63514	ALNGOFFSET	63517
DECCFFSET	63515	CRSSOFFSET	63516	ALNGOFFSET	63517	ARCCFFLEV	63522
TIMETHOLD	63520	PERIOOLEV	63521	ARCCFFLEV	63522	PERICDEC	63525
PERICAZIM	63523	ARCOFAZIM	63524	PERICDEC	63525	ARCCFRA	63530
ARCCFDEC	63526	PERIOORA	63527	ARCCFRA	63530	RACICRA	63540
RAECOTIME	63531	AZELOTIME	63532	RACICRA	63540	IC3RADIO	63776
RACICDEC	63541	SYNCTIMING	63542	IC3RADIO	63776	IC5RADIO	64776
ID4RADIO	63777	AZIMOUT	64000	IC5RADIO	64776	IC7RADIO	65776
ID6RADIO	64777	ELEVOUT	65000	IC7RADIO	65776	IC9RADIO	66776
ID8RADIO	65777	COPOUT	66000	IC9RADIO	66776	IC11RADIO	67776
ID10RADIO	66777	RECAZIM	67000	IC11RADIO	67776	IC13RADIO	70775
ID12RADIO	67777	RECELEV	70000	IC13RADIO	70775	MCPFILLER	71000
ID14RADIO	70776	RANGEOUT	70777	MCPFILLER	71000	INTERAZIM	72000
ID15RADIO	71776	IC16RADIO	71777	INTERAZIM	72000	INTERELEV	73000
ID17RADIO	72776	IC18RADIO	72777	INTERELEV	73000	INTERDCPF	74000
ID19RADIO	73776	IC20RADIO	73777	INTERDCPF	74000	AZIMIN	75000
ID21RADIO	74776	ID22RADIO	74777	AZIMIN	75000	ELEVIN	76000
ID23RADIO	75776	ID24RADIO	75777	ELEVIN	76000	INTERERRANGE	76777
ID25RADIO	76776	ID26RADIO	76777	INTERERRANGE	76777	SYSTEMTRIES	77600
ID1SYSENT	77576	ID2SYSENT	77577	SYSTEMTRIES	77600	SYSNAMES	77600
ID1SYSNAM	77676	ID2SYSNAM	77677	SYSNAMES	77600		77700

CARDS	LI	IO	LABEL	TA	STATEMENT	LOC	F	JKB	Y	NOTES
.	C0C00		WESTFORD		PROGRAM J00*2/1/65	00000	00027	00002		MILLSTONE TO HAYSTACK
.	C0C01				COMMENT COUPLE	00001	34132	42711		
.	C0C02		WESTFCRC		U-TAG WFRON*WFINIT	00002	61000	00000		
.	C0C03				FO 1*WFORO	00003	11030	63333		7750 B14
.	C0C04		WFINIT		ENTRY	00004	02000	00001		843 FOR OIV
.	C0C05				ENT A*(WFFREQ)	00005	10000	00000		
.	C0C06				RSH A*1	00006	23030	63317		10000 B14 = Q00T B29 IN Q
.	C0C07				CL C*	00007	11000	00000		
.	C0C10				CIV W(FREQUENCY)	00010	23000	01750		RO TO KCS
.	C0C11				CL A*	00011	14030	00315		B29
.	C0C12				CIV 10000	00012	11030	63332		MCS B14 = B44 AC
.	C0C13				STR C*(FRATIO)	00013	10000	00000		
.	C0C14				ENT A*(MSFREQ)	00014	03000	00001		B43
.	C0C15				CL C*	00015	23030	63317		B14
.	C0C16				RSH AQ*1	00016	14030	00304		B29
.	C0C17				CIV W(FREQUENCY)	00017	10030	00316		
.	C0C18				STR C*(MSRATIO)	00020	14030	00054		
.	C0C20				PUT W(ANSMINT)*W(54)	00021	75630	00317		
.	C0C21				IN C14*(MSINBCW)*MONITOR	00022	61010	00002		
.	C0C22				EXIT	00023	61000	00000		
.	C0C23				ENTRY	00024	17630	00326		
.	C0C24		MSININT		STR C14*(STATUS)	00025	75630	00317		
.	C0C25				IN C14*(MSINBCW)*MONITOR	00026	60110	00023		
.	C0C26				RLJPL(MSININT)	00027	61000	00000		
.	C0C27		WFRUN		ENTRY	00030	11010	63450		
.	C0C30				ENT A*(WFACD)	00031	15010	00070		
.	C0C31				STR A*(STRAE1)	00032	15010	00074		
.	C0C32				STR A*(STRAE2)	00033	15010	00075		
.	C0C33				STR A*(STRAE3)	00034	15010	00076		
.	C0C34				STR A*(STRAE4)	00035	15010	00103		
.	C0C35				STR A*(STRAE4)	00036	15010	00202		RETRIEVE STORED WF A + E
.	C0C36				STR A*(STRAEXTRA)	00037	21000	00002		
.	C0C37				SUB A*2	00040	15010	00141		
.	C0C40				STR A*(STRDOP)	00041	20000	00001		
.	C0C41				STR A*(STRDOP)	00042	15010	00164		
.	C0C42				ADD A*1	00043	11010	63442		PICK UP RIGHT AZ
.	C0C43				STR A*(STRRRG)	00044	21000	00001		
.	C0C44				ENT A*(AZIMAG0)	00045	15010	00065		
.	C0C45				SUB A*1	00046	11010	63443		PICK UP RIGHT EL
.	C0C46				STR A*(PUPAZ1)	00047	21000	00001		
.	C0C47				ENT A*(ELEVAG0)	00050	15010	00071		FWA OF NEW UOPPLER
.	C0C50				SUB A*1	00051	11010	63444		
.	C0C51				STR A*(PUPEL1)	00052	20000	00372		
.	C0C52				ENT A*(LOPPA00)	00053	15010	00110		
.	C0C53				ADD A*2500	00054	11010	63445		
.	C0C54				STR A*(PUPDOPP)	00055	15010	00152		
.	C0C55				ENT A*(RANGEADC)	00056	12500	00000		PICK UP 40 AZ + ELS
.	C0C56				STR A*(ORANGE)	00057	12600	00000		INDEX STORES BY 3
.	C0C57				CL R5*	00060	11000	40000		
.	C0C60				CL R6*	00061	15030	00314		
.	C0C61				ENT A*40000	00062	11030	00330		
.	C0C62				STR A*(INXAZEL)					
.	C0C63		LCCPRTRN		ENT A*1440000					

CARDS	TA LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
•	C0C64	RPL A*Y*W(LINOXAZEL)	00063	24030	00314		
•	C0C65	ENT B*U(LINOXAZEL)	00064	12420	00314		
•	C0C66	ENT A*W(O*84)	00065	11034	00C00		
•	C0C67	RSH AQ*4*QPOS	00066	03200	000C4		
•	C0C70	ADD A*1	00067	20000	00C01		
•	C0C71	STR A*L(O*86)	00070	15016	00C00		
•	C0C72	ENT A*W(O*84)	00071	11034	00C00		
•	C0C73	RSH AQ*4*QPOS	00072	03200	000C4		
•	C0C74	ADD A*1	00073	20000	00C01		
•	C0C75	STR A*O(O*86)	00074	15026	00C00		
•	C0C76	ENT C*W(O*86)*QPOS	00075	10236	00C00		
•	C0C77	CL U(O*86)	00076	16026	00C00		WAS NEG
•	C01C0	ENT B*8*86*3	00077	12606	00C03		
•	C0101	BSK B5*390	00100	71500	00047		
•	C0102	JP LOOPRTRN	00101	61000	00062		
•	C0103	CL B5	00102	12500	000C0		
•	C0104	STR C*W(O*86)	00103	14036	000C0		
•	C0105	ENT B*8*86*3	00104	12606	00C03		
•	C0106	BSK B5*90	00105	71500	00011		
•	C0107	JP STRAEXTRA	00106	61000	001C3		
•	C0110	CL W(DOPSIGN)	00107	16030	00313		00PPLER BU IN CPS
•	C0111	ENT C*W(O)	00110	10030	00C00		HOLD FOR H.S. USE
•	C0112	STR Q*W(SAVEDDOP)	00111	14030	003C5		
•	C0113	SUB Q*7500000*QPOS	00112	27630	00331		
•	C0114	RJP COPNEC	00113	65000	00143		
•	C0115	MUL W(FRATIO)	00114	22030	00315		FW/FHS X 1000 B29
•	C0116	LSH AQ*1	00115	07000	00C01		KCS BD IN A
•	C0117	STR A*Q	00116	15000	00C00		
•	C0120	CL A*	00117	11000	00C00		EXTRACT UNITS OIGIT
•	C0121	DIV 10C	00120	23000	00012		
•	C0122	STR A*W(WFDDOPPLER)	00121	15030	00312		TENS IN A 100S IN Q
•	C0123	CL A*	00122	11000	00C00		
•	C0124	DIV 10C	00123	23000	00012		
•	C0125	LSH A*4	00124	06000	000C4		
•	C0126	AGD A*W(WFDDOPPLER)	00125	20030	00312		
•	C0127	LSH Q*80	00126	05000	00010		
•	C0130	ADD Q*A	00127	26070	00C00		
•	C0131	STR C*W(WFDDOPPLER)	00130	14030	00312		
•	C0132	LSH C*130	00131	05000	00015		
•	C0133	ADD C*W(WFDDOPPLER)	00132	26030	00312		
•	C0134	STR Q*A	00133	14040	000C0		
•	C0135	SEL SET*4000000000	00134	50030	00332		
•	C0136	ENT C*W(DOPSIGN)*QPOS	00135	10230	00313		
•	C0137	JP SETDOPNEC	00136	61000	00147		
•	C0140	ENT B3*3	00137	12300	000C3		
•	C0141	RPT SOC*ADDR	00140	70300	00062		
•	C0142	STR A*W(O*83)	00141	15033	00C00		
•	C0143	JP CDORANCEX	00142	61000	00151		
•	C0144	ENTRY	00143	61000	00C00		
•	C0145	STR PC*CPW(COPSIGN)	00144	16070	00313		
•	C0146	CP C*	00145	14000	00C00		
•	C0147	EXIT	00146	61010	00143		
•	C0150	SEL SET*0200010000	00147	50030	00333		

CARDS	LI	IO LABEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0151	UCRANGEX	JP SETB3	00150	61000	00137		
.	C0152	DCRANGE	CL A*	00151	11000	00000		RANGE IN N.M.
.	C0153		ENT Q*(O)	00152	10030	00000		
.	C0154		STR Q*(SAVEORNG)	00153	14030	00306		
.	C0155		CIV 2500000	00154	23030	00334		MOOULO 50 KC
.	C0156		STR A*Q	00155	15000	00000		
.	C0157		MUL W(RFACTOR)*AZERO	00156	22430	00310		
.	C0160		SUB A*240	00157	21000	00030		
.	C0161		SEL SET*6000700000	00160	50030	00335		
.	C0162		SEL CL*17770000000	00161	52030	00336		
.	C0163		ENT B*3	00162	12300	00003		
.	C0164		RPT 500*A008	00163	70300	00062		
.	C0165	STRNG	STR A*(O+B3)	00164	15033	00000		
.	C0166		PUT L(MILLSTNAD)*L(STRMSAZ)	00165	10010	63451		
.	C0167		STR Q*(STR3MOAZ)	00166	14010	00203		
.	C0170		ADD Q*1	00167	14010	00216		
.	C0171		STR Q*(STRMSEL)	00170	26000	00001		
.	C0172		STR Q*(STR3MOEL)	00171	14010	00207		
.	C0173		SUB Q*3	00172	14010	00217		
.	C0174		STR Q*(STRMSRNG)	00173	27000	00003		
.	C0175		ADD Q*1	00174	14010	00234		
.	C0176		STR Q*(STRMSOOP)	00175	26000	00001		
.	C0200		CL B*4	00176	14010	00252		
.	C0201		CL B*5	00177	12400	00000		
.	C0202	PLWFAE	CL B*6	00200	12500	00000		
.	C0203	STRMSAZ	ENT A*(O+B5)	00201	12600	00000		
.	C0204		STR A*(O+B6)	00202	11035	00000		STORE WF E + A EVERY 3RD
.	C0205		CL Q*	00203	15016	00000		STORE EVERY 4TH AZIMUTH
.	C0206		RSH AQ*150	00204	10000	00000		
.	C0207	STRMSEL	SEL SET*20000000000	00205	03000	00017		ELEVATION CODE
.	C0210		STR A*(O+B6)	00206	50030	00337		ELEVATION
.	C0211		ENT B*85+3	00207	15036	00000		
.	C0212		ENT B*86+4	00210	12505	00003		
.	C0213		BSK B*390	00211	12606	00004		
.	C0214		JP PLWFAE	00212	71400	00047		
.	C0215		CL B*5	00213	61000	00202		
.	C0216	STR3MOAZ	LSH Q*150	00214	12500	00000		
.	C0217	STR3MOEL	STR Q*(O+B6)	00215	05000	00017		LAST AZIMUTH
.	C0220		STR A*(O+B6)	00216	14036	00000		3 ADDITIONAL AZIMUTHS
.	C0221		ENT B*86+4	00217	15036	00000		3 ADDITIONAL ELEVATIONS
.	C0222		BSK B*90	00220	12606	00004		
.	C0223	OCMSRNGE	JP STR3MOAZ	00221	71500	00011		
.	C0224		ENT Q*(SAVEORNG)	00222	61000	00216		TWO WAY UNITS .2 MICROSECONO
.	C0225		CL A*	00223	10030	00306		S
.	C0226		CIV 5*	00224	11000	00000		TO UNITS OF 1 MICROSECONO
.	C0227		SUB A*3*ANEG	00225	23000	00005		
.	C0228		ACC Q*1	00226	21700	00003		
.	C0229		RJP T06800	00227	26000	00001		CONVERT 6 BCO CHAR ARG IN Q A
.	C0231		SEL SET*40000000000	00230	65000	00254		NS IN A
.	C0232		ENT B*4	00231	50030	00332		PANGECODE
.	C0233			00232	12400	00004		

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WESTFORD

CARDS	LI	ID	LAREL	TA	STATEMENT	LUC	F	JKB	Y	NOTES
•	C0233			RPT	50D*ADDB	00233	70300	00062		
•	C0234		STRMSPNG	STR	A*(O+B4)	00234	15034	00000		
•	C0235		DCMSDCP	CL	W(TO+IGN)	00235	16030	00313		
•	C0236			ENT	Q*(SAVE000P)	00236	10030	00305		
•	C0237			SUB	Q*7*000000*QPDS	00237	27630	00331		
•	C0240			RJP	DOPNEG	00240	65000	00143		
•	C0241			MUL	W(MSRATIO)	00241	22030	00304		CPS 80 IN A
•	C0242			LSH	AQ*1	00242	07000	00001		
•	C0243			STR	A*Q	00243	15000	00000		
•	C0244			RJP	T06HCO	00244	65000	00254		
•	C0245			ENT	Q*(TO+PSIGN)*QPOS	00245	10230	00313		
•	C0246			SEL	SET*6040000000	00246	50030	00340		NEG DOPPLER
•	C0247			SEL	SET*6000000000	00247	50030	00341		POS DOPPLER
•	C0250			ENT	B4*4	00250	12400	00004		
•	C0251			RPT	50D*ADDB	00251	70300	00062		
•	C0252		STRMSPNG	STR	A*(O+B4)	00252	15034	00000		
•	C0253			JP	L(WFRUN)	00253	61010	00027		
•	C0254		T(6BCD	ENTRY		00254	61000	00000		
•	C0255			CL	W(ANS)	00255	16030	00307		
•	C0256			CL	A	00256	11000	00000		
•	C0257			DIV	100	00257	23000	00012		U
•	C0260			STR	A*(ANS)	00260	15030	00307		
•	C0261			CL	A	00261	11000	00000		
•	C0262			DIV	100	00262	23000	00012		
•	C0263			LSH	A*4	00263	06000	00004		T+U
•	C0264			RPL	A*Y*(ANS)	00264	24030	00307		
•	C0265			CL	A*	00265	11000	00000		
•	C0266			DIV	100	00266	23000	00012		
•	C0267			LSH	A*80	00267	06000	00010		
•	C0270			RPL	A*Y*(ANS)	00270	24030	00307		H+T+U
•	C0271			CL	A*	00271	11000	00000		
•	C0272			DIV	100	00272	23000	00012		
•	C0273			LSH	A*120	00273	06000	00014		
•	C0274			RPL	A*Y*(ANS)	00274	24030	00307		T+H+T+U
•	C0275			CL	A*	00275	11000	00000		
•	C0276			DIV	100*	00276	23000	00012		
•	C0277			LSH	A*160	00277	06000	00020		
•	C0300			RPL	A*Y*(ANS)	00300	24030	00307		
•	C0301			LSH	Q*200	00301	05000	00024		
•	C0302			RPL	Y+Q*(ANS)	00302	34030	00307		
•	C0303			EXIT		00303	61010	00254		
•	C0304		MSRATIO	C		00304	00000	00000		
•	C0305		SAVEDCOP	C		00305	00000	00000		
•	C0306		SAVEDRNG	C		00306	00000	00000		
•	C0307		ANS	C		00307	00000	00000		
•	C0310		RFACTCR	C	102222000	00310	01022	22000		OEC
•	C0311		WFRANGE	C		00311	00000	00000		
•	C0312		WFDOPPLER	C		00312	00000	00000		
•	C0313		CCPSIGN	C		00313	00000	00000		
•	C0314		INDXAZEL	C		00314	00000	00000		
•	C0315		FRATIC	C		00315	00000	00000		
•	C0316		ANSMSINT	RJP	MSININT	00316	65000	00023		

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CARDS	LI	ID	LAPEL	TA STATEMENT	LOC	F	JKB	Y	NOTES
.	C0317		MSINBCH	U-TAG	00317		00325		00320
.	C0320		MSINDATA	RESERVE	00320		00000		00000
.	C0321		STATUS	0	00326		00000		00000
.	C0322			NO-OP	00327		12000		00000
					00330		00014		40000
					00331		00026		70660
					00332		40000		00000
					00333		02000		10000
					00334		00007		50220
					00335		60007		00000
					00336		17770		00000
					00337		20000		00000
					00340		60400		00000
					00341		60000		00000

END OF LISTING

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
A\$\$\$\$1111	00330	A\$\$\$\$1112	00331	A\$\$\$\$1113	00332	A\$\$\$\$1113	00332
A\$\$\$\$1114	00333	A\$\$\$\$1115	00334	A\$\$\$\$1116	00335	A\$\$\$\$1116	00335
A\$\$\$\$1117	00336	A\$\$\$\$1118	00337	A\$\$\$\$1119	00340	A\$\$\$\$1119	00340
A\$\$\$\$111A	00341	ACQAZIM	63071	ACQSEV	63075	ACQSEV	63075
ACQUI	63427	ACTUAL TIME	63142	ADSCN	63416	ADSCN	63416
AESC	63417	ALNGOFSET	63517	ANS	00307	ANS	00307
ANSMINT	00316	ARCOFAZIM	63524	ARCOFOEC	63526	ARCOFOEC	63526
ARCOFEV	63522	ARCOFRA	63530	ASTROOEC	63106	ASTROOEC	63106
ASTORA	63105	AUPEREQUAT	63341	AZELOTIME	63532	AZELOTIME	63532
AZELRXSCAN	63500	AZIM	63053	AZIMOFFSET	63512	AZIMOFFSET	63512
AZIMOUT	64000	AZIMOVER	63325	AZIMAOO	63442	AZIMAOO	63442
AZIMIN	75000	AZIMTHSCAN	63501	BOOYSIZE	63462	BOOYSIZE	63462
BLASTDFF	63146	COCN	63414	CONVERTIME	63135	CONVERTIME	63135
CCRCT	63420	COSORIENT	63065	COSAZEL	63070	COSAZEL	63070
CAZIM	63060	CELBOOY	63113	CELCOMPGM	63424	CELCOMPGM	63424
CELEV	63061	CELTIME	63133	CHCOR	63422	CHCOR	63422
CHPAR	63431	CRANGE	63057	CRSSOFFSET	63516	CRSSOFFSET	63516
CCMSDOP	00235	DOMSRNGE	00223	OOPNEG	00143	OOPNEG	00143
CCPPOUT	66000	OPPADO	63444	OOPSIGN	00313	OOPSIGN	00313
DCRANGE	00152	ODRANGEX	00151	OATANALYZE	63425	OATANALYZE	63425
CAY	63150	OEC	63003	OECOFFSET	63515	OECOFFSET	63515
CECCOT	63010	DECLINSCAN	63505	DELTAEE	63316	DELTAEE	63316
CSECONDS	63141	ELEVOFFSET	63154	OYOMP	63421	OYOMP	63421
ELEV	63054	ELEVIN	76000	ELEVOUT	65000	ELEVOUT	65000
ELEADD	63443	ESTHIFTED	63143	ELVTNSCAN	63502	ELVTNSCAN	63502
EQUATOR	63323	FIRSTHRU	63153	EXPNAME	63350	EXPNAME	63350
FIRSTELEV	63104	FRAIO	00315	FLATTENING	63337	FLATTENING	63337
FRAMESIZE	63101	GEODETLAT	63321	FREQUENCY	63317	FREQUENCY	63317
GECENLAT	63322	HOLONDHOLE	63511	GMTMOO24	63145	GMTMOO24	63145
GMTSHIFTEC	63144	HEIGHT	63326	HOURMINUTE	63137	HOURMINUTE	63137
HOURREG	63151	ID12RAOIO	67777	ID1ORAIO	66777	ID1ORAIO	66777
IC11RAOIC	67776	ID15RAOIO	71776	ID13RAOIO	70775	ID13RAOIO	70775
IC14RAOIC	70776	ID18RAOIO	72777	ID16RAOIO	71777	ID16RAOIO	71777
IC17RAOIC	72776	ID1ENTPT	63410	ID19RAOIO	73776	ID19RAOIO	73776
IC1CELCR	63000	ID1RECRD	63210	ID1RAOCCR	63050	ID1RAOCCR	63050
IC1RADIO	63440	ID1SYSPAR	63310	ID1SYSENT	77576	ID1SYSENT	77576
IC1SYSNAM	77676	ID21RAOIO	74776	ID1TIME	63130	ID1TIME	63130
IC2CRADIC	73777	ID24RAOIO	75777	ID22RAOIO	74777	ID22RAOIO	74777
IC23RAOIO	75776	ID2CELCOR	63001	ID25RAOIO	76775	ID25RAOIO	76775
IC26RAOIO	76776	ID2RAOIO	63441	ID2ENTPNT	63411	ID2ENTPNT	63411
IC2ADCCR	63051	ID3RADIO	77677	ID2RECRD	63211	ID2RECRD	63211
IC2SYSENT	77577	ID6RADIO	64777	ID2SYSPAR	63311	ID2SYSPAR	63311
IC2TIME	63131	ID9RADIO	66776	ID4RADIO	63777	ID4RADIO	63777
IC5RADIC	64776	INELEVAOD	66776	ID7RADIO	65776	ID7RADIO	65776
ICRRADIC	65777	INTERCOM	63426	INAZIMADO	63446	INAZIMADO	63446
INDXAZEL	00314	INTERLCKSM	63460	INTER	63413	INTER	63413
INTERAZIM	72000	KYBROLEVEL	63110	INTEROOPP	74000	INTEROOPP	74000
INTERELEV	73000	LSPERAU	63336	INTERRANGE	76777	INTERRANGE	76777
KMPFERVM	63342	MCPGM	63412	LOOPTRN	00062	LOOPTRN	00062
LCNGITUCE	63320			MAINSWITCH	63334	MAINSWITCH	63334
MCPFILLER	71000			MILLSTNADO	63451	MILLSTNADO	63451

SPURT OUTPUT NO. 211

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WESTFORD

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
MINREG	63152	MSFREQ	63332	MSINBCW	00317	MSINBCW	00317
MSINDATA	00320	MSININT	00023	MSRATIO	00304	MSRATIO	00304
NMPERAU	63340	POLE	63324	PERIODAZIM	63523	PERIODAZIM	63523
PERIODDEC	63525	PERIODELEV	63521	PERIORA	63527	PERIORA	63527
PLOTP	63436	PLANP	63434	PREVIOUSTM	63461	PREVIOUSTM	63461
PRLOG	63423	PUPAZ1	00065	PUPOOPP	00110	PUPOOPP	00110
PUPELL1	00071	PUPFAE	00202	ROTATEAEBX	63507	ROTATEAEBX	63507
RCTATERADN	63506	ROTATEROBX	63510	RA	63002	RA	63002
RACFFSET	63514	RAOOT	63007	RAARMOOE	63312	RAARMOOE	63312
RACBXSAN	63503	RAOECTIME	63531	RAIODEC	63541	RAIODEC	63541
RADIOMETER	63102	RAIORA	63540	RAIUS	63006	RAIUS	63006
RADIUSOOT	63011	RANGE	63052	RANGEOUT	70777	RANGEOUT	70777
RANGEADC	63445	RANGEDOOT	63062	RASCTNSCAN	63504	RASCTNSCAN	63504
RCMTR	63430	ROXXX	63433	RECORDSIZE	63112	RECORDSIZE	63112
RECAZIM	67000	RECELEV	70000	RECFILE	63212	RECFILE	63212
RECRD	63415	RECRSWTCH	63155	RELEASESH	63156	RELEASESH	63156
RFACTOR	00310	RHERE	00114	SAVEOOP	00305	SAVEOOP	00305
SAVEDRNG	00306	SAZIM	63055	SCELTIME	63134	SCELTIME	63134
SDEC	63005	SECONDS	63140	SELEV	63056	SELEV	63056
SETB3	00137	SETOOPNEG	00147	SIDERTIME	63012	SIDERTIME	63012
SINCRIENT	63064	SINAZEL	63066	SKIP	63331	SKIP	63331
SRA	63004	SRADTIME	63136	STATUS	00326	STATUS	00326
STR3MOAZ	00216	STR3MOEL	00217	STRAE1	00070	STRAE1	00070
STRAE2	00074	STRAE3	00075	STRAE4	00076	STRAE4	00076
STRAEXTRA	00103	STROOP	00141	STRMSAZ	00203	STRMSAZ	00203
STRMSOOP	00252	STRMSEL	00207	STRMSRNG	00234	STRMSRNG	00234
STRRNG	00164	SYNCTIMING	63542	SYSCOMREG1	63452	SYSCOMREG1	63452
SYSCDMREG2	63453	SYSCDMREG3	63454	SYSCOMREG4	63455	SYSCOMREG4	63455
SYSCDMREG5	63456	SYSCDMREG6	63457	SYSENTRIES	77600	SYSENTRIES	77600
SYSNAMES	77700	SYSTAT1	63313	SYSTAT2	63314	SYSTAT2	63314
SYSTATD	63315	T068CD	00254	TIMECORR	63107	TIMECORR	63107
TIMEMDOE	63103	TIMEP	63435	TIMETOHOLO	63520	TIMETOHOLO	63520
TRUERANGE	63063	TRUETIME	63132	TTYSTATUS	63111	TTYSTATUS	63111
TWCSECOCP	63017	VELOFLIGHT	63335	VIZDECL	63014	VIZDECL	63014
VIZDEC2	63016	VIZRA1	63013	VIZRA2	63015	VIZRA2	63015
WESTFORC	00000	WFDR0	63432	WFA00	63450	WFA00	63450
WFDCPPLER	00312	WFFREQ	63333	WFINIT	00002	WFINIT	00002
WFRANGE	00311	WFRUN	00027	YEARMONTH	63147	YEARMONTH	63147
YRTRAN	63327	ZRTRAN	63330				

END OF LISTING

SPURT OUTPUT NO. 212

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WESTFORD		JDD*2/1/65			
LABEL	LOC	LABEL	LOC	LABEL	LOC
WESTFORD	00000	WFINIT	00002	MSININT	00023
WFRUN	00027	LOOPTRN	00062	PUPAZI	00065
STRAE1	00070	PUPEL1	00071	STRAE2	00074
STRAE3	00075	STRAE4	00076	STRAEXTRA	00103
PUPCOPP	00110	RHERE	00114	SETB3	00137
STRDUP	00141	DOPNEG	00143	SETDOPNEG	00147
DCRAVEX	00151	DORANGE	00152	STRNG	00164
PWFAGE	00202	STRMSAZ	00203	STRMSEL	00207
ST13MOAZ	00216	STR3MDEL	00217	DOMSRNGE	00223
STRMSRNG	00234	DOMSDOP	00235	STRMSDOP	00252
LC6BCD	00254	MRSATIO	00304	SAVEDDOP	00305
SAVEDRNG	00306	ANS	00307	RFACTOR	00310
WFFANGE	00311	WFDOPPLER	00312	DOPSIGN	00313
INDXAZEL	00314	FRATIO	00315	ANSMINT	00316
MSINRCW	00317	MSINDATA	00320	STATUS	00326
A\$\$\$\$1111	00330	A\$\$\$\$1112	00331	A\$\$\$\$1113	00332
A\$\$\$\$1114	00333	A\$\$\$\$1115	00334	A\$\$\$\$1116	00335
A\$\$\$\$1117	00336	A\$\$\$\$1118	00337	A\$\$\$\$1119	00340
A\$\$\$\$111A	00341	ID1CELCOR	63000	ID2CELCOR	63001
RA	63002	DEC	63003	SRA	63004
SCEC	63005	RADIUS	63006	RADOT	63007
DECDOT	63010	RADIUSDOT	63011	SIDERTIME	63012
VIZRA1	63013	VIZDEC1	63014	VIZRA2	63015
VIZDEC2	63016	TWOSECOOP	63017	IDIRACOR	63050
ID2RADCCR	63051	RANGE	63052	AZIM	63053
ELEV	63054	SAZIM	63055	SELEV	63056
CRANGE	63057	CAZIM	63060	CELEV	63061
RANGEDOT	63062	TRUERANGE	63063	SINORIENT	63064
CCSCRIENT	63065	SINAZEL	63066	COSAZEL	63070
ACQAZIM	63071	ACQELEV	63075	FRAMESIZE	63101
RADIOMETER	63102	TIMEMJDE	63103	FIRSTELEV	63104
ASTORA	63105	ASTRODEC	63106	TIMECORR	63107
KYPRLEVEL	63110	TYSTATUS	63111	RECORDSIZE	63112
CELEBODY	63113	IDTIME	63130	ID2TIME	63131
TRUETIME	63132	CELTIME	63133	SCELTIME	63134
CCVERTIME	63135	SRAOTIME	63136	HOURLMINUTE	63137
SECONDS	63140	DSECOVOS	63141	ACTUALTIME	63142
ESTSHIFTED	63143	GMTSHIFTED	63144	GMTMODU24	63145
BLASTOFF	63146	YEARMINTH	63147	OAY	63150
HCURREG	63151	MINREG	63152	FIRSTTHRU	63153
COMSECTTG	63154	RECRSWTCH	63155	RELEASESM	63156
ID1RECRD	63210	ID2RECRD	63211	REGFILE	63212
ID1SYSPAR	63310	ID2SYSPAR	63311	RADARMODE	63312
SYSTAT1	63313	SYSTAT2	63314	SYSTATO	63315
DELTATEE	63316	FREQUENCY	63317	LONGITUDE	63320
GEODETLAT	63321	GEODEVLAT	63322	EQUATOR	63323
PCLE	63324	AZIMOVER	63325	HEIGHT	63326
YRTRAN	63327	ZRTRAN	63330	SKIP	63331
MSFREQ	63332	WFFREQ	63333	MAINSWITCH	63334
VELOCFLIGHT	63335	LSPERAU	63336	FLATTENING	63337
NMPERAU	63340	AUPEREQUAT	63341	KMPERNH	63342

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WESTFORD

LABEL	LOC	LABEL	LOC	LABEL	LOC	LABEL	LOC
EXPNAME	63350	ID1ENTPNT	63410	ID2ENTPNT	63411		
MCPGM	63412	INTER	63413	CDCON	63414		
RECRD	63415	ADSCN	63416	AESCR	63417		
CORCT	63420	DYDMP	63421	CHCOR	63422		
PRLOG	63423	CELCOMPGM	63424	DATANALYZE	63425		
INTERCOM	63426	ACQUI	63427	RDMPR	63430		
CHPAR	63431	WFRD	63432	RDXXX	63433		
PLANP	63434	TIMEP	63435	PLDTP	63436		
ID1RADIO	63440	ID2RADIO	63441	AZIMADD	63442		
ELEVADD	63443	DDPPADD	63444	RANGEADU	63445		
INAZIMADD	63446	INELEVADD	63447	WFADD	63450		
MILLSTNADD	63451	SYSCOMREG1	63452	SYSCOMREG2	63453		
SYSCOMREG3	63454	SYSCOMREG4	63455	SYSCOMREG5	63456		
SYSCOMREG6	63457	INTERLCKSW	63460	PREVIOUSIM	63461		
BODYSIZE	63462	AZELBXSCAN	63500	AZMTHSCAN	63501		
DECLINSCAN	63502	RADCRXSCAN	63503	RASCTNSCAN	63504		
ROTATERC8X	63510	ROTATERADN	63506	RD1ATEAERX	63507		
ELEVOFFSET	63513	HOLONJHOLD	63511	AZIMOFFSET	63512		
CRSSOFFSET	63516	RADFFSET	63514	DECOFFSET	63515		
PERIODELEV	63521	ALNGOFFSET	63517	TIMETOHULD	63520		
ARCOFAZIM	63524	ARCOFELEV	63522	PERIODAZIM	63523		
PERIODRA	63527	PERIODEDEC	63525	ARCOFDEC	63526		
AZELOTIME	63532	ARCOFRA	63530	RADECOTIME	63531		
SYNCTIMING	63542	RAD1ORA	63540	RADIODEC	63541		
AZIMOUT	64000	ID3RADIO	63776	ID4RADIO	63777		
ELEVOUT	65000	ID5RADIO	64776	ID6RADIO	64777		
DCPPOUT	66000	ID7RADIO	65776	ID8RADIO	65777		
RECAZIM	67000	ID9RADIO	66776	ID10RADIO	66777		
RECELEV	70000	ID11RADIO	67776	ID12RADIO	67777		
RANGEOUT	70777	ID13RADIO	70775	ID14RADIO	70776		
ID16RADIO	71777	MCPFILLER	71000	ID15RADIO	71776		
ID18RADIO	72777	INTERAZIM	72000	ID17RADIO	72776		
ID20RADIO	73777	INTERELEV	73000	ID19RADIO	73776		
ID22RADIO	74777	INTERODPP	74000	ID21RADIO	74776		
ID24RADIO	75777	AZIMIN	75000	ID23RADIO	75776		
ID26RADIO	76776	ELEVIN	76000	ID25RADIO	76775		
ID2SYSNT	77577	INTERANGE	76777	ID1SYSNT	77576		
ID2SYSNAM	77677	SYSENTRIES	77600	ID1SYSNAM	77676		
		SYSNAMES	77700				

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13. ABSTRACT A description is given of ten non-major subprograms in the Haystack Pointing System. These programs all operate in the real-time environment, but in a sense are embellishments to the system proper inasmuch as they are by design either utilitarian to system operation or perform minor system functions. The additional system capabilities provided by this set of subprograms include: alteration of memory locations; modification of certain system parameters; constant monitoring of selectable memory locations; pointing of the antenna to any azimuth and elevation or right ascension and declination; outputting of certain planning information "on-line"; strip chart recording; magnetic tape recording; high-speed printer interfacing and Westford/Millstone intersite coupling.		
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