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# Haystack Pointing System: Intercom

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LINCOLN LABORATORY

# HAYSTACK POINTING SYSTEM: INTERCOM

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ABSTRACT

The Intercom program in the Haystack pointing system provides communications between the pointing system and an experimenter at Haystack using the console keyboard-typewriter. A user at the Millstone or the West Ford site may also direct the pointing system via a teletypewriter. The structure of the program, the calling sequence for it, and the conventions affecting the operator are described.

Accepted for the Air Force
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## PREFACE

This document was written by C. W. Adams Associates, 575 Technology Square, Cambridge, Massachusetts, under subcontract to Group 62 of Lincoln Laboratory, as part of a programming effort on the Haystack Pointing System.

CONTENTS

# I. INTRODUCTION

INTERCOM is an independent closed subroutine used in the Haystack Pointing System to provide communication between the operator of the system and the various programs which point the antenna. The routine also has the facility for allowing the operator of the West Ford antenna system to communicate with Univac 490 programs operating on that device. Programs which use INTERCOM specify the format for input and/or output by format specification tables referred to in the calling sequence. The basic input-output device used by INTERCOM is the console typewriter-printer provided with the Univac 490. However, when operating with the West Ford system, a standard teletypewriter (Model 28) is used instead for input-output.

All messages, both input and output, may be fully logged on the high-speed printer, using the Haystack system subprogram PRLOG, as well as on the console typewriter-printer. Thus, if the operator chooses to terminate printing on the console device, he will still have a complete record of all messages prepared by INTERCOM.

## II. PROGRAM SPECIFICATIONS

### Calling Sequence

From User Program:

```
RJP       U(INTERCOM)
U-TAG     XXXXX,YYYYY
Normal return
```

XXXXX = location of output specification table; and YYYYY = location of input specification table. If XXXXX = 0, no output activity will take place; if YYYYY = 0, no input will be expected; if both XXXXX and YYYYY = 0, control will be returned to the normal return after cycling once through the system. Whenever control is returned to the normal return, all input-output activity is completed.

From Master Control Program (MCP):

```
RJP       L(INTERCOM)
Attention return
Normal return
```

### Communication with West Ford Teletypewriter

To indicate that the West Ford teletypewriter is to be used as the basic communication device with the Haystack console serving only as monitor, the Univac 490 operator must set Jump Key 3 on the computer control board. When INTERCOM finds this, it sets up for conversion of all information to or from teletype code and operates through an additional input-output channel. The 490 console is disabled for input but prints everything that is printed on the West Ford teletypewriter, both input and output. All special control keys perform the same functions on the West Ford and the Haystack keyboards.

Control Characters

| Haystack | West Ford | Meaning |
|---|---|---|
| C/R | C/R (carriage return) | Terminates input, causes INTERCOM to evaluate input string for format validity, limits not exceeded, etc. If input is acceptable, causes * to be printed. If no input expected, terminates output. |
| ? | ? | Deletes current input and allows operator to start over. Causes the message NOT ACCEPTED to be printed. |
| □ (SPEC) | # | Forces limit check, i.e., if limit had been exceeded, this key will cause the input value to be accepted regardless of limit. Causes the message ACCEPTED to be printed. |
| (S) (or ↑) | (bell) | Attention symbol; causes transfer of control to attention return in MCP. |

Operational Conventions

Any output information may be cut off at any time by hitting either a control character key or a data character key (except when parallel output on the high speed printer is unavailable if it was desired). A carriage return with indentation, or a line feed, depending on the action called for in the input specification table, will be issued followed by that character (or the appropriate message, if one of the control characters was hit). If input is expected, that character will be treated as the first character of the input string. If no input is expected, the character is ignored.

After a limit has been exceeded, a carriage return will cause no operation. The operator must hit either a question

mark to delete the entry or the SPEC key to force the answer in spite of the limit, or he may begin immediately to type the new answer which will automatically delete the previous entry. Once this has been done the carriage return key will again perform its normal function.

Up to 300 characters may be output in any one output message. Since the teleprinter page is only 72 character positions wide, however, the user must make provision for issuing his own carriage return and line feed.

The space character is printed but not recognized for numerical input. It is accepted, though, for alphanumeric character string input.

Carriage positioning conventions are designed so that it is always possible to distinquish information typed by the computer (output) from that typed by the operator (input). Output information always begins at the left margin of the log paper. It may extend over several lines, but each line should begin at the left margin (unless spaces are deliberately programmed into the output message, which is not recommended). Input information will always be started on the next line below the last line of output. The input message would begin either indented five spaces from the left margin or directly below the first space after the output message, depending on an indicator bit in the input specification table.

## High-Speed Printer Output

If Jump Key 1 is not set on the computer control board, there is activated a series of routines that cause all messages, both input and output, to be printed in their entirety on the high-speed printer. (Note that the normal condition is for printer output; setting Jump Key 1 inhibits printer output.) This provides a complete log of operator activity since, even if the operator terminates an output message before completion on the console printer by commencing the input response, the entire message will be printed on the high-speed (line) printer. Indentation is identical to what would appear on the console printer, but vertical spacing is compressed to single spacing between lines.

An additional option is provided for using the various output formatting and conversion routines in INTERCOM as a means for conveniently printing internally-stored information on the line printer without printing on the console printer. This requires a call to INTERCOM with no input indicated and a special bit setting in the output specification table. This is further described in the section explaining the output specification entry.

## Error Conditions

FORMAT ERROR - This message is typed by INTERCOM after the operator has completed typing the input message and hit carriage return if his input violated one of the requirements of the input specification. For example, if numeric input was specified and the operator typed an alphabetic character, or if an octal number was specified and the operator typed an 8 or 9, etc. After typing the error message, INTERCOM will give a carriage return, enough spaces to line up the new answer with the erroneous one, and retype as much of the input as correctly met the specifications. The operator may proceed to finish the input message correctly, again terminating with the carriage return. This process will be repeated as long as incorrect input is typed. An incorrect input may not be forced to be accepted but the entire input string may be deleted by typing a question mark.

PROGRAM ERROR - This message is typed by INTERCOM if an output message cannot be properly converted to the format specified by the output specification table, or if either of the specification tables is improperly coded. In short, it implies that the program which called INTERCOM is in error and there is nothing the operator can do to cause or correct this condition. INTERCOM will return control to the normal return of the MCP and the program which caused the error will not be resumed.

MAX LIMIT, MIN LIMIT - These messages are typed by INTERCOM if the upper or lower limit given in the input specification table is exceeded. The message will occur after the operator hits the carriage return terminating the input string. The operator then has the three options described above under Operational Conventions, namely, to start a new input string directly, to force the entry past the limit check, or to delete the previous entry. It is important

to note that once this error message has been typed, the location specified to receive the input entry has had that entry stored in it; therefore it is not possible to delete the entry, then hit carriage return and assume that the receiving location has the same contents as before the call to INTERCOM.

## Specification Tables

Two distinct types of specification tables may be referenced by INTERCOM, each with its own rules for proper preparation. The output specification table consists of one or more separate output specification entries. If there are more than one, the routine will link together the output messages indicated and type each in its own format with a single call to INTERCOM. Inputs may not be linked in this manner; thus the input specification table will always consist of only one entry.

## Output Specification Entry

The first word of the output specification will contain the format description of what is to be printed. The second word will contain, in the lower half, the location of the information to be output. The upper half of the word will contain:

All ones (77777), meaning there is nothing more to be printed.

All zeros (00000), meaning the following location contains the first word of the next output specification entry to be processed.

The location of the next output specification to be processed (must not be location 00000, 00001, 77776, or 77777).

If line printer output only is desired, this half-word in the first output specification entry of the table should contain either a -1 (77776) if there is nothing more to be printed, or a +1 (00001) if the following location contains the first word of another entry.

There is no provision for indicating printer-only operation in an entry which points to the location of the next entry.

The following format descriptions are acceptable for output specification entries:

Fβ means that a 60-bit floating-point value is to be printed in exponential form with β digits to the right and one digit to the left of the decimal point; for example, a format description of F6 would result in a printout of the form: 1.234567E-2.

XβBγ means that a 30-bit value is to be printed out as a fixed-point decimal number whose radix point is to the right of bit γ (the 30 bits being counted 0 to 29 from right to left), β numerals (β=1 to 9) expressing the fraction and as many digits as required for the integer portion. (γ=0 implies an integer.) The integer portion is followed by a decimal point whether or not a fractional portion follows.

D means that a 30-bit value is to be printed as a signed decimal integer with leading zeros suppressed.

O means that a 30-bit value is to be printed out as a 10-digit octal integer.

A means that the second entry will contain the location of one or more words containing a string of six-bit (Fieldata) alphanumeric characters which will be terminated by a word of all ones.

Input Specification Entry

The first word of the input specification table will contain the format description. The second word will contain, in the lower half, the location into which the input information is to be placed (converted into internal computer form). If this information requires more than one

word (double-length floating-point numbers or an alpha string of characters), this location is the first location of the information to be stored.

The upper half of the second word will contain two indicator bits to specify carriage positioning prior to input and whether or not limit checking is desired.

To specify a carriage return, line feed and usual identation, the upper half of the second word is coded as a one (00001). A line-feed-only specification is coded as zero. The input information would then begin immediately following the output, but on the next line.

To specify limit checking the upper half of the second word is coded as 10. No limit checking is coded as 00. Thus, to specify both carriage return and limit check the upper half would be coded as 11. If limit checking is indicated, there will be a third entry containing the lower limit and a fourth entry for the upper limit. If the converted number is double-length, the third and fourth entries will similarly be double-length.

The following format descriptions are acceptable for the input specification table:

F means that the input number is to be converted to a 60-bit internal format floating-point number. The forms of a number which may be input are:

```
57
5.7E+1
5.7E1
57.0
57.
.57E2
570E-1
```

XY means that a number is to be converted to a 30-bit fixed-point binary number with the radix point to the right of bit Y. The input format of the number is the same as for floating-point numbers.

D means that a signed decimal integer is to be converted to a 30-bit binary number. (Omission of sign implies positive.)

0 means that a signed octal integer is to converted to a 30-bit binary number. (Omission of sign implies positive.)

Y means that a YES or NO is to be typed next. If a YES is typed, a one will be placed in the location specified in the second entry; if a NO, a zero will be placed there.

Lα means that from 1 to α alphabetic letters (A to Z) are to be typed.

Nα means that from 1 to α numerals are to be typed.

Mα means that from 1 to α characters of any mixture are to be typed.

WΦ means that the character to be typed must be Φ where Φ is some specific character.

α may not exceed 300, (the size of the character buffer used for both input and output.)

Examples

To output a string of characters, such as a statement requiring no reply, an entry would be made to INTERCOM from the calling program by:

```
        RJP             U(INTERCOM)
        U-TAG           OUTSPEC,0
```

where OUTSPEC is the location of the output specification table.

The output specification table would be written in SPURT, as follows:

```
OUTSPEC     FD 0            A
            77777           MESSAGELOC
```

```
MESSAGELOC      FD 3            FIRST NUMBER
                77777           77777
```

To input only a number to be converted to floating-point and to store that number in XX, the calling sequence would be:

```
                RJP             U(INTERCOM)
                0               INSPEC

INSPEC          FD 0            F
                0               XX
```

To both output the statement above and input the previously specified number, the following entry could be made:

```
                RJP             U(INTERCOM)
                U-TAG           OUTSPEC, INSPEC
```

The output and input specification tables as written above would be used.

To link together several output messages with different formats and require another format for input, the coding below might be used. (This particular sequence of code would serve as an octal-to-decimal converter which would print the decimal equivalent of the previous input number and then await new input.)

```
                RJP             U(INTERCOM)             CALL INTERCOM
                U-TAG           SPECTBLOUT,SPECTBLIN
                JP              $-2                     RETURN TO TYPEOUT LAST
                COMMENT                                 INPUT AND AWAIT NEXT

SPECTBLOUT      FD 1            A                       ALPHA OUTPUT
                00000           DECMESSAGE              POINT TO MESSAGE
                FD 1            D                       DECIMAL OUTPUT
                NEXTSPEC        NUMBERLOC               POINT TO NUMBER

NEXTSPEC        FD 1            A                       ALPHA OUTPUT
                77777           HOCTMSG                 POINT TO MESSAGE

DECMESSAGE      FD 4            DECIMAL EQUIVALENT =
                77777           77777                   TERMINATE ALPHA STRING

HOCTMSG         FD 3            OCTAL NUMBER =
                77777           77777                   TERMINATE ALPHA STRING
```

```
NUMBERLOC   00000        00144

SPECTBLIN   FD 1         0                 OCTAL INPUT
            10           NUMBERLOC         LINE FEED AND LIMIT CHECK
            00000        00000             LOWER LIMIT = 0
            00000        01000             UPPER LIMIT = 1000
```

This coding could produce the following log on the console printer:

```
(a) DECIMAL EQUIVALENT = 100 OCTAL NUMBER =
(b)                                          678 FORMAT ERROR
(c)                                          67*
(d) DECIMAL EQUIVALENT = 55  OCTAL NUMBER =
(e)                                          2233 MAX LIMIT=0000001000
(f)                                          7654 MAX L
(g)                                                    ACCEPTED
(h) DECIMAL EQUIVALENT = 4012 OCTAL NUMBER =
```

Notes:

Line (b) - Digit 8 is not an octal digit, hence caused format error.

Line (e) - Number typed was larger than 1000, hence caused limit check error.

Line (f) - Number typed was larger than 1000, hence caused limit check error. Operator did not wait for entire error message to print, but hit SPEC key to force typein in spite of exceeding limit.

Line (g) - Message typed as result of hitting SPEC key.

# III. SUBROUTINE DESCRIPTIONS

## INTERCOM

### Function

To print a message on the console printer (and/or the line printer) consisting of alphabetic information, fixed-point, floating-point, octal integer or decimal integer converted from internal computer representation, and to accept similar types of input from the console typewriter or a remote teletypewriter.

### Calling Sequence

```
RJP     U(INTERCOM)
U-TAG   XXXXX,YYYYY
Normal  return
```

(XXXXX = location of output specification table)
(YYYYY = location of input specification table)

### Input

Output and input specification tables (see Section II).

### Output

Printed output on console printer, line printer, or remote teleprinter.

Converted values of input information stored in location given by input specification table.

### Subroutines Used

PUTFORMINT, COMPROC, WESTOUT, WESTIN, HSPOUT.

Storage Areas Read

None.

Storage Areas Written

INTOUTSWO, CASESET, INTOUTSW, ACTIVITY
SPECTBLS, PRINTSW, BUFFCOUNT, BUFFER
KILLOUTSW, BUFSLOT

Method

INTERCOM interprets calling sequence and, through use of PUTFORMINT, prepares the output message string. It initiates the output buffer, calls WESTOUT if Jump Key 3 is set indicating that the West Ford console should also receive the output message, and calls HSPOUT if line printer output is also indicated (Jump Key 1 not set). If no output is indicated, INTERCOM sets the output completion bit in the ACTIVITY word and bypasses initiating any output buffer. Once all appropriate outputs are initiated, INTERCOM exits to an address set up by COMPROC, which must be called first for initialization. This address is normally in the MCP of the pointing system and control remains with the MCP until output is complete or terminated by the operator and the input, if indicated, is correctly accepted, converted, limit checked and stored in the user's area as performed by COMPROC. COMPROC then jumps back to the exit portion of INTERCOM, returning to the user program via the normal return. If neither input nor output is indicated, INTERCOM merely cycles once through the MCP and COMPROC, then returns to the user program without any teletypewriter action.

Error Conditions

For operator error conditions, see Error Conditions in Section II. Program error conditions cause a jump to the routine called ERROR with a 0 in the A register indicating an invalid call to INTERCOM. The message "PROGRAM ERROR XXXXX" is printed where XXXXX is the location of the call to INTERCOM.

## COMPROC

### Function

To initialize the interrupt answering routines, test for output or input completed, interpret, check, convert and store the input and return control to the user program when input is correct.

### Calling Sequence

```
RJP  L(INTERCOM)
Attention return
Normal return
```

### Input

ACTIVITY - a status register set by the interrupt answering routines.

BUFFER - an area containing the string of input characters.

### Output

INTERCOM program messages indicating error conditions or valid input.

### Subroutines Used

INFORMINT, WESTOUT, WESTIN, HSPACC, HSPGIN, HSPATTN, HSPNOTACC, SPACERITE, ERROR

### Storage Areas Read

ACTIVITY, SPECTBLS, BUFSLOT, BUFFCOUNT

Storage Areas Written

SLOTSTOR, ACTIVITY, LOCININT (42), LOCOUTINT (62), LOCTTYIN (40), LOCTTYOUT (60), BUFSLOT
BUFFER

(Locations 40, 60, 42, and 62 are the hardware interrupt locations for input and output on channels 0 and 2, respectively.)

Method

COMPROC is called by MCP to respond to an operator's use of the control characters. It examines the ACTIVITY word to decide whether to exit immediately back to the MCP, process completed input data, exit to the attention return, delete input up to this point, etc. When all input is correct, COMPROC will jump back to the exit portion of INTERCOM, returning control to the user program.

Error Conditions

An error of any type causes a jump to the routine called ERROR with a code in the A register. The codes are interpreted as follows:

```
    0 - program error; invalid call to INTERCOM
   20 - maximum limit exceeded
   21 - minimum limit exceeded
other - format error; input cannot be correctly
          interpreted
```

# INTOUT

## Function

To answer output interrupts serving two types of output: 1) the output message strings prepared by INTERCOM or COMPROC; and 2) the single characters echoed back to the console printer by INTIN, the input interrupt answering routine. Routine serves both console printer and remote teletypewriter.

## Calling Sequence

From location 62 (the Internal Output Interrupt location for channel 2) or location 60 (the location for channel 0) the instruction

```
RJP  INTOUT
```

is executed by the hardware when an output buffer on channel 2 or channel 0 is exhausted. The return from INTOUT releases the interlock set by the hardware interrupt and returns control to the user's program at the point at which the interrupt occurred.

## Input

None.

## Output

ACTIVITY - not changed if only single character input is being returned to printer; set to 4 if output message string is complete.

## Subroutines Used

WESTOUT, WESTIN

Storage Areas Read

SPECTBLS

Storage Areas Written

ACTIVITY

Method

A switch setting INTOUTSWO determines which of the two types of output is being processed. If single character echoing is being performed, the routine immediately sets up another input buffer and exits. If message strings are being processed, the specification table is examined to see if carriage return and indentation is requested or only line feed and the appropriate spacing output characters are given (without further interrupt required). Then the ACTIVITY word is set to 4, an input buffer initiated and the routine releases interlock and exits.

Error Conditions

None.

# INTIN

## Function

To answer input interrupts for the console typewriter. Can terminate output and examine the input character to see if it is a control character. If a control character, it processes it accordingly setting the appropriate bit in the ACTIVITY word; if not, it stores the input character in the next available slot in the buffer and initiates an output buffer to echo the character back to the printer.

## Calling Sequence

From location 42 (the Internal Input Interrupt location for channel 2) the instruction

```
RJP  INTIN
```

is executed by the hardware when the single word (character) input buffer connected to channel 2 becomes filled. The return from INTIN releases the interlock set by the hardware interrupt and returns control to the point at which the interrupt occurred.

## Input

BUFIN - the single character buffer

## Output

ACTIVITY - 10 if input complete (carriage return)
4 if output terminated
2 if deletion (question mark)
1 if attention (attention symbol)

## Subroutines Used

WESTOUT, WESTIN, ERROR

Storage Areas Read

BUFIN, SPECTBLS, BUFSLOT, BUFFER

Storage Areas Written

ACTIVITY, BUFSLOT

Method

If output is in progress when INTIN is called, that output is terminated and either a carriage return, line feed and indentation is given or only a line feed depending on the input specification table. Then the input character is examined. If it is one of the control characters, the appropriate bit is set in the ACTIVITY word and the routine exits after re-initiating the input buffer. If not a control character, it is stored in the next slot in the BUFFER, BUFSLOT is incremented, and the character is output back to the console printer and to the remote teletypewriter if West Ford communication is indicated.

Error Conditions

If BUFSLOT, when incremented, exceeds the limit on the BUFFER size, currently set to $300_{10}$, the effect is as if a carriage return had been issued. Presumably, a format error will be detected by COMPROC since no input specification allows for more than 300 characters.

## TTYININT

### Function

To answer input interrupts for the remote teletypewriter (at West Ford). The routine interprets the character, echoes it, sets a case switch if the character is a shift, otherwise translates the character to Fieldata code and passes it on to INTIN for normal input character processing.

### Calling Sequence

From location 40 (the Internal Input Interrupt location for channel 0) the instruction

```
RJP  TTYININT
```

is executed by the hardware when a single word (character) input buffer connected to channel 0 becomes filled. The return from TTYININT releases the interlock set by the hardware interrupt and returns control to the point at which the interrupt occurred.

### Input

TTYINWD - the single character buffer.

### Output

See output of INTIN.

### Subroutines Used

INTIN

### Storage Areas Read

TTYINWD, TTYTBL

Storage Areas Written

BUFINWD

Method

The teletype to Fieldata translation table has letter shift characters in the lower portion of the table and figure shift characters in the higher portion. The base address of the table is set to one or the other of these portions by the corresponding shift character after which the Fieldata character corresponding to any teletype character may be accessed directly. This character is placed in BUFINWD, simulating the hardware function of filling the buffer and allowing INTIN to process the character exactly as though it came from the console typewriter.

Error Conditions

None.

# WESTOUT

## Function

The West Ford teletypewriter output routine tests Jump Key 3 to see if communication is desired with the West Ford device. If so, it translates the output message string prepared by INTERCOM or COMPROC from Fieldata to teletype code, inserting shift characters as necessary and initiates an output buffer to West Ford, with or without monitor as the instruction preceding the call indicates.

## Calling Sequence

```
IN   KEYIN, W(BUFINWD), MONITOR (Optional)
OUT  KEYOUT, W(ANYTHING), MONITOR (MONITOR optional)
RJP  WESTOUT
Normal return
```

## Input

Output buffer of Fieldata characters indicated by OUT instruction preceding call.

## Output

Printed output on remote teletypewriter.

## Subroutines Used

None.

## Storage Areas Read

TTYTBL.

Storage Areas Written

FDBUFCNT, TTYBUF.

Method

The two instructions preceding the call to WESTOUT are interpreted as follows: if the instruction preceding the call is an OUT with MONITOR, the OUT instruction on channel 0 will likewise be with MONITOR, otherwise the OUT will be without MONITOR. The buffer word indicated by that instruction will be used to show the location and size of the Fieldata buffer to be translated. The instruction preceding that (two prior to the RJP) is examined to see if it is an IN; if so, a corresponding IN is initiated on channel 0.

Error Conditions

None.

# INFORMINT

## Function

To interpret the input specification table, test the completed input message for proper format, convert to internal computer word representation, store in the user's area, and check for the value within the limits given.

## Calling Sequence

```
RJP  INFORMINT
0    location of input spec table
Error return
Normal return
```

## Input

BUFFER - the string of characters containing the input message.

The input specification table indicated.

## Output

The converted value of the input message stored in the user's area.

## Subroutines Used

GREEKCONV

The following routines are called corresponding to the format character given in the input specification table:

| Format Character | TEST | STORE | LMTCHK |
|---|---|---|---|
| F | FLOATIN | FLTSRT | SLTLMT |
| X | FIXIN | NUMSTR | FIXLMT |
| D | DECIN | NUMSTR | DECLMT |
| 0 | HOCTIN | NUMSTR | HOCTLMT |

| Format Character | TEST | STORE | LMTCHK |
|---|---|---|---|
| Y | YESIN | NUMSTR | NOLMT |
| L | INPUTLA | STRING | NOLMT |
| N | INPUTNA | STRING | NOLMT |
| M | INPUTMA | STRING | NOLMT |
| W | SPECIN | NUMSTR | NOLMT |

Storage Areas Read

INCODTBL, INTEGER.

Storage Areas Written

BUFSLOT.

Method

The routine examines the input specification table to see if characters other than the format character are required to specify gamma (the binary point of a fixed-point number), the number of characters to be input, or the specific character to be typed. If so, these numbers are converted with GREEKCONV and passed on (by being left in the A-register) to the appropriate TEST routine. The appropriate STORE routine stores the converted values in the location(s) indicated in the specification table, after which, if limit checking is indicated, they are tested by the corresponding LMTCHK routine to see if they are within the given limits.

Error Conditions

1) Errors may be passed on from the TEST routine and the LMTCHK routine. The contents of the A-register are unchanged so that the individual routines determine the type error.

2) An error return from GREEKCONV causes a 0 (program error) to be placed in the A-register before returning to the error return.

3) If a format character other than those allowed is specified, a program error is indicated.

# PUTFORMINT

## Function

To interpret the Output Specification Table, linking individual entries and causing the internal representations to be converted to the appropriate output form and placed in the output buffer, one character per word.

## Calling Sequence

```
RJP  PUTFORMINT
0    location of output spec table
Error return
Normal return
```

## Input

The output specification table indicated.

## Output

BUFFER - the string of characters comprising the output message.

## Subroutines Used

GREEKCONV, PUTPREP.

## Storage Areas Read

PUTCODTBL, CHARO, INTEGER.

## Storage Areas Written

None (BUFFER through use of PUTPREP).

## Method

A loop is established for processing each specification entry. Within that loop the format character determines whether there are additional characters in the word for specifying beta (the number of fractional digits to print) or gamma (the binary point of a fixed-point number). If so, they are converted from Fieldata to decimal and given to the calling sequence of PUTPREP. The PUTPREP routine actually calls the conversion routines and unpacks the output characters for storing in the buffer. PUTFORMINT then tests for more entries in the specification table and either repeats the loop or exits accordingly.

## Error Conditions

Any error condition, whether generated by subroutines or by PUTFORMINT coding, causes an exit to the error return with a 0 (program error) in the A-register.

# PUTPREP

## Function

To call the appropriate output conversion routine, unpack the resultant characters and store them with sign, decimal point, etc., in the output buffer.

## Calling Sequence

```
RJP    PUTPREP
U-TAG  XXXXX, YYYYY
Error return
Normal return
```

where XXXXX = location of information to be converted and
YYYYY = code, gamma, beta as follows:

```
000 CCC GGG GGB BBB
    code gamma beta
```

## Input

Information in calling sequence.

## Output

BUFFER - the string of characters containing the output message.

BUFFCOUNT - a count of the number of characters in BUFFER.

## Subroutines Used

COTFLT, COFFIX, BINDECINT, BINOCTFLD, ZROSUPINT, BUFFSTORE.

Storage Areas Read

SIGN, IOINTEGER, IOFRACTION, BETA, EXPSIGN, IOEXPONENT INTEGER.

Storage Areas Written

CODE, GAMMA, BETA, BUFFER, BUFFCOUNT

Method

Completely separate paths are followed for each of the five possible output format characters (codes). Straight Fieldata output is converted within PUTPREP; all other conversions are done with subroutines.

Error Conditions

Any error condition causes an exit to the error return with a code in the A-register as follows:

11 - output message exceeds size of buffer
25 - Format Character not valid
other - as returned from conversion routine

## INPUTLA,INPUTNA,INPUTMA

### Function

To test the input string of characters for proper class: alphabetic, numeric or mixed, respectively.

### Calling Sequence

```
RJP  INPUTXA
Error return
Normal return
```

with the maximum number of characters to be tested in the A-register

### Input

None.

### Output

The appropriate return.

### Subroutines Used

INPUTA.

### Storage Areas Read

None.

### Storage Areas Written

None.

Method

An index register is loaded with the address of a word containing the upper and lower limits of the character codes within the class indicated by the particular routine. This word is given to INPUTA to test the input string in general.

Error Conditions

If the string contains a character not between 05 and 37 for INPUTLA or between 57 and 71 for INPUTNA, the appropriate error return is given.

# INPUTA

## Function

To test a string of input characters falling within a pair of Fieldata codes given by the calling routines.

## Calling Sequence

```
        ENT B6  ADDRESS
        RJP     INPUTA
        Error return
        Normal return

ADDRESS XX      YY
```

where XX is the upper limit and YY the lower limit of the class of characters being tested.

## Input

BUFFER+(BUFSLOT).

The A-register containing the maximum number of characters to be tested.

## Output

A setting of B6, BUFSLOT.

## Subroutines Used

None.

## Storage Areas Read

BUFFER, BUFSLOT

Storage Areas Written

BUFSLOT.

Method

The input buffer beginning at BUFFER + (BUFSLOT) is tested character by character for a space which is ignored, a carriage return which is cleared in the buffer and triggers the normal return, or a character within the limits specified. Any character other than these causes an error return.

Error Conditions

1. A 10 in the A-register indicates too many characters in the string prior to the carriage return. B6 contains a one.

2. If a character is not within the specified class, the error return is given with a zero in B6.

# DECIN, HOCTIN

## Function

To test the input string for proper decimal or octal format and convert to internal code.

## Calling Sequence

RJP DECIN or RJP HOCTIN
Error return
Normal return

## Input

None.

## Output

The appropriate return and the converted number in INTEGER.

## Subroutines Used

NUMIN.

## Storage Areas Read

None.

## Storage Areas Written

BINLMT, CONVERT.

Method

The appropriate BCD limit, 10 for HOCTIN or 12 for DECIN, is placed in BINLMT and the appropriate conversion routine, INTOCTBIN or INTBCDBIN, respectively, placed in CONVERT. Then the common routine NUMIN is called which actually tests the characters and calls the proper conversion routine.

Error Conditions

1. The error return from DECIN leaves a 07 in the A-register.

2. The error return from HOCTIN leaves a 06 in the A-register.

# NUMIN

## Function

To test and convert a string of input characters in either octal or decimal form.

## Calling Sequence

```
RJP  NUMIN
Error return
Normal return
```

## Input

BINLMT, CONVERT, BUFFER+(BUFSLOT).

## Output

INTEGER.

## Subroutines Used

INTOCTBIN or INTBCDBIN.

## Storage Areas Read

BINLMT, CONVERT, BUFFER, BUFSLOT.

## Storage Areas Written

SIGN, IOINTEGER (2), NUMDIG.

Method

The string is first examined for a sign character which is used to set the register SIGN to 1 if minus or to 0 if plus. If no sign is found, the register SIGN is set to 0 and the rest of the string examined. Spaces are ignored. Each number is converted from Fieldata to pure BCD, tested against the maximum limit given in BINLMT, and then packed into IOINTEGER, a 2-register common storage area. The appropriate conversion routine converts the number and leaves it properly signed in INTEGER.

Error Conditions

If any format condition is not met or if the conversion routine indicates an error, the routine exits to the error return.

# SPECIN

## Function

To test the input string for a particular character.

## Calling Sequence

```
RJP  SPECIN
Error return
Normal return
```

with the Fieldata code of the character to be tested for in the A-register.

## Input

BUFFER+(BUFSLOT)

## Output

INTEGER.

## Subroutines Used

None.

## Storage Areas Read

BUFSLOT, BUFFER.

## Storage Areas Written

INTEGER.

Method

Spaces are not permitted; the character in BUFFER+(BUFSLOT) must be precisely that given in the A-register and the next character must be a carriage return. The proper character is placed in the common storage register INTEGER.

Error Conditions

1. If the input buffer size is exceeded, the error return is made with a 01 in the A-register.

2. If the character was not properly entered, the error return is made with a 10 in the A-register.

# YESIN

## Function

To test the input string for a yes or no answer.

## Calling Sequence

```
RJP  YESIN
Error return
Normal return
```

## Input

BUFFER+(BUFSLOT).

## Output

INTEGER (= 1 for yes, 0 for no).

## Subroutines Used

None.

## Storage Areas Read

BUFFER, BUFSLOT.

## Storage Areas Written

INTEGER.

Method

Spaces are ignored. Only the first character is tested for Y or N, after which anything may be typed.

Error Conditions

If neither a Y nor an N is typed as the first non-space character, the routine exits to the error return with an 11 in the A-register.

# FLOATIN, FIXIN

## Function

To test the input string for proper exponential format and convert to either floating- or fixed-point internal form.

## Calling Sequence

```
RJP  FLOATIN or RJP  FIXIN
Error return
Normal return
```

## Input

None.

## Output

The appropriate return.

## Subroutines Used

FXPREPREN, CINFLT or CINFIX

## Storage Areas Read

None.

## Storage Areas Written

None.

Method

FXPREPREN is a common routine for testing input format, after which the appropriate conversion routine is called.

Error Conditions

If either of the subroutines indicates an error, the routine exits to the error return.

# FXPREPREN

## Function

To test the input string for proper exponential format and get the information into common storage areas.

## Calling Sequence

```
RJP  FXPREPREN
Error return
Normal return
```

## Input

BUFFER

## Output

EXPSIGN, SIGN, IOINTEGER(2), IOFRACTION(2), IOFRACTION(2), IOEXPONENT.

## Method

Each portion of the input number is examined separately, beginning with the sign (the absence of which indicates a plus), followed by the integer portion terminated by a decimal point, then by the fraction terminated by an E, then by the sign of the exponent, and finally by the magnitude of the exponent, terminated by a carriage return.

## Error Conditions

Tests are made for the digit count of the integer or fraction portion not exceeding 10, for the exponent not exceeding 40, for all characters to be valid digits, etc. Any violation causes an exit to the error return.

# BINDECINT

## Function

To convert the value in INTEGER from binary to decimal in Fieldata output form.

## Calling Sequence

```
RJP  BINDECINT
Normal return
```

## Input

INTEGER.

## Output

IOINTEGER(2), SIGN

## Subroutines Used

None.

## Storage Areas Read

INTEGER

## Storage Areas Written

IOINTEGER(2), SIGN

Method

Repeatedly divide the quantity in INTEGER, having been forced positive, by $12_8$ and store the remainder in the appropriate digit position of IOINTEGER or IOINTEGER+1.

Error Conditions

None.

# INTOCTBIN

## Function

To convert the value in IOINTEGER from octal input form to internal binary form.

## Calling Sequence

```
RJP  INTOCTBIN
Error return
Normal return
```

## Input

IOINTEGER(2), SIGN.

## Output

INTEGER.

## Subroutines Used

None.

## Storage Areas Read

IOINTEGER(2), SIGN.

## Storage Areas Written

INTEGER.

Method

Each character is tested for the presence of an 8 or 9, which results in an error condition. If not, the good characters are packed into a register that is stored in INTEGER.

Error Conditions

Non-octal digits result in an exit to the error return.

# INTBCDBIN

## Function

To convert a value in IOINTEGER from integer decimal form to internal binary.

## Calling Sequence

```
RJP  INTBCDBIN
Error return
Normal return
```

## Input

IOINTEGER(2), SIGN.

## Output

INTEGER.

## Subroutines Used

None.

## Storage Areas Read

IOINTEGER(2), SIGN.

## Storage Areas Written

INTEGER.

Method

Multiply successively higher order digits by $12_8$ and add to the previous partial product.

Error Conditions

An overflow in the multiplication process indicates that the value in IOINTEGER was too large to convert to single-word binary and causes an exit to the error return.

# FRABCDBIN

## Function

To convert a value in IOFRACTION from fractional decimal form to internal binary.

## Calling Sequence

```
RJP  FRABCDBIN
Normal return
```

## Input

IOFRACTION(2), SIGN.

## Output

FRACTION.

## Subroutines Used

None.

## Storage Areas Read

IOFRACTION(2), SIGN.

## Storage Areas Written

FRACTION.

Method

Multiply successively higher order digits by $(10/12)_8^n$ and add to the previous partial product (where n is the decimal power of 10 of the digit being multiplied).

Error Conditions

None.

## BINDECFRA

### Function

To convert a value in FRACTION from internal binary form to fractional decimal form suitable for output.

### Calling Sequence

```
RJP  BINDECFRA
Normal return
```

### Input

FRACTION.

### Output

IOFRACTION(2), SIGN.

### Subroutines Used

None.

### Storage Areas Read

FRACTION.

### Storage Areas Written

IOFRACTION(2), SIGN.

Method

Multiply the fraction by 10 (B1), each time converting the high-order four bits to output form and accumulating them in IOFRACTION.

Error Conditions

None.

## Function

To suppress leading zeros in the area defined by the calling sequence, converting them to blanks, but leaving one zero if the entire value is zero.

## Calling Sequence

```
RJP     SUPZRO
U-TAG   AREA,XX     (XX = number of words)
Normal return
```

## Input

Area given by calling sequence.

## Output

Same area.

## Subroutines Used

None.

## Storage Areas Read

Area given by calling sequence.

## Storage Areas Written

Same area.

Method

Test leading digits for zero, clearing each until a non-zero digit is found or the area exhausted. If the latter, force a single zero in the least significant digit position of the area.

Error Conditions

None.

COFRND

Function

To round off the value in IOINTEGER and IOFRACTION to BETA deeimal places.

Calling Sequence

RJP COFRND
Normal Return

Input

IOINTEGER(2), IOFRACTION(2), BETA.

Output

IOINTEGER(2), IOFRACTION(2)

Subroutines Used

None.

Storage Areas Read

IOINTEGER(2), IOFRACTION(2), BETA.

Storage Areas Written

IOINTEGER(2), IOFRACTION(2).

Method

The BETA+1st digit is tested for five or greater. If not, it is cleared and the fraction replaced as is; if so, the next higher order digits are tested for 9's to see if the carry will propagate upwards. This process continues from IOFRACTION through to IOINTEGER until a digit less than 9 is found at which point 1 is added to it and the value cleared up and prepared for output with BETA digits, zero or greater in IOFRACTION.

Error Conditions

None.

# COFFIX

## Function

To convert the fixed-point value indicated by the calling sequence to output fixed point format with BETA decimal places printing.

## Calling Sequence

```
RJP     COFFIX
U-TAG   ADDRESS,GAMMA
Normal return
```

## Input

Value in address given in calling sequence.

## Output

IOINTEGER(2), IOFRACTION(2), SIGN.

## Subroutines Used

BINDECINT, BINDECFRA, COFRND, SUPZRO.

## Storage Areas Read

Address given in calling sequence.

## Storage Areas Written

SIGN, INTEGER, FRACTION, IOINTEGER(2), IOFRACTION(2) (by subroutines).

Method

The value is made positive and its true sign temporarily stored. It is then separated into its integer and fractional portions by the binary point (GAMMA) given in the calling sequence. Each is separately converted to output form and the entire value rounded to BETA decimal places with leading zeros suppressed.

Error Conditions

None

# CINFIX

## Function

To convert the input value in the various storage registers to a single fixed-point binary quantity with the binary point given by the calling sequence.

## Calling Sequence

```
RJP     CINFIX
U-TAG   ADDRESS,GAMMA
Error return
Normal return
```

## Input

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

## Output

The address given in the calling sequence.

## Subroutines Used

INTBCDBIN, FRABCDBIN.

## Storage Areas Read

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, INTEGER, FRACTION, NOINTS.

## Storage Areas Written

INTEGER, FRACTION (by subroutines); address given in calling sequence, FXCODE.

## Method

After masking off the Fieldata code bits from all numbers, the exponent is converted to binary. The values in IOINTEGER and IOFRACTION are shifted right or left (depending on the sign of the exponent), the number of digit positions indicated by the exponent. Then the integer and the fractional portions are separately converted to binary through the use of subroutines and the results shifted together the number of places given by the binary point (GAMMA) in the calling sequence. This quantity, after adjustment for sign, is then stored in the address given in the calling sequence.

## Error Conditions

If overflow occurs indicating that the integer portion is too large to fit into the number of bit positions available, the routine exits to the error return.

# COTFLT

## Function

To convert the value indicated by the calling sequence from internal floating-point form to output exponential form.

## Calling Sequence

```
RJP     COTFLT
U-TAG   ADDRESS,0
Error return
Normal return
```

## Input

Floating-point value in ADDRESS (2).

## Output

IOINTEGER+1, IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

## Subroutines Used

FLTPT, BINDECINT, BINDECFRA, COFRND, SUPZRO.

## Storage Areas Read

EXPONENT, FPFRACTION.

## Storage Areas Written

INTEGER, FRACTION, EXPONENT, FPFRACTION, IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, SINTEMP.

Method

The value indicated by the calling sequence is stored as a positive quantity in the common area EXPONENT and FPFRACTION along with temporary storage of the true sign. Separate paths are entered depending on the sign of the exponent; but as the functions are similar, only the positive exponent path will be described.

The number is tested against the floating-point representation of $10^{10}$ and repeatedly divided by it with corresponding adjustment of IOEXPONENT until it is less. Then it is tested against a table of floating-point representations of powers of ten and divided by the highest one which is less than it, thus making the number in terms of units only. Now the value can be shifted an amount equal to the exponent minus the base (40000) to separate the integer and fractional portions which are each converted separately to output format. The resultant input-output values are rounded to BETA decimal places and zero suppressed. The IOEXPONENT is then converted to decimal for output.

Error Conditions

If the resultant value of IOEXPONENT is greater than 40, the routine exits to the error return.

# CINFLT

## Function

To convert the input value in the various common storage registers to a floating point number stored in EXPONENT and FPFRACTION.

## Calling Sequence

```
RJP  CINFLT
Error return
Normal return
```

## Input

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN.

## Output

EXPONENT, FPFRACTION.

## Subroutines Used

INTBCDBIN, FRABCDBIN, FLTPT.

## Storage Areas Read

IOINTEGER(2), IOFRACTION(2), IOEXPONENT, EXPSIGN, SIGN, INTEGER, FRACTION

## Storage Areas Written

INTEGER, FRACTION (by subroutines), EXPONENT, FPFRACTION.

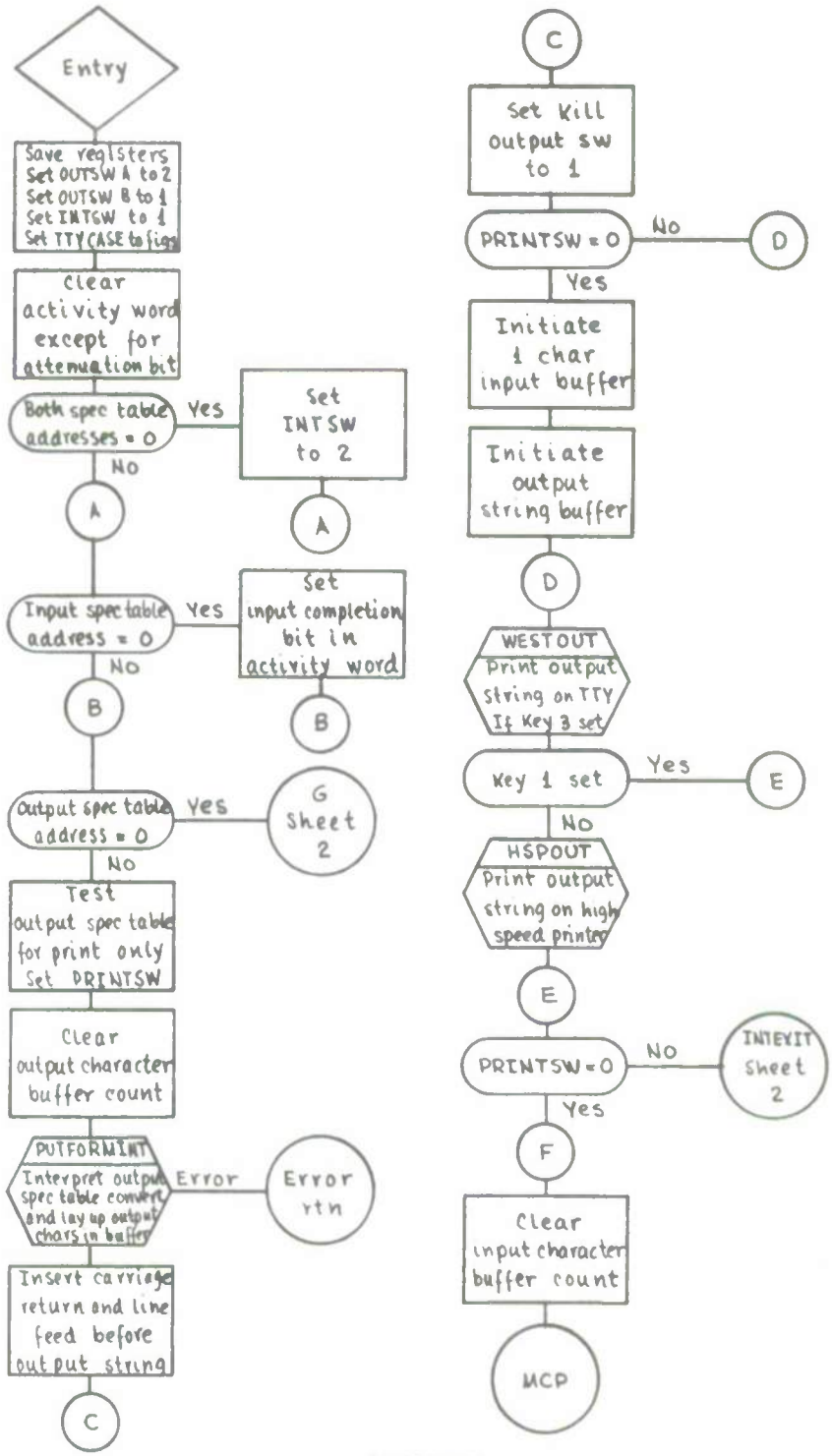
## Method

The input integer and fraction are separately converted to internal binary form after being stripped of Fieldata code bits. The resultant words are normalized by shifting together with a base exponent increased by one for each position shifted out of the integer and into the fraction. Alternatively, if the value were a pure fraction, the exponent would be decreased by one for each bit position the fraction is shifted left until it is normalized. This normalized result is rounded off with appropriate exponent adjustment and stored in a floating-point area.

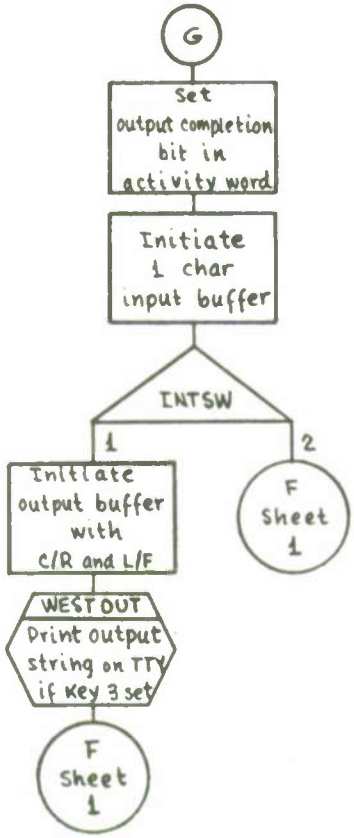
Now the input exponent may be applied through use of the floating-point subroutines. This exponent is separated into the tens and units position for conservation of table storage size. The floating-point value developed thus far is multiplied by the appropriate units digit, also in floating-point form, and that result multiplied by the appropriate multiple of ten. The final result is adjusted for the original sign.

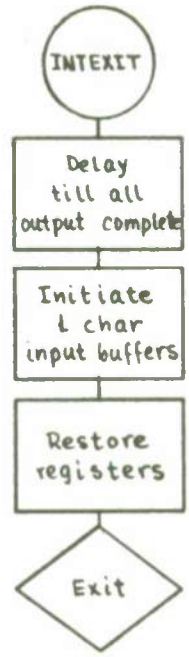
## Error Conditions

The error return from the INTBCDBIN subroutine causes an exit to the error return.

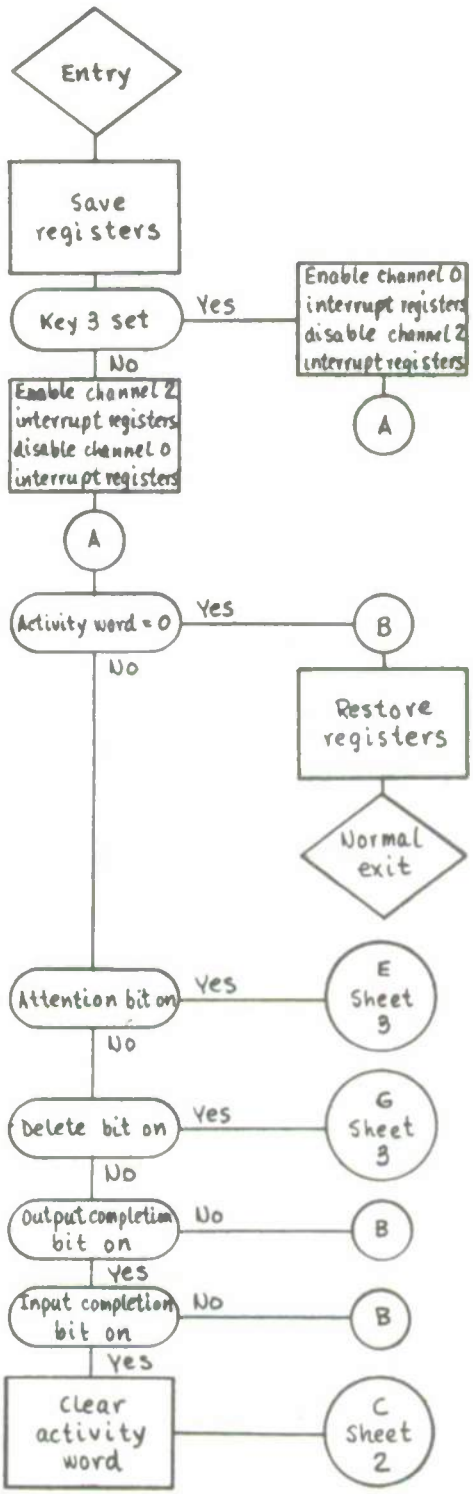



INTERCOM
Sheet 1 of 2

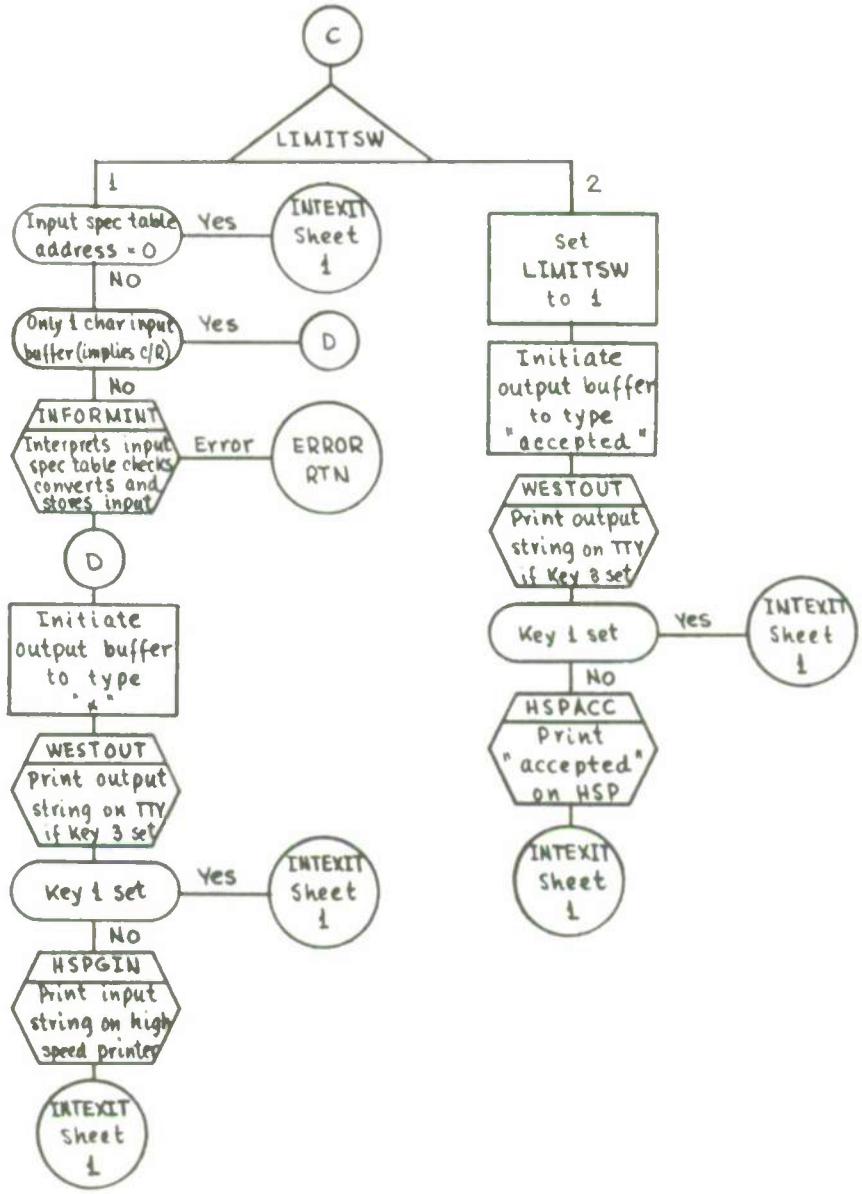


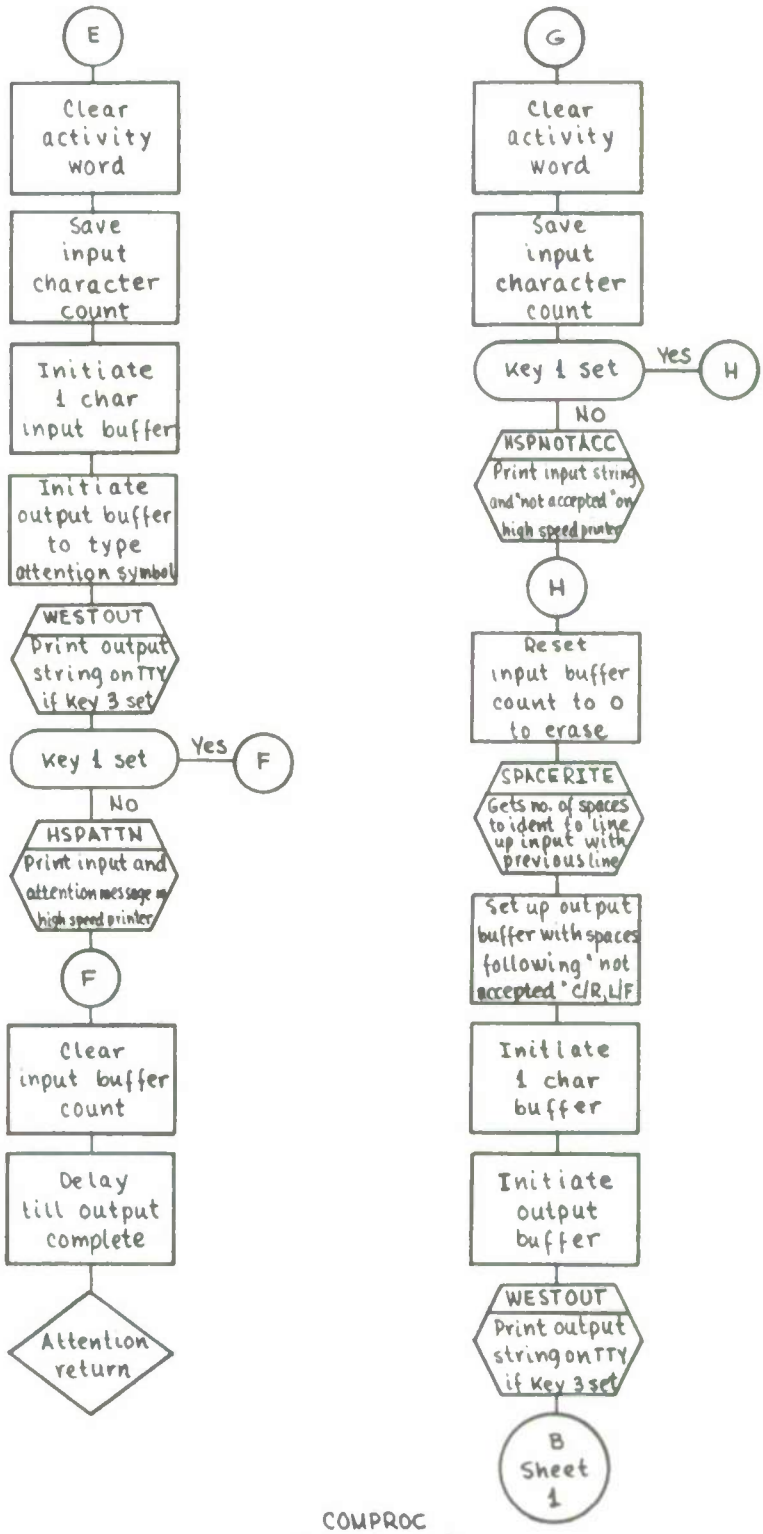

INTERCOM
Sheet 2 of 2



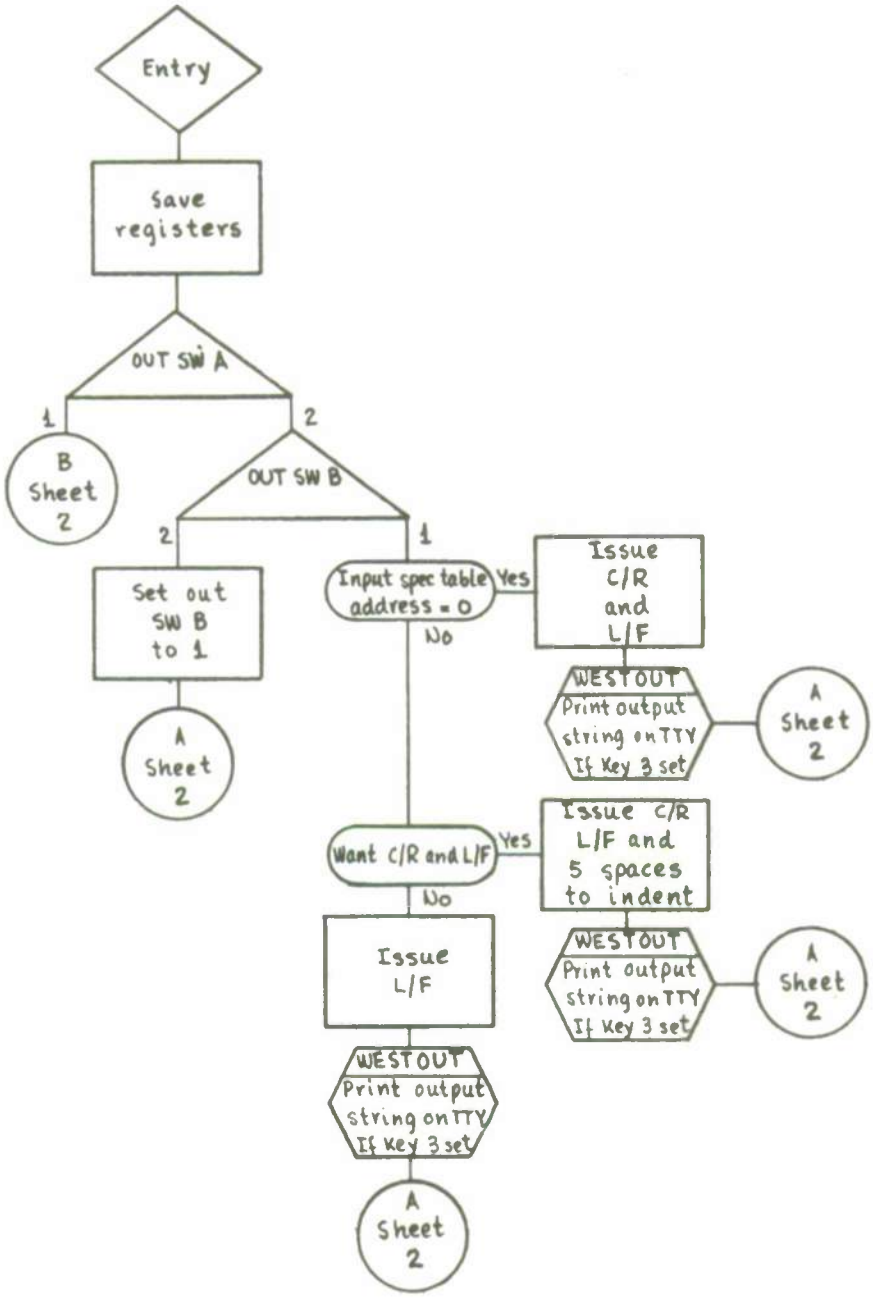

COMPROC
Sheet 1 of 3



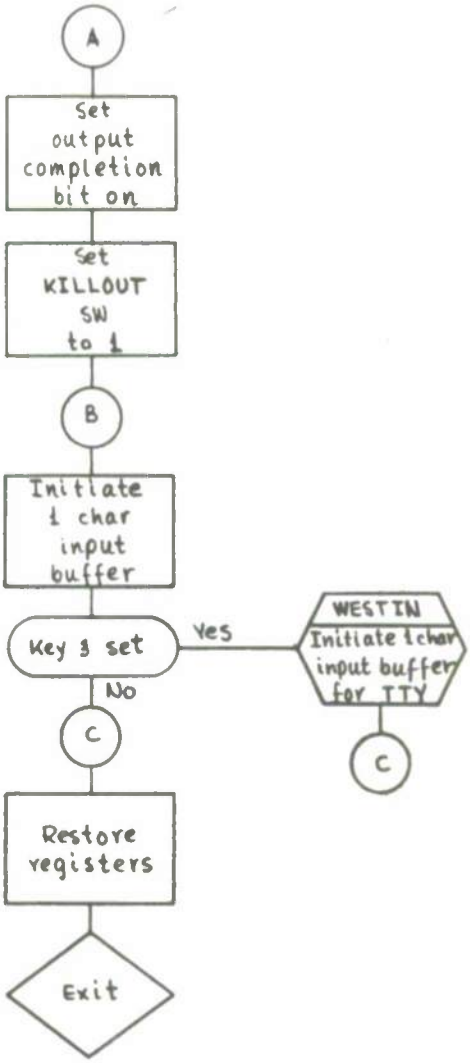

COMPROC
Sheet 2 of 3



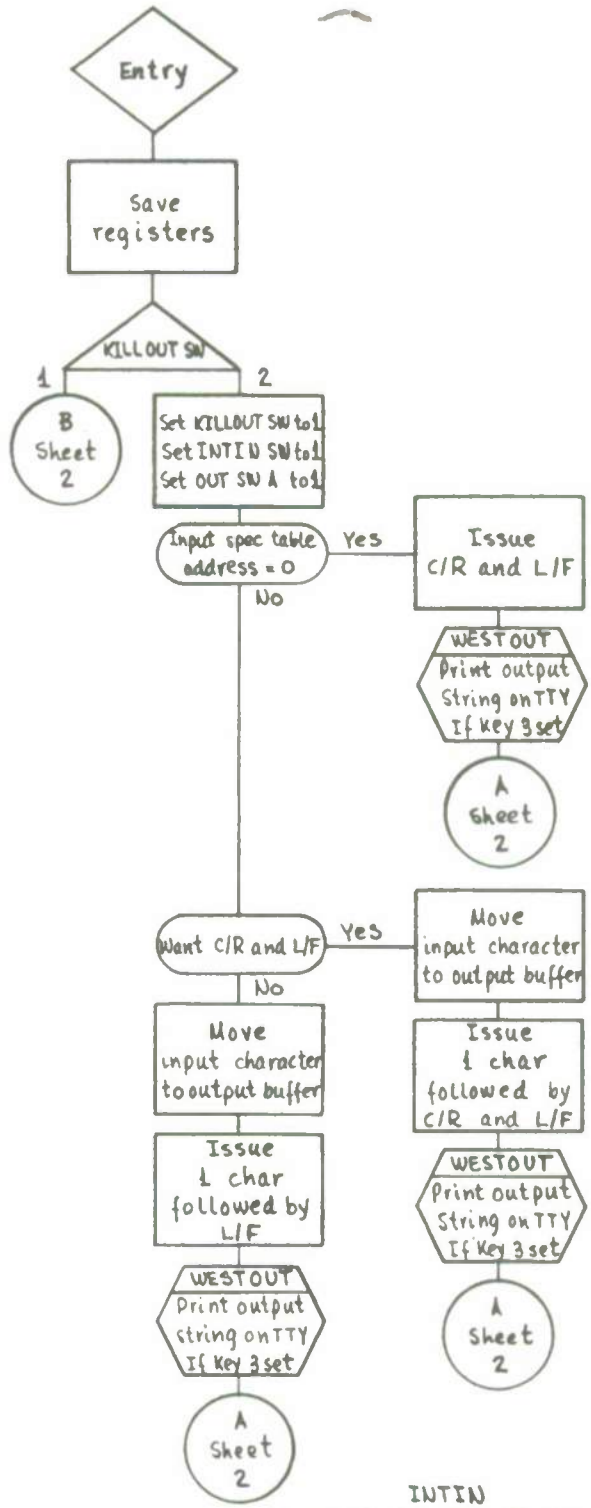

COMPROC
Sheet 3 of 3



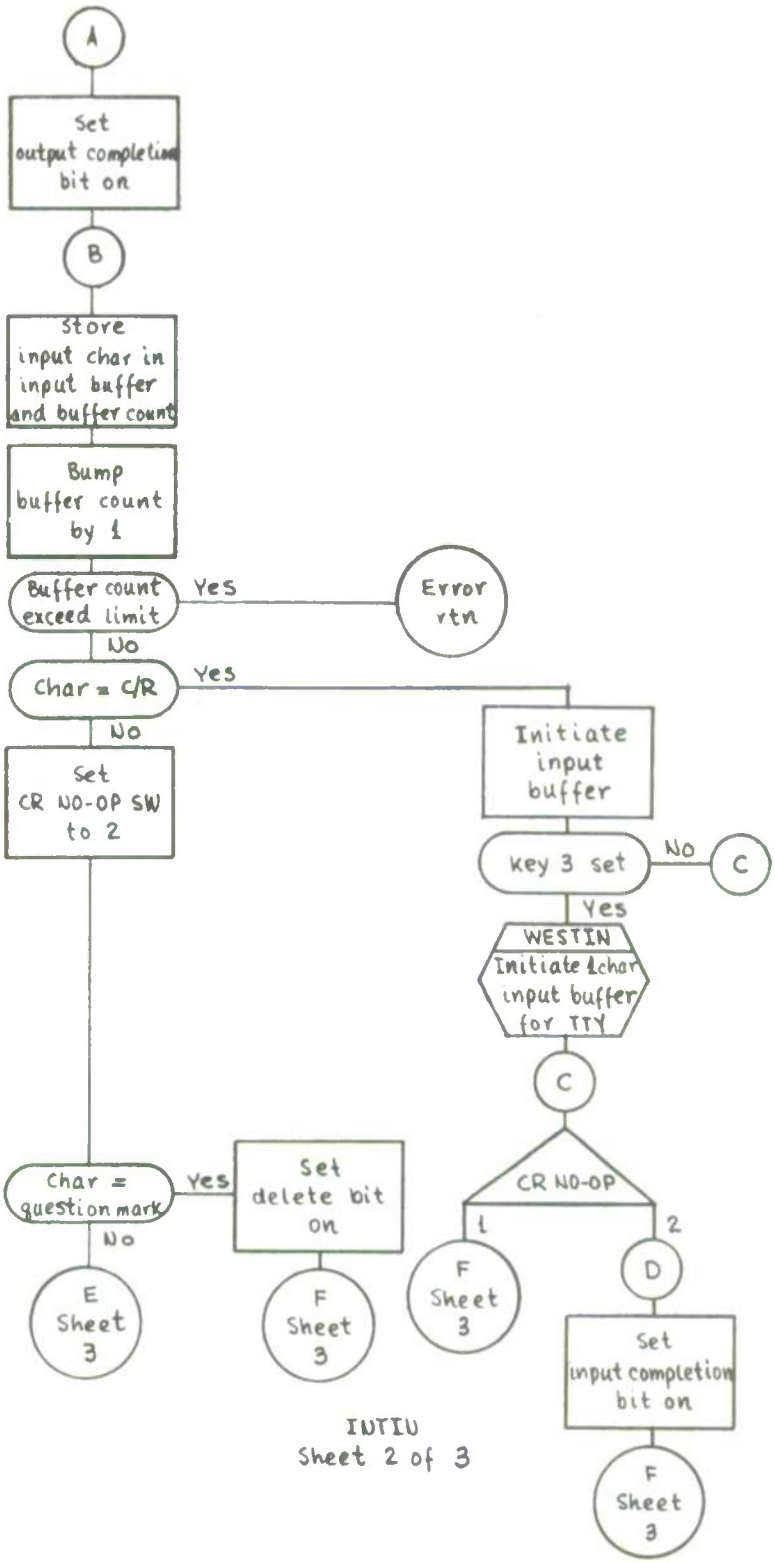

INTOUT
(Output Interrupt Routine)
Sheet 1 of 2



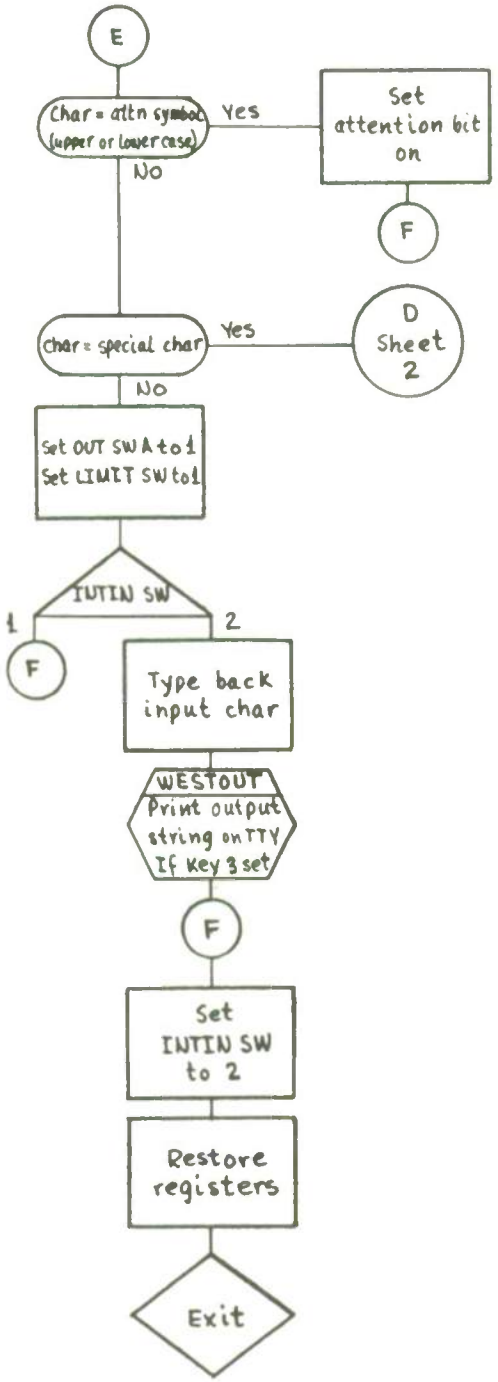

INTOUT
Sheet 2 of 2



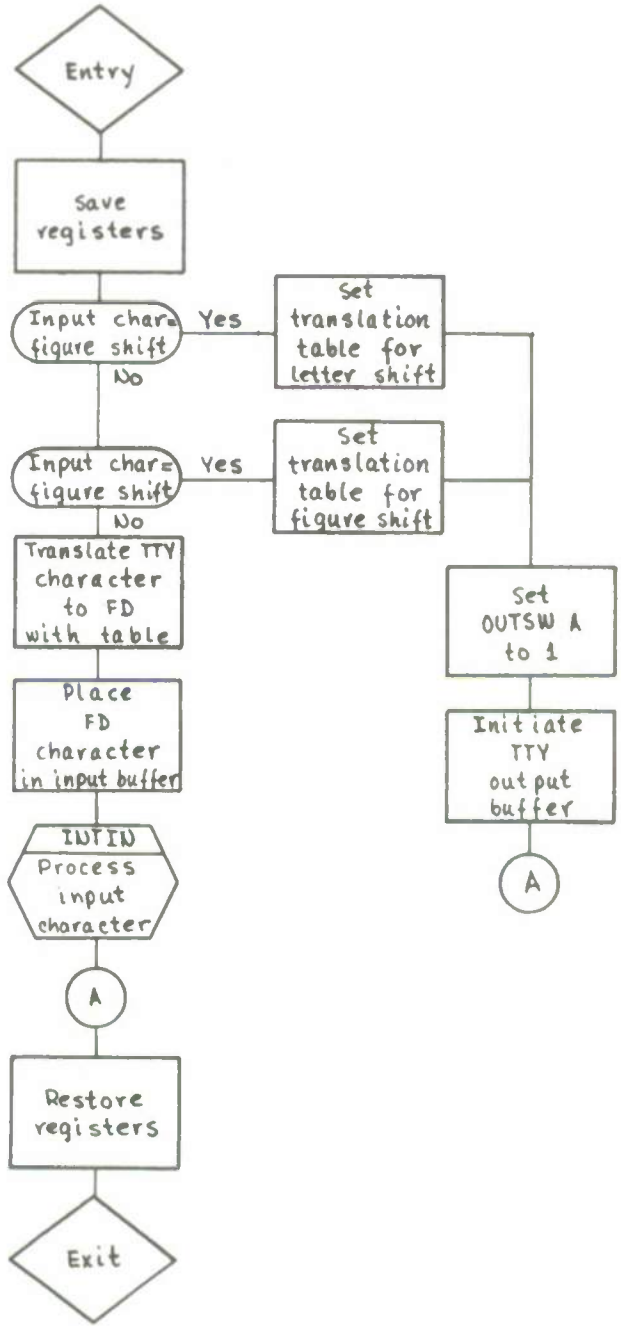

INTIN
(Input Interrupt Routine)
Sheet 1 of 3



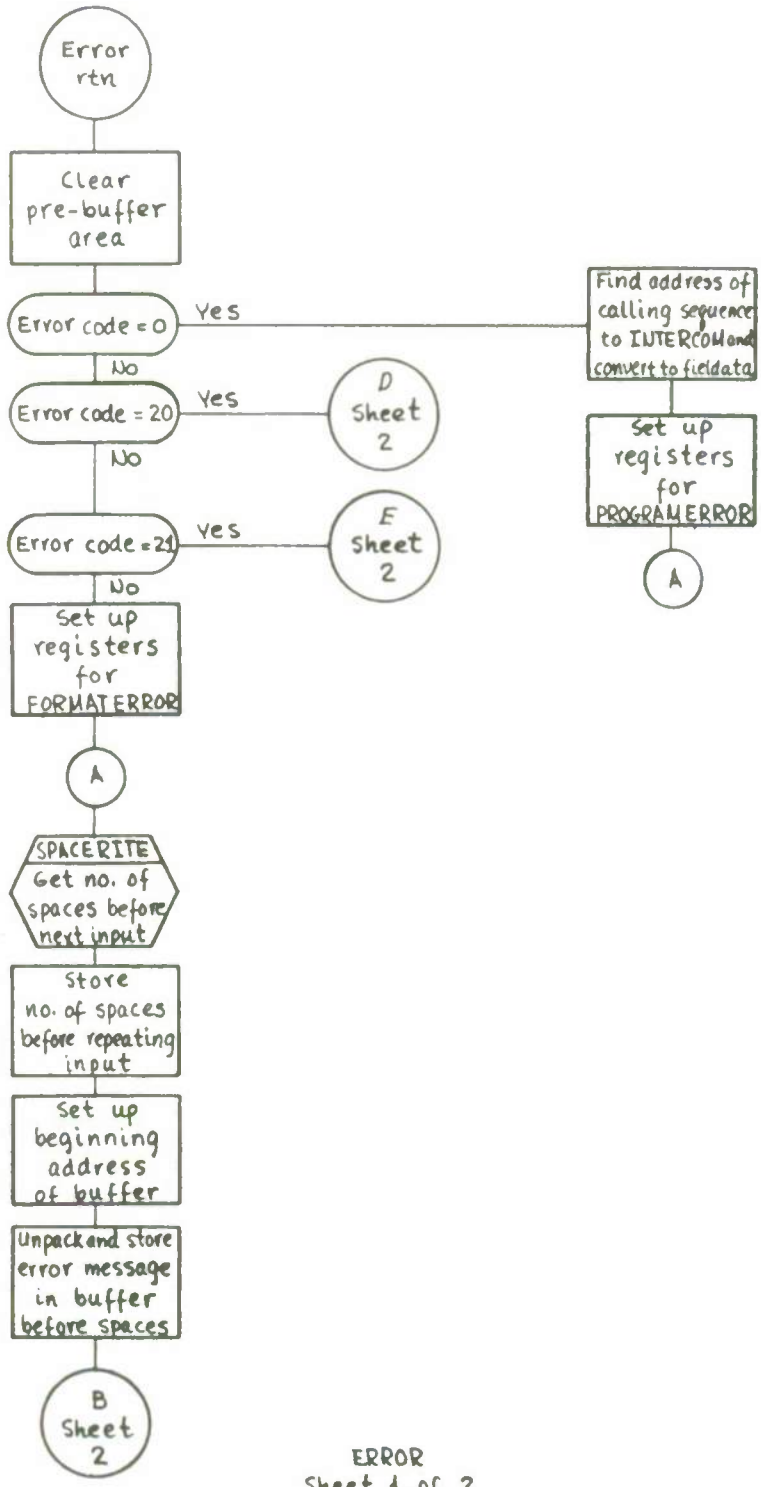

INTIU
Sheet 2 of 3



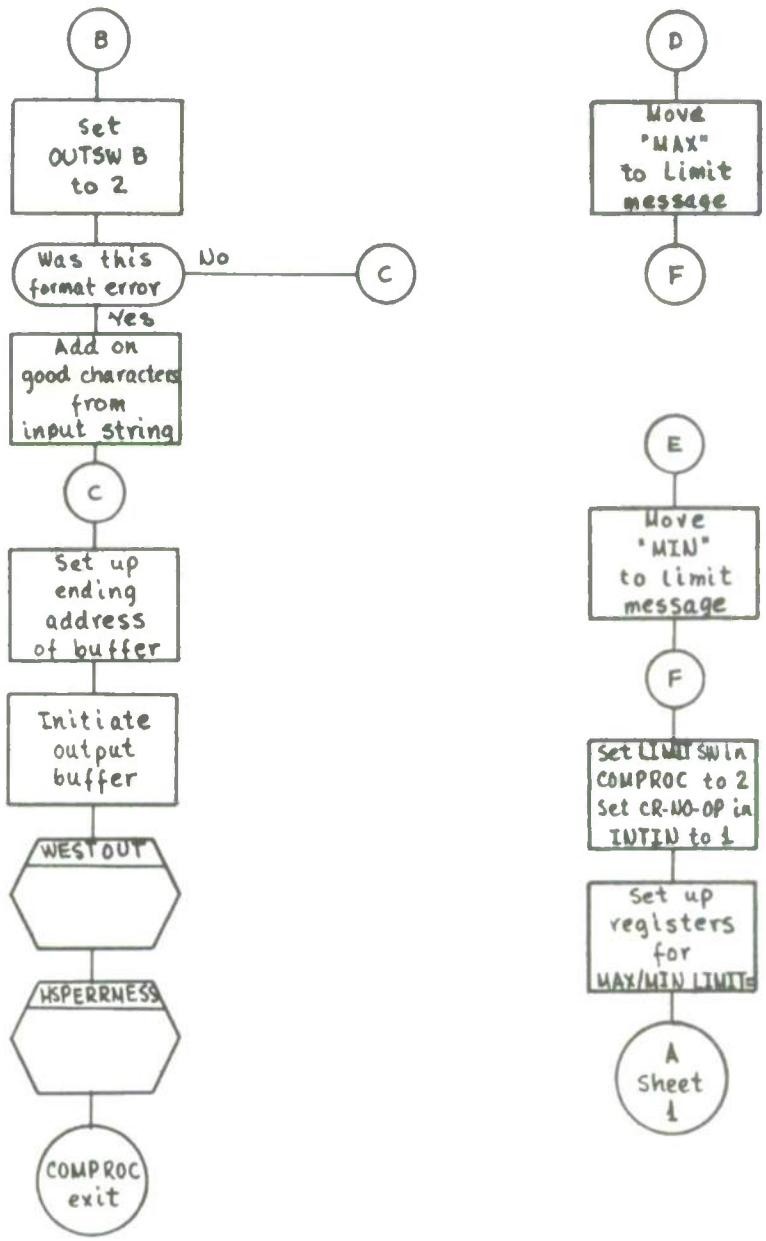

INTIN
Sheet 3 of 3



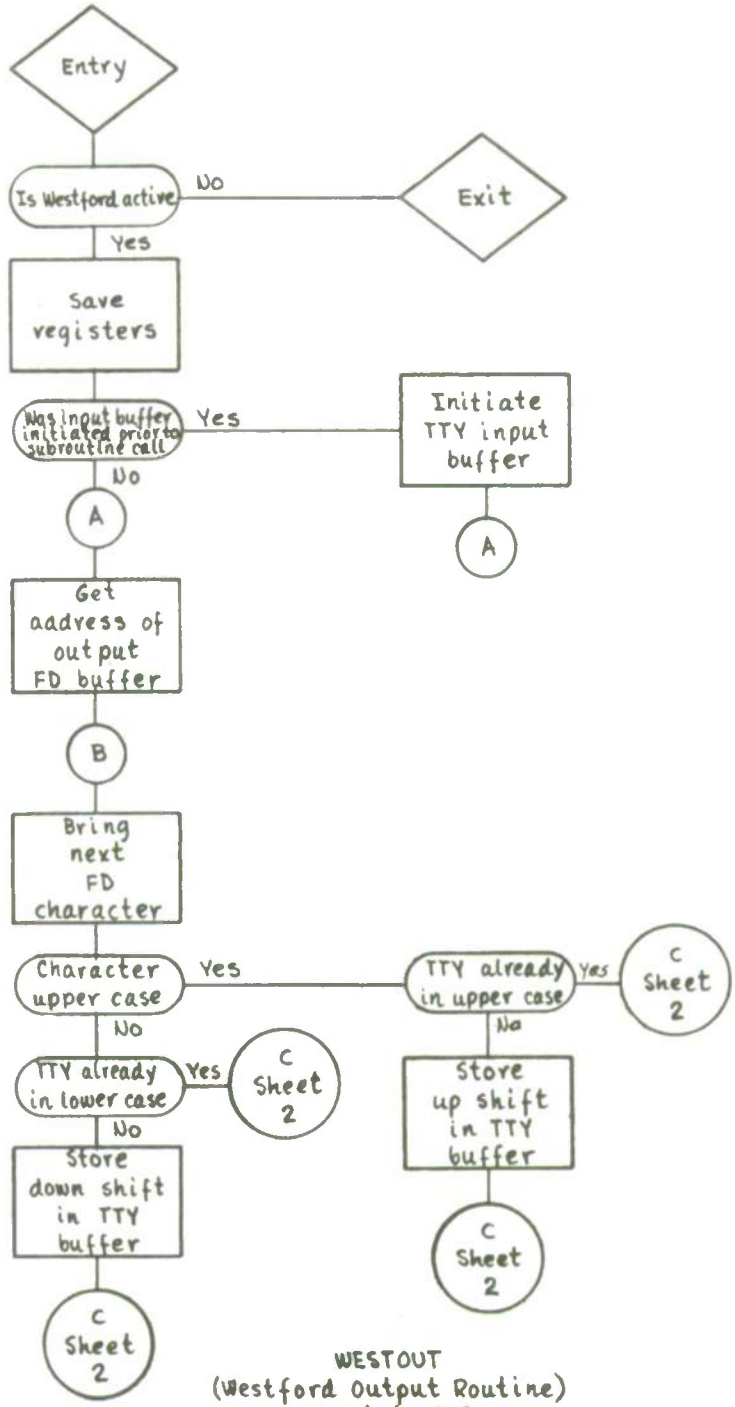

TTYININT
(Westford Input Interrupt Routine)



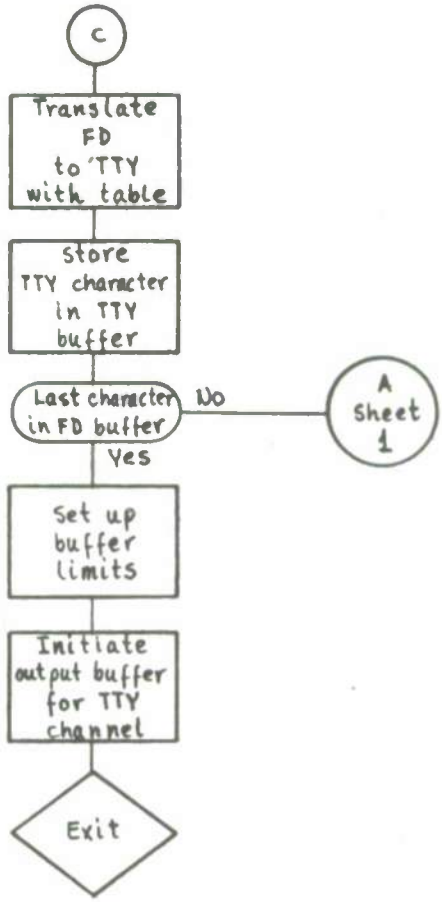

ERROR
Sheet 1 of 2



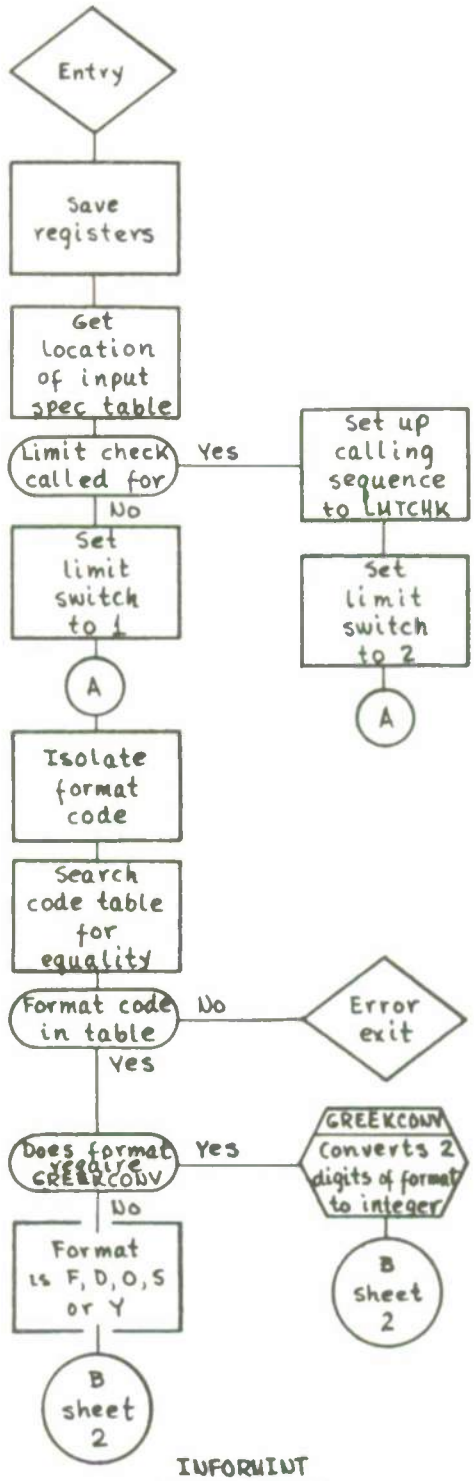

ERROR
Sheet 2 of 2



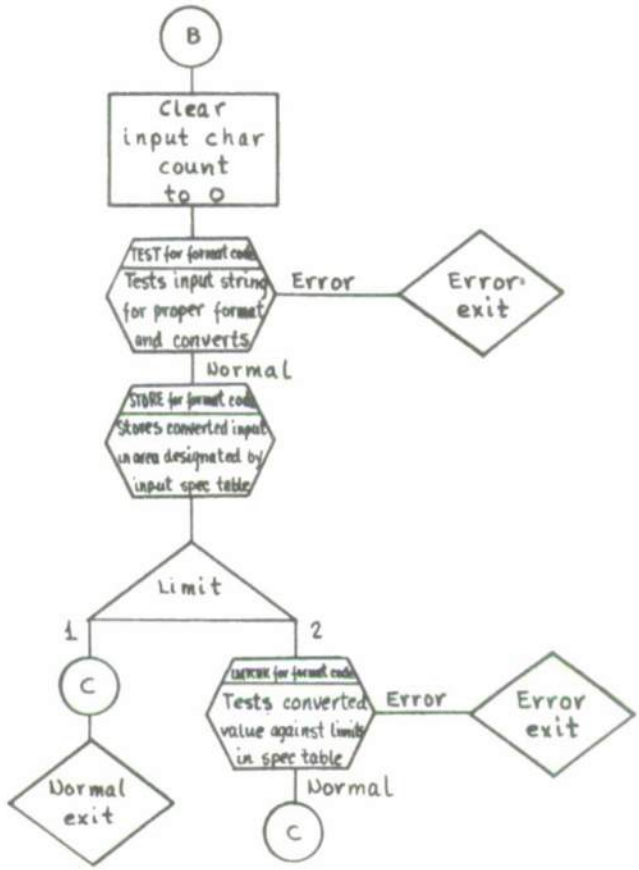

WESTOUT
(Westford Output Routine)
Sheet 1 of 2



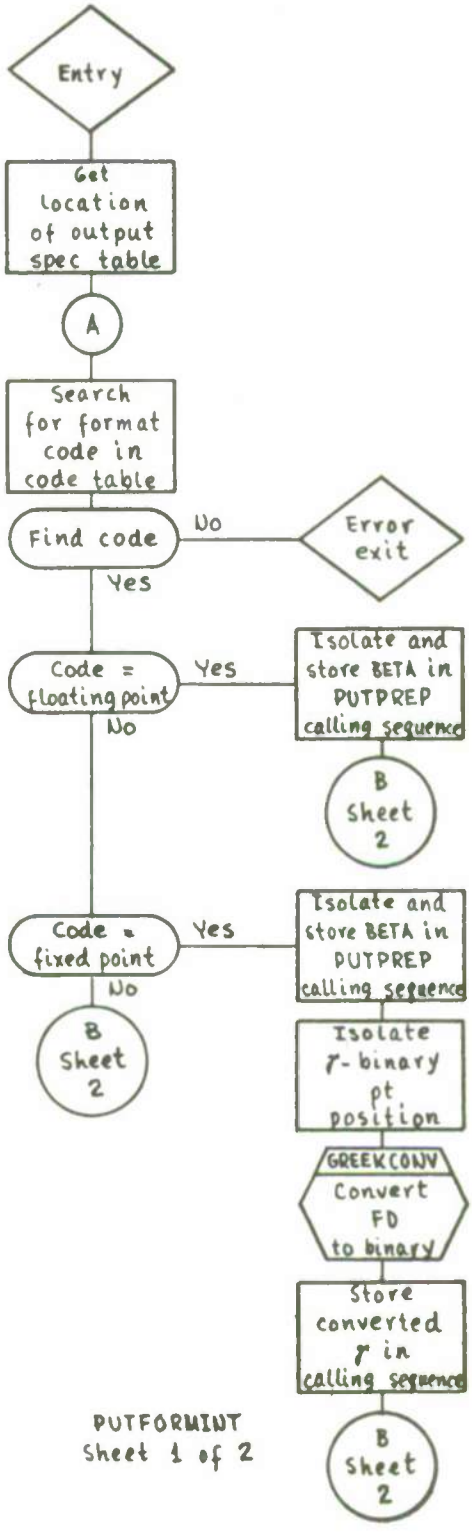

WESTOUT
Sheet 2 of 2



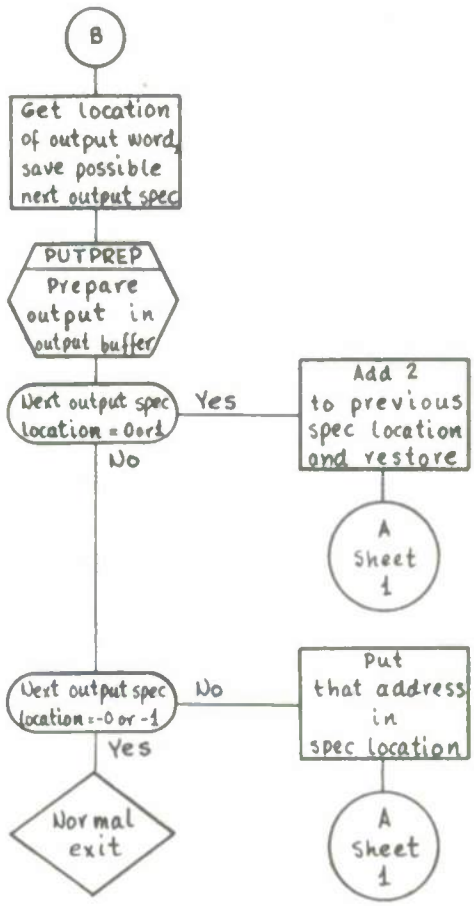

INFORMINT
Sheet 1 of 2



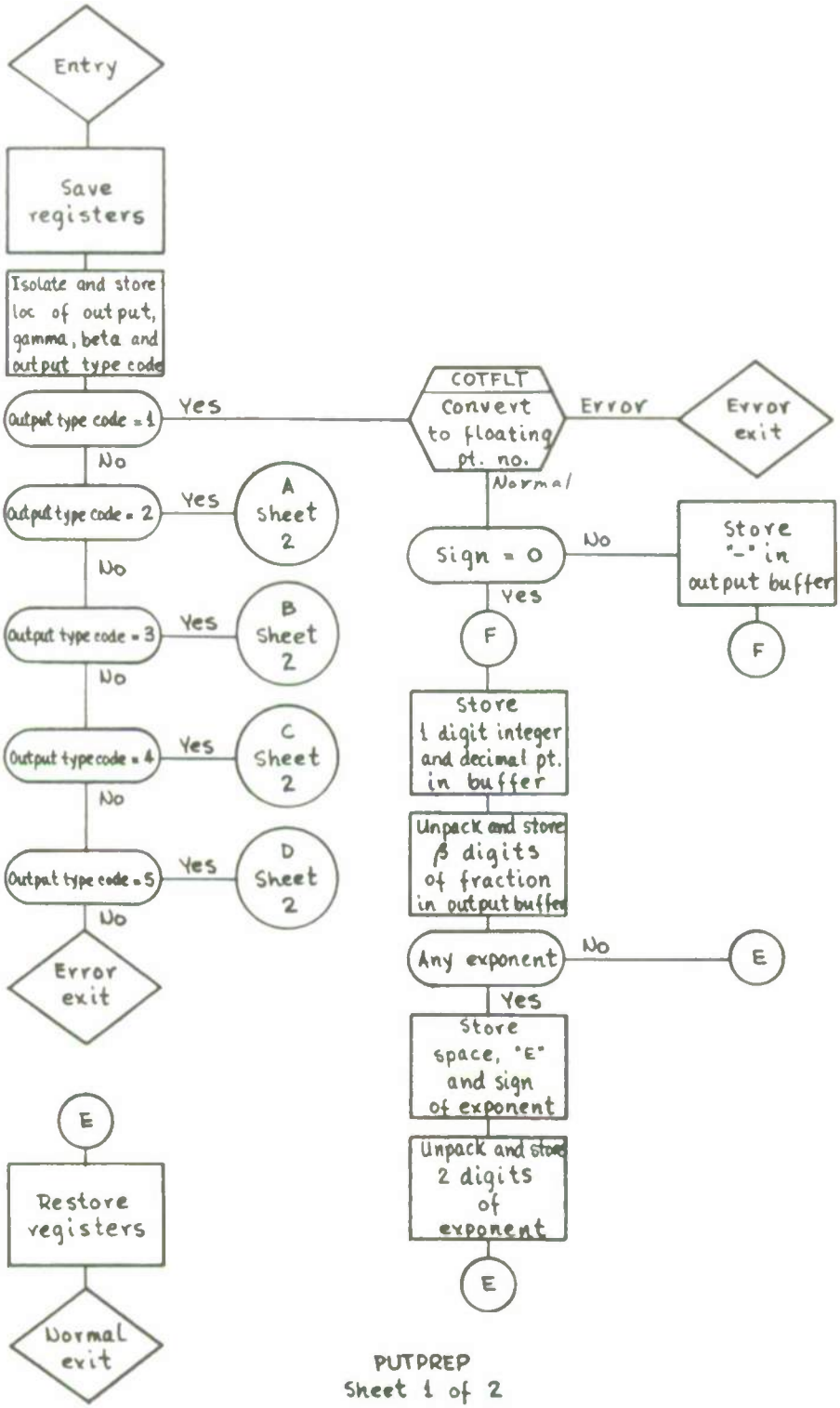

INFORMINT
Sheet 2 of 2



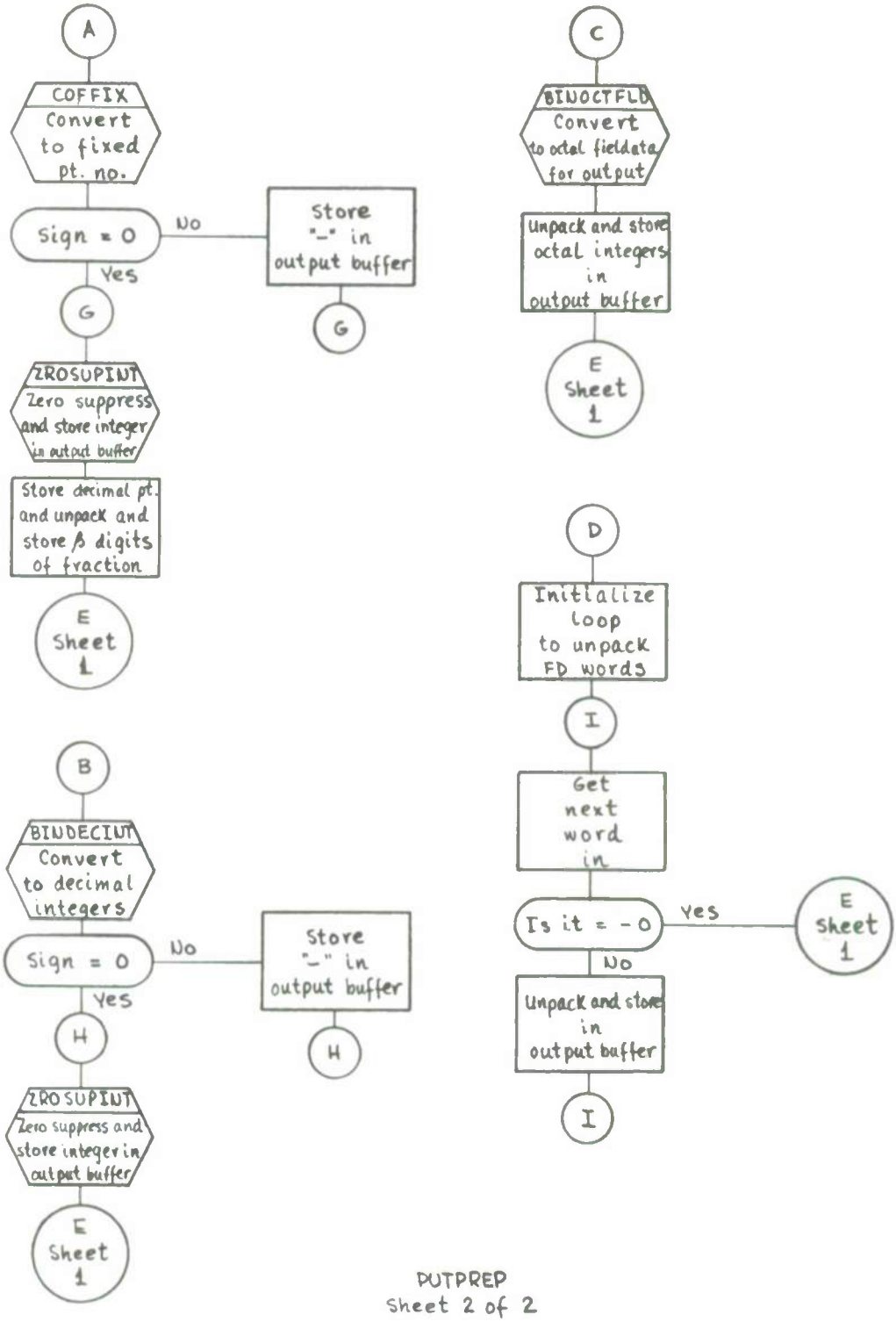

PUTFORMINT
Sheet 1 of 2



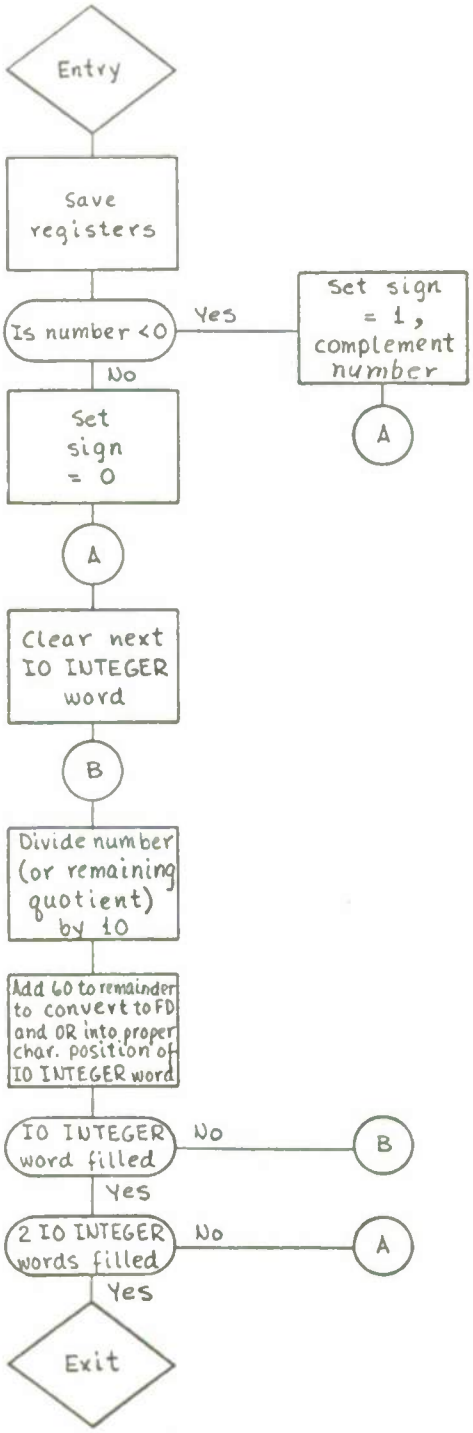

PUTFORMINT
Sheet 2 of 2



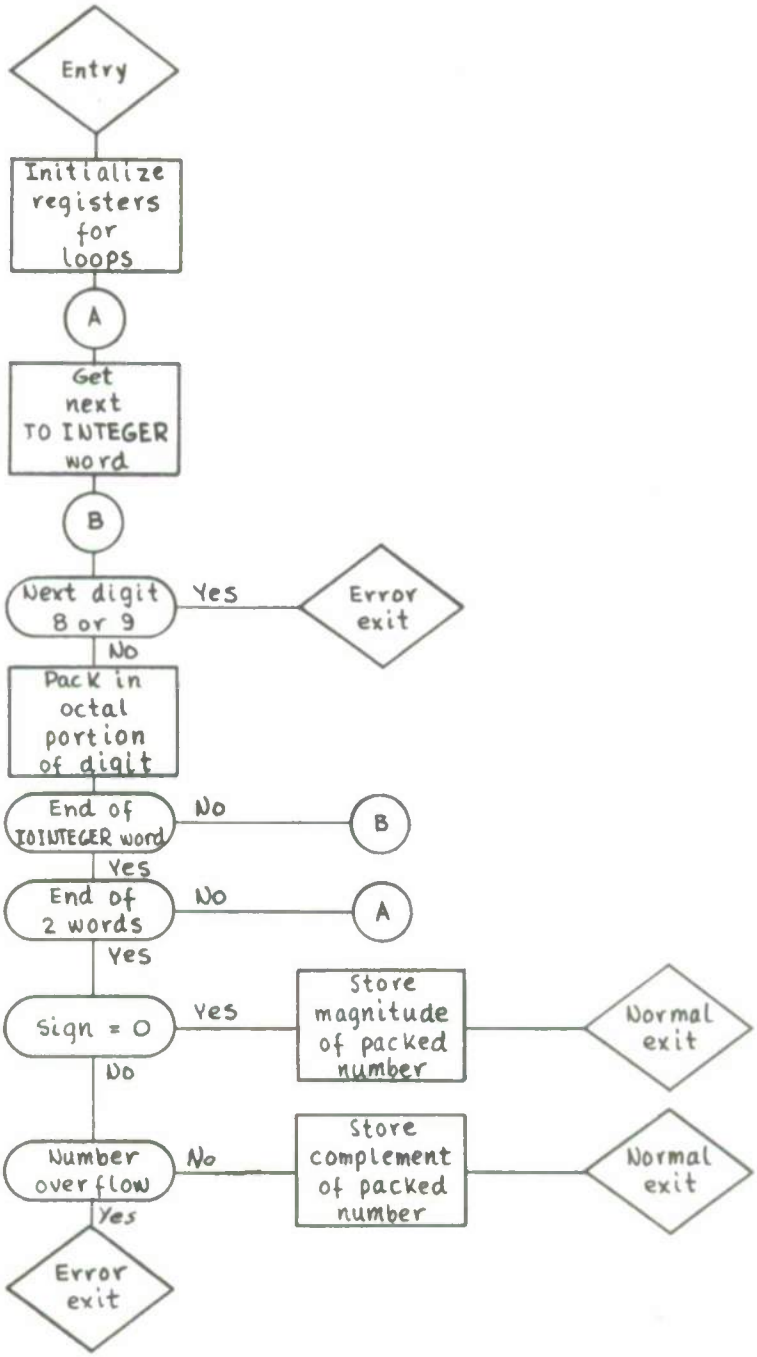

PUTPREP
Sheet 1 of 2



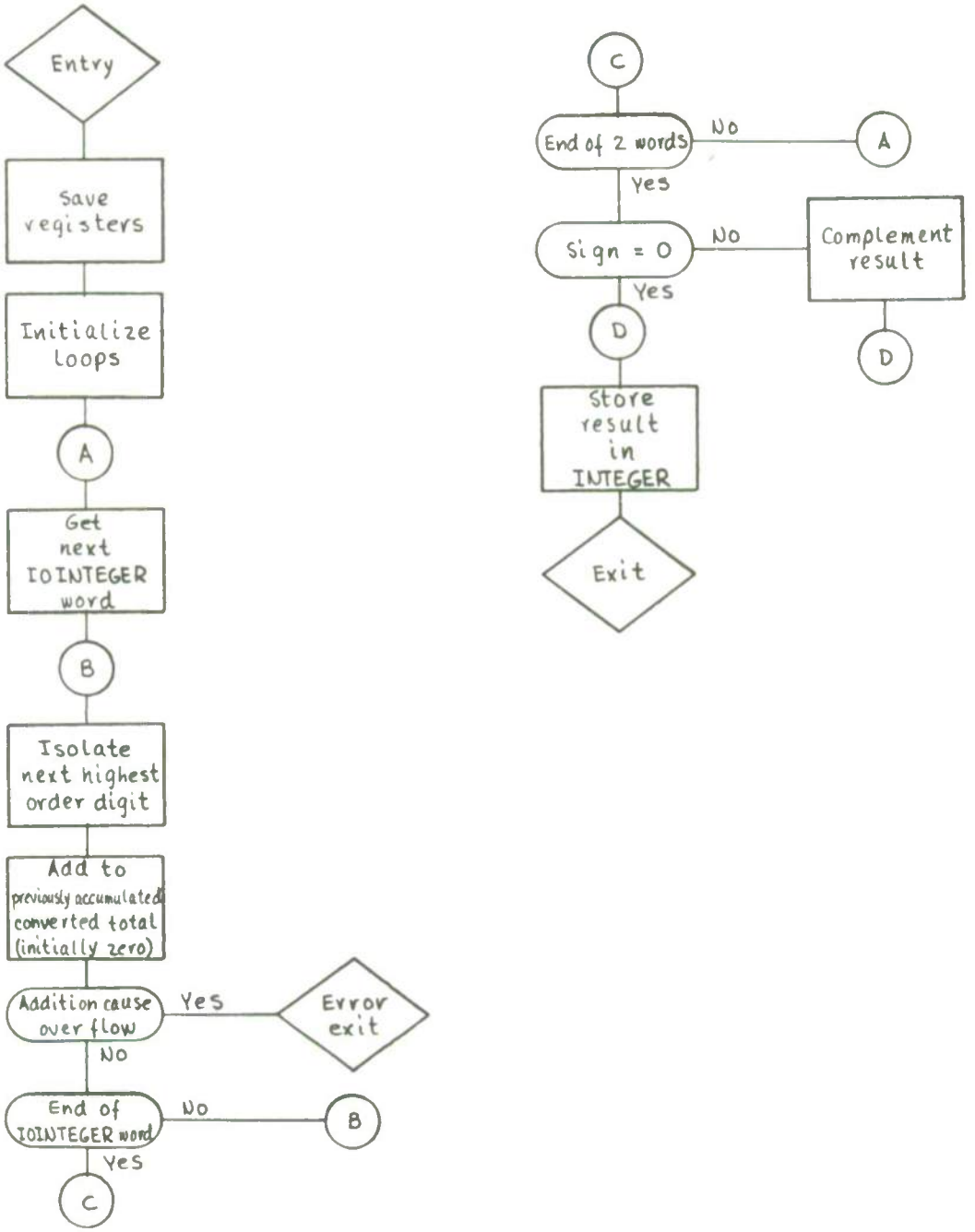

PUTPREP
Sheet 2 of 2


Entry
Save registers
Is number <0
Yes
Set sign = 1, complement number
A
No
Set sign = 0
A
Clear next IO INTEGER word
B
Divide number (or remaining quotient) by 10
Add 60 to remainder to convert to FD and OR into proper char. position of IO INTEGER word
IO INTEGER word filled
No
B
Yes
2 IO INTEGER words filled
No
A
Yes
Exit

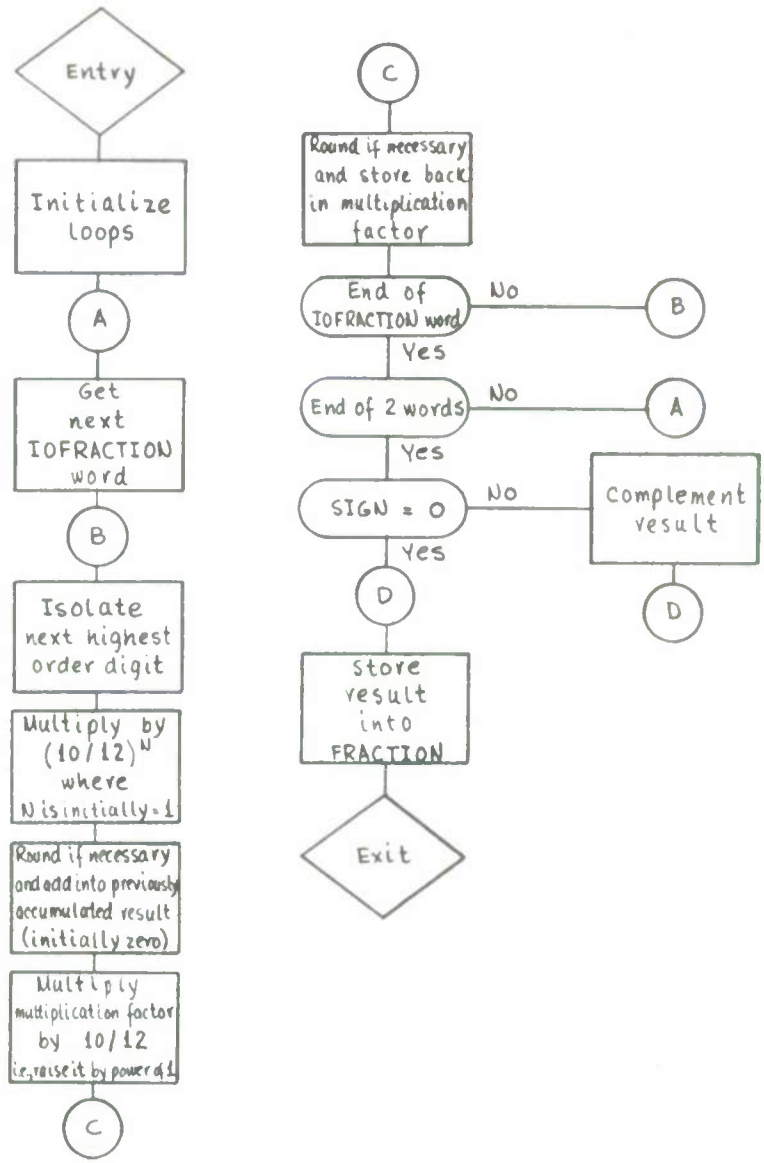
BINDECINT


Entry
Initialize registers for loops
A
Get next TO INTEGER word
B
Next digit 8 or 9
Yes
Error exit
No
Pack in octal portion of digit
End of IOINTEGER word
No
B
Yes
End of 2 words
No
A
Yes
Sign = 0
Yes
Store magnitude of packed number
Normal exit
No
Number overflow
No
Store complement of packed number
Normal exit
Yes
Error exit

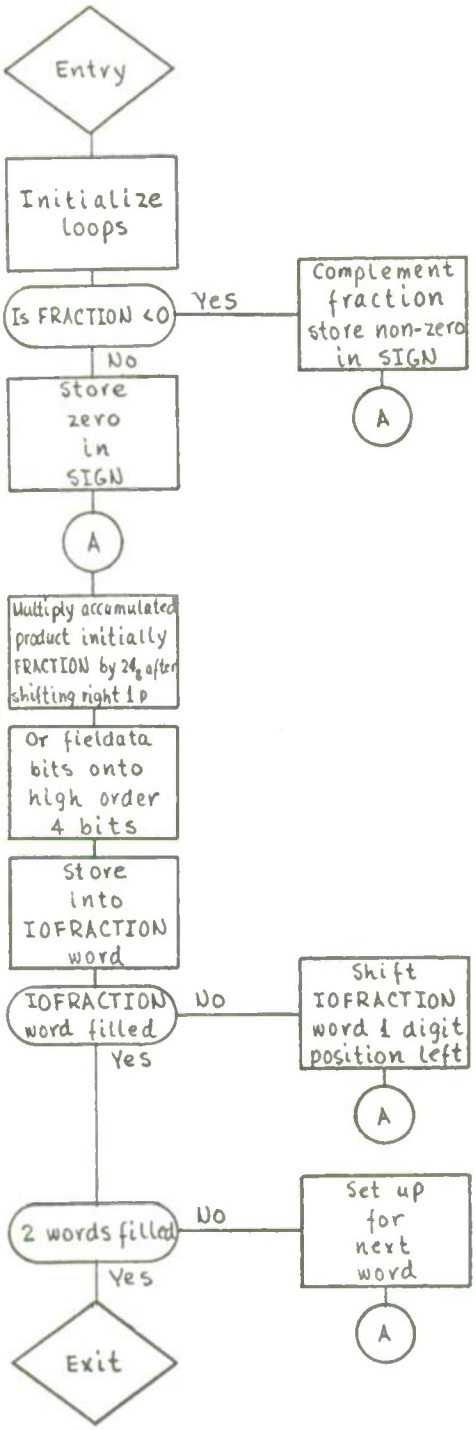
INTOCTBIN


Entry
Save registers
Initialize loops
A
Get next IOINTEGER word
B
Isolate next highest order digit
Add to previously accumulated converted total (initially zero)
Addition cause over flow
Yes
Error exit
No
End of IOINTEGER word
No
B
Yes
C
C
End of 2 words
No
A
Yes
Sign = 0
No
Complement result
Yes
D
D
Store result in INTEGER
Exit

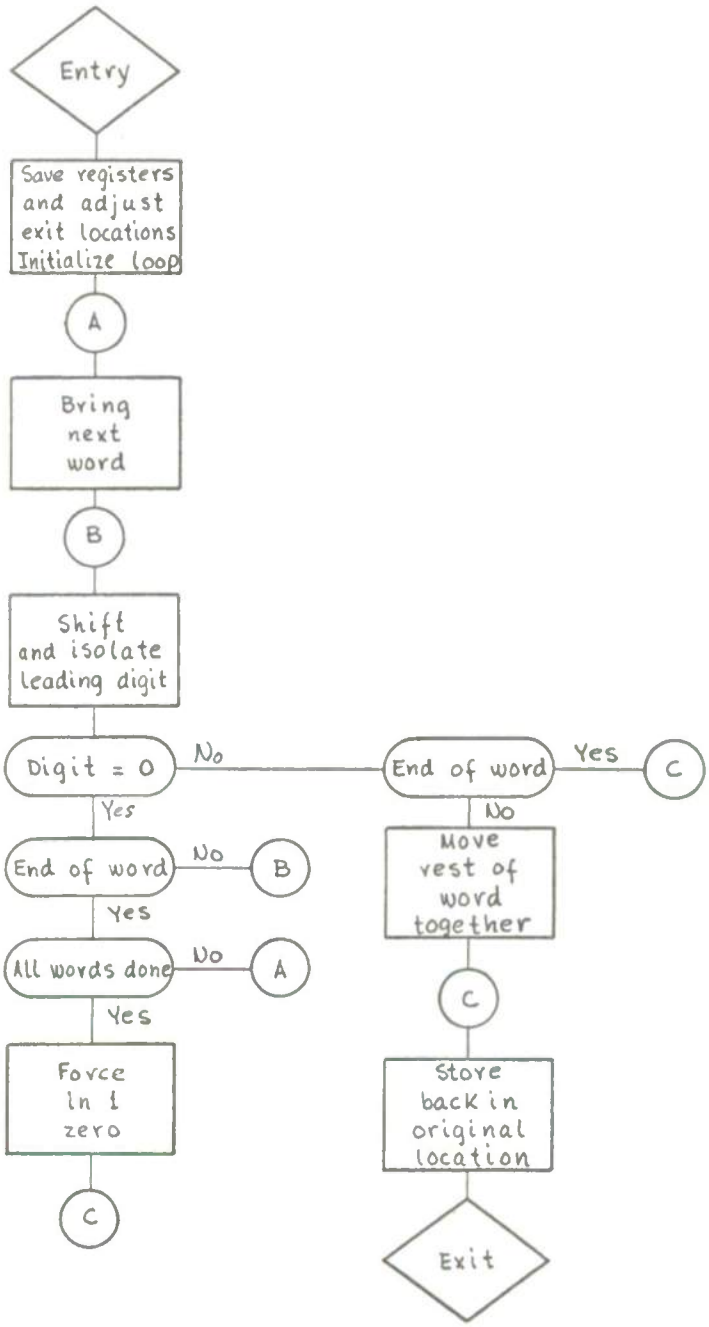
INTBCDBIN


Entry
Initialize loops
A
Get next IOFRACTION word
B
Isolate next highest order digit
Multiply by (10/12)^N where N is initially = 1
Round if necessary and add into previously accumulated result (initially zero)
Multiply multiplication factor by 10/12 i.e., raise it by power of 1
C
C
Round if necessary and store back in multiplication factor
End of IOFRACTION word
No
B
Yes
End of 2 words
No
A
Yes
SIGN = 0
No
Complement result
D
Yes
D
Store result into FRACTION
Exit

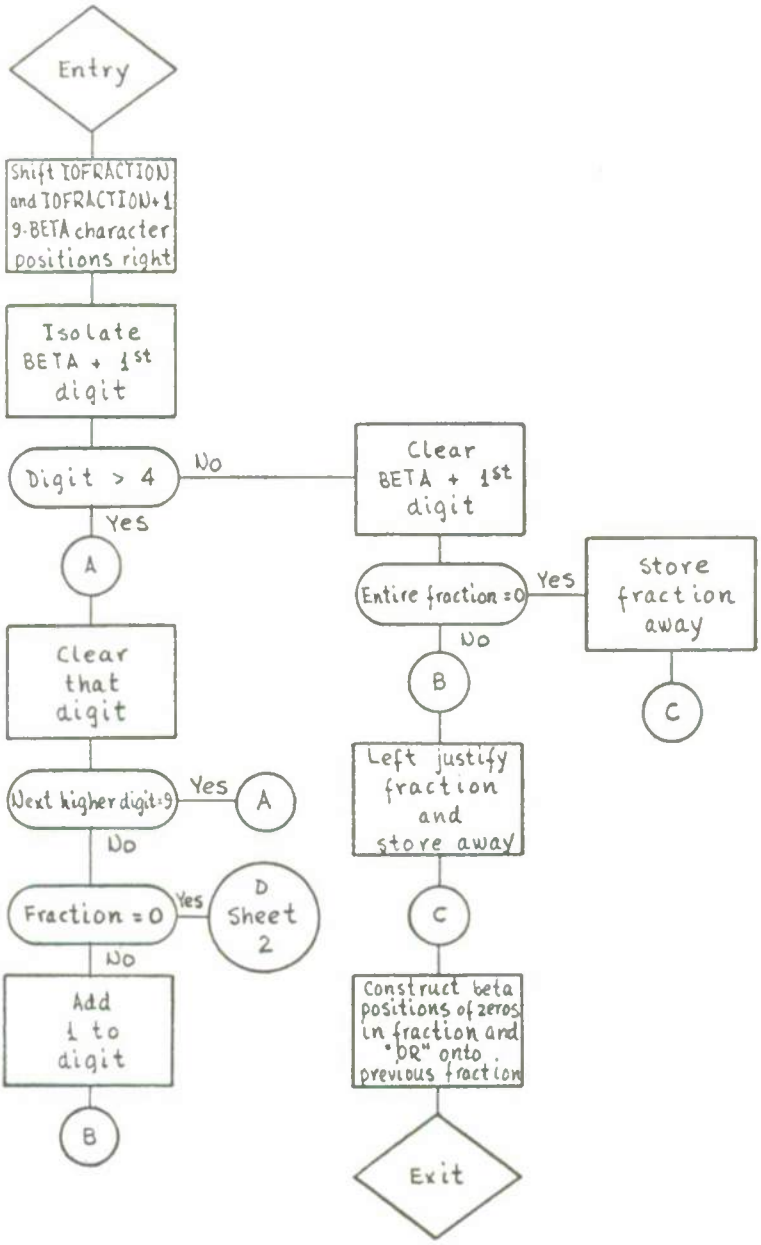
FRABCDBIN


Entry
Initialize loops
Is FRACTION <0
Yes
Complement fraction store non-zero in SIGN
A
No
Store zero in SIGN
A
Multiply accumulated product initially FRACTION by 2^6 after shifting right 1 D
Or fieldata bits onto high order 4 bits
Store into IOFRACTION word
IOFRACTION word filled
No
Shift IOFRACTION word 1 digit position left
A
Yes
2 words filled
No
Set up for next word
A
Yes
Exit

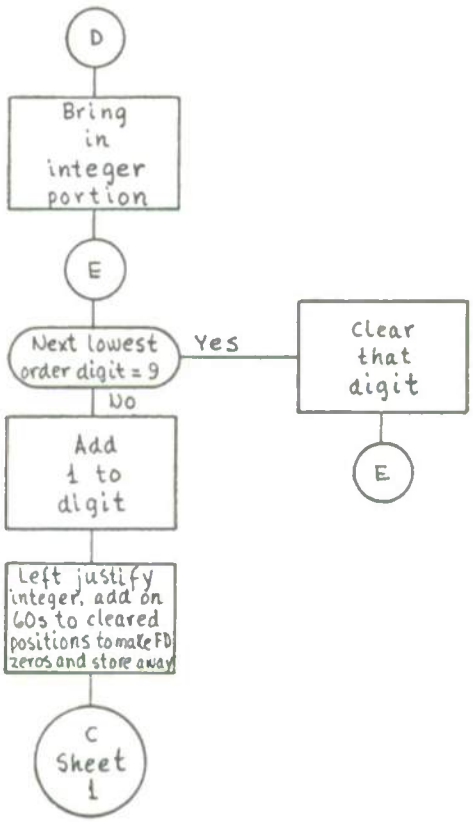
BINDECFRA


Entry
Save registers and adjust exit locations Initialize loop
A
Bring next word
B
Shift and isolate leading digit
Digit = 0
No
End of word
Yes
C
Yes
No
End of word
No
B
Move rest of word together
Yes
All words done
No
A
C
Yes
Force in 1 zero
Store back in original location
C
Exit

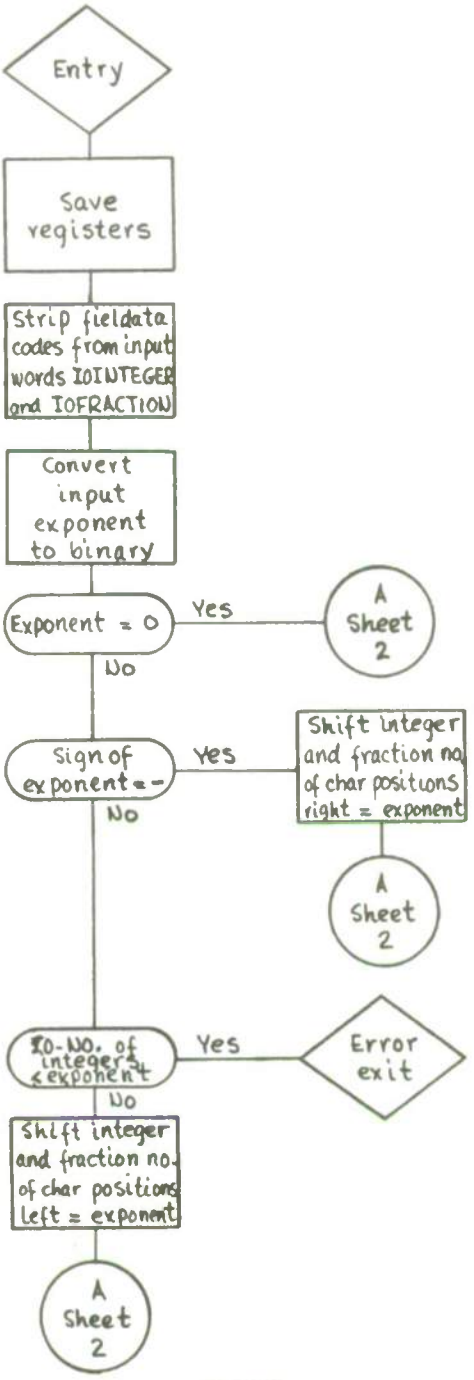
SUPZRO



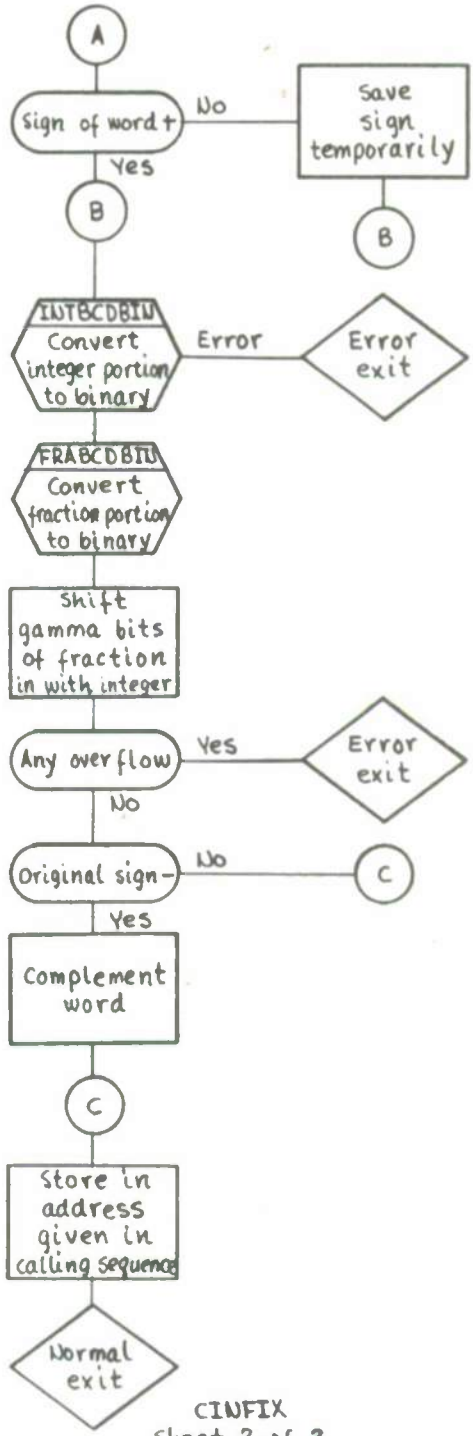

COFRND
Sheet 1 of 2



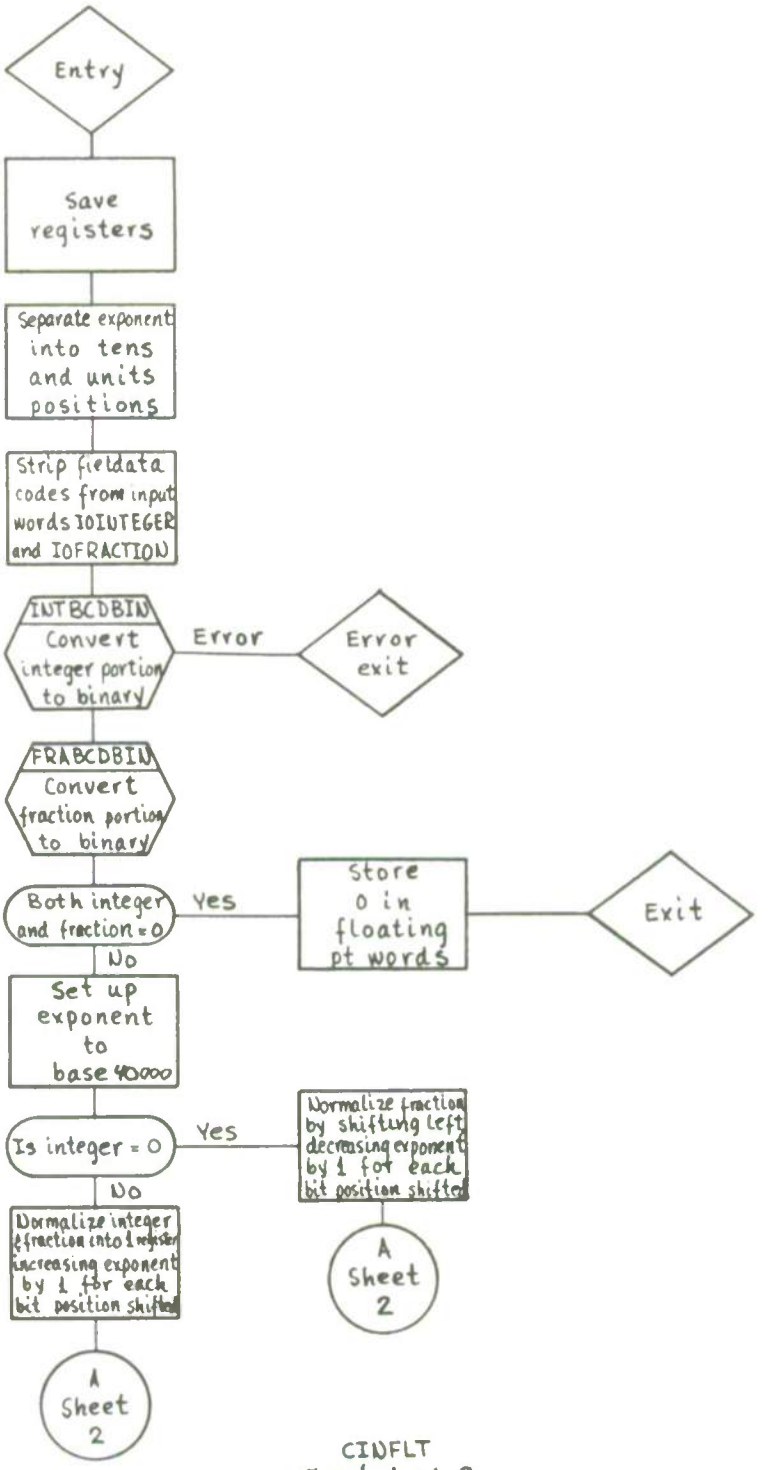

COFRND
Sheet 2 of 2



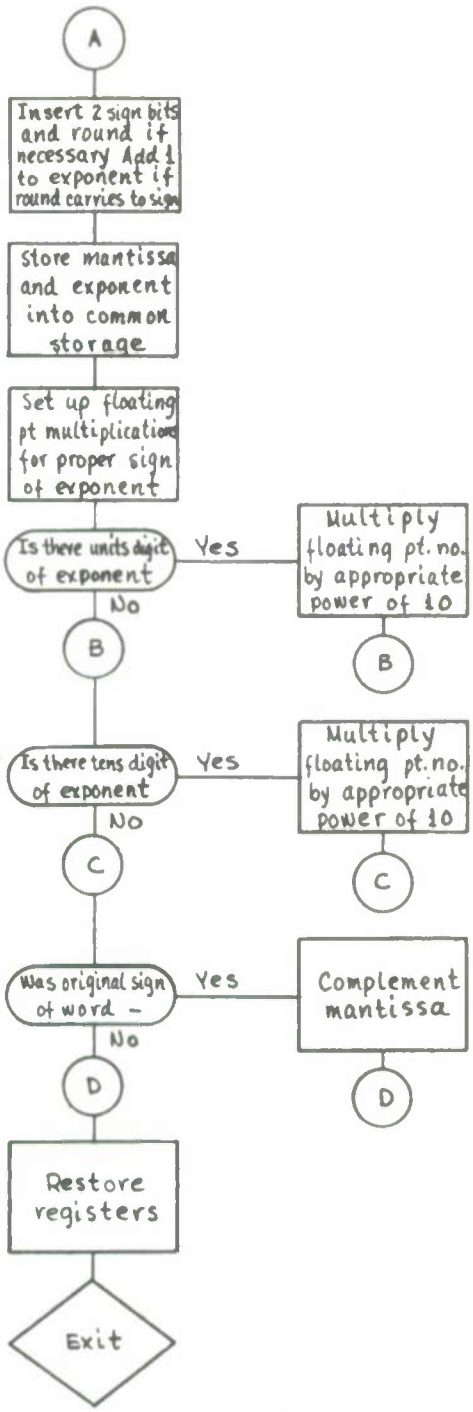

CINFIX
Sheet 1 of 2



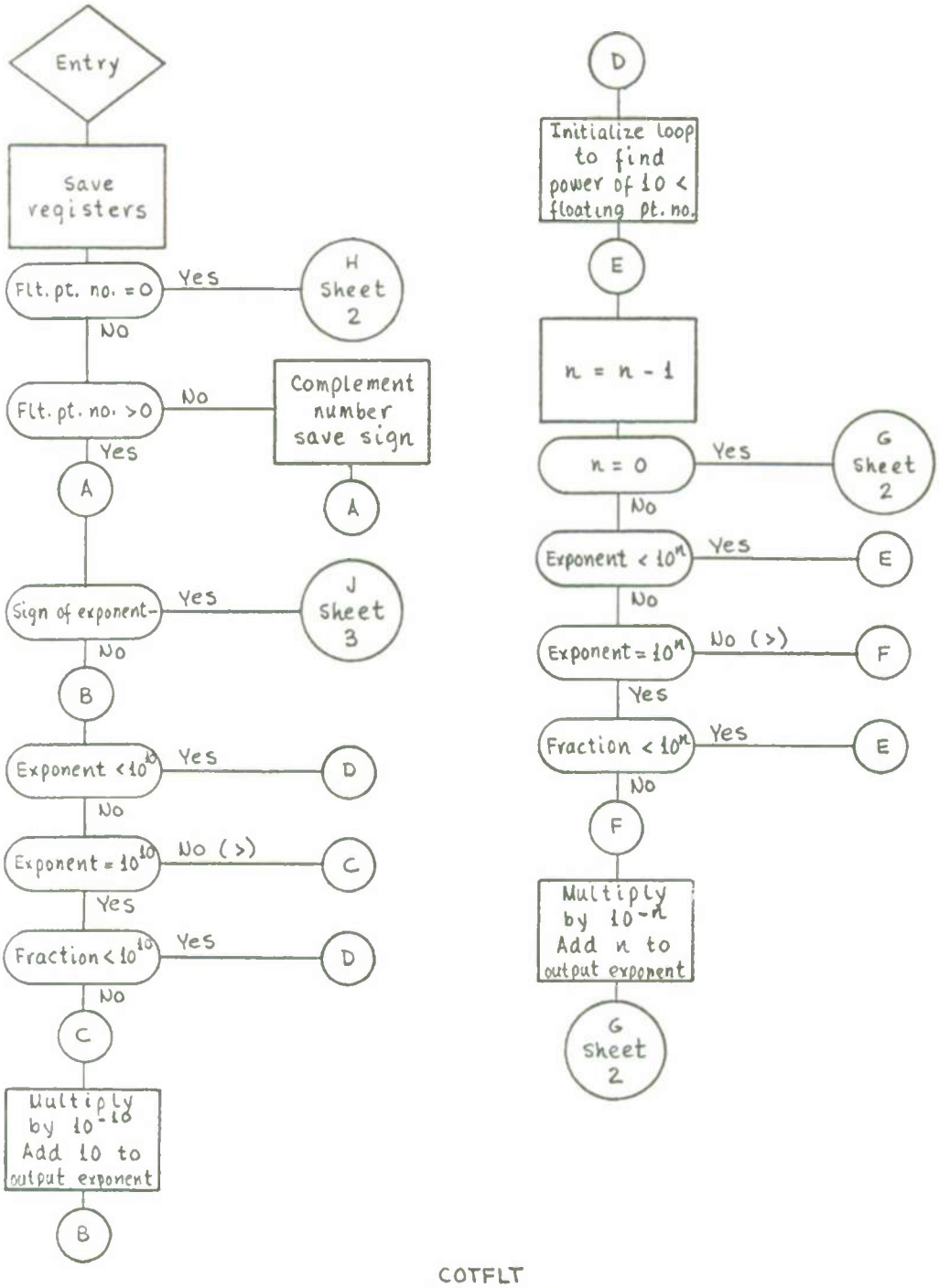

CIWFIX
Sheet 2 of 2



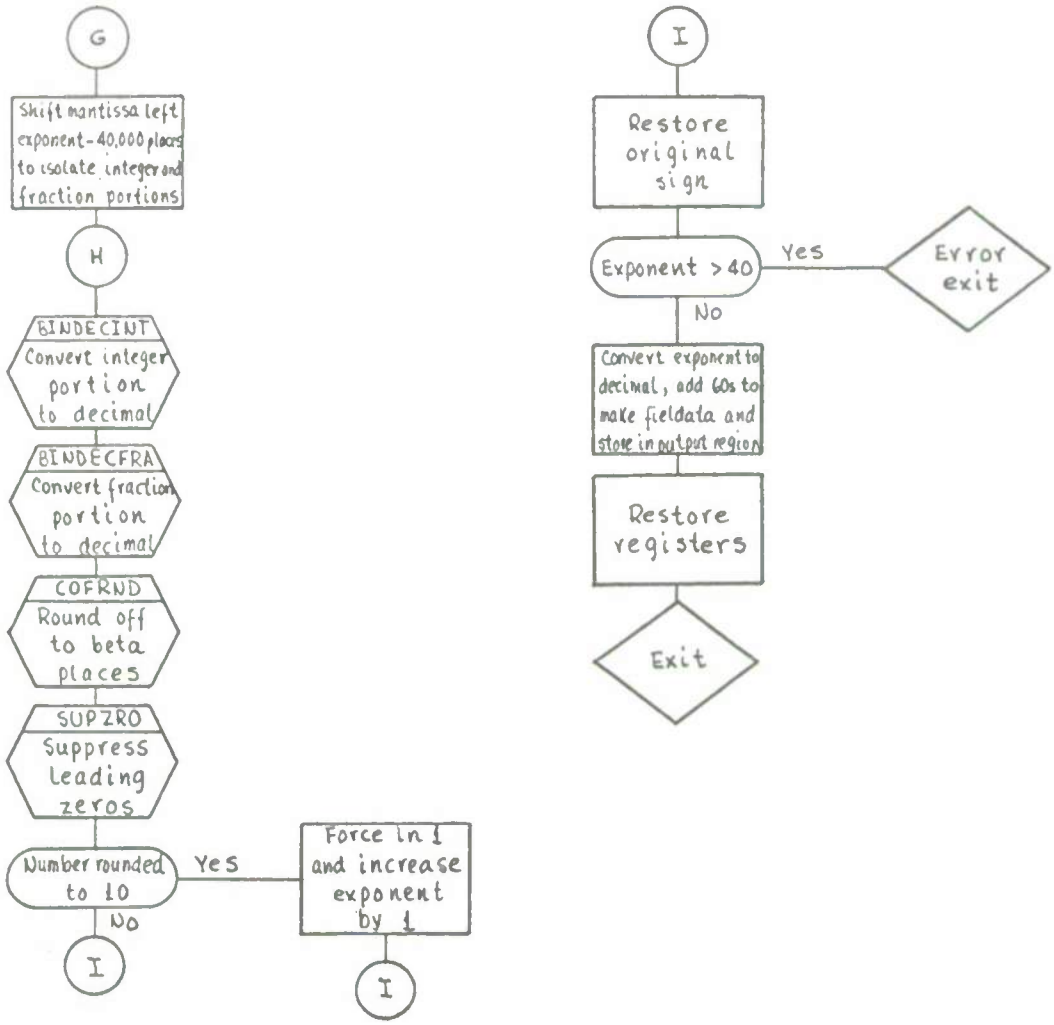

CIVFLT
Sheet 1 of 2



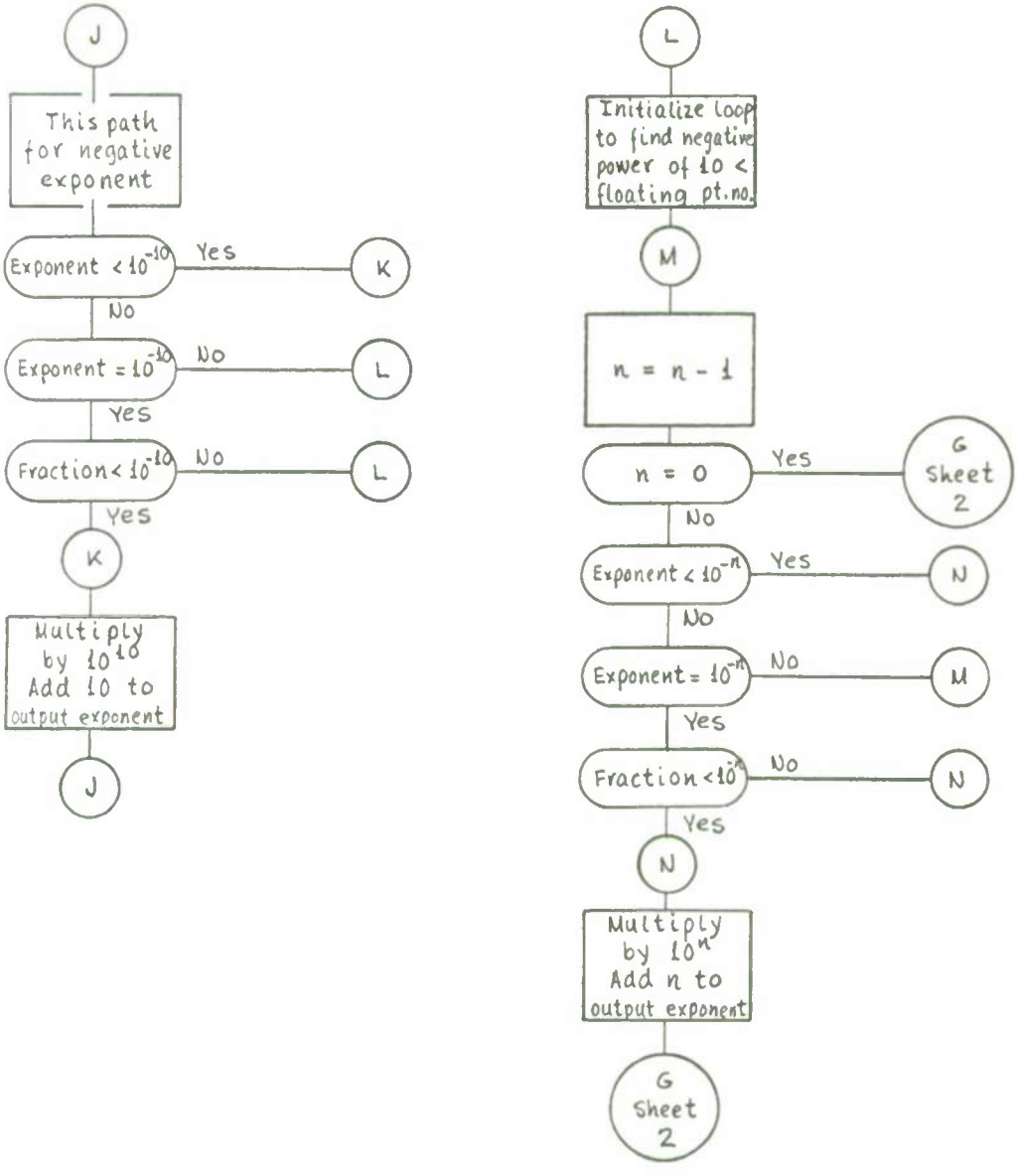

CINFLT
Sheet 2 of 2



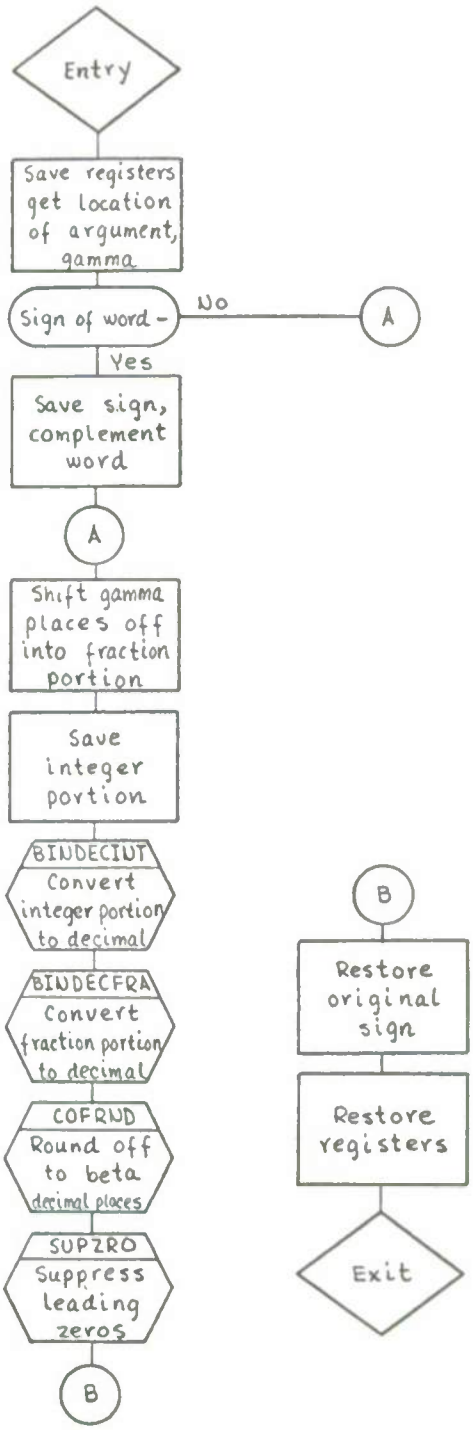

COTFLT
Sheet 1 of 3



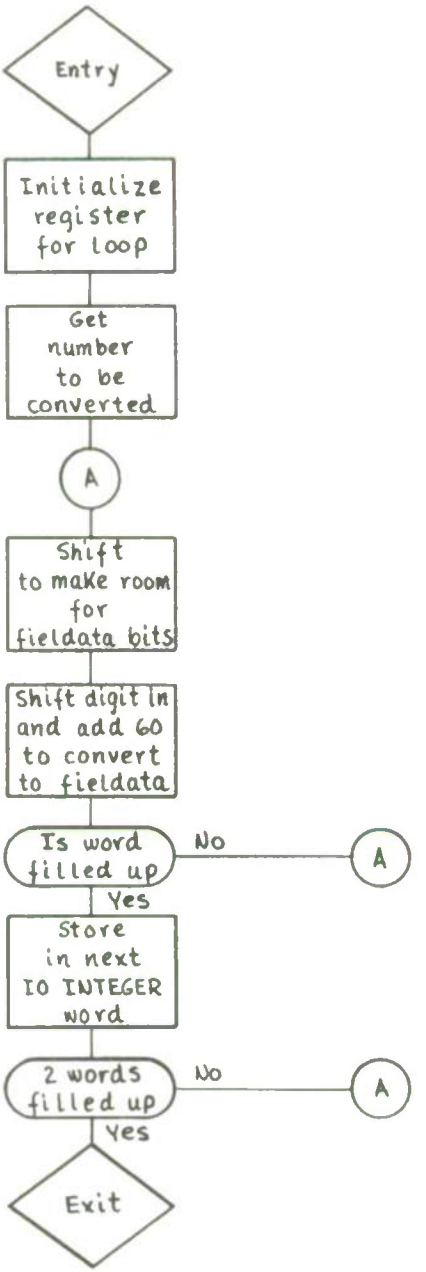

COTFLT
Sheet 2 of 3




COTFLT
Sheet 3 of 3


Entry
Save registers get location of argument, gamma
Sign of word -
No
A
Yes
Save sign, complement word
A
Shift gamma places off into fraction portion
Save integer portion
BINDECINT
Convert integer portion to decimal
BINDECFRA
Convert fraction portion to decimal
COFRND
Round off to beta decimal places
SUPZRO
Suppress leading zeros
B
B
Restore original sign
Restore registers
Exit

COFFIX


Entry
Initialize register for loop
Get number to be converted
A
Shift to make room for fieldata bits
Shift digit in and add 60 to convert to fieldata
Is word filled up
No
A
Yes
Store in next IO INTEGER word
2 words filled up
No
A
Yes
Exit

BINOCTFLD

| CARDS | L1 IO LABEL | TA STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|
| . | COCCC NTERCOM | PROGRAM AOAMS-ASSOC•7/1/65 | | | |
| . | COCC1 KYBRD | U-TAG NTERCOM•COMPROC | 00000 | 00002 00004 | |
| . | COCC2 | FO 1•KYBRO | 00001 | 20360 72711 | |
| . | COCC3 | CALL FLTPT | | | |
| . | COCC4 KEYIN | MEANS C2 | | | |
| . | COCC5 KEYOUT | MEANS C2 | | | |
| . | COCC6 TTYIN | MEANS CO | | | |
| . | COCC7 TTYOUT | MEANS CO | | | |
| . | COC10 LCCINTNT | EQUALS 42 | | | |
| . | COC11 LCCOUTINT | EQUALS 62 | | | |
| . | COC12 LOCTTYIN | EQUALS 40 | | | |
| . | COC13 LCCTTYOUT | EQUALS 60 | | | |
| . | COC14 NTERCOM | ENTRY | 00002 | 61000 00000 | ENTERED FROM CALLING PROGRAM |
| . | COC15 | JP COMPROC+2 | 00003 | 61000 00006 | |
| . | COC16 COMPROC | ENTRY | 00004 | 61000 00000 | |
| . | COC17 | JP COMPROCOO | 00005 | 61000 00350 | |
| . | COC20 | STR A•W(CPASTOR) | 00006 | 15030 04566 | SAVE REGISTERS USED |
| . | COC21 | STR Q•W(CPQSTOR) | 00007 | 14030 04567 | |
| . | COC22 | STR B7•L(CPBSTOR) | 00010 | 16710 00130 | |
| . | COO23 | STR B6•L(CPB6STOR) | 00011 | 16610 00131 | |
| . | COC24 | STR B1•L(CPB6STOR+1) | 00012 | 16110 00132 | |
| . | COC25 | STR B2•L(CPB6STOR+2) | 00013 | 16210 00133 | |
| . | COC26 | STR B3•L(CPB6STOR+3) | 00014 | 16310 00134 | |
| . | COC27 | STR B4•L(CPB6STOR+4) | 00015 | 16410 00135 | |
| . | COC30 | STR B5•L(CPB6STOR+5) | 00016 | 16510 00136 | |
| . | COC31 | 12000 MCPINIT | 00017 | 12000 06173 | SET FOR REAL MCP-MAKE RJP FOR PHONY |
| . | COC32 | ENT Q•12000 | 00020 | 10000 12000 | SET SW IN INTOUT TO NO-OP |
| . | COC33 | STR Q•U(INTOUTSWO) | 00021 | 14020 00142 | |
| . | COC34 | ENT A•35 | 00022 | 11000 00035 | |
| . | COC35 | STR A•L(CASESET) | 00023 | 15010 00730 | INITIALIZE CASE SWITCH |
| . | COC36 | ENT A•61000 | 00024 | 11000 61000 | |
| . | COC37 | STR A•U(INTOUTSW) | 00025 | 15020 00143 | |
| . | COC40 | ENT B7•L(NTERCOM) | 00026 | 1271C 00002 | GET PARAMETER WORD ADDRESS |
| . | COC41 | RPL Y+1•L(NTERCOM) | 00027 | 36010 00002 | ADJUST EXIT LOCATION |
| . | COC42 | ENT Q•1 | 00030 | 1000C 00001 | |
| . | COO43 | RPL LP•W(ACTIVITY) | 00031 | 44030 04574 | CLEAR ALL BUT ATTENTION BIT |
| . | COC44 | ENT Q•12000 | 00032 | 10000 12000 | |
| . | COC45 | ENT A•W(B7)•ANOT | 00033 | 11537 00000 | TEST FOR BOTH SPEC TABLES =0 |
| . | COC46 | ENT Q•61000 | 00034 | 10000 61000 | |
| . | COC47 | STR Q•U(INTCOMO3+4) | 00035 | 14020 00114 | |
| . | COC50 | STR A•W(SPECTBLS) | 00036 | 15030 04576 | NO - STORE SPEC TABLE ADDRESSES |
| . | COC51 | ENT A•L(B7)•AZERO | 00037 | 11417 00000 | IS INPUT SPEC TABLE ADDRESS=0 |
| . | COC52 | JP INTCOMO1 | 00040 | 61000 00043 | NO |
| . | COC53 | ENT A•INCOMP | 00041 | 11000 00010 | YES TURN ON INPUT COMPLETION BIT |
| . | COC54 | RSE SET•W(ACTIVITY) | 00042 | 54030 04574 | |
| . | COC55 INTCOMC1 | ENT A•U(B7)•ANOT | 00043 | 11527 00000 | IS OUTPUT SPEC TABLE ADDRESS = 0 |
| . | COC56 | JP INTCOMO3 | 00044 | 61000 00110 | YES |
| . | COC57 | STR A•L(INTCOMO4) | 00045 | 15010 00057 | |

| CARDS | L1 ID | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| . | C0C60 | | CL | W(PRINTSW) | 00046 | 16030 | 044C2 | | |
| . | C0C61 | | ENT | B7•U(B7) | 00047 | 12727 | 000C0 | | |
| . | C0C62 | | ENT | A•UX(B7+1)•APOS | 00050 | 11667 | 00CC1 | | LOOK AT PRINT ONLY BIT |
| . | C0C63 | | CP | A• | 00051 | 15040 | 0C0C0 | | |
| . | C0C64 | | JP | $+3•AZERO | 00052 | 60400 | 00055 | | IF ZERO SKIP PAST REST |
| . | C0C65 | | RSH | A•1•ANOT | 00053 | 02500 | 0CCC1 | | IF NOT SHIFT OFF BIT |
| . | C0C66 | | STR | A•CPL(PRINTSW) | 00054 | 15050 | 04402 | | NOW IF ZERO SET SWITCH |
| . | C0C67 | | CL | W(BUFFCOUNT) | 00055 | 16030 | 046C0 | | |
| . | C0C70 | | RJP | PUTFORMINT | 00056 | 65000 | 02072 | | |
| . | C0C71 | INTCOMC4 | C | C | 00057 | 00000 | 000C0 | | |
| . | C0C72 | | JP | ERROR | 00060 | 61000 | 03746 | | |
| . | C0C73 | | ENT | A•03 | 00061 | 11000 | 0C0C3 | | |
| . | C0C74 | | STR | A•W(BUFFER-3) | 00062 | 15030 | 04740 | | |
| . | C0C75 | | STR | A•W(BUFFER-2) | 00063 | 15030 | 04741 | | |
| . | C0C76 | | ENT | A•04 | 00064 | 11000 | 000C4 | | |
| . | C0077 | | STR | A•W(BUFFER-1) | 00065 | 15030 | 04742 | | |
| . | C01C0 | | ENT | A•BUFFER-3 | 00066 | 11000 | 04740 | | |
| . | C01C1 | | STR | A•L(BUFOUTWC) | 00067 | 15010 | 00537 | | |
| . | C01C2 | | ADD | A•L(BUFFCOUNT) | 00070 | 20010 | 046C0 | | |
| . | C01C3 | | ADD | A•2 | 00071 | 20000 | 000C2 | | |
| . | C01C4 | | STR | A•U(BUFOUTWD) | 00072 | 15020 | 00537 | | STORE FINAL ADDRESS OF OUTPUT BUF |
| . | C01C5 | | ENT | A•12000 | 00073 | 11000 | 120C0 | | |
| . | C01C6 | | STR | A•U(KILLOUTSW) | 00074 | 1502C | 00240 | | |
| . | C01C7 | | ENT | A•W(PRINTSW)•AZERO | 00075 | 11430 | 044C2 | | |
| . | C011C | | JP | $+3 | 00076 | 61000 | 001C1 | | |
| . | C0111 | | IN | KEYIN•W(BUFINWD)•MONITOR | 00077 | 75130 | 00540 | | |
| . | C0112 | | OUT | KEYOUT•W(BUFOUTWD)•MONITOR | 00100 | 76130 | 00537 | | |
| . | C0113 | | RJP | WESTOUT•KEY3 | 00101 | 65300 | 00630 | | |
| . | C0114 | | JP | $+2•KEY1 | 00102 | 61100 | 001C4 | | |
| . | C0115 | | RJP | HSPOUT | 00103 | 65000 | 04115 | | PRINT OUTPUT ON PRINTER |
| . | C0116 | | ENT | A•W(PRINTSW)•AZERO | 00104 | 11430 | 044C2 | | |
| . | C0117 | | JP | INTEXIT | 00105 | 6100C | 0C120 | | |
| . | C0120 | INTCOMC2 | CL | W(BUFSLOT) | 00106 | 16030 | 04575 | | |
| . | C0121 | | JP | NIL | 00107 | 61000 | 000C0 | | |
| . | C0122 | INTCOM03 | ENT | A•PUTCOMP | 00110 | 11000 | 0C0C4 | | |
| . | C0123 | | RSE | SET•W(ACTIVITY) | 00111 | 54030 | 04574 | | |
| . | C0124 | | IN | KEYIN•W(BUFINWD)•MONITOR | 00112 | 75130 | 00540 | | |
| . | C0125 | | RJP | WESTIN•KEY3 | 00113 | 65300 | 00624 | | |
| . | C0126 | | JP | $+3 | 00114 | 61000 | 00117 | | SWITCH FOR VACUUOUS INTERCOM |
| . | C0127 | | OUT | KEYOUT•W(CRBUF) | 00115 | 74130 | 00541 | | |
| . | C0130 | | RJP | WESTOUT•KEY3 | 00116 | 65300 | 0C630 | | |
| . | C0131 | | JP | INTCOM02 | 00117 | 61000 | 001C6 | | |
| . | C0132 | INTEXIT | NO-OP | | 00120 | 12000 | 0CCC0 | | |
| . | C0133 | | JP | $-1•KEYOUT•ACTIVEOUT | 00121 | 63100 | 00120 | | WAIT TILL MESSAGE DONE |
| . | C0134 | | JP | $-2•TTYOUT•ACTIVEOUT | 00122 | 63000 | 0C120 | | |
| . | C0135 | | IN | KEYIN•W(BUFINWD)•MONITOR | 00123 | 75130 | 00540 | | |
| . | C0136 | | RJP | WESTIN•KEY3 | 00124 | 65300 | 00624 | | |
| . | C0137 | | ENT | A•W(CPASTOR) | 00125 | 11030 | 04566 | | RESTORE REGISTERS |
| . | C0140 | | ENT | C•W(CPQSTOR) | 00126 | 10030 | 04567 | | |
| . | C0141 | | CL | W(SPECTBLS) | 00127 | 1603C | 04576 | | |
| . | C0142 | CPBSTOR | ENT | B7•NIL | 00130 | 12700 | 0C0C0 | | |

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CAROS   L1 ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C0143 CFB6STOR      ENT  B6•NIL                       00131  12600 00000
   .    C0144               ENT  B1•NIL                       00132  12100 00000
   .    C0145               ENT  B2•NIL                       00133  12200 00000
   .    C0146               ENT  B3•NIL                       00134  12300 00000
   .    C0147               ENT  B4•NIL                       00135  12400 00000
   .    C0150               ENT  B5•NIL                       00136  12500 00000
   .    C0151               JP   L(NTERCOM)                   00137  61010 00002  NORMAL EXIT
   .    C0152 INTOUT        ENTRY                             00140  61000 00000  ENTERED FROM HAROWARE INTERRUP
                                                                                   T
   .    C0153               STR  A•W(INTASTOR)                00141  15030 04572  SAVE REGISTERS USED
   .    C0154 INTOUTSWD     JP   INTOUT35                     00142  61000 00164
   .    C0155 INTOUTSW      JP   INTOUT01                     00143  61000 00147  SET TO NO-OP BY ERROR
   .    C0156               ENT  A•61000                      00144  11000 61000
   .    C0157               STR  A•U(INTOUTSW)                00145  15020 00143  RESET SWITCH TO JUMP
   .    C0160               JP   INTOUT03                     00146  61000 00160
   .    C0161 INTOUT01      ENT  A•L(SPECTBLS)•ANOT           00147  11510 04576
   .    C0162               JP   INTOUT05                     00150  61000 00173
   .    C0163               ADD  A•1                          00151  20000 00001
   .    C0164               STR  A•L(INTOUT02)                00152  15010 00153  CARRIAGE RETURN BIT
   .    C0165 INTOUT02      ENT  A•W(NIL)                     00153  11030 00000
   .    C0166               SEL  CL•W(CRCOMP)•ANOT            00154  52530 00622
   .    C0167               JP   INTOUT04                     00155  61000 00170  WANT ONLY LINE FEED
   .    C0170               CUT  KEYOUT•W(CRBUF)              00156  74130 00541  WANT CARRIAGE RETURN
   .    C0171               RJP  WESTOUT•KEY3                 00157  65300 00630
   .    C0172 INTOUT03      ENT  A•PUTCOMP                    00160  11000 00004  TURN ON OUTPUT COMPLETION BIT
   .    C0173               RSE  SET•W(ACTIVITY)              00161  54030 04574
   .    C0174               ENT  A•61000                      00162  11000 61000
   .    C0175               STR  A•U(KILLOUTSW)               00163  15020 00240  DESABLE KILLING OUTPUT
   .    C0176 INTOUT35      IN   KEYIN•W(BUFINWD)•MONITOR     00164  75130 00540  SET UP TO READ NEXT
   .    C0177               RJP  WESTIN•KEY3                  00165  65300 00624  IF WESTFORD ACTIVE, ENABLE
   .    C0200               ENT  A•W(INTASTOR                 00166  11030 04572  RESTORE REGISTERS
   .    C0201               RILJP      L(INTOUT)              00167  60110 00140
   .    C0202 INTOUT04      CUT  KEYOUT•W(LFBUF)              00170  74130 00542
   .    C0203               RJP  WESTOUT•KEY3                 00171  65300 00630
   .    C0204               JP   INTOUT03                     00172  61000 00160
   .    C0205 INTOUT05      CUT  KEYOUT•W(CROUT)              00173  74130 00546  IF NO INPUT, ISSUE C/R
   .    C0206               RJP  WESTOUT•KEY3                 00174  65300 00630
   .    C0207               JP   INTOUT03                     00175  61000 00160
   .    C0210 FSHIFT        EQUALS     33
   .    C0211 LSHIFT        EQUALS     37
   .    C0212 TTYININT      ENTRY                             00176  61000 00000  ENTERED FORM CO HAROWARE
   .    C0213               STR  A•W(TTYASTOR)                00177  15030 00230
   .    C0214               STR  Q•W(TTYQSTOR)                00200  14030 00231  SAVE REGISTERS A,Q,B7
   .    C0215               STR  B7•L(TTYBSTOR)               00201  16710 00216
   .    C0216               ENT  Q•37                         00202  10000 00037
   .    C0217               ENT  A•W(TTYINWD)                 00203  11030 00232
   .    C0220               COM  MASK•LSHIFT•ANOT             00204  43500 00037  TEST FOR LETTER SHIFT
   .    C0221               JP   TTYIN2                       00205  61000 00220
   .    C0222               COM  MASK•FSHIFT•ANOT             00206  43500 00033  TEST FOR FIGURE SHIFT
   .    C0223               JP   TTYIN3                       00207  61000 00221
   .    C0224               ENT  B7•A                         00210  12770 00000  NEITHER. TRANSLATE TO FD
   .    C0225 TTYIN1        ENT  A•L(TTYTBL+B7)               00211  11017 06073  SET BY LAST CASE SHIFT
   .    C0226               STR  A•L(BUFIN)                   00212  15010 04577  PUT FD CHARACTER IN INPUT BUFF
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CARDS    LI IO LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

                                                                                          ER
    .    C0227              RJP  INTIN                                  00213  65000 00234  PERFORM HAYSTACK INTERRUPT RTN

    .    C0230 TTYIN4       ENT  A•W(TTYASTOR)                          00214  11030 00230
    .    C0231              ENT  Q•W(TTYQSTOR)                          00215  10030 00231  RESTORE REGISTERS
    .    C0232 TTYBSTOR     ENT  B7•NIL                                 00216  12700 00000
    .    C0233              RILJP     L(TTYININT)                       00217  60110 00176
    .    C0234 TTYIN2       ENT  A•TTYTBL•SKIP                          00220  11100 06073  SET FOR APPROPRIATE TRANSLATIO
                                                                                          N
    .    C0235 TTYIN3       ENT  A•TTYTBLL                              00221  11000 06133  TABLE, LETTER OR FIGURE
    .    C0236              STR  A•L(TTYIN1)                            00222  15010 00211
    .    C0237              ENT  A•61000                                00223  11000 61000
    .    C0240              STR  A•U(INTOUTSWO)                         00224  15020 00142
    .    C0241              CUT  TTYOUT•W(TXYBUF)•MONITOR               00225  76030 00227
    .    C0242              JP   TTYIN4                                 00226  61000 00214
    .    C0243 TXYBUF       U-TAG     TTYINWC•TTYINWO                   00227  00232 00232
    .    C0244 TTYASTOR     0    0                                      00230  00000 00000
    .    C0245 TTYQSTOR     0    0                                      00231  00000 00000
    .    C0246 TTYINWO      0    0                                      00232  00000 00000
    .    C0247              STR  A•U(COMPROCSW)                         00233  15020 00422
    .    C0250 INTIN        ENTRY                                       00234  61000 00000  ENTERED FROM HARDWARE INTERRUP
                                                                                          T
    .    C0251              STR  A•W(INTASTOR)                          00235  15030 04572  SAVE REGISTERS USED
    .    C0252              STR  Q•W(INTQSTOR)                          00236  14030 04573
    .    C0253              STR  B7•L(INTBSTOR)                         00237  16710 00321
    .    C0254 KILLOUTSW    JP   KILLOUT1+2                             00240  61000 00261  NOP WHEN KILLING OUTPUT
    .    C0255              ENT  A•61000                                00241  11000 61000  RESET KILLOUTSW
    .    C0256              STR  A•U(KILLOUTSW)                         00242  15020 00240
    .    C0257              STR  A•U(INTINSW)                           00243  15020 00312  SET TO KILL NORMAL OUTPUT
    .    C0260              ENT  A•L(SPECTBLS)•ANOT                     00244  11510 04576  IS INPUT EXPECTED
    .    C0261              JP   KILLOUT2                               00245  61000 00340  NO
    .    C0262              ADD  A•1                                    00246  20000 00001  YES- SEE IF WANT CR
    .    C0263              STR  A•L($+1)                               00247  15010 00250
    .    C0264              ENT  A•W(NIL)                               00250  11030 00000
    .    C0265              SEL  CL•W(CRCOMP)•ANOT                      00251  52530 00622
    .    C0266              JP   KILLOUT3                               00252  61000 00343  NO - WANT LINE FEED
    .    C0267              ENT  A•W(BUFIN)                             00253  11030 04577
    .    C0270              STR  A•W(TOPCR+1)                           00254  15030 00577
    .    C0271              CUT  KEYOUT•W(CRBUFIN)•MONITOR              00255  76130 00550
    .    C0272              RJP  WESTOUT•KEY3                           00256  65300 00630
    .    C0273 KILLCUT1     ENT  A•PUTCOMP                              00257  11000 00004  SET OUTPUT COMPLETION
    .    C0274              RSE  SET•W(ACTIVITY)                        00260  54030 04574  BIT IN ACTIVITY WORD
    .    C0275              ENT  Q•77                                   00261  10000 00077  EXAMINE NEW CHARACTER
    .    C0276              ENT  A•W(BUFIN)                             00262  11030 04577
    .    C0277              ENT  B7•L(BUFSLOT)                          00263  12710 04575
    .    C03C0              STR  A•W(BUFFER+B7)                         00264  15037 04743
    .    C03C1              BSK  B7•BUFLMT                              00265  71700 00453
    .    C03C2              JP   INTINO1                                00266  61000 00272
    .    C03C3              ENT  A•01                                   00267  11000 00001  ENTER BUFFER EXCEEDED CODE
    .    C03C4              STR  B0•L(BUFSLOT)                          00270  16010 04575  CLEAR BUFSLOT IF BUFFER EXCEED
                                                                                          ED
    .    C03C5              RILJP     ERROR                             00271  60100 03746
    .    C03C6 INTINC1      STR  B7•L(BUFSLOT)                          00272  16710 04575
```

| CARDS | L1 IO LABEL | TA STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|
| . | C03C7 | COM MASK•CRWORO•ANOT | 00273 | 43500 00004 | IS IT CARRIAGE RETURN |
| . | C0310 | JP INTINO29 | 00274 | 61000 00323 | |
| . | C0311 | ENT B7•61000 | 00275 | 12700 61000 | IF NOT CR |
| . | C0312 | STR B7•UI INTINO3) | 00276 | 16720 00325 | |
| . | C0313 | COM MASK•QMWORO•ANOT | 00277 | 43500 00054 | IS IT QUESTION MARK |
| . | C0314 | JP INTINO4 | 00300 | 61000 00332 | |
| . | C0315 | COM MASK•ATTNWOUC•ANOT | 00301 | 43500 00057 | |
| . | C0316 | JP INTINO5 | 00302 | 61000 00335 | |
| . | C0317 | COM MASK•ATTNWOLC•ANOT | 00303 | 43500 00077 | |
| . | C0320 | JP INTINO5 | 00304 | 61000 00335 | |
| . | C0321 | COM MASK•SPECWD•ANOT | 00305 | 43500 00076 | |
| . | C0322 | JP INTINO35 | 00306 | 61000 00327 | IF LIMIT ACCEPTED |
| . | C0323 | ENT Q•61000 | 00307 | 10000 61000 | SET TO TEST FOR CHAR REALLY OU T |
| . | C0324 | STR Q•UICOMPROCSW) | 00310 | 14020 00422 | |
| . | C0325 | STR Q•U(INTOUTSWO) | 00311 | 14020 00142 | |
| . | C0326 INTINSW | 12000 INTINO2 | 00312 | 12000 00315 | NORMALLY NO-OP, JUMP AFTER KIL L |
| . | C0327 | CUT KEYOUT•WIBUFINWD)•MONITOR | 00313 | 76130 00540 | IF NONE TYPE BACK |
| . | C0330 | RJP WESTOUT•KEY3 | 00314 | 65300 00630 | |
| . | C0331 INTINC2 | ENT Q•12000 | 00315 | 10000 12000 | |
| . | C0332 | STR Q•UI INTINSW) | 00316 | 14020 00312 | RESET SWITCH TO NO-OP |
| . | C0333 | ENT A•W(INTASTOR) | 00317 | 11030 04572 | RESTORE REGISTERS |
| . | C0334 | ENT Q•W(INTQSTOR) | 00320 | 10030 04573 | |
| . | C0335 INTBSTCR | ENT B7•NIL | 00321 | 12700 00000 | |
| . | C0336 | RILJP LI INTIN) | 00322 | 60110 00234 | |
| . | C0337 INTINC29 | IN KEYIN•WIBUFINWO)•MONITOR | 00323 | 75130 00540 | |
| . | C0340 | RJP WESTIN•KEY3 | 00324 | 65300 00624 | |
| . | C0341 INTINC3 | JP INTINO35 | 00325 | 61000 00327 | SWITCH FOR CR NOP AFTER LIMIT |
| . | C0342 | JP INTINO2 | 00326 | 61000 00315 | |
| . | C0343 INTINC35 | ENT A•INCOMP | 00327 | 11000 00010 | SET INPUT COMPLETION BIT |
| . | C0344 | RPL A+Y•WIACTIVITY) | 00330 | 24030 04574 | |
| . | C0345 | JP INTINO2 | 00331 | 61000 00315 | |
| . | C0346 INTINC4 | ENT A•DELBIT | 00332 | 11000 00002 | |
| . | C0347 | RSE SET•WIACTIVITY) | 00333 | 54030 04574 | |
| . | C0350 | JP INTINO2 | 00334 | 61000 00315 | |
| . | C0351 INTINC5 | ENT A•ATTNBIT | 00335 | 11000 00001 | |
| . | C0352 | RSE SET•WIACTIVITY) | 00336 | 54030 04574 | |
| . | C0353 | JP INTINO2 | 00337 | 61000 00315 | |
| . | C0354 KILLCUT2 | CUT KEYOUT•WICROUT)•MONITOR | 00340 | 76130 00546 | |
| . | C0355 | RJP WESTOUT•KEY3 | 00341 | 65300 00630 | |
| . | C0356 | JP KILLOUT1 | 00342 | 61000 00257 | |
| . | C0357 KILLCUT3 | ENT A•WIBUFIN) | 00343 | 11030 04577 | |
| . | C0360 | STR A•WILFIN+1) | 00344 | 15030 00601 | |
| . | C0361 | CUT KEYOUT•WILFBUFIN)•MONITOR | 00345 | 76130 00551 | |
| . | C0362 | RJP WESTOUT•KEY3 | 00346 | 65300 00630 | |
| . | C0363 | JP KILLOUT1 | 00347 | 61000 00257 | |
| . | C0364 COMPRCC00 | STR B6•LIMCPB6STOR) | 00350 | 16610 00455 | |
| . | C0365 | STR B7•LIMCPB7STOR) | 00351 | 16710 00456 | |
| . | C0366 | STR A•WIMCPASTOR) | 00352 | 15030 04570 | SAVE REGISTERS USED |
| . | CU367 | STR Q•WIMCPQSTOR) | 00353 | 14030 04571 | |
| . | C0370 | JP $+2•KEY3 | 00354 | 61300 00356 | |
| . | C0371 | JP COMPROC09 | 00355 | 61000 00373 | ONLY HAYSTACK ACTIVE |

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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C0372               ENT  A•WILOCTTYIN)                00356  11030 00040
   .     C0373               SUB  A•WIRJPTTYIN)•ANOT           00357  21530 00725
   .     C0374               JP   COMPROC0B                    00360  61000 004C7
   .     C0375               ENT  A•60000                      00361  11000 600C0  WESTFORD ACTIVE - DISABLE HAYS
                                                                                   TACK
   .     C0376               STR  A•UILOCININT)                00362  15020 00042
   .     C0377               STR  A•UILOCOUTINT)               00363  15020 00062
   .     C04C0               PUT  WIRJPOUT)•WILOCTTYOUT)       00364  10030 04622
                                                               00365  14030 00060
   .     C04C1               PUT  WIRJPTTYIN)•WILOCTTYIN)      00366  10030 00725
                                                               00367  14030 00040
   .     C04C2               TERM KEYIN•INPUT                  00370  66100 000C0
   .     C04C3               IN   TTYIN•WITXYBUF)•MONITOR      00371  75030 00227
   .     C04C4               JP   COMPROC0B                    00372  61000 00407
   .     C04C5 CCMPRCCC9     ENT  A•W(LOCININT)                00373  11030 00042
   .     C04C6               SUB  A•W(RJPIN)•ANOT              00374  21530 04621
   .     C0407               JP   COMPROC0B                    00375  61000 004C7
   .     C0410               ENT  A•60000                      00376  11000 60000
   .     C0411               STR  A•UILOCTTYOUT)               00377  15020 00060
   .     C0412               STR  A•U(LOCTTYIN)                00400  15020 00040
   .     C0413               PUT  W(RJPIN)•WILOCININT)         00401  10030 04621
                                                               00402  14030 00042
   .     C0414               PUT  W(RJPOUT)•W(LOCOUTINT)       00403  10030 04622
                                                               00404  14030 00062
   .     C0415               TERM TTYIN•INPUT                  00405  66000 000C0
   .     C0416               IN   KEYIN•W(BUFINWO)•MONITOR     00406  75130 00540
   .     C0417 CCMPRCCC8     ENT  A•WIACTIVITY)•ANOT           00407  11530 04574  ANY ACTIVITY COMPLETED
   .     C0420               JP   COMPROC02                    00410  61000 00451  NO-GO TO EXIT
   .     C0421               CL   Q•                           00411  10000 000C0
   .     C0422               RSH  AQ•1•QPOS                    00412  03200 00001  IS ATTENTION BIT ON
   .     C0423               JP   COMPROC03                    00413  61000 00460  YES
   .     C0424               RSH  AQ•1•QPOS                    00414  03200 00001  IS DELETE BIT ON
   .     C0425               JP   COMPROC04                    00415  61000 00475  YES
   .     C0426               RSH  AQ•1•QNEG                    00416  03300 000C1  IS OUTPUT COMPLETION BIT ON
   .     C0427               JP   COMPROC02                    00417  61000 00451  NO - GO TO EXIT
   .     C0430               JP   COMPROC02•AZERO              00420  60400 00451  IS INPUT COMPLETION BIT ON
   .     C0431               CL   WIACTIVITY)                  00421  16030 04574  IF BOTH ON, TURN THEM OFF
   .     C0432 CCMPRCCSW     JP   COMPROC07                    00422  61000 00432  SET TO NO-OP BY LIMIT ERROR
   .     C0433               ENT  Q•61000                      00423  10000 610C0  RESET TO JUMP
   .     C0434               STR  Q•U(COMPROCSW)               00424  14020 00422
   .     C0435               CUT  KEYOUT•WIHOKBUF)             00425  74130 00547  TYPE ACCEPTED$
   .     C0436               RJP  WESTOUT•KEY3                 00426  65300 00630
   .     C0437               JP   $+2•KEY1                     00427  61100 00431
   .     C0440               RJP  HSPACC                       00430  65000 04216
   .     C0441               JP   INTEXIT                      00431  61000 00120
   .     C0442 CCMPRCCC7     ENT  A•L(SPECTBLS)•ANOT           00432  11510 04576  IS INPUT SPLC TABLE ADDRESS=0
   .     C0443               JP   INTEXIT                      00433  61000 00120
   .     C0444               STR  A•LICOMPROC06)               00434  15010 00442
   .     C0445               ENT  A•WIBUFSLOT)                 00435  11030 04575
   .     C0446               STR  A•WISLOTSTOR)                00436  15030 04403  SAVE BUFSLOT
   .     C0447               SUB  A•1•ANOT                     00437  21500 00001
   .     C0450               JP   COMPROC01                    00440  61000 00444  IF SO, SKIP TO RETURN PROCEDURE
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SPURT OUTPUT NO. 210
INTERCOM ADAMS-ASSOC•7/1/65

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CARDS    LI IO LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

   .     C0451            RJP  INFORMINT                                00441  65000 00734
   .     C0452 COMPRCCC6  C    0                                        00442  00000 000C0
   .     C0453            JP   ERROR                                    00443  61000 03746  BAD DATA. JUMP TO ERROR ROUTIN
                                                                                            E
   .     C0454 COMPRCCC1  CUT  KEYOUT•W(STOPBUF)                       00444  74130 00545  GOOO OTAA  TYPE STOP SYMBOL
   .     C0455            RJP  WESTOUT•KEY3                            00445  65300 00630
   .     C0456            JP   $+2•KEY1                                00446  61100 00450
   .     C0457            RJP  HSPGIN                                  00447  65000 04172
   .     C0460            JP   INTEXIT                                 00450  61000 00120  RETURB TO CALLING PROGRAM
   .     C0461 COMPRCCC2  RPL  Y+1•L(COMPROC)                          00451  36010 0C0C4
   .     C0462            STR  A•L(INTCOMO2+1)                         00452  15010 001C7
   .     C0463            ENT  A•W(MCPASTOR)                           00453  11030 04570
   .     C0464            ENT  Q•W(MCPQSTOR)                           00454  10030 04571
   .     C0465 MCPB6STOR  ENT  B6•NIL                                  00455  12600 000C0
   .     C0466 MCPB7STOR  ENT  B7•NIL                                  00456  12700 0C0C0
   .     C0467            JP   L(INTCOMO2+1)                           00457  61010 00107  EXIT
   .     C0470 COMPRCCC3  CL   W(ACTIVITY)                             00460  16030 04574
   .     C0471            ENT  Q•WIBUFSLOT)                            00461  10030 04575
   .     C0472            STR  Q•W(SLOTSTOR)                           00462  14030 04403
   .     C0473            IN   KEYIN•WIBUFINWO)•MONITOR                00463  75130 00540
   .     C0474            CUT  KEYOUT•W(ATTNBUF)                       00464  74130 00544
   .     C0475            RJP  WESTOUT•KEY3                            00465  65300 00630
   .     C0476            JP   $+2•KEY1                                00466  61100 00470
   .     C0477            RJP  HSPATTN                                 00467  65000 04204
   .     C05C0            CL   WIBUFSLOT)                              00470  16030 04575
   .     C05C1            ENT  B0•0                                    00471  12000 00000
   .     C05C2            JP   $-1•KEYOUT•ACTIVEOUT                    00472  63100 00471  WAIT TILL OONE
   .     C05C3            JP   $-2•TTYOUT•ACTIVEOUT                    00473  63000 00471
   .     C05C4            JP   LICOMPROC)                              00474  61010 00004
   .     C05C5 COMPRCCC4  CL   W(ACTIVITY)                             00475  16030 04574
   .     C0506            ENT  Q•W(BUFSLOT)                            00476  10030 04575
   .     C0507            STR  Q•WISLOTSTOR)                           00477  14030 04403
   .     C0510            JP   $+2•KEY1                                00500  61100 0C502
   .     C0511            RJP  HSPNOTACC                               00501  65000 04233
   .     C0512            CL   WIBUFSLOT)                              00502  16030 04575
   .     C0513            RJP  SPACERITE                               00503  65000 00524
   .     C0514            ENT  A•BUFFER+17                             00504  11000 04762
   .     C0515            ADD  A•B7                                    00505  20007 00000
   .     C0516            STR  A•U(DELBUF)                             00506  15020 00543
   .     C0517            ENT  B6•17                                   00507  12600 00017
   .     C0520            ENT  A•WIBOTDEL+B6)                          00510  11036 00552
   .     C0521            STR  A•WIBUFFER+B6)                          00511  15036 04743  STORE NOT ACCEPTEO
   .     C0522            BJP  B6•$-2                                  00512  72600 00510
   .     C0523            ENT  A•05                                    00513  11000 00005
   .     C0524            RPT  B7•AOV                                  00514  70107 00000
   .     C0525            STR  A•WIBUFFER+20)                          00515  15030 04763
   .     C0526            ENT  Q•12000                                 00516  10000 12000
   .     C0527            STR  Q•UIKILLOUTSW)                          00517  14020 00240
   .     C0530            IN   KEYIN•WIBUFINWO)•MONITOR                00520  75130 00540
   .     C0531            CUT  KEYOUT•WIDELBUF)•MONITOR                00521  76130 00543
   .     C0532            RJP  WESTOUT•KEY3                            00522  65300 00630
   .     C0533            JP   COMPROCO2                               00523  61000 00451
   .     C0534 SPACERITE  ENTRY                                        00524  61000 00000
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| CAROS | L1 ID | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| . | C0535 | | | ENT A•UISPECTBLS)•ANOT | 00525 | 11520 | 04576 | | |
| . | C0536 | | | JP SPACE01 | 00526 | 61000 | 00535 | | |
| . | C0537 | | | ENT B7•LISPECTBLS) | 00527 | 12710 | 04576 | | |
| . | C0540 | | | ENT A•WI1+B7) | 00530 | 11037 | 00001 | | |
| . | C0541 | | | SEL CL•WICRCOMP)•AZERO | 00531 | 52430 | 00622 | | LOOK FOR CR BIT |
| . | CU542 | | | JP SPACE01 | 00532 | 61000 | 00535 | | |
| . | C0543 | | | ENT B7•WIBUFFCOUNT) | 00533 | 12730 | 04600 | | WANT LINE FEED |
| . | C0544 | | | EXIT | 00534 | 61010 | 00524 | | |
| . | C0545 | SPACE01 | | ENT B7•5 | 00535 | 12700 | 00005 | | |
| . | C0546 | | | EXIT | 00536 | 61010 | 00524 | | |
| . | C0547 | BUFOUTWD | | U-TAG BUFFER+800•BUFFER | 00537 | 05063 | 04743 | | |
| . | C0550 | BUFINWD | | U-TAG BUFIN•BUFIN | 00540 | 04577 | 04577 | | |
| . | C0551 | CRBUF | | U-TAG TOPCR•BOTCR | 00541 | 00576 | 00570 | | |
| . | C0552 | LFBUF | | U-TAG BOTCR•BOTCR | 00542 | 00570 | 00570 | | |
| . | C0553 | DELBUF | | U-TAG BUFFER+17•BUFFER | 00543 | 04762 | 04743 | | |
| . | C0554 | ATTNBUF | | U-TAG TOPATN•BOTATN | 00544 | 00604 | 00602 | | |
| . | C0555 | STOPBUF | | U-TAG TOPSTOP•BOTSTOP | 00545 | 00621 | 00617 | | |
| . | C0556 | CRCUT | | U-TAG BOTCR+1•BOTCR | 00546 | 00571 | 00570 | | |
| . | C0557 | HCKBUF | | U-TAG TOPSTOP•BOTOK | 00547 | 00621 | 00605 | | |
| . | C0560 | CRBUFIN | | U-TAG TOPCR+1•BOTCR | 00550 | 00577 | 00570 | | |
| . | C0561 | LFBUFIN | | U-TAG LFIN+1•LFIN | 00551 | 00601 | 00600 | | |
| . | C0562 | BCTDEL | | C 05 | 00552 | 00000 | 00005 | | |
| . | C0563 | | | O 05 | 00553 | 00000 | 00005 | | |
| . | C0564 | | | C 23 | 00554 | 00000 | 00023 | | |
| . | C0565 | | | O 24 | 00555 | 00000 | 00024 | | |
| . | C0566 | | | O 31 | 00556 | 00000 | 00031 | | |
| . | C0567 | | | O 05 | 00557 | 00000 | 00005 | | |
| . | C0570 | | | C 06 | 00560 | 00000 | 00006 | | |
| . | C0571 | | | O 10 | 00561 | 00000 | 00010 | | |
| . | C0572 | | | C 10 | 00562 | 00000 | 00010 | | |
| . | C0573 | | | C 12 | 00563 | 00000 | 00012 | | |
| . | C0574 | | | C 25 | 00564 | 00000 | 00025 | | |
| . | C0575 | | | O 31 | 00565 | 00000 | 00031 | | |
| . | C0576 | | | C 12 | 00566 | 00000 | 00012 | | |
| . | C0577 | | | C 11 | 00567 | 00000 | 00011 | | |
| . | C0600 | BCTCR | | C 03 | 00570 | 00000 | 00003 | | |
| . | C0601 | | | O 04 | 00571 | 00000 | 00004 | | |
| . | C0602 | | | C 05 | 00572 | 00000 | 00005 | | |
| . | C0603 | | | O 05 | 00573 | 00000 | 00005 | | |
| . | C0604 | | | C 05 | 00574 | 00000 | 00005 | | |
| . | C0605 | | | O 05 | 00575 | 00000 | 00005 | | |
| . | C0606 | TCPDEL | | C 05 | 00576 | 00000 | 00005 | | |
| . | C0607 | | | C 0 | 00577 | 00000 | 00000 | | |
| . | C0610 | TCPCR | | EQUALS TOPDEL | | | | | |
| . | C0611 | LFIN | | C 03 | 00600 | 00000 | 00003 | | |
| . | C0612 | | | C 0 | 00601 | 00000 | 00000 | | |
| . | C0613 | BCTATN | | O 57 | 00602 | 00000 | 00057 | | |
| . | C0614 | | | C 04 | 00603 | 00000 | 00004 | | |
| . | C0615 | TCPATN | | O 03 | 00604 | 00000 | 00003 | | |
| . | C0616 | BCTOK | | C 05 | 00605 | 00000 | 00005 | | |
| . | C0617 | | | C 05 | 00606 | 00000 | 00005 | | |
| . | C0620 | | | C 06 | 00607 | 00000 | 00006 | | |
| . | C0621 | | | C 10 | 00610 | 00000 | 00010 | | |

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CARDS   LI (O LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .    C0622               0    10                                00611  00000 00010
   .    C0623               0    12                                00612  00000 00012
   .    C0624               0    25                                00613  00000 00025
   .    C0625               0    31                                00614  00000 00031
   .    C0626               0    12                                00615  00000 00012
   .    C0627               0    11                                00616  00000 00011
   .    C063C BCTSTOP       0    50                                00617  00000 00050
   .    C0631               0    04                                00620  00000 00004
   .    C0632 TCPSTOP       0    03                                00621  00000 00003
   .    C0633 CRCOMP        77776     77777                        00622  77776 77777
   .    C0634 LPTCOMP       77767     77777                        00623  77767 77777
   .    C0635 ATTNBIT       EQUALS    1
   .    C0636 DELBIT        EQUALS    2
   .    C0637 PLTCOMP       EQUALS    4
   .    C0640 INCOMP        EQUALS    &0
   .    C0641 NIL           EQUALS    0
   .    C0642 CRWORD        EQUALS    04
   .    C0643 OPWORD        EQUALS    54
   .    C0644 ATTNWDLC      EQUALS    77
   .    C0645 ATTNWDUC      EQUALS    57
   .    C0646 SPECWD        EQUALS    76
   .    C0647 SPECERR       EQUALS    00
   .    C0650 BUFLMT        EQUALS    299D
   .    C0651 WESTIN        ENTRY                                   00624  61000 000C0
   .    C0652               TERM KEY(N•INPUT                        00625  66100 00000
   .    C0653               (N   TTY(N•W(TXYBUF)•MONITOR            00626  75030 00227
   .    C0654               EXIT                                    00627  61010 00624
   .    C0655 WESTOUT       ENTRY                                   00630  61000 000C0
   .    C0656               STR  B4•L(WEST84STOR)                   00631  16410 00677  STORE REGISTERS
   .    C0657               STR  B5•L(WEST85STOR)                   00632  16510 00700
   .    C0660               STR  B6•L(WEST86STOR)                   00633  16610 00701
   .    C0661               STR  B7•L(WEST87STOR)                   00634  16710 00702
   .    C0662               STR  A•W(WESTASTOR)                     00635  15030 00731
   .    C0663               STR  Q•W(WESTQSTOR)                     00636  14030 00732
   .    C0664               ENT  B7•L(WESTOUT)                      00637  12710 00630
   .    C0665               ENT  B7•B7-2                            00640  12707 77775
   .    C0666               ENT  A•75000                            00641  11000 75000  TEST FOR IN BUFFER ACTIVE
   .    C0667               ENT  Q•77000                            00642  10000 77000
   .    C0670               COM  MASK•U(B7-1)•ANOT                  00643  43527 77776
   .    C0671               RJP  WESTIN                             00644  65000 00624
   .    C0672               ENT  B6•L(B7)                           00645  12617 00000
   .    C0673               ENT  A•U(B6)                            00646  11026 00000
   .    C0674               STR  A•L(FOBUFCNT)                      00647  15010 00726  SET UP FLOATA BUFFER LENGTH
   .    C0675               ENT  B5•L(B6)                           00650  12516 00000
   .    C0676               ENT  B6•0                               00651  12600 00000  (NITIALIZE TTY BUFFER COUNTER

   .    C0677 WESTCHAR      ENT  A•L(B5)                            00652  11015 000C0  GET FLDATA CHARACTER
   .    C07C0               COM  A•40•YMORE                         00653  04700 00040  CHECK
   .    C0701               JP   WESTUPCS                           00654  61000 00706  UPPER OR
   .    C07C2               JP   WESTLRCS                           00655  61000 00715  LOWER CASE
   .    C07C3 WESTCCNV      ENT  B4•A                               00656  12470 000C0
   .    C0704               ENT  A•U(TTYTBL+B4)                     00657  11024 06073  CONVERT FLO TO TTY
   .    C07C5               STR  A•L(TTYBUF+B6)                     00660  15016 05417
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| CARDS | LI IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C07C6 | | | BSK B6•77777 | 00661 | 71600 77777 | INCREMENT TTY BUFFER |
| . | C07C7 | | | BSK B5•L(FOBUFCNT) | 00662 | 71510 00726 | CHECK FOR LAST CHAR. |
| . | C0710 | | | JP WESTCHAR | 00663 | 61000 00652 | |
| . | C0711 | | | ENT A•76130 | 00664 | 11000 76130 | |
| . | C0712 | | | ENT Q•77777 | 00665 | 10000 77777 | |
| . | C0713 | | | COM MASK•U(B7)•AZERO | 00666 | 43427 00000 | CHECK FOR MONITOR |
| . | C0714 | | | ENT A•74030•SKIP | 00667 | 11100 74030 | NO |
| . | C0715 | | | ENT A•76030 | 00670 | 11000 76030 | |
| . | C0716 | | | STR A•U(WESTOUTWO) | 00671 | 15020 00676 | |
| . | C0717 | | | ENT A•TTYBUF | 00672 | 11000 05417 | SET UP OUTPUT WORD |
| . | C0720 | | | STR A•L(TTYOUTWO) | 00673 | 15010 00727 | LOWER LIMIT |
| . | C0721 | | | ENT A•TTYBUF+B6-1 | 00674 | 11006 05416 | |
| . | C0722 | | | STR A•U(TTYOUTWC) | 00675 | 15020 00727 | UPPER LIMIT |
| . | C0723 | WESTOUTWO | | OUT TTYOUT•W(TTYOUTWO) | 00676 | 74030 00727 | ACTIVATE OUTPUT |
| . | C0724 | WESTB4STOR | | ENT B4•NIL | 00677 | 12400 00000 | |
| . | C0725 | WESTB5STOR | | ENT B5•NIL | 00700 | 12500 00000 | RESTORE BUFFERS |
| . | C0726 | WESTB6STOR | | ENT B6•NIL | 00701 | 12600 00000 | |
| . | C0727 | WESTB7STOR | | ENT B7•NIL | 00702 | 12700 00000 | |
| . | C0730 | | | ENT A•W(WESTASTOR) | 00703 | 11030 00731 | |
| . | C0731 | | | ENT Q•W(WESTQSTOR) | 00704 | 10030 00732 | |
| . | C0732 | | | EXIT | 00705 | 61010 00630 | |
| . | C0733 | WESTUPCS | | ENT Q•33 | 00706 | 10000 00033 | UPPER CASE |
| . | C0734 | | | COM Q•L(CASESET)•YMORE | 00707 | 04310 00730 | COMPARE WITH CASE SWITCH |
| . | C0735 | | | JP WESTCONV | 00710 | 61000 00656 | YES |
| . | C0736 | | | STR Q•L(CASESET) | 00711 | 14010 00730 | NO |
| . | C0737 | | | STR Q•L(TTYBUF+B6) | 00712 | 14016 05417 | PUT CASE CHANGE IN OUTPUT |
| . | C0740 | | | BSK B6•77777 | 00713 | 71600 77777 | INCR TTY BUFFER |
| . | C0741 | | | JP WESTCONV | 00714 | 61000 00656 | GET PENDING CHAR |
| . | C0742 | WESTLRCS | | ENT Q•37 | 00715 | 10000 00037 | LOWER CASE |
| . | C0743 | | | SUB Q•L(CASESET)•QNOT | 00716 | 27510 00730 | COMPARE WITH CASE SWITCH |
| . | C0744 | | | JP WESTCONV | 00717 | 61000 00656 | YES |
| . | C0745 | | | ADD Q•L(CASESET) | 00720 | 26010 00730 | NO |
| . | C0746 | | | STR Q•L(CASESET) | 00721 | 14010 00730 | |
| . | C0747 | | | STR Q•L(TTYBUF+B6) | 00722 | 14016 05417 | PUT CASE CHANGE IN OUTPUT |
| . | C0750 | | | BSK B6•77777 | 00723 | 71600 77777 | INCR TTY BUFFER |
| . | C0751 | | | JP WESTCONV | 00724 | 61000 00656 | GET PENDING CHAR |
| . | C0752 | RJPTTY(N | | RJP TTY(NINT | 00725 | 65000 00176 | |
| . | C0753 | FOBUFCNT | | RESERVC 1 | 00726 | 00000 00000 | |
| . | C0754 | TTYOUTWC | | U-TAG WESTOUTBF•WESTOUTBF | 00727 | 00733 00733 | |
| . | C0755 | CASESET | | RESERVE 1 | 00730 | 00000 00000 | |
| . | C0756 | WESTASTOR | | RESERVE 1 | 00731 | 00000 00000 | |
| . | C0757 | WESTQSTOR | | RESERVE 1 | 00732 | 00000 00000 | |
| . | C0760 | WESTOUTBF | | C 0 | 00733 | 00000 00000 | |
| . | C0761 | (NFORM(NT | | ENTRY | 00734 | 61000 00000 | |
| . | C0762 | | | STR B5•L((NB5STOR) | 00735 | 16510 00765 | |
| . | C0763 | | | ENT B7•L((NFORMINT) | 00736 | 12710 00734 | |
| . | C0764 | | | RPL Y+1•L((NFORM(NT) | 00737 | 36010 00734 | MAKES (NFORMINT ERROR EXIT |
| . | C0765 | | | ENT B7•L(B7) | 00740 | 12717 00000 | LOCATION OF (NPUT SPEC TABLE |
| . | C0766 | | | STR B7•L((NFO1) | 00741 | 16710 00753 | |
| . | C0767 | | | ENT A•W(1+B7) | 00742 | 11037 00001 | LOCATION OF STROAGE ADDRESS |
| . | C0770 | | | STR A•L((NFO5) | 00743 | 15010 01005 | STORE IN CALLING SEQ |
| . | C0771 | | | SEL CL•W(LMTCOMP)•ANOT | 00744 | 52530 00623 | TEST FOR L(MIT CHECK |
| . | C0772 | | | JP (NFOO | 00745 | 61000 00751 | |

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CARDS   L1 ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C0773            ENT  A*2+B7                          00746  11007 000C2  LOC OF LIMIT WORDS
   .    C0774            STR  A*LI INFO7)                     00747  15010 01010  STORE IN CALLING SEQ OF LMTCHK

   .    C0775            ENT  Q*I2000*SKIP                    00750  10100 12000  SET SWITCH TO GO THRU LMTCHK
   .    C0776 INFOO      ENT  Q*61000                         00751  10000 61000  SET SWITCH TO SKIP LMTCHK
   .    C0777            STR  Q*U(INFO6)                      00752  14020 01006
   .    C1CC0 INFO1      ENT  Q*W(NIL)                        00753  10030 000C0  BRING FORMAT CODE WORD
   .    C1CC1            CL   A*                              00754  11000 0C0C0
   .    C1CC2            LSH  AQ*6                            00755  07000 0C0C6  GET FORMAT CODE
   .    C1CC3            STR  Q*W(INFS1)                      00756  14030 04562
   .    C1CC4            ENT  Q*77                            00757  10000 00077
   .    C1CC5            ENT  B5*INCODMAX                     00760  12500 00010
   .    C1CC6 INFC2      COM  MASK*LI INCODTBL+B5)*ANOT        00761  43515 01014
   .    C1C07            JP   INFO3                           00762  61000 00767
   .    C1C10            BJP  B5*INFO2                        00763  72500 00761
   .    C1C11 INERRX     ENT  A*SPECERR                       00764  11000 000C0  IF CODE NOT FOUND
   .    C1C12 INB5STOR   ENT  B5*NIL                          00765  12500 000C0
   .    C1C13            EXIT                                 00766  61010 00734
   .    C1C14 INFO3      ENT  A*UI INCODTBL+B5)*ANOT           00767  11525 01014  DOES FORMAT REQUIRE GREEKCONV

   .    C1C15            JP   INFO4                           00770  61000 01001
   .    C1C16            ENT  Q*WI INFS1)                     00771  10030 04562
   .    C1C17            SUB  A*2*AZERO                       00772  21400 000C2
   .    C1C20            JP   INFO31                          00773  61000 00776
   .    C1C21            LSH  AQ*6                            00774  07000 000C6
   .    C1C22            JP   INFO4                           00775  61000 01001
   .    C1C23 INFO31     RJP  GREEKCONV                       00776  65000 02203
   .    C1C24            JP   INERRX                          00777  61000 00764
   .    C1C25            ENT  A*W(INTEGER)                    01000  11030 046C5  BRING ALPHA OR PHI
   .    C1C26 INFO4      CL   WIBUFSLOT)                      01001  16030 04575
   .    C1C27            RJP  LITEST+B5)                      01002  65015 01025  TEST BUFFER AND CONVERT
   .    C1C30            JP   INERRX+1                        01003  61000 00765  BAD DATA - GO TO ERROR EXIT

   .    C1C31            RJP  UISTORE+B5)                     01004  65025 01036  IF SO, STORE IT NORMALLY
   .    C1C32 INFO5      C    0                               01005  00000 00000  LOCATION OF STORAGE CELLS
   .    C1C33 INFO6      JP   INFO8                           01006  61000 01012  SWITCH FOR LMTCHK
   .    C1C34            RJP  LILMTCHK+B5)                    01007  65015 01036  TEST FOR DATA WITHIN LIMITS
   .    C1C35 INFO7      C    0                               01010  00000 00000  LOCATION OF 1ST LIMIT WORD
   .    C1C36            JP   INERRX+1                        01011  61000 00765  IF NOT, GO TO ERROR STORE
   .    C1C37 INFO8      RPL  Y+1*L(INFORMINT)                01012  36010 00734
   .    C1C40            JP   INB5STOR                        01013  61000 00765  NORMAL EXIT
   .    C1C41 INCODMAX   EQUALS    8D
   .    C1C42 INCODTBL   C    13                              01014  00000 00013
   .    C1C43            1    35                              01015  00001 00035
   .    C1C44            C    11                              01016  00000 0C011
   .    C1C45            O    24                              01017  00000 00024
   .    C1C46            C    36                              01020  00000 00036
   .    C1C47            I    21                              01021  00001 00021
   .    C1C50            1    23                              01022  00001 0C023
   .    C1C51            1    22                              01023  00001 00022
   .    C1C52            2    34                              01024  00002 00034
   .    C1C53 TEST       0    FLOATIN                         01025  00000 01321
   .    C1C54            C    FIXIN                           01026  00000 01330
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CAROS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C1C55               C     DECIN                           01027  00000 01127
   .     C1C56               O     HOCTIN                          01030  00000 01140
   .     C1C57               C     YESIN                           01031  00000 01273
   .     C1C60               O     INPUTLA                         01032  00000 01077
   .     C1C61               C     INPUTNA                         01033  00000 01107
   .     C1C62               O     INPUTMA                         01034  00000 01117
   .     C1C63               C     SPECIN                          01035  00000 01247
   .     C1C64 LMTCHK        U-TAG       FLTSTR•FLTLMT             01036  01617 01712
   .     C1C65               U-TAG       NUMSTR•FIXLMT             01037  01560 01670
   .     C1C66               U-TAG       NUMSTR•DECLMT             01040  01560 01634
   .     C1C67               U-TAG       NUMSTR•HOCTLMT            01041  01560 01653
   .     C1C70               U-TAG       NUMSTR•NOLMT              01042  01560 01630
   .     C1C71               U-TAG       STRING•NOLMT              01043  01567 01630
   .     C1C72               U-TAG       STRING•NOLMT              01044  01567 01630
   .     C1C73               U-TAG       STRING•NOLMT              01045  01567 01630
   .     C1C74               U-TAG       NUMSTR•NOLMT              01046  01560 01630
   .     C1C75 STORE         EQUALS      LMTCHK
   .     C1C76 INPUTA        ENTRY                                 01047  61000 000C0  ENTRY  EXIT
   .     C1077               ENT   B7•W(BUFSLOT)                   01050  12730 04575  FIRST INTERESTING CHAR-START B
                                                                                       F
   .     C11C0               ADD   A•W(BUFSLOT)                    01051  20030 04575
   .     C11C1               STR   A•L(INPUTA3)                    01052  15010 01071  SET ALPHA-LIMIT
   .     C1102 INPUTA1       ENT   Q•77                            01053  10000 00077  MASK TEST
   .     C1103               ENT   A•W(BUFFER+B7)                  01054  11037 04743  INPUT WORD TO BE TESTED
   .     C11C4               COM   MASK•5•ANOT                     01055  43500 00005  IS THIS A SPACE
   .     C11C5               JP    INPUTA3                         01056  61000 01071  SPACE-GO COUNT
   .     C1106               COM   MASK•4•AZERO                    01057  43400 00004  IS THIS A CARRIAGE RETURN
   .     C11C7               JP    INPUTA2                         01060  61000 01065  CR--EXIT NORMAL RETURN
   .     C1110               CL    W(BUFFER+B7)                    01061  16037 04743  CLEAR OUT CARRIAGE RETURN
   .     C1111               RPL   Y+1•L(INPUTA)                   01062  36010 01047  SET NORMAL RETURN
   .     C1112 INPUTA1A      STR   B7•W(BUFSLOT)                   01063  16730 04575  STORE NEW START OF BUFFER
   .     C1113               EXIT                                  01064  61010 01047
   .     C1114 INPUTA2       ENT   Q•U(B6)                         01065  10026 000C0  UPPER LIMIT
   .     C1115               ENT   A•L(B6)                         01066  11016 000C0  LOWER LIMIT
   .     C1116               COM   AQ•W(BUFFER+B7)•YIN             01067  04437 04743  TEST IF CHAR IN DEF LIMITS
   .     C1117               JP    INPUTA5                         01070  61000 01075  NO--BAD CHAR
   .     C1120 INPUTA3       BSK   B7•0                            01071  71700 00000  TEST ON BUFFER OVERFLOW
   .     C1121               JP    INPUTA1                         01072  61000 01053  OK-RPT WITH NEXT CHAR
   .     C1122               ENT   B6•I                            01073  12600 00001  SET FOR BUFFER
   .     C1123               ENT   A•10•SKIP                       01074  11100 00010
   .     C1124 INPUTA5       CL    B6                              01075  12600 000C0
   .     C1125               JP    INPUTA1A                        01076  61000 01063
   .     C1126 INPUTLA       ENTRY                                 01077  61000 00000  EXIT ENTRY
   .     C1127               ENT   B6•INPUTLA3                     01100  12600 01106
   .     C1130               RJP   INPUTA                          01101  65000 01047  GENERAL TEST
   .     C1131               JP    INPUTLA1+B6                     01102  61006 01104
   .     C1132               RPL   Y+1•L(INPUTLA)                  01103  36010 01077  SET NORMAL RETURN
   .     C1133 INPUTLA1      ENT   A•15                            01104  11000 00015
   .     C1134               EXIT                                  01105  61010 01077
   .     C1135 INPUTLA3      37    5                               01106  00037 000C5
   .     C1136 INPUTNA       ENTRY                                 01107  61000 000C0  EXIT ENTRY
   .     C1137               ENT   B6•INPUTNA3                     01110  12600 01116
   .     C1140               RJP   INPUTA                          01111  65000 01047  GENERAL TEST
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| CARDS | L1 ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C1141 | | | JP (NPUTNA1+B6 | 01112 | 61006 01114 | |
| . | C1142 | | | RPL Y+1•L((NPUTNA) | 01113 | 36010 01107 | NORMAL RETURN |
| . | C1143 | INPUTNA1 | | ENT A•16 | 01114 | 11000 00016 | |
| . | C1144 | | | EXIT | 01115 | 61010 01107 | |
| . | C1145 | (NPUTNA3 | | 71 57 | 01116 | 00071 00057 | |
| . | C1146 | INPUTMA | | ENTRY | 01117 | 61000 000C0 | |
| . | C1147 | | | ENT B6•(NPUTMA3 | 01120 | 12600 01126 | |
| . | C115C | | | RJP (NPUTA | 01121 | 65000 0(047 | GENERAL TEST |
| . | C1151 | | | JP (NPUTMA1+B6 | 01122 | 61006 01124 | |
| . | C1152 | | | RPL Y+1•L((NPUTMA) | 01123 | 36010 01117 | NPRMAL RETURN |
| . | C1153 | (NPUTMA1 | | ENT A•17 | 01124 | 11000 00017 | |
| . | C1154 | | | EX(T | 01125 | 61010 01117 | |
| . | C1155 | (NPUTMA3 | | 77 0 | 01126 | 00077 000C0 | |
| . | C1156 | DECIN | | ENTRY | 01127 | 61000 00000 | ENTERED FROM INPREP |
| . | C1157 | | | ENT A•12 | 01130 | 11000 00012 | |
| . | C1160 | | | STR A•W(B(NLMT) | 01131 | 15030 04557 | SET UP BCO LIM(T |
| . | C1161 | | | ENT A•INTRCOB(N | 01132 | 11000 02607 | |
| . | C1162 | | | STR A•L(CONVERT) | 01133 | 15010 04560 | SET UP CONVERSION ROUTINE AODR ESS |
| . | C1163 | | | RJP NUMIN | 01134 | 65000 01151 | CHECK NUMBER AND CONVERT |
| . | C1164 | | | ENT A•07•SK(P | 01135 | 11100 00007 | DECIMAL ERRUR |
| . | C1165 | | | RPL Y+1•L(DEC(N) | 01136 | 36010 01127 | NORMAL RETURN |
| . | C1166 | | | EX(T | 01137 | 61010 01127 | |
| . | C1167 | HOCT(N | | ENTRY | 01140 | 61000 00000 | ENTEREO FROM INPREP |
| . | C1170 | | | ENT A•80 | 01141 | 11000 00010 | |
| . | C1171 | | | STR A•W(B(NLMT) | 01142 | 15030 04557 | SET OCTAL NUMBER LIMIT |
| . | C1172 | | | ENT A•(NTOCTB(N | 01143 | 11000 02543 | |
| . | C1173 | | | STR A•L(CONVERT) | 01144 | 15010 04560 | SET UP CONVERSION ROUTINE AOOR ESS |
| . | C1174 | | | RJP NUM(N | 01145 | 65000 01151 | CHECK NUMBER AND CONVERT |
| . | C1175 | | | ENT A•06•SK(P | 01146 | 11100 00006 | OCTAL ERROR |
| . | C1176 | | | RPL Y+1•L(HOCT(N) | 01147 | 36010 01140 | NORMAL RETURN |
| . | C1177 | | | EX(T | 01150 | 61010 01140 | |
| . | C12C0 | NUMIN | | ENTRY | 01151 | 61000 00000 | ENTERED FROM OECIN OR HOCTIN |
| . | C1201 | | | ENT A•61000 | 01152 | 11000 61000 | SET NO C/R SWITCH TO JUMP |
| . | C12C2 | | | STR A•U(NUM04) | 01153 | 15020 01230 | |
| . | C12C3 | | | CL W(SIGN) | 01154 | 16030 04607 | SET SIGN REGISTER TO + |
| . | C12C4 | | | CL W(IOINTEGER) | 01155 | 16030 04613 | CLEAR IOINTEGER WOROS |
| . | C12C5 | | | CL W(IOINTEGER+1) | 01156 | 16030 04614 | |
| . | C12C6 | | | ENT B7•L(BUFSLOT) | 01157 | 12710 04575 | GET CHAR POSITION IN BUFFER (O ) |
| . | C12C7 | NUMCC | | ENT A•L(BUFFER+B7) | 01160 | 11017 04743 | EXAMINE FIRST CHARACTER |
| . | C1210 | | | ENT Q•77 | 01161 | 10000 00077 | |
| . | C1211 | | | COM MASK•SPACE•ANOT | 01162 | 43500 00005 | |
| . | C1212 | | | JP NUM01 | 01163 | 61000 01171 | |
| . | C1213 | | | COM MASK•M(NUS•ANOT | 01164 | 43500 00041 | IS IT - |
| . | C1214 | | | JP NUM06 | 01165 | 61000 01243 | YES - GO TO SET SIGN WORO - |
| . | C1215 | | | COM MASK•PLUS•ANOT | 01166 | 43500 00042 | IS IT + |
| . | C1216 | | | JP NUM07 | 01167 | 61000 01245 | YES - GO TO SET SIGN WORO + |
| . | C1217 | | | JP NUM02-1 | 01170 | 61000 01174 | |
| . | C1220 | NUM01 | | BSK B7•BUFLMT | 01171 | 71700 00453 | |
| . | C1221 | | | JP NUM00 | 01172 | 61000 01160 | |
| . | C1222 | | | JP NUMERR | 01173 | 61000 01241 | |

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CARDS   L1 IO LABEL     TA STATEMENT                          LOC    F JKB Y      NOTES

.       C1223           ENT  B6*90                            01174  12600 00011  NO-SET UP TO EXAMINE 1ST CHAR.
.       C1224 NLMO2     RSH  AQ*4                             01175  03000 00004  SHIFT OFF BCD PART
.       C1225           SEL  CP*3*AZERO                       01176  51400 00003  TEST FOR GO
.       C1226           JP   NUMERR                           01177  61000 01241
.       C1227           LSH  AQ*4                             01200  07000 00004  BRING BACK BCD
.       C1230           COM  A*W(BINLMT)*YMORE                01201  04730 04557  TEST AGAINST LIMIT SET BY CALL
                                                                                   ER
.       C1231           JP   NUMERR                           01202  61000 01241
.       C1232           RSH  AQ*6                             01203  03000 00006  IF GOOD DIGIT, SHIFT INTO INTE
                                                                                   GER
.       C1233           STR  Q*W(NUMDIG)                      01204  14030 04561
.       C1234           ENT  Q*W(IOINTEGER+1)                 01205  10030 04614
.       C1235           ENT  A*W(IOINTEGER)                   01206  11030 04613
.       C1236           LSH  AQ*6                             01207  07000 00006  SHIFT 1CHAR INTO IOINTEGER
.       C1237           STR  A*W(IOINTEGER)                   01210  15030 04613
.       C1240           LSH  AQ*240                           01211  07000 00030
.       C1241           ENT  Q*W(NUMDIG)                      01212  10030 04561
.       C1242           LSH  AQ*6                             01213  07000 00006  SHIFT NEW CHAR INTO IOINTEGER+
                                                                                   1
.       C1243           STR  A*W(IOINTEGER+1)                 01214  15030 04614
.       C1244           BJP  B6*NUMO3                         01215  72600 01220  KEEP COUNT OF DIGITS IN INTEGE
                                                                                   R
.       C1245           ENT  A*12000                          01216  11000 12000  IF IO CHAR, SET NO C/R SWITCH

.       C1246           STR  A*U(NUMO4)                       01217  15020 01230  TO JUMP TO ERROR
.       C1247 NLMO3     BSK  B7*BUFLMT                        01220  71700 00453  BUMP BUFFER COUNTER
.       C1250           ENT  A*LIBUFFER+B7)*SKIP              01221  11117 04743  BRING NEXT CHARACTER
.       C1251           JP   NUMERR                           01222  61000 01241
.       C1252           ENT  Q*77                             01223  10000 00077  EXAMINE IT FOR C/R
.       C1253           COM  MASK*SPACE*ANOT                  01224  43500 00005
.       C1254           JP   NUMO3                            01225  61000 01220
.       C1255           COM  MASK*O4*ANOT                     01226  43500 00004
.       C1256           JP   NUMO5                            01227  61000 01232
.       C1257 NLMO4     JP   NUMO2                            01230  61000 01175  NO C/R SWITCH
.       C1260           JP   NUMERR                           01231  61000 01241
.       C1261 NLMO5     CL   WIBUFFER+B7)                     01232  16037 04743  CLEAR OUT C/R IN BUFFER
.       C1262           BSK  B7*BUFLMT                        01233  71700 00453
.       C1263           JP   NUMO8                            01234  61000 01236
.       C1264           JP   NUMERR                           01235  61000 01241
.       C1265 NLMO8     RJP  LICONVERT)                       01236  65010 04560  PERFORM APPROPRIATE CONVERSION

.       C1266           JP   NUMERR                           01237  61000 01241
.       C1267           RPL  Y+1*L(NUMIN)                     01240  36010 01151
.       C1270 NLMERR    STR  B7*WIBUFSLOT)                    01241  16730 04575
.       C1271           EXIT                                  01242  61010 01151
.       C1272 NLMO6     ENT  A*1                              01243  11000 00001  IF 1ST CHAR -, SET SIGN WORD
.       C1273           STR  A*WISIGN)                        01244  15030 04607
.       C1274 NLMO7     ENT  B6*90                            01245  12600 00011
.       C1275           JP   NUMO3                            01246  61000 01220  THEN GO TO GET NEXT CHARACTER

.       C1276 SPECIN    ENTRY                                 01247  61000 00000  ENTERED FROM INPREP
.       C1277           STR  A*LISPEC01)                      01250  15010 01254  STORE PHI IN TEST INST.
.       C1300           ENT  B7*LIBUFSLOT)                    01251  12710 04575
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| CARDS | LI ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C13C1 | | | ENT A•W(BUFFER+B7) | 01252 | 11037 04743 | GET CHAR FRUM BUFFER |
| . | C13C2 | | | ENT Q•77 | 01253 | 10000 00077 | |
| . | C13C3 | SPECO1 | | COM MASK•O•AZERO | 01254 | 43400 00000 | TEST FOR EQUAL TO PHI |
| . | C13C4 | | | JP SPECO2 | 01255 | 61000 01271 | |
| . | C13C5 | | | STR A•W(INTEGER) | 01256 | 15030 04605 | IF SO, STORE IT |
| . | C13C6 | | | BSK B7•BUFLMT | 01257 | 71700 00453 | |
| . | C13C7 | | | ENT A•W(BUFFER+B7)•SKIP | 01260 | 11137 04743 | |
| . | C1310 | | | JP SPECO3 | 01261 | 61000 01270 | |
| . | C1311 | | | COM MASK•O4•AZERO | 01262 | 43400 00004 | TEST IT FOR C/R |
| . | C1312 | | | JP SPECO2 | 01263 | 61000 01271 | |
| . | C1313 | | | CL W(BUFFER+B7) | 01264 | 16037 04743 | IS SO, CLEAR IT IN BUFFER |
| . | C1314 | | | STR B7•W(BUFSLOT) | 01265 | 16730 04575 | |
| . | C1315 | | | RPL Y+1•L(SPECIN) | 01266 | 36010 01247 | AOJUST EXIT LOCATION |
| . | C1316 | | | EXIT | 01267 | 61010 01247 | |
| . | C1317 | SPECC3 | | ENT A•01•SKIP | 01270 | 11100 00001 | BUFLMT ERROR |
| . | C1320 | SPECC2 | | ENT A•10 | 01271 | 11000 00010 | IF DISCREPANCY, ENTER ERROR CO DE |
| . | C1321 | | | EXIT | 01272 | 61010 01247 | ERROR EXIT |
| . | C1322 | YESIN | | ENTRY | 01273 | 61000 00000 | ENTERED FROM INPREP |
| . | C1323 | | | ENT B7•L(BUFSLOT) | 01274 | 12710 04575 | |
| . | C1324 | YESOC | | ENT A•W(BUFFER+B7) | 01275 | 11037 04743 | |
| . | C1325 | | | ENT Q•77 | 01276 | 10000 00077 | |
| . | C1326 | | | COM MASK•36•ANOT | 01277 | 43500 00036 | IS IT Y |
| . | C1327 | | | JP YESO2 | 01300 | 61000 01312 | |
| . | C133C | | | COM MASK•23•ANOT | 01301 | 43500 00023 | |
| . | C1331 | | | JP YESO2+1 | 01302 | 61000 01313 | |
| . | C1332 | | | COM MASK•SPACE•ANOT | 01303 | 43500 00005 | |
| . | C1333 | | | JP YESO3 | 01304 | 61000 01315 | |
| . | C1334 | | | ENT A•11 | 01305 | 11000 00011 | |
| . | C1335 | | | EXIT | 01306 | 61010 01273 | ERROR EXIT |
| . | C1336 | YESO1 | | STR A•W(INTEGER) | 01307 | 15030 04605 | STORE ANSWER CODE |
| . | C1337 | | | RPL Y+1•L(YESIN) | 01310 | 36010 01273 | |
| . | C1340 | | | EXIT | 01311 | 61010 01273 | NORMAL EXIT |
| . | C1341 | YESO2 | | ENT A•1•SKIP | U1312 | 11100 00001 | |
| . | C1342 | | | ENT A•0 | 01313 | 11000 00000 | |
| . | C1343 | | | JP YESO1 | 01314 | 61000 01307 | |
| . | C1344 | YESO3 | | BSK B7•BUFLMT | 01315 | 71700 00453 | |
| . | C1345 | | | JP YESOO | 01316 | 61000 01275 | |
| . | C1346 | | | ENT A•20 | 01317 | 11000 00020 | |
| . | C1347 | | | EXIT | 01320 | 61010 01273 | |
| . | C135C | FLOATIN | | ENTRY | 01321 | 61000 00000 | |
| . | C1351 | | | RJP FXPREPEN | 01322 | 65000 01341 | |
| . | C1352 | | | JP FLOATIN1 | 01323 | 61000 01325 | |
| . | C1353 | | | RJP CINFLT | 01324 | 65000 03275 | |
| . | C1354 | FLOATIN1 | | ENT A•35•SKIP | 01325 | 11100 00035 | |
| . | C1355 | | | RPL Y+1•L(FLOATIN) | 01326 | 36010 01321 | |
| . | C1356 | | | EXIT | 01327 | 61010 01321 | |
| . | C1357 | FIXIN | | ENTRY | 01330 | 61000 00000 | |
| . | C1360 | | | STR A•L(FIXIN1) | 01331 | 15010 01335 | |
| . | C1361 | | | RJP FXPREPEN | 01332 | 65000 01341 | |
| . | C1362 | | | JP FIXIN2 | 01333 | 61000 01336 | |
| . | C1363 | | | RJP CINFIX | 01334 | 65000 031C0 | |
| . | C1364 | FIXIN1 | | U-TAG INTEGER•NIL | 01335 | 04605 000C0 | |

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CARDS    L1 (O LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1365 F(X(N2        ENT  A•36•SK(P                    01336  11100 00036
   .     C1366               RPL  Y+1•L(FIX(N)                 01337  36010 01330
   .     C1367               EX(T                              01340  61010 01330
   .     C1370 FXPREPEN      ENTRY                             01341  61000 00000
   .     C1371               CL   W(EXPSIGN)                   01342  16030 04620
   .     C1372               CL   W(S(GN)                      01343  16030 04607
   .     C1373               CLEAR     5•(0INTEGER             01344  70100 00005
                                                               01345  16030 04613
   .     C1374               STR  85•L(FX85STOR)               01346  16510 01413
   .     C1375               STR  84•L(FX84STOR)               01347  16410 01412
   .     C1376               ENT  84•77776                     01350  12400 77776
   .     C1377               ENT  85•100                       01351  12500 00012  AND COUNTERS
   .     C14C0               ENT  Q•61000                      01352  10000 61000
   .     C1401               STR  Q•U(FXPER1)                  01353  14020 01445
   .     C1402               STR  Q•U(FXO(GF)                  01354  14020 01471
   .     C14C3               STR  Q•U(FXSIGN)                  01355  14020 01536
   .     C14C4               STR  Q•U(FXS(GN2)                 01356  14020 01547
   .     C14C5               STR  Q•U(FXPER)                   01357  14020 01443
   .     C14C6               STR  Q•U(FXSIGN1)                 01360  14020 01540
   .     C14C7               STR  Q•U(FXE2)                    01361  14020 01522
   .     C1410               ENT  Q•12000                      01362  10000 12000
   .     C1411               STR  Q•U(FXOIG1)                  01363  14020 01454
   .     C1412               CL   B6•                          01364  12600 00000
   .     C1413               CL   B7•                          01365  12700 00000
   .     C1414 FX1           BSK  B4•20                        01366  71400 00020
   .     C1415               ENT  A•W(BUFFER+B4)•SK(P           01367  11134 04743  BRING CHAR FROM BUFFER TO A
   .     C1416               JP   FXERR                        01370  61000 01412
   .     C1417               ENT  Q•X(77777)                   01371  10040 77777
   .     C1420               COM  MASK•05•ANOT                 01372  43500 00005  COMPARE CHAR TO A BLANK
   .     C1421               JP   FX1                          01373  61000 01366  CHAR = BLANK
   .     C1422               COM  MASK•04•ANOT                 01374  43500 00004  COMPARE CHAR TO A CAR RET
   .     C1423               JP   FXCR                         01375  61000 01415  CHAR = CR
   .     C1424               COM  MASK•75•ANOT                 01376  43500 00075  COMPARE CHAR TO A PERIOD
   .     C1425               JP   FXPER                        01377  61000 01443  CHAR=PERIOD
   .     C1426               COM  A•60•YLESS                   01400  04600 00060  IS 60 LESS THAN OR = TO CHAR

   .     C1427               JP   FX2                          01401  61000 01404  CHAR NOT DIGIT
   .     C1430               COM  A•72•YLESS                   01402  04600 00072  IS 72 LESS THAN OR = TO CHAR

   .     C1431               JP   FXO(G                        01403  61000 01453  CHAR = DIGIT
   .     C1432 FX2           COM  MASK•12•ANOT                 01404  43500 00012  COMPARE CHAR TO AN E
   .     C1433               JP   FXE                          01405  61000 01520  CHAR = E
   .     C1434               COM  MASK•41•ANOT                 01406  43500 00041  COMPARE CHAR TO -
   .     C1435               JP   FXS(GN                       01407  61000 01536  CHAR = -
   .     C1436               COM  MASK•42•ANOT                 01410  43500 00042  COMPARE CHAR TO +
   .     C1437               JP   FXS(GN                       01411  61000 01536  CHAR=+
   .     C1440 FX84STOR      ENT  84•NIL                       01412  12400 00000
   .     C1441 FX85STOR      ENT  85•NIL                       01413  12500 00000
   .     C1442               EXIT                              01414  61010 01341
   .     C1443 FXERR         EQUALS    FX84STOR
   .     C1444 FXCR          ENT  A•85                         01415  11005 00000  IS DIGIT CNI = 10
   .     C1445               SUB  A•12•ANOT                    01416  21500 00012
   .     C1446               JP   FXERR                        01417  61000 01412  YES= ERROR
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| CARDS | LI ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C1447 | FXCR1 | ENT | A•W(IOFRACTION+B7)•ANOT | 01420 | 11537 04615 | |
| . | C145C | | JP | FXCR2 | 01421 | 61000 01425 | |
| . | C1451 | | JP | FXCR2•ANEG | 01422 | 60700 01425 | |
| . | C1452 | FXCR3 | LSH | A•6•ANEG | 01423 | 06700 0C0C6 | |
| . | C1453 | | JP | FXCR3 | 01424 | 61000 01423 | |
| . | C1454 | FXCR2 | STR | A•W(IOFRACTION+B7) | 01425 | 15037 04615 | |
| . | C1455 | | BSK | B7•1 | 01426 | 71700 0C0C1 | |
| . | C1456 | | JP | FXCR1 | 01427 | 61000 01420 | |
| . | C1457 | FXCR4 | ENT | A•W(SIXTIES) | 01430 | 11030 01557 | |
| . | C1460 | | RSE | SET•W(IOINTEGER) | 01431 | 54030 04613 | |
| . | C1461 | | ENT | A•W(SIXTIES) | 01432 | 11030 01557 | |
| . | C1462 | | RSE | SET•W(IOINTEGER+1) | 01433 | 54030 04614 | |
| . | C1463 | FXCRF7 | ENT | A•W(SIXTIES) | 01434 | 11030 01557 | |
| . | C1464 | | RSE | SET•W(IOFRACTION) | 01435 | 54030 04615 | |
| . | C1465 | | ENT | A•W(SIXTIES) | 01436 | 11030 01557 | |
| . | C1466 | | RSE | SET•W(IOFRACTION+1) | 01437 | 54030 04616 | |
| . | C1467 | | RPL | Y+1•L(FXPREPEN) | 01440 | 36010 01341 | NORMAL EXIT |
| . | C1470 | | STR | B6•W(NOINTS) | 01441 | 16630 04610 | |
| . | C1471 | | JP | FXB4STOR | 01442 | 61000 01412 | |
| . | C1472 | FXPER | JP | FXPER1 | 01443 | 61000 01445 | PERIOD SW E |
| . | C1473 | | JP | FXERR | 01444 | 61000 01412 | SW E |
| . | C1474 | FXPER1 | JP | FXPER2 | 01445 | 61000 01447 | SW D |
| . | C1475 | | JP | FXERR | 01446 | 61000 01412 | |
| . | C1476 | FXPER2 | ENT | Q•12000 | 01447 | 10000 12000 | |
| . | C1477 | | STR | Q•U(FXPER1) | 01450 | 14020 01445 | |
| . | C15C0 | | STR | Q•U(FXDIGF) | 01451 | 14020 01471 | |
| . | C15C1 | | JP | FX1 | 01452 | 61000 01366 | |
| . | C15C2 | FXDIG | ENT | Q•A | 01453 | 10070 000C0 | SHIFTS OIGITS TO Q |
| . | C15C3 | FXDIG1 | JP | FXDIG2 | 01454 | 61000 01457 | |
| . | C15C4 | | BJP | B5•FXDIGF | 01455 | 72500 01471 | IF OIGIT CNT FOR GREATER THAN 10 |
| . | C15C5 | | JP | FXERR | 01456 | 61000 01412 | IF EXCEEOS AN ERROR |
| . | C15C6 | FXDIG2 | LSH | Q•24D | 01457 | 05000 0C030 | |
| . | C15C7 | | ENT | A•W(IOEXPONENT)•APOS | 01460 | 11630 04617 | |
| . | C1510 | | JP | FXERR | 01461 | 61000 01412 | EXPONENT FREATER THAN 5 OIGITS ERR |
| . | C1511 | | LSH | AQ•6 | 01462 | 07000 00006 | |
| . | C1512 | | STR | A•W(IOEXPONENT) | 01463 | 15030 04617 | |
| . | C1513 | | ENT | A•60 | 01464 | I1000 00060 | |
| . | C1514 | | RSE | SET•W(IOEXPONENT) | 01465 | 54030 04617 | |
| . | C1515 | | COM | A•6561•YLESS | 01466 | U4600 06561 | EQUAL TO A LESS THAN 40 |
| . | C1516 | | JP | FX1 | 01467 | 61000 01366 | YES |
| . | C1517 | | JP | FXERR | 01470 | 61000 01412 | NO |
| . | C1520 | FXDIGF | JP | FXDIGI | 01471 | 61000 015C4 | SET |
| . | C1521 | | LSH | Q•24D | 01472 | 05000 00030 | DIGIT IN LEFT OF Q |
| . | C1522 | | ENT | A•W(IOFRACTION)•APOS | 01473 | 11630 04615 | DIGIT SI FRACTION |
| . | C1523 | | JP | FXDIGF1 | 01474 | 61000 015C0 | 5 OIGITS YES |
| . | C1524 | | LSH | AQ•6 | 01475 | 07000 00006 | NO |
| . | C1525 | | STR | A•W(IOFRACTION) | 01476 | 15030 04615 | |
| . | C1526 | | JP | FX1 | 01477 | 61000 01366 | |
| . | C1527 | FXDIGF1 | ENT | A•W(IOFRACTION+1) | 01500 | 11030 04616 | |
| . | C1530 | | LSH | AQ•6 | 01501 | 07000 00006 | STORAGE RIGHT ORIENTEO |
| . | C1531 | | STR | A•W(IOFRACTION+1) | 01502 | 15030 04616 | |

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CARDS    LI IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1532                  JP   FX1                        01503  61000 01366
   .     C1533 FXDIG1           ENT  B6•1+B6                    01504  12606 00001  DIGIT AN INTEGER
   .     C1534                  LSH  Q•240                      01505  05000 00030  DIGIT IN LEFT OF Q
   .     C1535                  STR  Q•W(QSTORE)                01506  14030 04565
   .     C1536                  ENT  A•W(10INTEGER)             01507  11030 04613
   .     C1537                  ENT  Q•W(10INTEGER+1)           01510  10030 04614
   .     C1540                  LSH  AQ•6                       01511  07000 00006
   .     C1541                  STR  A•W(10INTEGER)             01512  15030 04613
   .     C1542                  ENT  A•W(QSTORE)                01513  11030 04565
   .     C1543                  RSH  Q•6                        01514  01000 00006  RIGHT ORIENT THE INTEGER
   .     C1544                  LSH  AQ•6                       01515  07000 00006
   .     C1545                  STR  Q•W(10INTEGER+1)           01516  14030 04614
   .     C1546                  JP   FX1                        01517  61000 01366
   .     C1547 FXE              ENT  Q•12000                    01520  10000 12000  SET O TO B
   .     C1550                  STR  Q•U(FXPER1)                01521  14020 01445
   .     C1551 FXE2             JP   FXE1                       01522  61000 01524
   .     C1552                  JP   FXERR                      01523  61000 01412
   .     C1553 FXE1             ENT  Q•12000                    01524  10000 12000  SET E SWITCHES TO B
   .     C1554                  STR  Q•U(FXPER)                 01525  14020 01443
   .     C1555                  STR  Q•U(FXE2)                  01526  14020 01522
   .     C1556                  STR  Q•U(FXSIGN1)               01527  14020 01540
   .     C1557                  ENT  Q•61000                    01530  10000 61000
   .     C1560                  STR  Q•U(FXDIG1)                01531  14020 01454
   .     C1561                  ENT  A•B5                       01532  11005 00000  TEST DIG CNT = 0
   .     C1562                  SUB  A•12•AZERO                 01533  21400 00012
   .     C1563                  JP   FX1                        01534  61000 01366  NO
   .     C1564                  JP   FXERR                      01535  61000 01412  YES
   .     C1565 FXSIGN           JP   FXSIGN1                    01536  61000 01540  SW ALPHA
   .     C1566                  JP   FXERR                      01537  61000 01412
   .     C1567 FXSIGN1          JP   FXSIGN2                    01540  61000 01547  SW E 3PRIME
   .     C1570                  COM  MASK•42•ANOT               01541  43500 00042  TEST FOR +
   .     C1571                  CL   A•                         01542  11000 00000  YES
   .     C1572                  STR  A•W(EXPSIGN)               01543  15030 04620
   .     C1573                  ENT  Q•12000                    01544  10000 12000  SET ALPHA TO B
   .     C1574                  STR  Q•U(FXSIGN)                01545  14020 01536
   .     C1575                  JP   FX1                        01546  61000 01366
   .     C1576 FXSIGN2          JP   FXSIGN3                    01547  61000 01551
   .     C1577                  JP   FXERR                      01550  61000 01412
   .     C1600 FXSIGN3          COM  MASK•42•ANOT               01551  43500 00042  TEST FOR +
   .     C1601                  CL   A•                         01552  11000 00000  YES
   .     C1602                  STR  A•W(SIGN)                  01553  15030 04607  NO
   .     C1603                  ENT  Q•12000                    01554  10000 12000
   .     C1604                  STR  Q•U(FXSIGN2)               01555  14020 01547
   .     C1605                  JP   FX1                        01556  61000 01366
   .     C1606 SIXTIES          60606      0606U                01557  60606 06060
   .     C1607 NUMSTR           ENTRY                           01560  61000 00000
   .     C1610                  ENT  B7•L(NUMSTR)               01561  12710 01560
   .     C1611                  ENT  B7•L(B7)                   01562  12717 00000  LOAD B7 WITH STORAGE LOCATION

   .     C1612                  RPL  Y+1•L(NUMSTR)              01563  36010 01560  ADJUST EXIT LOCATION
   .     C1613                  ENT  A•W(INTEGER)               01564  11030 04605  STURE CONVERTED NUMBER
   .     C1614                  STR  A•W(B7)                    01565  15037 00000  INTO DESIRED LOCATION
   .     C1615                  EXIT                            01566  61010 01560
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CARDS    L1 ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1616 STRING        ENTRY                              01567  61000 00000
   .     C1617               ENT  B7•L(STRING)                  01570  12710 01567
   .     C1620               ENT  B7•L(B7)                      01571  12717 00000  LOAD B7 WITH STORAGE LOCATION

   .     C1621               RPL  Y+1•L(STRING)                 01572  36010 01567  ADJUST EXIT LOCATION
   .     C1622               STR  B5•L(STRB5STOR)               01573  16510 01615  SAVE B5
   .     C1623               CL   B6•                           01574  12600 00000
   .     C1624 STRINGO1      ENT  A•W(SPACES)                   01575  11030 03077
   .     C1625               ENT  B5•4                          01576  12500 00004
   .     C1626 STRINGO2      ENT  Q•W(BUFFER+B6)                01577  10036 04743  BRING NEXT CHAR FROM BUFFER
   .     C1627               LSH  Q•240                         01600  05000 00030
   .     C1630               LSH  AQ•6                          01601  07000 00006  PACK IT INTO A
   .     C1631               BJP  B5•STRINGO4                   01602  72500 01607
   .     C1632 STRINGO3      STR  A•W(B7)                       01603  15037 00000  WHEN A FILLLO, STORE INTO STOR
                                                                                    AGE
   .     C1633               BSK  B7•70707                      01604  71700 70707  LOCATION, THEN BUMP LOC BY 1
   .     C1634               ENT  A•W(SPACES)                   01605  11030 03077
   .     C1635               ENT  B5•4                          01606  12500 00004
   .     C1636 STRINGO4      BSK  B6•W(BUFSLOT)                 01607  71630 04575
   .     C1637               JP   STRINGO2                      01610  61000 01577
   .     C1640               ENT  Q•W(SPACES)                   01611  10030 03077
   .     C1641 STRINGO5      LSH  AQ•6                          01612  07000 00006
   .     C1642               BJP  B5•STRINGO5                   01613  72500 01612
   .     C1643               STR  A•W(B7)                       01614  15037 00000
   .     C1644 STRB5STOR     ENT  B5•NIL                        01615  12500 00000
   .     C1645               EXIT                               01616  61010 01567
   .     C1646 FLTSTR        ENTRY                              01617  61000 00000
   .     C1647               ENT  B7•L(FLTSTR)                  01620  12710 01617
   .     C1650               ENT  B7•L(B7)                      01621  12717 00000  LOAD B7 WITH STORAGE LOCATION

   .     C1651               RPL  Y+1•L(FLTSTR)                 01622  36010 01617  ADJUST EXIT LOCATION
   .     C1652               ENT  A•W(EXPONENT)                 01623  11030 04611
   .     C1653               STR  A•W(B7)                       01624  15037 00000  STORE 1ST OF 2 FLT PT WORDS
   .     C1654               ENT  A•W(FPFRACTION)               01625  11030 04612
   .     C1655               STR  A•W(1+B7)                     01626  15037 00001  STORE 2ND FLT PT WORD
   .     C1656               EXIT                               01627  61010 01617
   .     C1657 NOLMT         ENTRY                              01630  61000 00000
   .     C1660               RPL  Y+1•L(NOLMT)                  01631  36010 01630
   .     C1661               ENT  A•SPECERR                     01632  11000 00000
   .     C1662               EXIT                               01633  61010 01630
   .     C1663 OECLMT        ENTRY                              01634  61000 00000
   .     C1664               ENT  B7•L(IOECLMT)                 01635  12710 01634
   .     C1665               RPL  Y+1•L(IOECLMT)                01636  36010 01634
   .     C1666               RJP  NUMLMT                        01637  65000 01733
   .     C1667               JP   OECLO1                        01640  61000 01643
   .     C1670               RPL  Y+1•L(IOECLMT)                01641  36010 01634
   .     C1671               EXIT                               01642  61010 01634
   .     C1672 OECLO1        STR  A•L(IOECLO2)                  01643  15010 01651
   .     C1673               STR  Q•W(INTEGER)                  01644  14030 04605
   .     C1674               RJP  BINOECINT                     01645  65000 02514
   .     C1675               RJP  SUPZRO                        01646  65000 02726
   .     C1676               U-TAG     IOINTEGER•2              01647  04613 00002
   .     C1677               RJP  LMTSTR1                       01650  65000 02030
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CARDS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C17CC DECLC2        ENT  A•NIL                              01651  11000 00CC0
   .     C1701               EXIT                                    01652  61010 01634
   .     C17C2 HCCTLMT       ENTRY                                   01653  61000 00000
   .     C17C3               ENT  B7•L(HOCTLMT)                      01654  12710 01653
   .     C17C4               RPL  Y+1•L(HOCTLMT)                     01655  36010 01653
   .     C17C5               RJP  NUMLMT                             01656  65000 01733
   .     C17C6               JP   HOCTLO1                            01657  61000 01662
   .     C17C7               RPL  Y+1•L(HOCTLMT)                     01660  36010 01653
   .     C1710               EXIT                                    01661  61010 01653
   .     C1711 HCCTLC1       STR  A•L(HOCTLO2)                       01662  15010 01666
   .     C1712               STR  Q•W(INTEGER)                       01663  14030 04605
   .     C1713               RJP  BINOCTFLO                          01664  65000 02573
   .     C1714               RJP  LMTSTR1                            01665  65000 02030
   .     C1715 HCCTLC2       ENT  A•NIL                              01666  11000 00CC0
   .     C1716               EXIT                                    01667  61010 01653
   .     C1717 FIXLMT        ENTRY                                   01670  61000 00000
   .     C1720               ENT  B7•L(FIXLMT)                       01671  12710 01670
   .     C1721               RPL  Y+1•L(FIXLMT)                      01672  36010 01670
   .     C1722               RJP  NUMLMT                             01673  65000 01733
   .     C1723               JP   FIXLO1                             01674  61000 01677
   .     C1724               RPL  Y+1•L(FIXLMT)                      01675  36010 01670
   .     C1725               EXIT                                    01676  61010 01670
   .     C1726 FIXLC1        STR  A•L(FIXLO2)                        01677  15010 01710
   .     C1727               STR  Q•W(INTEGER)                       01700  14030 04605
   .     C1730               PUT  L(FIX1N1)•L(FIXLO15)               01701  10010 01335  MOVE GAMMA TO CALLING SEQUENCE
                                                                     01702  14010 017C6
   .     C1731               PUT  9D•W(BETA)                         01703  10000 00011
                                                                     01704  14030 046C4
   .     C1732               RJP  COFFIX                             01705  65000 03240
   .     C1733 FIXLC15       U-TAG     INTEGER•NIL                   01706  04605 000C0
   .     C1734               RJP  LMTSTR2                            01707  65000 02044
   .     C1735 FIXLC2        ENT  A•NIL                              01710  11000 000C0
   .     C1736               EXIT                                    01711  61010 01670
   .     C1737 FLTLMT        ENTRY                                   01712  61000 000C0
   .     C1740               ENT  B7•L(FLTLMT)                       01713  12710 01712
   .     C1741               RPL  Y+1•L(FLTLMT)                      01714  36010 01712
   .     C1742               RJP  FLTNUMLMT                          01715  65000 01751
   .     C1743               JP   FLTLO1                             01716  61000 01721
   .     C1744               RPL  Y+1•L(FLTLMT)                      01717  36010 01712
   .     C1745               EXIT                                    01720  61010 01712
   .     C1746 FLTLC1        STR  A•L(FLTLO2)                        01721  15010 01731
   .     C1747               STR  Q•U(FLTO3)                         01722  14020 01726
   .     C1750               PUT  90•W(BETA)                         01723  10000 00011
                                                                     01724  14030 04604
   .     C1751               RJP  COTFLT                             01725  65000 03441
   .     C1752 FLTO3         C    0                                  01726  00000 000C0
   .     C1753               JP   FLTLO2+1                           01727  61000 01732
   .     C1754               RJP  LMTSTR3                            01730  65000 02057
   .     C1755 FLTLC2        ENT  A•NIL                              01731  11000 000C0
   .     C1756               EXIT                                    01732  61010 01712
   .     C1757 NLMLMT        ENTRY                                   01733  61000 00000
   .     C1760               ENT  B7•L(B7)                           01734  12717 00000
   .     C1761               ENT  Q•W(B7)                            01735  10037 000C0
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CAROS    L1 IO LABEL       TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C1762               SUB  Q•1                            01736  27000 0C0C1
   .     C1763               COM  Q•W(INTEGER)•YLESS              01737  04230 046C5
   .     C1764               JP   NUMLMT01                       01740  61000 01744
   .     C1765               ADD  Q•1                            01741  26000 000C1
   .     C1766               ENT  A•21                           01742  11000 0C021  MIN LIMIT CODE
   .     C1767               EXIT                                01743  61010 01733
   .     C1770 NUMLMTC1      ENT  Q•W(1+B7)                      01744  10037 0C0C1
   .     C1771               COM  Q•W(INTEGER)•YLESS              01745  04230 046C5
   .     C1772               ENT  A•20•SKIP                      01746  11100 0C020  MAX LIMIT CODE
   .     C1773               RPL  Y+1•L(NUMLMT)                  01747  36010 01733
   .     C1774               EXIT                                01750  61010 01733
   .     C1775 FLTNUMLMT     ENTRY                               01751  61000 00CC0
   .     C1776               ENT  Q•X(77777)                     01752  10040 77777
   .     C1777               ENT  B7•L(B7)                       01753  12717 00000  LOC OF FIRST LIMIT WORD TO B7

   .     C2CC0               ENT  A•W(1+B7)•APOS                 01754  11637 0CCC1  TEST SIGN OF LOWER LIMIT
   .     C2CC1               JP   FLTLOLMT2                      01755  61000 01777  NEG
   .     C2CC2               ENT  A•W(FPFRACTION)•APOS           01756  11630 04612  POS - TEST SIGN OF FRAC
   .     C2CC3               JP   FLTNUMEL                       01757  61000 02023  NEG - LOWER LIMIT ERROR
   .     C2CC4 FLTLCLMT1     ENT  A•W(B7)                        01760  11037 000C0  POS - IS EXP GRTR THAN LLEXP
   .     C2CC5               COM  A•W(EXPONENT)•YLESS            01761  04630 04611
   .     C2CC6               JP   FLTUPLMT                       01762  61000 020C1  YES - NUMBER IS GOOD
   .     C2CC7               COM  MASK•W(EXPONENT)•AZERO         01763  43430 04611  NO - IS IT EQUAL
   .     C2C10               JP   FLTNUMEL                       01764  61000 02023  NO - LOWER LIMIT ERROR
   .     C2C11               ENT  A•W(FPFRACTION)                01765  11030 04612  YES - IS FRAC LESS THAN LLFRAC

   .     C2C12               COM  A•W(1+B7)•YLESS                01766  04637 00001
   .     C2C13               JP   FLTNUMEL                       01767  61000 02023  YES - LOWER LIMIT ERROR
   .     C2C14               JP   FLTUPLMT                       01770  61000 020C1  NO - GOOD NUMBER
   .     C2C15 FLTLCLMT3     ENT  A•W(B7)                        01771  11037 000C0  IF BOTH NEG
   .     C2C16               COM  A•W(EXPONENT)•YLESS            01772  04630 04611
   .     C2C17               JP   FLTNUMEL                       01773  61000 02023
   .     C2C20               COM  MASK•W(EXPONENT)•AZERO         01774  43430 04611
   .     C2C21               JP   FLTUPLMT                       01775  61000 020C1
   .     C2C22               JP   FLTLOLMT1+5                    01776  61000 01765
   .     C2C23 FLTLCLMT2     ENT  A•W(FPFRACTION)•APOS           01777  11630 04612  IF LL IS NEG TEST SIGN OF
   .     C2C24               JP   FLTLOLMT3                      02000  61000 01771
   .     C2C25 FLTUPLM1      ENT  A•W(3+B7)•APOS                 02001  11637 000C3  TEST SIGN OF UPPER LIMIT
   .     C2C26               JP   FLTUP2                         02002  61000 02016  NEG
   .     C2027               ENT  A•W(FPFRACTION)•APOS           02003  11630 04612  POS - TEST SIGN OF FRAC
   .     C2030               JP   FLTNUMGX                       02004  61000 02026  NEG - GOOD NUMBER
   .     C2031 FLTUP1        ENT  A•W(2+B7)                      02005  11037 000C2  POS - IS EXP GRTR THAN ULEXP
   .     C2C32               COM  A•W(EXPONENT)•YLESS            02006  04630 04611
   .     C2C33               JP   FLTNUMEU                       02007  61000 02020  YES - UPPER LIMIT ERROR
   .     C2C34               COM  MASK•W(EXPONENT)•AZERO         02010  43430 04611  NO - IS IT EQUAL
   .     C2C35               JP   FLTNUMGX                       02011  61000 02026  NO - THEREFORE LESS AND GOOD

   .     C2C36               ENT  A•W(3+B7)                      02012  11037 0C0C3  YES - TEST FRACTIONS
   .     C2C37               COM  A•W(FPFRACTION)•YLESS          02013  04630 04612
   .     C2C40               JP   FLTNUMEU                       02014  61000 02020  IF FRAC GRTR THAN UL FRAC - ER
                                                                                       ROR
   .     C2C41               JP   FLTNUMGX                       02015  61000 02026  OTHERWISE - GOOD NUMBER
   .     C2C42 FLTUP2        ENT  A•W(FPFRACTION)•APOS           02016  11630 04612  IF UL IS NEG, TEST SIGN OF FRA
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CARDS    LI IO LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

                                                                                           C
    .    C2C43                JP   FLTUP1                              02017  61000 020C5  IF NEG, TEST IS SAME
    .    C2C44 FLTNUMFL       ENT  A*20                                02020  11000 00020  UPPER LIMIT EXCEEDED CODE 20 T
                                                                                           O A REG
    .    C2C45                ENT  C*2+B7                              02021  10007 0C0C2
    .    C2C46                EXIT                                     02022  61010 01751  ERROR EXIT
    .    C2C47 FLTNUMFL       ENT  A*21                                02023  11000 0C021  LOWER LIMIT NOT MET CODE 21 TO
                                                                                            A REG
    .    C2C5C                ENT  C*B7                                02024  10007 0CCC0
    .    C2C51                EXIT                                     02025  61010 01751  ERROR EXIT
    .    C2C52 FLTNUMGX       RPL  Y+1*LIFLTNUMLMTI                    02026  36010 01751  GOOD EXIT
    .    C2C53                EXIT                                     02027  61010 01751
    .    C2C54 LMTSTR1        ENTRY                                    02030  61000 000C0
    .    C2C55                CLEAR     8D*LIMIT                       02031  70100 00010
                                                                       02032  16030 041C4
    .    C2C56                ENT  A*W(SIGNI*ANOT                      02033  11530 046C7
    .    C2C57                ENT  A*0*SKIP                            02034  11100 000C0
    .    C2C6C                ENT  A*41                                02035  11000 0C041
    .    C2C61                STR  A*WILIMITI                          02036  15030 041C4
    .    C2C62                PUT  WI10INTEGERI*WILIMIT+1I             02037  10030 04613
                                                                       02040  14030 041C5
    .    C2C63                PUT  WI10INTEGER+1I*WILIMIT+2I           02041  10030 04614
                                                                       02042  14030 041C6
    .    C2C64                EXII                                     02043  61010 02030
    .    C2C65 LMTSTR2        ENTRY                                    02044  61000 0C0C0
    .    C2C66                RJP  LMTSTR1                             02045  65000 02030
    .    C2C67                ENT  A*W(BETA)*ANOT                      02046  11530 046C4
    .    C2C7C                EXIT                                     02047  61010 02044
    .    C2C71                PUT  75*WILIMIT+3I                       02050  10000 00075
                                                                       02051  14030 041C7
    .    C2C72                PUT  WI10FRACTION)*W(LIMIT+4)            02052  10030 04615
                                                                       02053  14030 04110
    .    C2C73                PUT  WI10FRACTION+1I*WILIMIT+5I          02054  10030 04616
                                                                       02055  14030 04111
    .    C2C74                EXIT                                     02056  61010 02044
    .    C2C75 LMTSTR3        ENTRY                                    02057  61000 000C0
    .    C2C76                RJP  LMTSTR2                             02060  65000 02044
    .    C2C77                ENT  A*LI10EXPONENTI*ANOT                02061  11510 04617
    .    C21C0                EXIT                                     02062  6101C 02057
    .    C21C1                ENT  A*W(EXPSIGNI*ANOT                   02063  11530 04620
    .    C21C2                ENT  A*51242*SKIP                        02064  11100 51242
    .    C21C3                ENT  A*51241                             02065  11000 51241
    .    C21C4                STR  A*WILIMIT+6I                        02066  1503C 04112
    .    C21C5                PUT  L(10EXPONENT)*WILIMIT+7)            02067  1001C 04617
                                                                       02070  14030 04113
    .    C21C6                EXIT                                     02071  61010 02057
    .    C21C7 SPACE          EQUALS    05
    .    C211C MINUS          EQUALS    41
    .    C2111 PLUS           EQUALS    42
    .    C2112 PLTFORMINT     ENTRY                                    02072  61000 00CC0
    .    C2113                ENT  B7*LIPUTFORMINTI                    02073  12710 02072
    .    C2114                RPL  Y+1*LIPUTFORMINTI                   02074  36010 02072
    .    C2115 PLTO1          ENT  A*WIB7)                             02075  11037 00CC0  GET LOCATION OF OUT SPEC TABLE
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| CARDS | LI | IO | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| . | C2116 | | | STR | A•L(PUTO2) | 02076 | 15010 | 02101 | | |
| . | C2117 | | | ADD | A•1 | 02077 | 20000 | 00001 | | |
| . | C2120 | | | STR | A•L(PUTO4) | 02100 | 15010 | 02122 | | |
| . | C2121 | | PUTO2 | ENT | Q•W(00000) | 02101 | 10030 | 00000 | | GET FORMAT ENTRY WORD |
| . | C2122 | | | CL | A• | 02102 | 11000 | 00000 | | |
| . | C2123 | | | LSH | AQ•6 | 02103 | 07000 | 00006 | | ISOLATE FORMAT CODE |
| . | C2124 | | | STR | Q•W(PUTS1) | 02104 | 14030 | 04563 | | |
| . | C2125 | | | ENT | Q•77 | 02105 | 10000 | 00077 | | |
| . | C2126 | | | ENT | B7•PUTCODMAX | 02106 | 12700 | 00004 | | |
| . | C2127 | | PUTO25 | COM | MASK•L(PUTCODTBL+B7)•ANOT | 02107 | 43517 | 02176 | | SEARCH FOR CODE |
| . | C2130 | | | JP | PUTO3 | 02110 | 61000 | 02114 | | |
| . | C2131 | | | BJP | B7•PUTO25 | 02111 | 72700 | 02107 | | |
| . | C2132 | | PUTERRX | ENT | A•SPECERR | 02112 | 11000 | 00000 | | IF CODE NOT FOUND |
| . | C2133 | | | EXIT | | 02113 | 61010 | 02072 | | ERROR EXIT |
| . | C2134 | | PUTO3 | ENT | A•U(PUTCODTBL+B7) | 02114 | 11027 | 02176 | | |
| . | C2135 | | | STR | A•L(PUTO5) | 02115 | 15010 | 02126 | | |
| . | C2136 | | | COM | A•C2000•YLESS | 02116 | 04600 | 02000 | | |
| . | C2137 | | | JP | PUTO8 | 02117 | 61000 | 02164 | | |
| . | C2140 | | | COM | A•03000•YLESS | 02120 | 04600 | 03000 | | |
| . | C2141 | | | JP | PUTO7 | 02121 | 61000 | 02145 | | |
| . | C2142 | | PUTO4 | ENT | A•W(00000) | 02122 | 11030 | 00000 | | GET NEXT WORD FROM FORMAT STRING |
| . | C2143 | | | STR | A•U(PUTO5I | 02123 | 15020 | 02126 | | STORE LOC OF OUTPUT IN CALLING SEQ |
| . | C2144 | | | STR | A•W(PUTS2) | 02124 | 15030 | 04564 | | STORE POSSIBLE LOC OF NEXT OUTPUT SPEC |
| . | C2145 | | | RJP | PUTPREP | 02125 | 65000 | 02235 | | |
| . | C2146 | | PUTO5 | C | 0 | 02126 | 00000 | 00000 | | |
| . | C2147 | | | JP | PUTERRX | 02127 | 61000 | 02112 | | ERROR RETURN |
| . | C2150 | | | ENT | A•U(PUTS2) | 02130 | 11020 | 04564 | | POSSIBLE LOC OF NEXT OUT SPEC |
| . | C2151 | | | RSH | AQ•1•AZERO | 02131 | 03400 | 00001 | | |
| . | C2152 | | | JP | PUTO6 | 02132 | 61000 | 02136 | | |
| . | C2153 | | | ENT | A•L(PUTO2) | 02133 | 11010 | 02101 | | |
| . | C2154 | | | ADD | A•2 | 02134 | 20000 | 00002 | | |
| . | C2155 | | | JP | PUTO1+1 | 02135 | 61000 | 02076 | | |
| . | C2156 | | PUTO6 | ENT | A•77776 | 02136 | 11000 | 77776 | | |
| . | C2157 | | | ENT | Q•77776 | 02137 | 10000 | 77776 | | |
| . | C2160 | | | COM | MASK•U(PUTS2I•AZERO | 02140 | 43420 | 04564 | | |
| . | C2161 | | | ENT | A•U(PUTS2)•SKIP | 02141 | 11120 | 04564 | | |
| . | C2162 | | | RPL | Y+1•L(PUTFORMINT)•SKIP | 02142 | 36110 | 02072 | | |
| . | C2163 | | | JP | PUTO1+1 | 02143 | 61000 | 02076 | | |
| . | C2164 | | | EXIT | | 02144 | 61010 | 02072 | | |
| . | C2165 | | PUTO7 | ENT | Q•W(PUTS1) | 02145 | 10030 | 04563 | | |
| . | C2166 | | | ENT | A•W(CHARDI | 02146 | 11030 | 02175 | | |
| . | C2167 | | | COM | MASK•W(M6L)•ANOT | 02147 | 43530 | 03074 | | |
| . | C2170 | | | JP | PUTO71 | 02150 | 61000 | 02155 | | |
| . | C2171 | | | LSH | AQ•2 | 02151 | 07000 | 00002 | | |
| . | C2172 | | | CL | A• | 02152 | 11000 | 00000 | | |
| . | C2173 | | | LSH | AQ•4 | 02153 | 07000 | 00004 | | BETA |
| . | C2174 | | | RSE | SET•L(PUTO5I | 02154 | 54010 | 02126 | | |
| . | C2175 | | PUTO71 | LSH | AQ•6 | 02155 | 07000 | 00006 | | |
| . | C2176 | | | RJP | GREEKCONV | 02156 | 65000 | 02203 | | CONVERT GAMMA TO BINARY |

| CARDS | LI IO LABEL | TA STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|
| . | C2177 | JP PUTERRX | 02157 | 61000 02112 | |
| . | C22C0 | ENT A•W(INTEGER) | 02160 | 11030 046C5 | |
| . | C22C1 | LSH A•4 | 02161 | 06000 0C0C4 | |
| . | C22C2 | RSE SET•W(PUTOS) | 02162 | 54030 02126 | GAMMA TO CALLING SEQUENCE |
| . | C22C3 | JP PUT04 | 02163 | 61000 02122 | |
| . | C22C4 PLTC8 | ENT Q•W(PUTS1) | 02164 | 10030 04563 | IF FLOATING POINT, |
| . | C22C5 | ENT A•W(CHARO) | 02165 | 11030 02175 | |
| . | C22C6 | COM MASK•W(M6L)•ANOT | 02166 | 43530 03074 | |
| . | C22C7 | JP PUT04 | 02167 | 61000 02122 | |
| . | C2210 | LSH AQ•2 | 02170 | 07000 000C2 | |
| . | C2211 | CL A• | 02171 | 11000 000C0 | |
| . | C2212 | LSH AQ•4 | 02172 | 07000 0C0C4 | |
| . | C2213 | RSE SET•L(PUTOS) | 02173 | 54010 02126 | |
| . | C2214 | JP PUT04 | 02174 | 61000 02122 | |
| . | C2215 CHARC | 240CC 00000 | 02175 | 24000 000C0 | |
| . | C2216 PLTCCCMAX | EQUALS 4 | | | |
| . | C2217 PUTCCCTBL | C100C 13 | 02176 | 01000 00013 | |
| . | C222C | C200C 35 | 02177 | 02000 0C035 | |
| . | C2221 | C300C 11 | 02200 | 03000 00011 | |
| . | C2222 | C400C 24 | 02201 | 04000 00024 | |
| . | C2223 | C50CC 06 | 02202 | 05000 000C6 | |
| . | C2224 PLTLM | EQUALS 12 | | | |
| . | C2225 GREEKCONV | ENTRY | 02203 | 61000 000C0 | |
| . | C2226 | CL A• | 02204 | 11000 000C0 | |
| . | C2227 | LSH AQ•14 | 02205 | 0700C 0C014 | |
| . | C223C | SEL CP•6060 | 02206 | 51000 06060 | |
| . | C2231 | RSH AQ•6 | 02207 | 03000 000C6 | |
| . | C2232 | COM A•PUTLM•YLESS | 02210 | 04600 00012 | TEST 1ST DIGIT |
| . | C2233 | JP $+3 | 02211 | 61000 02214 | IF LESS THAN 11, GOOD |
| . | C2234 | SEL CP•44•AZERO | 02212 | 51400 00044 | IF GREATER THAN 11, TEST FOR 2 4 |
| . | C2235 | EXIT | 02213 | 61010 022C3 | IF NOT, ERROR |
| . | C2236 | STR A•W(IOINTEGER+1) | 02214 | 15030 04614 | |
| . | C2237 | CL A• | 02215 | 11000 000C0 | |
| . | C2240 | LSH AQ•6 | 02216 | 07000 000C6 | |
| . | C2241 | COM A•PUTLM•YLESS | 02217 | 04600 0C012 | TEST NEXT DIGIT |
| . | C2242 | JP $+3 | 02220 | 61000 02223 | |
| . | C2243 | SEL CP•44•AZERO | 02221 | 51400 00044 | |
| . | C2244 | JP GREO1 | 02222 | 61000 02227 | |
| . | C2245 | RSH AQ•6 | 02223 | 03000 000C6 | |
| . | C2246 | ENT A•W(IOINTEGER+1) | 02224 | 11030 04614 | |
| . | C2247 | LSH AQ•6 | 02225 | 07000 000C6 | |
| . | C2250 | STR A•W(IOINTEGER+1) | 02226 | 15030 04614 | |
| . | C2251 GREO1 | CL W(IOINTEGER) | 02227 | 16030 04613 | |
| . | C2252 | CL W(SIGN) | 02230 | 16030 046C7 | |
| . | C2253 | RJP INTBCOBIN | 02231 | 65000 02607 | |
| . | C2254 | EXIT | 02232 | 61010 022C3 | |
| . | C2255 | RPL Y+1•L(GREEKCONV) | 02233 | 36010 022C3 | |
| . | C2256 | EXIT | 02234 | 61010 022C3 | |
| . | C2257 PLTPREP | ENTRY | 02235 | 61000 000C0 | |
| . | C2260 | STR B4•L(PPB4STOR) | 02236 | 16410 025C2 | |
| . | C2261 | STR B5•L(PPB5STOR) | 02237 | 16510 025C3 | |
| . | C2262 | STR B6•L(PPB6STOR) | 02240 | 16610 025C4 | |

| CAROS | L1 IO LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|
| . | C2263 | ENT | B5•L(PUTPREP) | 02241 | 12510 02235 | |
| . | C2264 | ENT | A•U(B5) | 02242 | 11025 00000 | SEPERATE RETRIEVAL ADDRESS |
| . | C2265 | STR | A•W(PPADDR) | 02243 | 15030 04601 | AND STORE |
| . | C2266 | ENT | Q•L(B5) | 02244 | 10015 00000 | |
| . | C2267 | CL | A• | 02245 | 11000 00000 | |
| . | C2270 | LSH | AQ•21D | 02246 | 07000 00025 | SEPERATE CODE GAMMA AND BETA |
| . | C2271 | STR | A•W(CODE) | 02247 | 15030 04602 | AND STORE EACH |
| . | C2272 | CL | A• | 02250 | 11000 00000 | |
| . | C2273 | LSH | AQ•5 | 02251 | 07000 00005 | |
| . | C2274 | STR | A•W(GAMMA) | 02252 | 15030 04603 | |
| . | C2275 | LSH | Q•4 | 02253 | 05000 00004 | |
| . | C2276 | STR | Q•W(BETA) | 02254 | 14030 04604 | |
| . | C2277 | ENT | B6•L(BUFFCOUNT) | 02255 | 12610 04600 | PUT BUFFCOUNT INTO BUFFER IR |
| . | C23C0 | ENT | A•W(CODE) | 02256 | 11030 04602 | ENTER CODE AND JUMP |
| . | C23C1 | SUB | A•1•ANOT | 02257 | 21500 00001 | TO APPROPRAITE OUTPUT FORMAT |
| . | C23C2 | JP | PPA | 02260 | 61000 02273 | ROUTINE 01-PPA 02-PPB |
| . | C23C3 | SUB | A•1•ANOT | 02261 | 21500 00001 | 03- PPC 04-PPD 05-PPE |
| . | C23C4 | JP | PPB | 02262 | 61000 02352 | |
| . | C23C5 | SUB | A•1•ANOT | 02263 | 21500 00001 | |
| . | C23C6 | JP | PPC | 02264 | 61000 02407 | |
| . | C23C7 | SUB | A•1•ANOT | 02265 | 21500 00001 | |
| . | C2310 | JP | PPD | 02266 | 61000 02436 | |
| . | C2311 | SUB | A•1•ANOT | 02267 | 21500 00001 | |
| . | C2312 | JP | PPE | 02270 | 61000 02455 | |
| . | C2313 | ENT | A•21D | 02271 | 11000 00025 | VALID CODE NOT FOUND PUT ERROR |
| . | C2314 | JP | PPERREXIT | 02272 | 61000 02473 | CODE 21 IN A-JUMP TO ERROR EXI T |
| . | C2315 PFA | PUT | W(PPADDR)•U(PPAD+1) | 02273 | 10030 04601 | F-BETA OUTPUT ROUTINE |
| | | | | 02274 | 14020 02300 | |
| . | C2316 | PUT | W(BETA)•L(PPAD+1) | 02275 | 10030 04604 | |
| | | | | 02276 | 14010 023C0 | |
| . | C2317 PFAD | RJP | COTFLT | 02277 | 65000 03441 | JUMP TO COTFLT TO CONVERT A 60 |
| . | C232C | RESERVE | 1 | 02300 | 00000 00000 | BIT FLT NO. AT ADDRESS IN CALL |
| . | C2321 | JP | PPERREXIT | 02301 | 61000 02473 | |
| . | C2322 | ENT | A•W(SIGN)•ANOT | 02302 | 11530 04607 | SEQUENCE TO FLO.DATA CODE LEFT IN |
| . | C2323 | JP | PPA1 | 02303 | 61000 02306 | IOINTER-IOFRACTION-IOEXPONENT |
| . | C2324 | ENT | A•41 | 02304 | 11000 00041 | SIGN AND EXPONENT SIGN |
| . | C2325 | RJP | BUFFSTORE | 02305 | 65000 02506 | |
| . | C2326 PFA1 | ENT | A•W(IOINTEGER+1) | 02306 | 11030 04614 | STORE SIGN AND IOINTEGER IN BU FF |
| . | C2327 | RJP | BUFFSTORE | 02307 | 65000 02506 | |
| . | C2330 | ENT | A•75 | 02310 | 11000 00075 | STORE DECIMAL POINT |
| . | C2331 | RJP | BUFFSTORE | 02311 | 65000 02506 | |
| . | C2332 | ENT | A•W(BETA)•ANOT | 02312 | 11530 04604 | |
| . | C2333 | JP | PPA4 | 02313 | 61000 02330 | |
| . | C2334 | CL | B5• | 02314 | 12500 00000 | |
| . | C2335 | CL | B4• | 02315 | 12400 00000 | |

| CARDS | L1 IO LABEL | TA STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|
| . | C2336 PPA2 | ENT Q•W(IOFRACTION+B5) | 02316 | 10035 04615 | BRING IN PACKED WORD |
| . | C2337 PPA3 | CL A• | 02317 | 11000 000C0 | |
| . | C234C | LSH AQ•6 | 02320 | 07000 000C6 | SEPERATE DIGIT |
| . | C2341 | RJP BUFFSTORE | 02321 | 65000 025C6 | STORE |
| . | C2342 | RPL Y-1•W(BETA)•ANOT | 02322 | 37530 04604 | DECREMENT BETA COUNT |
| . | C2343 | JP PPA4 | 02323 | 61000 02330 | OUT BETA DIGIT HAVE BEEN STORE D |
| . | C2344 | BSK B4•4 | 02324 | 71400 000C4 | INDEX CHARACTER COUNT |
| . | C2345 | JP PPA3 | 02325 | 61000 02317 | WORD NOT DONE-BACK FOR NEXT DI GIT |
| . | C2346 | BSK B5•1 | 02326 | 71500 00001 | WORD DONE, INDEX WORD COUNT |
| . | C2347 | JP PPA2 | 02327 | 61000 02316 | BACK FOR 2ND WORD |
| . | C2350 PPA4 | ENT A•W(IOEXPONENT)•ANOT | 02330 | 11530 04617 | |
| . | C2351 | JP PPFINAL | 02331 | 61000 02476 | |
| . | C2352 | ENT A•05 | 02332 | 11000 00005 | |
| . | C2353 | RJP BUFFSTORE | 02333 | 65000 025C6 | STORE SPACE CHARACTER |
| . | C2354 | ENT A•12 | 02334 | 11000 00012 | |
| . | C2355 | RJP BUFFSTORE | U2335 | 65000 02506 | STORE E CHARACTER |
| . | C2356 | ENT A•W(EXPSIGN)•AZERO | 02336 | 11430 04620 | |
| . | C2357 | ENT A•41•SKIP | 02337 | 11100 00041 | |
| . | C2360 | ENT A•42 | 02340 | 11000 00042 | |
| . | C2361 | RJP BUFFSTORE | 02341 | 65000 02506 | |
| . | C2362 | ENT Q•W(IOEXPONENT) | 02342 | 10030 04617 | SEPERATE AND STORE THE |
| . | C2363 | CL A• | 02343 | 11000 00000 | 2RIGHT IOEXPONENT DIGITS |
| . | C2364 | LSH AQ•240 | 02344 | 07000 00030 | |
| . | C2365 | RJP BUFFSTORE | 02345 | 65000 02506 | |
| . | C2366 | CL A• | 02346 | 11000 00000 | |
| . | C2367 | LSH AQ•6 | 02347 | 07000 00006 | |
| . | C2370 | RJP BUFFSTORE | 02350 | 65000 02506 | |
| . | C2371 | JP PPFINAL | 02351 | 61000 02476 | TO FINALIZE AND EXIT |
| . | C2372 PPB | ENT A•W(PPADDR) | 02352 | 11030 04601 | X-BETA-B-GAMMA OUTPUT ROUTINE |
| . | C2373 | STR A•U(PPBD•1) | 02353 | 15020 02357 | SETUP CALLING |
| . | C2374 | ENT A•W(GAMMA) | 02354 | 11030 04603 | |
| . | C2375 | STR A•L(PPBD•1) | 02355 | 15010 02357 | |
| . | C2376 PPBD | RJP COFFIX | 02356 | 65000 03240 | JUMP TO CONVERT 30 BIT NO. TO |
| . | C2377 | RESERVE 1 | 02357 | 00000 00000 | FIXED FIELD DATA FORMAT LEFT I N |
| . | C24CC | ENT A•W(SIGN)•ANOT | U2360 | 11530 046C7 | EXAMINE SIGN |
| . | C2401 | JP PPB1 | 02361 | 61000 02364 | POS-SKIP |
| . | C24C2 | ENT A•41 | 02362 | 11000 00041 | NEG-STORE MINUS IN BUFFER |
| . | C24C3 | RJP BUFFSTORE | 02363 | 65000 025C6 | |
| . | C24C4 PPB1 | CL B5• | 02364 | 12500 000C0 | |
| . | C2405 | RJP ZROSUPINT | U2365 | 65000 02421 | PERFORM ZERO SUPPRESSION |
| . | C24C6 | ENT A•75 | 02366 | 11000 00075 | YES-STORE DECIMAL POINT |
| . | C24C7 | RJP BUFFSTORE | 02367 | 65000 02506 | |
| . | C2410 | ENT A•W(BETA)•ANOT | U2370 | 11530 046C4 | |
| . | C2411 | JP PPB6 | 02371 | 61000 024C6 | |
| . | C2412 PPB3 | ENT B4•BD | 02372 | 12400 00000 | INITIALIZE FOR LOOP TO |
| . | C2413 | ENT B5•BD | 02373 | 12500 00000 | STORE FRACTION DIGITS |
| . | C2414 PPB4 | ENT Q•W(IOFRACTION+B5) | 02374 | 10035 04615 | LOOP TO STORE BETA |
| . | C2415 PPB5 | CL A• | 02375 | 11000 000C0 | FRACTIONAL DIGITS |
| . | C2416 | LSH AQ•6 | 02376 | 07000 00006 | |

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CARDS    LI IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C2417              RJP  BUFFSTORE                      02377  65000 02506
   .     C2420              RPL  Y-1•W(BETA)•ANOT               02400  37530 04604
   .     C2421              JP   PPB6                           02401  61000 024C6  OUT-BETA DIGITS STORED
   .     C2422              BSK  B4•4                           02402  71400 00004
   .     C2423              JP   PPB5                           02403  61000 02375
   .     C2424              BSK  B5•1                           02404  71500 00001
   .     C2425              JP   PPB4                           02405  61000 02374
   .     C2426 PPB6         JP   PPFINAL                        02406  61000 02476
   .     C2427 PFC          ENT  B4•L(PPADDR)                   02407  12410 04601  D-FORMAT OUTPUT ROUTINE
   .     C2430              ENT  A•W(B4)                        02410  11034 00000  INITIALIZE FOR CALL
   .     C2431              STR  A•W(INTEGLR)                   02411  15030 046C5  TO BINDECINT
   .     C2432              RJP  BINDECINT                      02412  65000 02514  CALL TO CONVERT BINARY NO. TO

   .     C2433              ENT  A•W(SIGN)•ANOT                 02413  11530 046C7  FIELD DATA DECIMAL INTEGER
   .     C2434              JP   PPC00                          02414  61000 02417  CHECK SIGN AND STORE
   .     C2435              ENT  A•41                           02415  11000 00041  OR SKIP
   .     C2436              RJP  BUFFSTORE                      02416  65000 02506
   .     C2437 PFC00        RJP  ZROSUPINT                      02417  65000 02421  SUPPRESS LEAD ZEROS AND STORE

   .     C2440              JP   PPFINAL                        02420  61000 02476
   .     C2441 ZROSUPINT    ENTRY                               02421  61000 00000
   .     C2442 PPC0         RJP  SUPZRO                         02422  65000 02726
   .     C2443              U-TAG     IO(NTEGER•2               02423  04613 00002
   .     C2444              CL   B5•                            02424  12500 00000
   .     C2445              ENT  Q•W((O(NTEGER+B5)              02425  10035 04613
   .     C2446 PFC1         CL   A•                             02426  11000 000C0
   .     C2447              LSH  AQ•6•AZERO                     02427  07400 00006
   .     C2450              RJP  BUFFSTORE                      02430  65000 02506
   .     C2451              ADD  Q•O•QZERO                      02431  26400 00000
   .     C2452              JP   PPC1                           02432  61000 02426
   .     C2453              BSK  B5•1                           02433  71500 00001
   .     C2454              JP   PPC1-1                         02434  61000 02425
   .     C2455              EXIT                                02435  61010 02421
   .     C2456 PFD          ENT  B4•L(PPADDR)                   02436  12410 04601  D-FORMAT ROUTINE
   .     C2457              ENT  A•W(B4)                        02437  11034 00000  SETUP BINARY WORD TO BE CONVER
                                                                                    TED
   .     C2460              STR  A•W(INTEGER)                   02440  15030 046C5
   .     C2461              RJP  BINOCTFLO                      02441  65000 02573  CALL BINOCTFLO TO CONVERT BINA
                                                                                    RY
   .     C2462              ENT  B4•80                          02442  12400 000C0  WROD TO OCTAL FLO. DATA INTEGE
                                                                                    R
   .     C2463              ENT  B5•80                          02443  12500 000C0
   .     C2464 PFD1         ENT  Q•W((O(NTEGER+B5)              02444  10035 04613  LOOP TO STORE 2 PACKED
   .     C2465 PPD2         CL   A•                             02445  11000 00000  FD WORDS IN BUFFER
   .     C2466              LSH  AQ•6                           02446  07000 00006
   .     C2467              RJP  BUFFSTORE                      02447  65000 02506
   .     C2470              BSK  B4•4                           02450  71400 00004
   .     C2471              JP   PPD2                           02451  61000 02445
   .     C2472              BSK  B5•1                           02452  71500 00001
   .     C2473              JP   PPD1                           02453  61000 02444
   .     C2474              JP   PPFINAL                        02454  61000 02476  FINISHED-TO FINAL EXIT
   .     C2475 PFE          ENT  A•L(PPADDR)                    02455  11010 04601  A-FORMAT ROUTINE
   .     C2476              STR  A•L(PPE1)                      02456  15010 02460  SETUP 1ST WORD ADDRESS
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| CARDS | L1 ID | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| . | C2477 | | | ENT B4•80 | 02457 | 12400 | 00000 | | INITIALE LOOP TO UNPACK-PD WORDS |
| . | C25C0 | PPE1 | | ENT Q•W(11111) | 02460 | 10030 | 11111 | | WORD IN |
| . | C2501 | | | ENT Y-Q•X77777•ANOT | 02461 | 31540 | 77777 | | IS IT ALL ONES |
| . | C2502 | | | JP PPE3 | 02462 | 61000 | 02472 | | YES-OUT |
| . | C25C3 | PPE2 | | CL A• | 02463 | 11000 | 00000 | | NO-UNPACK AND STORE IN BUFFER |
| . | C25C4 | | | LSH AQ•6 | 02464 | 07000 | 00006 | | SEPERATE CHAR. |
| . | C2505 | | | RJP BUFFSTORE | 02465 | 65000 | 02506 | | STORE |
| . | C2506 | | | BSK B4•4 | 02466 | 71400 | 00004 | | IS WORD FINISHED |
| . | C2507 | | | JP PPE2 | 02467 | 61000 | 02463 | | NO |
| . | C2510 | | | RPL Y+1•L(PPE1) | 02470 | 36010 | 02460 | | YES-MOD. ADDRESS FOR NEXT WORD |
| . | C2511 | | | JP PPE1 | 02471 | 61000 | 02460 | | TO UNPACK NEXT WORD |
| . | C2512 | PPE3 | | JP PPFINAL | 02472 | 61000 | 02476 | | FINISHED-TO FINAL EXIT |
| . | C2513 | PFERREXIT | | ENT Q•L(PUTPREP) | 02473 | 10010 | 02235 | | SETUP ERROR RETURN |
| . | C2514 | | | ADD Q•1 | 02474 | 26000 | 00001 | | |
| . | C2515 | | | JP PPFINAL+2 | 02475 | 61000 | 02500 | | |
| . | C2516 | PPFINAL | | ENT Q•L(PUTPREP) | 02476 | 10010 | 02235 | | SETUP NORMAL RETURN |
| . | C2517 | | | ADD Q•2 | 02477 | 26000 | 00002 | | |
| . | C2520 | | | STR Q•L(PUTPREP) | 02500 | 14010 | 02235 | | |
| . | C2521 | | | STR B6•L(BUFFCOUNT) | 02501 | 16610 | 04600 | | STORE BUFFER COUNT |
| . | C2522 | PPB4STOR | | ENT B4•NIL | 02502 | 12400 | 00000 | | |
| . | C2523 | PPB5STOR | | ENT B5•NIL | 02503 | 12500 | 00000 | | |
| . | C2524 | PPB6STOR | | ENT B6•NIL | 02504 | 12600 | 00000 | | |
| . | C2525 | | | JP L(PUTPREP) | 02505 | 61010 | 02235 | | |
| . | C2526 | BUFFSTORE | | ENTRY | 02506 | 61000 | 00000 | | ROUTINE TO STORE CHAR.FROM A |
| . | C2527 | | | STR A•W(BUFFER+B6) | 02507 | 15036 | 04743 | | INTO BUFFER-CHECK BUFF OVERFLOW |
| . | C2530 | | | BSK B6•BUFLMT | 02510 | 71600 | 00453 | | IS BUFFER FULL |
| . | C2531 | | | EXIT | 02511 | 61010 | 02506 | | NO |
| . | C2532 | | | ENT A•11 | 02512 | 11000 | 00011 | | YES |
| . | C2533 | | | JP PPERREXIT | 02513 | 61000 | 02473 | | ERROR RETURN |
| . | C2534 | BINDECINT | | JP 0 | 02514 | 61000 | 00000 | | EXIT ENTRY |
| . | C2535 | | | STR B1•U(BINDECINT3) | 02515 | 16120 | 02542 | | SAVE B REGISTERS |
| . | C2536 | | | STR B2•L(BINDECINT3) | 02516 | 16210 | 02542 | | |
| . | C2537 | | | CL B2 | 02517 | 12200 | 00000 | | INITIALIZE B REGS FOR COUNT |
| . | C2540 | | | ENT B1•1 | 02520 | 12100 | 00001 | | |
| . | C2541 | | | STR B1•W(SIGN) | 02521 | 16130 | 04607 | | STORE 1 (B1) IN SIGN AS NEG SIGN |
| . | C2542 | | | ENT Q•W(INTEGER)•QNEG | 02522 | 10330 | 04605 | | TEST IF NUMBER(TO BE CONV) IS NEG |
| . | C2543 | | | RPL Y-1•W(SIGN)•SKIP | 02523 | 37130 | 04607 | | POS RESET SIGN TO ZERO-GO TO MAIN |
| . | C2544 | | | CP Q | 02524 | 14000 | 00000 | | NEG LEAVE SIGN-COMPLEMENT NUMBER |
| . | C2545 | BINDECINT1 | | CL W(IOINTEGER+B1) | 02525 | 16031 | 04613 | | MAIN LOOP-INITIALLY CLEAR OUTPUT |
| . | C2546 | BINDECINT2 | | CL A | 02526 | 11000 | 00000 | | CLEAR A FOR DIVIDE |
| . | C2547 | | | DIV 12 | 02527 | 23000 | 00012 | | NEG DEC DIGIT REMAINS IN A |
| . | C2550 | | | ADD A•60 | 02530 | 20000 | 00060 | | INCORPORATE FLOATA BITS |
| . | C2551 | | | RPT B2 | 02531 | 70002 | 00000 | | VARIABLE SHIFT TO INCORP FLOATA |

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CARDS    L1 ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C2552            LSH  A•6                              02532  06000 00006  DIGIT IN RT. JUSTIFIED OUTPUT
   .     C2553            RSE  SET•W(IOINTEGER+B1)              02533  54031 04613  ADD IN NEW 6-BIT CODE
   .     C2554            BSK  B2•4                             02534  71200 00004  OUTPUT WORD FILLED YET (5 CODE
                                                                                    S)
   .     C2555            JP   BINDECINT2                       02535  61000 02526  NO-GET ANOTHER CODE
   .     C2556            BJP  B1•BINDECINT1                    02536  72100 02525  YES-OUTPUT COMPLETED-IF NO DO
                                                                                    NEXT
   .     C2557            ENT  B1•U(BINDECINT3)                 02537  12120 02542  YES-RESTORE B REGS
   .     C2560            ENT  B2•L(BINDECINT3)                 02540  12210 02542
   .     C2561            JP   BINDECINT                        02541  61000 02514  AND EXIT
   .     C2562 BINDECINT3 C    0                                02542  00000 00000  SAVE B REGISTERS HERE
   .     C2563 INTOCTBIN  JP   0                                02543  61000 00000  EXIT ENTRY
   .     C2564            STR  B1•U(INTOCTBIN5)                 02544  16120 02572
   .     C2565            CL   B1                               02545  12100 00000  INITIALIZE B RES FOR COUNT
   .     C2566            CL   B7                               02546  12700 00000
   .     C2567 INTOCTBIN1 ENT  Q•W(IOINTEGER+B1)                02547  10031 04613  FIELDATA WORD TO BE TRANSLATED

   .     C2570 INTOCTBIN2 LSH  Q•2•QPOS                         02550  05200 00002  TEST FOR 8 OT 9
   .     C2571            JP   INTOCTBIN4                       02551  61000 02567  8 OR 9 PRESENT-ERROR RETURN
   .     C2572            LSH  Q•1                              02552  05000 00001  GET RID OF 3RD FLOATA BIT
   .     C2573            LSH  AQ•3                             02553  07000 00003  SUPPRESSED DIGIT FORMS NEW WOR
                                                                                    D IN
   .     C2574            BSK  B7•4                             02554  71700 00004  AT END OF FLDATA WORD (5TH PAS
                                                                                    S)
   .     C2575            JP   INTOCTBIN2                       02555  61000 02550  NO-GET MORE DIGITS
   .     C2576            BSK  B1•1                             02556  71100 00001  YES-TEST-END OF INPUT
   .     C2577            JP   INTOCTBIN1                       02557  61000 02547  NO DO 2ND WORD
   .     C2600            ENT  Q•W(SIGN)                        02560  10030 04607  YES GET SIGN SIGNAL
   .     C2601            LSH  AQ•30D•AZERO                     02561  07400 00036  IF POS NUMBER FORGET OVERFLOW
                                                                                    TEST
   .     C2602            JP   INTOCTBIN3•QNEG                  02562  60300 02566  NEG NO-IF OVERFLOW THEN ERROR
                                                                                    RETU
   .     C2603            STR  Q•W(INTEGER)•AZERO               02563  14430 04605  STORE SIGNED NUMBER
   .     C2604            STR  Q•CPW(INTEGER)                   02564  14070 04605
   .     C2605            RPL  Y+1•W(INTOCTBIN)                 02565  36030 02543  SET NORMAL RETURN
   .     C2606 INTOCTBIN3 ENT  A•4•SKIP                         02566  11100 00004  OVERFLOW ERROR RETURN SIGNAL
   .     C2607 INTOCTBIN4 ENT  A•3                              02567  11000 00003  DECIMAL DIGIT ERROR RETURN SIG
                                                                                    NAL
   .     C2610            ENT  B1•U(INTOCTBIN5)                 02570  12120 02572  RESOTRE B REGISTERS
   .     C2611            JP   INTOCTBIN                        02571  61000 02543  EXIT
   .     C2612 INTOCTBIN5 C    0                                02572  00000 00000  SAVE B REGISTERS HERE
   .     C2613 BINOCTFLO  JP   0                                02573  61000 00000  ENTRY EXIT
   .     C2614            CL   B7                               02574  12700 00000  CLEAR B7 FOR COUNT
   .     C2615            ENT  Q•W(INTEGER)                     02575  10030 04605  ENTER INPUT WORD
   .     C2616 BINOCTFL01 CL   A                                02576  11000 00000  MAIN LOOP SET WORD INITIALLY T
                                                                                    O ZER
   .     C2617 BINOCTFL02 LSH  A•3                              02577  06000 00003  ALLOW ROOM FOR FLOATA BITS
   .     C2620            LSH  AQ•3                             02600  07000 00003  INSERT 3BINARY BITS(1OCTAL DIG
                                                                                    IT)
   .     C2621            ADD  A•60•ANEG                        02601  20700 00060  INSERT FLOATA CODE TEST IF WOR
                                                                                    D FIL
   .     C2622            JP   BINOCTFL02                       02602  61000 02577  NOT FILLED INSERT NEXT DIGIT
   .     C2623            STR  A•W(IOINTEGER+B7)                02603  15037 04613  FILLED-STORE OUTPUT
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| CARDS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C2624 | | | BSK B7•1 | 02604 | 71700 00001 | ALL OUTPUT COMPLETE |
| . | C2625 | | | JP BINOCIFLOI | 02605 | 61000 02576 | NO- MAKE 2ND WORD |
| . | C2626 | | | JP BINOCIFLO | 02606 | 61000 02573 | AND EXIT |
| . | C2627 | INTBCDBIN | | JP 0 | 02607 | 61000 00000 | ENTRY EXIT |
| . | C2630 | | | STR B1•U(INTBCDBIN5) | 02610 | 16120 02640 | SAVE B REGISTERS |
| . | C2631 | | | STR B2•L(INTBCDBIN5) | 02611 | 16210 02640 | |
| . | C2632 | | | CL C | 02612 | 10000 00000 | SET Q TO ZERO INITALLY |
| . | C2633 | | | CL B1 | 02613 | 12100 00000 | INITIALIZE B REGS FOR COUNT |
| . | C2634 | INTBCDBIN1 | | ENT B2•4 | 02614 | 12200 00004 | |
| . | C2635 | INTBCDBIN2 | | MUL 12•AZERO | 02615 | 22400 00012 | TEST OVERFLOW INTO A |
| . | C2636 | | | JP INTBCDBIN3 | 02616 | 61000 02634 | OVERFLOW CONDITION MET |
| . | C2637 | | | ENT A•W(IOINTEGER+B1) | 02617 | 11031 04613 | GET NEXT INT DIGIT FOR CONVERT |
| . | C2640 | | | LSH A•6 | 02620 | 06000 00006 | RESET INPUT FOR NEXT TIME |
| . | C2641 | | | STR A•W(IOINTEGER+B1) | 02621 | 15031 04613 | |
| . | C2642 | | | 5234C 77760 | 02622 | 52340 77760 | ONLY 10IGIT USED-TEST MUL OVER FLW |
| . | C2643 | | | ACC C•A•QPOS | 02623 | 26670 00000 | ADD IN NXT DIGIT-TEST OVERFLOW |
| . | C2644 | | | JP INTBCDBIN3 | 02624 | 61000 02634 | OVERFLOW MET BY MUL OR ADD |
| . | C2645 | | | BJP B2•INTBCDBIN2 | 02625 | 72200 02615 | DONE WITH INPUT WORD--IF NOT R PT |
| . | C2646 | | | BSK B1•1 | 02626 | 71100 00001 | YES--DONE WITH INPUT |
| . | C2647 | | | JP INTBCDBIN1 | 02627 | 61000 02614 | NO-RPT WITH 2ND WORD |
| . | C2650 | | | CNT A•W(SIGN)•AZERO | 02630 | 11430 04607 | YES-SET ACCDING TO SIGN-POS |
| . | C2651 | | | CP C | 02631 | 14000 00000 | NO-MAKE NUMBER NEG |
| . | C2652 | | | STR C•W(INTEGER) | 02632 | 14030 04605 | STORE OUTPUT WORD |
| . | C2653 | | | RPL Y+1•W(INTBCDBIN)•SKIP | 02633 | 36130 02607 | SET NORMAL RETURN |
| . | C2654 | INTBCDBIN3 | | ENT A•5 | 02634 | 11000 00005 | SET ERROR RETURN MESSAGE-OVERF LO |
| . | C2655 | | | ENT B1•U(INTBCDBIN5) | 02635 | 12120 02640 | RESTORE B REGS |
| . | C2656 | | | ENT B2•L(INTBCDBIN5) | 02636 | 12210 02640 | |
| . | C2657 | | | JP INTBCDBIN | 02637 | 61000 02607 | EXIT |
| . | C2660 | INTBCDBIN5 | | C 0 | 02640 | 00000 00000 | SAVE B REGS HERE |
| . | C2661 | FRABCDBIN | | ENTRY | 02641 | 61000 00000 | |
| . | C2662 | | | STR B6•L(FRABCDBIN2) | 02642 | 16610 02677 | SAVE B REG |
| . | C2663 | | | CL B6 | 02643 | 12600 00000 | INITIALIZE |
| . | C2664 | | | CL B7 | 02644 | 12700 00000 | SET B6,B7,OUTPUT WORD TO ZERO |
| . | C2665 | | | STR B6•W(FRACTION) | 02645 | 16630 04606 | |
| . | C2666 | | | ENT A•W(FRABCDBIN4) | 02646 | 11030 02702 | RESET CONV FACTOR |
| . | C2667 | | | STR A•W(FRABCDBIN3) | 02647 | 15030 02701 | |
| . | C2670 | FRABCDBIN1 | | CL Q | 02650 | 10000 00000 | MAIN LOOP-INIT Q |
| . | C2671 | | | ENT A•W(IOFRACTION+B6) | 02651 | 11036 04615 | TAKE INPUT WORD |
| . | C2672 | | | LSH A•6 | 02652 | 06000 00006 | AND GET OUT |
| . | C2673 | | | STR A•W(IOFRACTION+B6) | 02653 | 15036 04615 | A SINGLE DIGIT |
| . | C2674 | | | RSH AQ•5 | 02654 | 03000 00005 | INTO Q AT B4 |
| . | C2675 | | | MUL W(FRABCDBIN3) | 02655 | 22030 02701 | CONVERT DIGIT-1(10/12)N |
| . | C2676 | | | LSH AQ•2•QPOS | 02656 | 07200 00002 | SET PRODUCT TO B0--1E-FRACTION |
| . | C2677 | | | ADC A•1 | 02657 | 20000 00001 | ROUND IF NEC |
| . | C2700 | | | ADD A•W(FRACTION) | 02660 | 20030 04606 | AND ADD IN TO |
| . | C2701 | | | STR A•W(FRACTION) | 02661 | 15030 04606 | OUTPUT WORD |
| . | C2702 | | | ENT Q•W(FRABCDBIN3) | 02662 | 10030 02701 | RESET CONVERSION FACTOR |

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CARDS    LI ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C27C3              MUL  W(FRABCOBIN4)                        02663  22030 027C2  FROM (10/12)N TO (10/12)N+1

   .     C27C4              RSH  AQ•2                                 02664  03000 000C2
   .     C27C5              STR  A•W(FRABCOBIN3)•QPOS                 02665  15230 027C1
   .     C27C6              RPL  Y+I•W(FRABCOBIN3)                    02666  36030 02701  ROUND IF NEC
   .     C27C7              BSK  B7•4                                 02667  71700 00004  DONE WITH INPUT WORD
   .     C2710              JP   FRABCOBINI                           02670  61000 02650  NO
   .     C2711              BSK  B6•1                                 02671  71600 00001  YES-DONE WITH INPUT
   .     C2712              JP   FRABCOBINI                           02672  61000 02650  NO
   .     C2713              ENT  C•W(FRACTION)                        02673  10030 04606  YES-TEST SIGN
   .     C2714              ENT  A•W(SIGN)•AZERO                      02674  11430 04607  IS SIGN POS
   .     C2715              CP   C                                    02675  14000 00000  NO--COMPLEMENT FRACTION
   .     C2716              STR  Q•W(FRACTION)                        02676  14030 04606
   .     C2717 FRABCOBIN2   ENT  B6•0                                 02677  12600 00000  RESTORE B REG
   .     C2720              EXIT                                      02700  61010 02641
   .     C2721 FRABCOBIN3   C    0                                    02701  00000 00000  CONVERSION FACTOR (10/12)N
   .     C2722 FRABCOBIN4   31463      14632                         02702  31463 14632  BASE CONV FACTOR=(10/12) 80
   .     C2723 BINDECFRA    ENTRY                                     02703  61000 00000
   .     C2724              CL   B7                                   02704  12700 00000  SET BREG
   .     C2725              ENT  Q•I                                  02705  10000 00001  FIND IF NO IS + OR -,
   .     C2726              ENT  A•W(FRACTION)•APOS                   02706  11630 04606  SET SIGN APPROPRIATELY
   .     C2727              STR  A•A•ANOT                             02707  15540 00000  AND SET NUMBER POSITIVE
   .     C2730              ENT  Q•0                                  02710  10000 00000
   .     C2731              STR  Q•W(SIGN)                            02711  14030 04607
   .     C2732              RSH  AQ•290                               02712  03000 00035  INITIALIZE
   .     C2733 BINDECFRA1   ENT  A•0                                  02713  11000 00000  SET OUTPUT WORD TO ZERO
   .     C2734 BINDECFRA2   LSH  A•6                                  02714  06000 00006  RESET OUTPUT WORD FOR NEXT CODE
   .     C2735              STR  A•W(IOFRACTION+B7)                   02715  15037 04615  AND STORE
   .     C2736              RSH  AQ•1                                 02716  03000 00001  SET Q FOR MUL OPERATION
   .     C2737              MUL  24                                   02717  22000 00024  PRODUCT AT B29
   .     C2740              SEL  SET•60                               02720  50000 00060  INSERT FIELDATA BITS
   .     C2741              RSE  SET•W(IOFRACTION+B7)•ANEG            02721  54737 04615  INSERT NEW CODE,WORD FILLED
   .     C2742              JP   BINDECFRA2                           02722  61000 02714  NO-KEEP FILLING SAME WORD
   .     C2743              BSK  B7•1                                 02723  71700 00001  YES-ARE BOTH WORDS FILLED
   .     C2744              JP   BINDECFRA1                           02724  61000 02713  NO-DO SECOND WORD
   .     C2745              EXIT                                      02725  61010 02703
   .     C2746 SLPZRC       ENTRY                                     02726  61000 00000
   .     C2747              STR  B6•L(SUPBSTOR)                       02727  16610 02761
   .     C2750              ENT  B7•L(SUPZRO)                         02730  12710 02726
   .     C2751              RPL  Y+I•L(SUPZRO)                        02731  36010 02726
   .     C2752              ENT  B6•L(B7)                             02732  12617 00000  NO OF WRDS
   .     C2753              STR  B6•L(SUPZRO3)                        02733  16610 02747
   .     C2754              ENT  B6•1                                 02734  12600 00001
   .     C2755              ENT  B7•U(B7)                             02735  12727 00000  ADDRESS
   .     C2756 SLPZRC1      ENT  Q•W(B7)                              02736  10037 00000  BRING NEXT (1ST) WORD
   .     C2757 SLPZRC2      CL   A•                                   02737  11000 00000
   .     C2760              LSH  AQ•6                                 02740  07000 00006  MOVE 1 DIGIT INTO A
   .     C2761              COM  A•6I•YMORE                           02741  04700 00061  TEST FOR EQUAL TO 60
   .     C2762              JP   SUPZR04                              02742  61000 02754  IF NOT, JUMP TO CLEAN-UP
   .     C2763              ADD  Q•0•QZERO                            02743  26400 00000  IF SO, TEST FOR WORD EXHAUSTED
   .     C2764              JP   SUPZR02                              02744  61000 02737  IF MORE DIGITS, RETURN TO TEST
   .     C2765              CL   W(B7)                                02745  16037 00000
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| CARDS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C2766 | | ENT | B7•1+B7 | 02746 | 12707 00001 | IF NOT,BUMP AOORESS OF WORO |
| . | C2767 | SLPZRC3 | BSK | B6•NIL | 02747 | 71600 000C0 | TEST FOR ALL WOROS OONE |
| . | C2770 | | JP | SUPZR01 | 02750 | 61000 02736 | RETURN FOR NEXT WORO |
| . | C2771 | | ENT | A•60 | 02751 | 11000 00060 | IF WOROS ALL ZERO, PRINT 1 |
| . | C2772 | | ENT | B7•B7-1 | 02752 | 12707 77776 | |
| . | C2773 | | JP | SUPZR05 | 02753 | 61000 02760 | |
| . | C2774 | SLPZRC4 | ADD | Q•0•QNOT | 02754 | 26500 000C0 | WHEN FINO NON-ZERO |
| . | C2775 | | JP | SUPZR05 | 02755 | 61000 02760 | |
| . | C2776 | | LSH | AQ•6 | 02756 | 07000 00006 | MOVE REST OF WORO TO A |
| . | C2777 | | JP | SUPZR04 | 02757 | 61000 02754 | |
| . | C3CCC | SLPZRC5 | STR | A•W(IB7) | 02760 | 15037 0C0C0 | STORE BACK IN PROPER SLOT |
| . | C3CC1 | SLPBSTOR | ENT | B6•NIL | 02761 | 12600 000C0 | |
| . | C3CC2 | | EXIT | | 02762 | 61010 02726 | |
| . | C3CC3 | CCFRNC | ENTRY | | 02763 | 61000 00000 | |
| . | C3CC4 | | ENT | A•90 | 02764 | 11000 00011 | |
| . | C3CC5 | | SUB | A•W(BETA) | 02765 | 21030 04604 | |
| . | C3CC6 | | ENT | B7•A | 02766 | 12770 000C0 | PUT 9-BETA IN B7 |
| . | C3CC7 | | ENT | Q•W(IOFRACTION+1) | 02767 | 10030 04616 | BRING FLOATA FRACTION TO AQ |
| . | C3C10 | | ENT | A•W(IOFRACTION) | 02770 | 11030 04615 | |
| . | C3C11 | | CL | W(IOFRACTION) | 02771 | 16030 04615 | |
| . | C3C12 | | CL | W(IOFRACTION+1) | 02772 | 16030 04616 | |
| . | C3C13 | | SEL | CL•W(HIBIT) | 02773 | 52030 03071 | |
| . | C3C14 | CCFRNC1 | PJP | B7•COFRND2 | 02774 | 72700 02776 | SUBTRACT 1 FROM B7 |
| . | C3C15 | | JP | COFRN03 | 02775 | 61000 030C0 | WHEN B7 IS 0, STOP SHIFTING |
| . | C3C16 | CCFRNC2 | RSH | AQ•6 | 02776 | 03000 0C0C6 | SHIFT OFF 1 OIGIT |
| . | C3017 | | JP | COFRN01 | 02777 | 61000 02774 | RETURN TO TEST B7 |
| . | C3C2C | CCFRNC3 | LSH | AQ•54D | 03000 | 07000 00066 | PUT BETA+1TH OIGIT IN A1-6 |
| . | C3C21 | | SEL | SET•W(HIHIBIT) | 03001 | 50030 03071 | |
| . | C3C22 | | COM | A•W(SIXTYFIVE)•YMORE | 03002 | 04730 03073 | |
| . | C3C23 | | JP | COFRND5 | 03003 | 61000 03015 | IF MORE THAN 4, GO TO AOO 1 |
| . | C3C24 | | SEL | CL•W(M6L) | 03004 | 52030 03074 | IF LESS THAN 5, CLEAR IT |
| . | C3C25 | | ADD | Q•0•QNOT | 03005 | 26500 000C0 | |
| . | C3C26 | | JP | COFRN041•AZERO | 03006 | 60400 03012 | |
| . | C3C27 | CCFRNC4 | LSH | AQ•1•ANEG | 03007 | 07700 00001 | LEFT JUSTIFY FRACTION |
| . | C3C30 | | JP | COFRN04 | 03010 | 61000 03007 | |
| . | C3C31 | | RSH | AQ•1 | 03011 | 03000 00001 | PUT HIGH ORDER BIT BACK ON |
| . | C3C32 | CCFRNC41 | STR | A•W(IOFRACTION) | 03012 | 15030 04615 | STORE AWAY |
| . | C3C33 | | STR | Q•W(IOFRACTION+1) | 03013 | 14030 04616 | |
| . | C3C34 | | JP | COFRN0B1 | 03014 | 61000 03053 | |
| . | C3C35 | CCFRNC5 | SEL | CL•W(M6L) | 03015 | 52030 03074 | IF MUST AOO 1, CLEAR EXTRA OIG IT |
| . | C3C36 | | LSH | AQ•54D | 03016 | 07000 00066 | SHIFT LOW-ORDER OIGIT TO TOP O F A |
| . | C3C37 | | COM | A•W(SEVENTYONE)•YMORE | 03017 | 04730 03075 | TEST EQUAL TO 71 |
| . | C3C40 | | JP | COFRN05I•ANOT | 03020 | 60500 03025 | IF SO, RETURN TO TEST NEXT OIG IT |
| . | C3C41 | | JP | COFRN06•AZERO | 03021 | 60400 03035 | IF NOT, TEST FOR FRACTION ALL O |
| . | C3C42 | | ADC | A•WIBIT5) | 03022 | 20030 03076 | IF NOT, AOO 1 TO OIGIT |
| . | C3C43 | | LSH | AQ•6 | 03023 | 07000 00006 | RIGHT JUSTIFY FRACTION |
| . | C3C44 | | JP | COFRN04 | 03024 | 61000 030C7 | |
| . | C3C45 | CCFRNC51 | JP | COFRN05•ANEG | 03025 | 60700 03015 | OIGIT MAY HAVE HAO HIBIT |
| . | C3C46 | | SEL | SET•W(HIBIT) | 03026 | 50030 03071 | CLEARED, SO RESTORE AND |

| CAROS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C3047 | | COM | A•W(SEVENTYONE)•YMORE | 03027 | 04730 03075 | |
| . | C3050 | | JP | COFRNO5 | 03030 | 61000 03015 | |
| . | C3051 | | ADD | A•W(BIT5) | 03031 | 20030 03076 | |
| . | C3052 | CCFRNC52 | LSH | AQ•6•ANEG | 03032 | 07700 00006 | |
| . | C3053 | | JP | COFRNO52 | 03033 | 61000 03032 | |
| . | C3054 | | JP | COFRNO41 | 03034 | 61000 03012 | |
| . | C3055 | CCFRNC6 | ENT | Q•W(IOINTEGER+1) | 03035 | 10030 04614 | |
| . | C3056 | | ENT | A•W(IOINTEGER) | 03036 | 11030 04613 | |
| . | C3057 | | JP | COFRNO7+1 | 03037 | 61000 03041 | |
| . | C3060 | CCFRNC7 | SEL | CL•W(M6L) | 03040 | 52030 03074 | |
| . | C3061 | | LSH | AQ•540 | 03041 | 07000 00066 | |
| . | C3062 | | COM | A•W(SEVENTYONE)•YMORE | 03042 | 04730 03075 | |
| . | C3063 | | ADD | A•W(BIT5) | 03043 | 20030 03076 | |
| . | C3064 | CCFRNO8 | LSH | AQ•6•ANEG | 03044 | 07700 00006 | |
| . | C3065 | | JP | COFRNO8 | 03045 | 61000 03044 | |
| . | C3066 | | SEL | SET•W(SIXTIES) | 03046 | 50030 01557 | |
| . | C3067 | | STR | A•W(IOINTEGER) | 03047 | 15030 04613 | |
| . | C3070 | | STR | Q•A | 03050 | 14040 00000 | |
| . | C3071 | | SEL | SET•W(SIXTIES) | 03051 | 50030 01557 | |
| . | C3072 | | STR | A•W(IOINTEGER+1) | 03052 | 15030 04614 | |
| . | C3073 | CCFRNC81 | ENT | B7•W(BETA) | 03053 | 12730 04604 | |
| . | C3074 | | BJP | B7•COFRNO9 | 03054 | 72700 03056 | |
| . | C3075 | | JP | COFRNO11 | 03055 | 61000 03065 | |
| . | C3076 | CCFRNO9 | ENT | A•W(SIXTY) | 03056 | 11030 03072 | |
| . | C3077 | | CL | Q• | 03057 | 10000 00000 | |
| . | C3100 | | BJP | B7•COFRNO10 | 03060 | 72700 03062 | |
| . | C3101 | | JP | COFRNO11 | 03061 | 61000 03065 | |
| . | C3102 | CCFRNO1C | LSH | AQ•540 | 03062 | 07000 00066 | |
| . | C3103 | | SEL | SET•W(SIXTY) | 03063 | 50030 03072 | |
| . | C3104 | | BJP | B7•COFRNO10 | 03064 | 72700 03062 | |
| . | C3105 | CCFRNC11 | RSE | SET•W(IOFRACTION) | 03065 | 54030 04615 | |
| . | C3106 | | STR | Q•A | 03066 | 14040 00000 | |
| . | C3107 | | RSE | SET•W(IOFRACTION+1) | 03067 | 54030 04616 | |
| . | C3110 | | EXIT | | 03070 | 61010 02763 | |
| . | C3111 | HIBIT | 40000 | 0 | 03071 | 40000 00000 | |
| . | C3112 | SIXTY | 60000 | 0 | 03072 | 60000 00000 | |
| . | C3113 | SIXTYFIVE | 65000 | 0 | 03073 | 65000 00000 | |
| . | C3114 | M6L | 77000 | 0 | 03074 | 77000 00000 | |
| . | C3115 | SEVENTYONE | 71000 | 0 | 03075 | 71000 00000 | |
| . | C3116 | BIT5 | 01000 | 0 | 03076 | 01000 00000 | |
| . | C3117 | SPACES | C505C | 50505 | 03077 | 05050 50505 | |
| . | C3120 | CINFIX | ENTRY | | 03100 | 61000 00000 | |
| . | C3121 | | STR | B1•L(CINFXT1) | 03101 | 16110 03225 | |
| . | C3122 | | STR | B2•L(CINFXT1+1) | 03102 | 16210 03226 | |
| . | C3123 | | STR | B3•L(CINFXT1+2) | 03103 | 16310 03227 | |
| . | C3124 | | STR | B4•L(CINFXT1+3) | 03104 | 16410 03230 | |
| . | C3125 | | CL | W(FXCODE) | 03105 | 16030 03274 | |
| . | C3126 | CINF1 | ENT | B2•3 | 03106 | 12200 00003 | STRIP FIELDATA CODE = |
| . | C3127 | | ENT | Q•W(CINFMSK) | 03107 | 10030 03232 | |
| . | C3130 | CINFSTRP | CL | A• | 03110 | 11000 00000 | |
| . | C3131 | | RSE | SU•W(IOINTEGER+B2) | 03111 | 57032 04613 | |
| . | C3132 | | BJP | B2•CINFSTRP | 03112 | 72200 03110 | |
| . | C3133 | | CL | C• | 03113 | 10000 00000 | |

| CARDS | LI ID | LABEL | IA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C3134 | | ENT | A•L(IOEXPONENT) | 03114 | 11010 04617 | |
| . | C3135 | | SEL | CL•6060 | 03115 | 52000 06060 | |
| . | C3136 | | LSH | AQ•24D | 03116 | 07000 00030 | |
| . | C3137 | | RSH | A•24D | 03117 | 02000 00030 | |
| . | C3140 | | STR | A•W(IOEXPONENT) | 03120 | 15030 04617 | |
| . | C3141 | | MUL | 12 | 03121 | 22000 00012 | |
| . | C3142 | | RPL | Y+Q•W(IOEXPONENT)•ANOT | 03122 | 34530 04617 | IS EXP = 0 |
| . | C3143 | | JP | CINF3 | 03123 | 61000 03175 | YES |
| . | C3144 | | ENT | B1•A | 03124 | 12170 00000 | |
| . | C3145 | | ENT | A•W1EXPSIGN)•AZERO | 03125 | 11430 04620 | |
| . | C3146 | | JP | CINF3-1 | 03126 | 61000 03174 | |
| . | C3147 | | ENT | A•100 | 03127 | 11000 00012 | |
| . | C3150 | | SUB | A•W(NOINTS) | 03130 | 21030 04610 | |
| . | C3151 | | COM | A•B1•YLESS | 03131 | 04601 00000 | |
| . | C3152 | | JP | CINFERR1 | 03132 | 61000 03233 | |
| . | C3153 | | JP | CINF30-2 | 03133 | 61000 03153 | |
| . | C3154 | CINF21 | ENT | A•W(IOINTEGER) | 03134 | 11030 04613 | |
| . | C3155 | | ENT | Q•W1IOINTEGER+1) | 03135 | 10030 04614 | |
| . | C3156 | | LSH | AQ•6 | 03136 | 07000 00006 | |
| . | C3157 | | STR | A•W(IOINTEGER) | 03137 | 15030 04613 | |
| . | C316C | | CL | A• | 03140 | 11000 00000 | |
| . | C3161 | | LSH | AQ•24D | 03141 | 07000 00030 | |
| . | C3162 | | ENT | Q•W(IOFRACTION) | 03142 | 10030 04615 | |
| . | C3163 | | LSH | AQ•6 | 03143 | 07000 00006 | |
| . | C3164 | | STR | A•W(IOINTEGER+1) | 03144 | 15030 04614 | |
| . | C3165 | | CL | A• | 03145 | 11000 00000 | |
| . | C3166 | | LSH | AQ•24D | 03146 | 07000 00030 | |
| . | C3167 | | ENT | Q•W(IOFRACTION+1) | 03147 | 10030 04616 | |
| . | C3170 | | LSH | AQ•6 | 03150 | 07000 00006 | |
| . | C3171 | | STR | A•W(IOFRACTION) | 03151 | 15030 04615 | |
| . | C3172 | | STR | Q•W(IOFRACTION+1) | 03152 | 14030 04616 | |
| . | C3173 | | BJP | B1•CINF21 | 03153 | 72100 03134 | |
| . | C3174 | | JP | CINF3 | 03154 | 61000 03175 | |
| . | C3175 | CINF3C | ENT | A•W(IOFRACTION) | 03155 | 11030 04615 | |
| . | C3176 | | ENT | Q•W1IOFRACTION+1) | 03156 | 10030 04616 | |
| . | C3177 | | RSH | AQ•6 | 03157 | 03000 00006 | |
| . | C32C0 | | STR | Q•W1IOFRACTION+1) | 03160 | 14030 04616 | |
| . | C32C1 | | CL | Q• | 03161 | 10000 00000 | |
| . | C32C2 | | RSH | AQ•24D | 03162 | 03000 00030 | |
| . | C32C3 | | ENT | A•W(IOINTEGER+1) | 03163 | 11030 04614 | |
| . | C32C4 | | RSH | AQ•6 | 03164 | 03000 00006 | |
| . | C32C5 | | STR | Q•W1IOFRACTION) | 03165 | 14030 04615 | |
| . | C32C6 | | CL | Q• | 03166 | 10000 00000 | |
| . | C32C7 | | RSH | AQ•24D | 03167 | 03000 00030 | |
| . | C3210 | | ENT | A•W(IOINTEGER) | 03170 | 11030 04613 | |
| . | C3211 | | RSH | AQ•6 | 03171 | 03000 00006 | |
| . | C3212 | | STR | A•W(IOINTEGER) | 03172 | 15030 04613 | |
| . | C3213 | | STR | Q•W(IOINTEGER+1) | 03173 | 14030 04614 | |
| . | C3214 | | BJP | B1•CINF30 | 03174 | 72100 03155 | |
| . | C3215 | CINF3 | ENT | A•W1SIGN)•ANOT | 03175 | 11530 04607 | YES-IS SIGN OF WORD + OR - |
| . | C3216 | | JP | CINFCALL | 03176 | 61000 032C1 | |
| . | C3217 | | CL | W(SIGN) | 03177 | 16030 04607 | MAKE VAL APPEAR + AND NOTE IN FXCODE |

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CARDS    LI ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C3220               RPL  Y+1•W(FXCODE)                03200  36030 03274
   .     C3221 CINFCALL      RJP  INTBCDBIN                    03201  65000 026C7  CONVERT BCO INT TO BIN
   .     C3222               JP   CINFERR3                     03202  61000 03235
   .     C3223               RJP  FRABCDBIN                    03203  65000 02641  CONVERT BCO FRA TO BIN
   .     C3224               ENT  A•W(INTEGER)                 03204  11030 04605
   .     C3225               ENT  Q•W(FRACTION)                03205  10030 046C6
   .     C3226               LSH  Q•1                          03206  05000 00001  REMOVE SIGN BIT
   .     C3227               ENT  B2•LIC1NFIX)                 03207  12210 031C0
   .     C3230               ENT  B4•L(B2)                     03210  12412 000C0
   .     C3231               STR  B4•CPLICINFTP3)              03211  16450 03212
   .     C3232 CINFTP3       ENT  B4•NIL                       03212  12400 000C0
   .     C3233               ENT  B4•300+B4                    03213  12404 00036
   .     C3234               RSH  AQ•B4•QPOS                   03214  03204 00000
   .     C3235               JP   CINFERR1                     03215  61000 03233  OVERFLOW OCCURREO
   .     C3236               JP   CINFERR1•ANOT                03216  60500 03233  OVERFLOW OCCURREO
   .     C3237               ENT  A•WIFXCOOE)•AZERO            03217  11430 03274  NO OVERFLOW - WAS NO ORIGINALL
                                                                                     Y MINUS
   .     C3240               CP   Q•                           03220  14000 00000  YES
   .     C3241               ENT  B4•U(B2)                     03221  12422 000C0  NO-STORE WORO IN AOORESS OESIG
                                                                                     .BY CALL
   .     C3242               STR  Q•W(B4)                      03222  14034 000C0
   .     C3243               ENT  B2•2+B2                      03223  12202 00002
   .     C3244               STR  B2•L(C1NFIX)                 03224  16210 031C0
   .     C3245 CINFXT1       ENT  B1•NIL                       03225  12100 00000
   .     C3246               ENT  B2•NIL                       03226  12200 000C0
   .     C3247               ENT  B3•NIL                       03227  12300 000C0
   .     C3250               ENT  B4•NIL                       03230  12400 000C0
   .     C3251 CINFXT        EXIT                              03231  61010 03100
   .     C3252 CINFMSK       17171     71717                   03232  17171 71717
   .     C3253 CINFERR1      ENT  A•22•SKIP                    03233  11100 00022  IMPLIES GAMMA TOO LARGE
   .     C3254 CINFERR2      ENT  A•23                         03234  11000 00023  IMPLIES E TOO LARGE   EXIT
   .     C3255 CINFERR3      ENT  B2•LIC1NF1X)                 03235  12210 031C0
   .     C3256               ENT  B2•1+B2                      03236  12202 00001
   .     C3257               JP   CINFXT1-1                    03237  61000 03224
   .     C3260 CCFFIX        ENTRY                             03240  61000 00000
   .     C3261               STR  B2•LICOFFTEM1)               03241  16210 03271
   .     C3262               STR  B3•LICOFFTEM2)               03242  16310 03272
   .     C3263               CL   WIFXCOOE)                    03243  16030 03274  INITIALIZATION
   .     C3264               CL   WISIGN)                      03244  16030 046C7
   .     C3265               ENT  B2•L(COFFIx)                 03245  12210 03240  B2 CONTAINS LOC OF ARG + GAMMA

   .     C3266               ENT  B3•UIB2)                     03246  12322 000C0
   .     C3267               ENT  A•WIB3)•ANEG                 03247  11733 00000  ARGUMENT UNTO A TEST + OR -
   .     C3270               JP   COFF1                        03250  61000 03253  + CONTINUE
   .     C3271               STR  A•W(FXCOOE)                  03251  15030 03274
   .     C3272               CP   A•                           03252  15040 000C0  -
   .     C3273 CCFF1         CL   Q•                           03253  10000 000C0
   .     C3274               ENT  B2•LIB2)                     03254  12212 00000
   .     C3275               RSH  AQ•B2                        03255  03002 00000
   .     C3276               STR  A•W(INTEGER)                 03256  15030 04605
   .     C3277               LSH  Q•290                        03257  05000 00035
   .     C33C0               STR  Q•WIFRACTION)                03260  14030 04606
   .     C3301               RJP  BINOECINT                    03261  65000 02514  CONVERT BIN INT TO FLOTA
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CAROS    LI (D LABEL      TA STATEMENT                              LOC    F JKB Y      NOTES

.     C33C2               RJP  B(NOECFRA                          03262  65000 027C3  CONVERT B(N FRAC TO FLOTA
.     C33C3               RJP  COFRNO                             03263  65000 02763
.     C33C4               RJP  SUPZRO                             03264  65000 02726
.     C33C5               U-TAG     (O(NTEGER•2                   03265  04613 000C2
.     C33C6               ENT  A•W(FXCODE)•AZERO                  03266  11430 03274
.     C33C7               STR  A•W(S(GN)                          03267  15030 04607
.     C3310               RPL  Y+1•L(COFFIX)                      03270  36010 03240
.     C3311 CCFFTEM1      ENT  B2•0                               03271  12200 000C0
.     C3312 CCFFTEM2      ENT  B3•0                               03272  12300 00C0C
.     C3313               EX(T                                    03273  61010 03240
.     C3314 FXCODE        C    0                                  03274  00000 00000
.     C3315 C(NFLT        ENTRY                                   03275  61000 000C0
.     C3316               STR  B4•L(CNFLTXT)                      03276  16410 03424
.     C3317               STR  B5•L(CNFLTXT+1)                    03277  16510 03425
.     C3320               STR  B6•L(CNFLTXT+2)                    03300  16610 03426
.     C3321               STR  B1•L(CNFLTXT+3)                    03301  16110 03427
.     C3322               ENT  B1•1                               03302  12100 00001
.     C3323               ENT  A•W(CNFLTP4)                       03303  11030 03436  NO
.     C3324               STR  A•W(CNFLTO1)                       03304  15030 03402
.     C3325               ENT  A•W(CNFLTP6)                       03305  11030 03440
.     C3326               STR  A•W(CNFLT11)                       03306  15030 03413
.     C3327               ENT  A•L((OEXPONENT)                    03307  11010 04617  SEPARATE EXP INTO
.     C3330               SEL  CL•6060                            03310  52000 06060  TENS AND UN(TS O(GIT
.     C3331               RSH  AQ•6                               03311  03000 00006
.     C3332               STR  A•W(CNFLTP1)                       03312  15030 03432  TENS O(GIT
.     C3333               CL   A•                                 03313  11000 000C0
.     C3334               LSH  AQ•6                               03314  07000 00006
.     C3335               STR  A•W(CNFLTP2)                       03315  15030 03433  UNITS DIGIT
.     C3336               ENT  A•W(SIGN)•AZERO                    03316  11430 04607  (S WORD PLUS
.     C3337               CL   W(SIGN)                            03317  16030 04607
.     C3340               STR  A•W(CNFLTPSIN)                     03320  15030 03434
.     C3341               ENT  B7•3                               03321  12700 00003  CLEAR 60-S FROM INTEGER + FRAC
                                                                                     TION
.     C3342               ENT  Q•W(CINFMSK)                       03322  10030 03232  X
.     C3343               CL   A•                                 03323  11000 00000  X
.     C3344               RSE  SU•W((OINTEGER•B7)                 03324  57037 04613  X
.     C3345               BJP  B7•$-2                             03325  72700 03323  X
.     C3346               RJP  (NTBCOB(N                          03326  65000 02607  CONVERT BCD TO BIN
.     C3347               JP   CNFLTERR1                          03327  61000 03431
.     C3350               RJP  FRABCOB(N                          03330  65000 02641
.     C3351               ENT  A•W((NTEGER)•ANOT                  03331  11530 04605
.     C3352               ENT  A•W(FRACT(ON)•AZERO                03332  11430 04606
.     C3353               JP   $+4                                03333  61000 03337
.     C3354               CL   W(EXPONENT)                        03334  16030 04611
.     C3355               CL   W(FPFRACT(ON)                      03335  16030 04612
.     C3356               JP   CNFLTXT-1                          03336  61000 03423
.     C3357               ENT  B6•40000                           03337  12600 40000  SET UP EXP OF ZERO BASE 2
.     C3360               ENT  A•W((NTEGER)                       03340  11030 04605
.     C3361               ENT  Q•W(FRACT(ON)                      03341  10030 04606
.     C3362               LSH  Q•1                                03342  05000 00001  GET RID OF SIGN BIT
.     C3363               JP   CNFLT                              03343  61000 03345
.     C3364               RSH  AQ•1                               03344  03000 00001  NORMALIZE
.     C3365 CNFLT         ADD  A•0•ANOT                           03345  20500 00000  IS WORD NORMALIZED
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| CARDS | L1 (O | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C3366 | | JP | CNFLNON | 03346 | 61000 03351 | YES IF THERE WAS AN INTEGER |
| . | C3367 | | ENT | B6•1+B6 | 03347 | 12606 00001 | NO (NCREASE EXP BY 1 |
| . | C3370 | | JP | CNFLT-1 | 03350 | 61000 03344 | CONTINUE |
| . | C3371 | CNFLNON | JP | CNFLNONO1•QNEG | 03351 | 60300 03355 | TEST IF WORD REALLY NORMALIZED |
| . | C3372 | | LSH | C•I | 03352 | 05000 00001 | NO THIS IS FRACTION TO BE NORM ALIZED |
| . | C3373 | | ENT | B6•B6-1 | 03353 | 12606 77776 | DECREASE EXP BY 1 |
| . | C3374 | | JP | CNFLNON | 03354 | 61000 03351 | |
| . | C3375 | CNFLNONC1 | LSH | AQ•280•QNEG | 03355 | 07300 00034 | INSERT TWO SIGN BITS - ROUND |
| . | C3376 | | JP | CNFLNON1 | 03356 | 61000 03365 | NO |
| . | C3377 | | ADD | A•1 | 03357 | 20000 00001 | YES |
| . | C3400 | | CL | C• | 03360 | 10000 00000 | |
| . | C3401 | | LSH | AQ•1•APOS | 03361 | 07600 00001 | DID ROUND CARRY TO SIGN |
| . | C3402 | | LSH | AQ•580•SKIP | 03362 | 07100 00072 | YES |
| . | C3403 | | RSH | AQ•1•SKIP | 03363 | 03100 00001 | NO |
| . | C3404 | | ENT | B6•1+B6 | 03364 | 12606 00001 | |
| . | C3405 | CNFLNON1 | STR | A•W(FPFRACTION) | 03365 | 15030 04612 | |
| . | C3406 | | STR | B6•W(EXPONENT) | 03366 | 16630 04611 | |
| . | C3407 | | ENT | A•W(EXPSIGN)•ANOT | 03367 | 11530 04620 | IS EXP P OR - |
| . | C3410 | | JP | CNFLNON2 | 03370 | 61000 03375 | +EXP |
| . | C3411 | | ENT | A•W(CNFLTP3) | 03371 | 11030 03435 | CHANGE INSTRUCTION FOR |
| . | C3412 | | STR | A•W(CNFLTO1) | 03372 | 15030 03402 | MINUS EXPONENT |
| . | C3413 | | ENT | A•W(CNFLTP5) | 03373 | 11030 03437 | |
| . | C3414 | | STR | A•W(CNFLT11) | 03374 | 15030 03413 | |
| . | C3415 | CNFLNON2 | ENT | A•W(CNFLTP2)•ANOT | 03375 | 11530 03433 | IS THERE A UNITS DIGIT IN EXP 6.10 |
| . | C3416 | | JP | CNFLTO11 | 03376 | 61000 03406 | NO CHECK TENS DIGIT |
| . | C3417 | | LSH | A•1 | 03377 | 06000 00001 | YES,MUL EXP BY 2 TO OBTAIN |
| . | C3420 | | ENT | B6•A | 03400 | 12670 00000 | INCREMENT OF CONSTANT TO MUL B Y |
| . | C3421 | | ENT | B4•EXPONENT | 03401 | 12400 04611 | SET UP FOR FP MUL |
| . | C3422 | CNFLTO1 | ENT | B5•TEN1-2+B6 | 03402 | 12506 03712 | |
| . | C3423 | | ENT | B6•EXPONENT | 03403 | 12600 04611 | |
| . | C3424 | | ENT | B7•02 | 03404 | 12700 00002 | |
| . | C3425 | | RJP | FLTPT | 03405 | 65000 06222 | |
| . | C3426 | CNFLTC11 | ENT | A•W(CNFLTP1)•ANOT | 03406 | 11530 03432 | TEST TEN-S DIGIT OF EXP 6.10 |
| . | C3427 | | JP | CNFLT12 | 03407 | 61000 03417 | NO DIGIT |
| . | C3430 | | LSH | A•1 | 03410 | 06000 00001 | MUL EXP BY 2 TO OBTAIN |
| . | C3431 | | ENT | B6•A | 03411 | 12670 00000 | CORRECT INCREMENT OF CONSTANT |
| . | C3432 | | ENT | B4•EXPONENT | 03412 | 12400 04611 | SET UP FOR FP MUL |
| . | C3433 | CNFLT11 | ENT | B5•TEN12-2+B6 | 03413 | 12506 03734 | |
| . | C3434 | | ENT | B6•EXPONENT | 03414 | 12600 04611 | |
| . | C3435 | | ENT | B7•02 | 03415 | 12700 00002 | |
| . | C3436 | | RJP | FLTPT | 03416 | 65000 06222 | |
| . | C3437 | CNFLT12 | ENT | A•W(CNFLTPSIN)•ANOT | 03417 | 11530 03434 | WAS ORIG SIGN OF WORD - |
| . | C3440 | | JP | CNFLT3+1 | 03420 | 61000 03423 | NO-EXIT |
| . | C3441 | | ENT | A•W(FPFRACTION) | 03421 | 11030 04612 | YES-COMPLEMENT WORD |
| . | C3442 | CNFLT3 | STR | A•CPW(FPFRACTION) | 03422 | 15070 04612 | |
| . | C3443 | | RPL | Y+1•L(CINFLT) | 03423 | 36010 03275 | |
| . | C3444 | CNFLTXT | ENT | B4•NIL | 03424 | 12400 00000 | |
| . | C3445 | | ENT | B5•NIL | 03425 | 12500 00000 | |

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CARDS    L1 IO LABEL       TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C3446                ENT  B6•NIL                       03426  12600 00000
   .     C3447                ENT  B1•NIL                       03427  12100 00000
   .     C3450                EXIT                              03430  61010 03275
   .     C3451 CNFLTERR1      JP   CNFLTXT                      03431  61000 03424
   .     C3452 CNFLTP1        C    0                            03432  00000 00000
   .     C3453 CNFLTP2        C    0                            03433  00000 00000
   .     C3454 CNFLTPSIN      C    0                            03434  00000 00000
   .     C3455 CNFLTP3        ENT  B5•MTEN1-2+B6                03435  12506 03656
   .     C3456 CNFLTP4        ENT  B5•TEN1-2+B6                 03436  12506 03712
   .     C3457 CNFLTP5        ENT  B5•MTEN12-2+B6               03437  12506 03700
   .     C3460 CNFLTP6        ENT  B5•TEN12-2+B6                03440  12506 03734
   .     C3461                COMMENT   SUBROUTINE                                  TO CONVERT INTERNAL FLOATING P
                                                                                     T
   .     C3462                COMMENT   NUMBER                                      TO OUTPUT EXPONENTIAL FORM
   .     C3463 CCTFLT         ENTRY                             03441  61000 00000
   .     C3464                STR  B4•L(COTXT)                  03442  16410 03577
   .     C3465                STR  B5•L(COTXT+1)                03443  16510 03600
   .     C3466                STR  B6•L(COTXT+2)                03444  16610 03601
   .     C3467                STR  B1•L(COTXT+3)                03445  16110 03602
   .     C3470                ENT  B1•1                         03446  12100 00001
   .     C3471                ENT  B7•L(COTFLT)                 03447  12710 03441
   .     C3472                ENT  B7•U(B7)                     03450  12727 00000  GET ADDRESS OF FLT PT NO.
   .     C3473                RPL  Y+1•L(COTFLT)                03451  36010 03441  ADJUST EXIT OT ERROR RETURN
   .     C3474                CL   W(IOEXPONENT)                03452  16030 04617
   .     C3475                CL   W(SINTEMP)                   03453  16030 03657
   .     C3476                CL   Q•                           03454  10000 00000
   .     C3477                ENT  A•W(B7+1)•ANOT               03455  11537 00001  IF NUMBER 0, EXIT
   .     C3500                JP   COT7                         03456  61000 03546
   .     C3501                ENT  A•W(B7+1)•APOS               03457  11637 00001  TEST SIGN OF FRACTION
   .     C3502                STR  A•CPW(FPFRACTION)•SKIP       03460  15170 04612  MAKE FRACTION LOOK POS
   .     C3503                STR  A•W(FPFRACTION)•SKIP         03461  15130 04612
   .     C3504                STR  A•W(SINTEMP)                 03462  15030 03657  STORE MINUS INDICATION
   .     C3505                ENT  A•LX(B7)                     03463  11057 00000
   .     C3506                STR  A•L(EXPONENT)•ANEG           03464  15710 04611  TEST SIGN OF EXP
   .     C3507                JP   COTNEG1                      03465  61000 03604  + IMPLIES NEG EXPONENT
   .     C3510                CL   W(EXPSIGN)                   03466  16030 04620  STORE + SIGN OF EXP
   .     C3511 CCT1           ENT  A•L(EXPONENT)                03467  11010 04611
   .     C3512                COM  A•L(TEN12)•YLESS             03470  04610 03736
   .     C3513                JP   COT2                         03471  61000 03510  NO. IS LESS THAN 10 TO 10TH
   .     C3514                ENT  Q•X77777                     03472  10040 77777
   .     C3515                COM  MASK•L(TEN12)•AZERO          03473  43410 03736
   .     C3516                JP   COT11                        03474  61000 03500  NO. IS MORE THAN 10 TO 10TH
   .     C3517                ENT  A•W(FPFRACTION)              03475  11030 04612  IF EXP =, TEST FRACTIONS
   .     C3520                COM  A•W(TEN12+1)•YLESS           03476  04630 03737
   .     C3521                JP   COT2                         03477  61000 03510  NO. IS LESS 10 TO 10TH
   .     C3522 CCT11          ENT  B4•EXPONENT                  03500  12400 04611
   .     C3523                ENT  B5•MTEN12                    03501  12500 03702
   .     C3524                ENT  B6•EXPONENT                  03502  12600 04611
   .     C3525                ENT  B7•02                        03503  12700 00002
   .     C3526                RJP  FLTPT                        03504  65000 06222
   .     C3527                ENT  A•100                        03505  11000 00012
   .     C3530                RPL  A+Y•W(IOEXPONENT)            03506  24030 04617  ADD 10 TO OUTPUT EXP
   .     C3531                JP   COT1                         03507  61000 03467  RETURN TO TEST NEW NO.
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CARDS   L1 IO LABEL     TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C3532 CCT2         ENT  B7•90                        03510  12700 00011
   .    C3533              ENT  B6•180                       03511  12600 00022
   .    C3534              ENT  Q•X77777                     03512  10040 77777
   .    C3535 CCT3         ENT  A•L(EXPONENT)                03513  11010 04611
   .    C3536              COM  A•L(TEN1+B6)•YLESS           03514  04616 03714
   .    C3537              JP   COT4                         03515  61000 03523  NO.LESS THAN THAT PWR OF 10
   .    C3540              COM  MASK•L(TEN1+B6)•AZERO        03516  43416 03714
   .    C3541              JP   COT5                         03517  61000 03526  IF GRTR, GO TO MULTIPLY
   .    C3542              ENT  A•W(FPFRACTION)              03520  11030 04612  IF EXP =, TEST FRACTIONS
   .    C3543              COM  A•W(TEN1+B6+1)•YMORE         03521  04736 03715
   .    C3544              JP   COT5                         03522  61000 03526
   .    C3545 CCT4         ENT  B6•B6-2                      03523  12606 77775  IF NO.= OR LESS, LOOK AT
   .    C3546              BJP  B7•COT3                      03524  72700 03513  NEXT LOWER PWR OF 10
   .    C3547              JP   COT6                         03525  61000 03535  NO. NEED NOT BE REDUCED
   .    C3550 CCT5         ENT  A•1+B7                       03526  11007 00001
   .    C3551              RPL  A+Y•W(IOEXPONENT)            03527  24030 04617
   .    C3552              ENT  B4•EXPONENT                  03530  12400 04611
   .    C3553              ENT  B5•MTEN1+B6                  03531  12506 03660
   .    C3554              ENT  B6•EXPONENT                  03532  12600 04611
   .    C3555              ENT  B7•02                        03533  12700 00002
   .    C3556              RJP  FLTPT                        03534  65000 06222
   .    C3557 CCT6         ENT  Q•W(FPFRACTION)              03535  10030 04612  COMMON PATH AFTER MULTIPLYING

   .    C3560              LSH  Q•2                          03536  05000 00002
   .    C3561              ENT  A•L(EXPONENT)                03537  11010 04611
   .    C3562              SUB  A•40000•ANOT                 03540  21500 400C0
   .    C3563              JP   COT7-1                       03541  61000 03545
   .    C3564              CL   A•                           03542  11000 000C0
   .    C3565              ENT  B7•L(EXPONENT)               03543  12710 04611
   .    C3566              LSH  AQ•B7-40000                  03544  07007 37777  SHIFT INTEGER PORTION TO A
   .    C3567              LSH  Q•290                        03545  05000 00035
   .    C3570 CCT7         STR  A•W(INTEGER)                 03546  15030 04605
   .    C3571              STR  Q•W(FRACTION)                03547  14030 046C6
   .    C3572              RJP  BINOECINT                    03550  65000 02514
   .    C3573              RJP  BINOECFRA                    03551  65000 027C3
   .    C3574              RJP  COFRNO                       03552  65000 02763  TRUNCATE BETA+1 AND ROUND
   .    C3575              RJP  SUPZRO                       03553  65000 02726  SUPPRESS LEADING ZEROS
   .    C3576              U-TAG     IOINTEGER•2             03554  04613 00002
   .    C3577              ENT  A•W(IOINTEGER+1)             03555  11030 04614
   .    C36C0              SEL  CP•06160•AZERO               03556  51400 06160  TEST FOR NUMBER ROUNDED TO 10
   .    C36C1              JP   $+4                          03557  61000 03563
   .    C36C2              PUT  61•W(IOINTEGER+1)            03560  10000 00061  IF SO JAM IN A 1
                                                             03561  14030 04614
   .    C36C3              RPL  Y+1•W(IOEXPONENT)            03562  36030 04617  AND BUMP EXPONENT BY 1
   .    C36C4              PUT  W(SINTEMP)•W(SIGN)           03563  10030 03657
                                                             03564  14030 04607
   .    C36C5              ENT  Q•W(IOEXPONENT)              03565  10030 04617
   .    C36C6              CL   A•                           03566  11000 00000
   .    C36C7              COM  Q•51•YMORE                   03567  04300 00051  TEST FOR EXP GRTR THAN 40
   .    C3610              JP   COTXT                        03570  61000 03577  IF SO, ERROR
   .    C3611              CIV  12                           03571  23000 00012  CONVERT TO DECIMAL
   .    C3612              LSH  A•240                        03572  06000 00030
   .    C3613              LSH  AQ•360•AZERO                 03573  07400 00044
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| CAROS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C3614 | | SEL | SET•W(SIXTIES) | 03574 | 50030 01557 | CONVERT TO FLOATA |
| . | C3615 | | STR | A•W(10EXPONENT) | 03575 | 15030 04617 | STORE IN OUTPUT |
| . | C3616 | | RPL | Y+1•L(COTFLT) | 03576 | 36010 03441 | ADJUST EXIT TO NORMAL RETURN |
| . | C3617 | CCTXT | ENT | B4•NIL | 03577 | 12400 00000 | EXIT |
| . | C3620 | | ENT | B5•NIL | 03600 | 12500 00000 | |
| . | C3621 | | ENT | B6•NIL | 03601 | 12600 00000 | |
| . | C3622 | | ENT | B1•NIL | 03602 | 12100 00000 | |
| . | C3623 | | EXIT | | 03603 | 61010 03441 | |
| . | C3624 | | COMMENT | THIS | | | BRANCH FOR NEGATIVE EXPONENTS |
| . | C3625 | CCTNEG1 | STR | A•W(EXPSIGN) | 03604 | 15030 04620 | |
| . | C3626 | | ENT | A•L(EXPONENT) | 03605 | 11010 04611 | |
| . | C3627 | | COM | A•L(MTEN12)•YLESS | 03606 | 04610 03702 | |
| . | C3630 | | JP | COTNEG11 | 03607 | 61000 03616 | NO LESS THAN 10 TO -10TH |
| . | C3631 | | ENT | Q•X77777 | 03610 | 10040 77777 | |
| . | C3632 | | COM | MASK•L(MTEN12)•AZERO | 03611 | 43410 03702 | |
| . | C3633 | | JP | COTNEG2 | 03612 | 61000 03626 | NO GRTR THAN 10 TO -10TH |
| . | C3634 | | ENT | A•W(FPFRACTION) | 03613 | 11030 04612 | |
| . | C3635 | | COM | A•W(MTEN12+1)•YMORE | 03614 | 04730 03703 | |
| . | C3636 | | JP | COTNEG2 | 03615 | 61000 03626 | NO GRTR THAN 10 TO -10TH |
| . | C3637 | CCTNEG11 | ENT | B4•EXPONENT | 03616 | 12400 04611 | |
| . | C3640 | | ENT | B5•TEN12 | 03617 | 12500 03736 | |
| . | C3641 | | ENT | B6•EXPONENT | 03620 | 12600 04611 | |
| . | C3642 | | ENT | B7•02 | 03621 | 12700 00002 | |
| . | C3643 | | RJP | FLTPT | 03622 | 65000 06222 | |
| . | C3644 | | ENT | A•100 | 03623 | 11000 00012 | ADD 10 TO OUTPUT EXPONENT |
| . | C3645 | | RPL | A+Y•W(10EXPONENT) | 03624 | 24030 04617 | |
| . | C3646 | | JP | COTNEG1+1 | 03625 | 61000 03605 | RETURN TO RETEST NO. |
| . | C3647 | CCTNEG2 | ENT | B7•90 | 03626 | 12700 00011 | WHEN NO = OR GRTR THAN |
| . | C3650 | | ENT | B6•180 | 03627 | 12600 00022 | 10 TO -10TH, LOOK FOR UNITS |
| . | C3651 | | ENT | Q•X77777 | 03630 | 10040 77777 | PWR OF 10 TO MULTIPLY BY |
| . | C3652 | CCTNEG3 | ENT | A•L(EXPONENT) | 03631 | 11010 04611 | |
| . | C3653 | | COM | A•L(MTEN1+B6)•YLESS | 03632 | 04616 03660 | |
| . | C3654 | | JP | COTNEG5 | 03633 | 61000 03647 | |
| . | C3655 | | COM | MASK•L(MTEN1+B6)•AZERO | 03634 | 43416 03660 | |
| . | C3656 | | JP | COTNEG4 | 03635 | 61000 03641 | |
| . | C3657 | | ENT | A•W(FPFRACTION) | 03636 | 11030 04612 | |
| . | C3660 | | COM | A•W(MTEN1+B6+1)•YLESS | 03637 | 04636 03661 | |
| . | C3661 | | JP | COTNEG5 | 03640 | 61000 03647 | |
| . | C3662 | CCTNEG4 | ENT | B6•B6-2 | 03641 | 12606 77775 | |
| . | C3663 | | BJP | B7•COTNEG3 | 03642 | 72700 03631 | |
| . | C3664 | | ENT | B4•EXPONENT | 03643 | 12400 04611 | |
| . | C3665 | | ENT | B5•TEN1 | 03644 | 12500 03714 | |
| . | C3666 | | RPL | Y+1•W(10EXPONENT) | 03645 | 36030 04617 | |
| . | C3667 | | JP | COTNEG5+4 | 03646 | 61000 03653 | |
| . | C3670 | CCTNEG5 | ENT | A•B7+2 | 03647 | 11007 00002 | |
| . | C3671 | | RPL | A+Y•W(10EXPONENT) | 03650 | 24030 04617 | |
| . | C3672 | | ENT | B4•EXPONENT | 03651 | 12400 04611 | |
| . | C3673 | | ENT | B5•TEN1+B6+2 | 03652 | 12506 03716 | |
| . | C3674 | | ENT | B6•EXPONENT | 03653 | 12600 04611 | |
| . | C3675 | | ENT | B7•02 | 03654 | 12700 00002 | |
| . | C3676 | | RJP | FLTPT | 03655 | 65000 06222 | |

| CARDS | LI ID | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| . | C3677 | | | JP COT6 | 03656 | 61000 | 03535 | | |
| . | C37CC | SINTEMP | | C 0 | 03657 | 00000 | 00000 | | |
| . | C37C1 | MTEN1 | | 0 37775 | 03660 | 00000 | 37775 | | |
| . | C37C2 | | | 14631 46315 | 03661 | 14631 | 46315 | | |
| . | C37C3 | MTEN2 | | 0 37772 | 03662 | 00000 | 37772 | | |
| . | C37C4 | | | 12172 70244 | 03663 | 12172 | 70244 | | |
| . | C37C5 | MTEN3 | | C 37767 | 03664 | 00000 | 37767 | | |
| . | C37C6 | | | 10142 23351 | 03665 | 10142 | 23351 | | |
| . | C37C7 | MTEN4 | | C 37763 | 03666 | 00000 | 37763 | | |
| . | C3710 | | | 15066 70565 | 03667 | 15066 | 70565 | | |
| . | C3711 | MTEN5 | | C 37760 | 03670 | 00000 | 37760 | | |
| . | C3712 | | | 1237C 55304 | 03671 | 12370 | 553C4 | | |
| . | C3713 | MTEN6 | | C 37755 | 03672 | 00000 | 37755 | | |
| . | C3714 | | | 10306 75720 | 03673 | 10306 | 75720 | | |
| . | C3715 | MTEN7 | | C 37751 | 03674 | 00000 | 37751 | | |
| . | C3716 | | | 15327 74515 | 03675 | 15327 | 74515 | | |
| . | C3717 | MTEN1C | | C 37746 | 03676 | 00000 | 37746 | | |
| . | C372C | | | 12571 43561 | 03677 | 12571 | 43561 | | |
| . | C3721 | MTEN11 | | C 37743 | 03700 | 00000 | 37743 | | |
| . | C3722 | | | 10456 02764 | 03701 | 10456 | 02764 | | |
| . | C3723 | MTEN12 | | C 37737 | 03702 | 00000 | 37737 | | |
| . | C3724 | | | 15574 67755 | 03703 | 15574 | 67755 | | |
| . | C3725 | MTEN24 | | C 37676 | 03704 | 00000 | 37676 | | |
| . | C3726 | | | 13634 50206 | 03705 | 13634 | 50206 | | |
| . | C3727 | MTEN36 | | C 37635 | 03706 | 00000 | 37635 | | |
| . | C3730 | | | 1211C 22777 | 03707 | 12110 | 22777 | | |
| . | C3731 | MTEN5C | | C 37574 | 03710 | 00000 | 37574 | | |
| . | C3732 | | | 10554 11423 | 03711 | 10554 | 11423 | | |
| . | C3733 | TEN | | C 37775 | 03712 | 00000 | 37775 | | |
| . | C3734 | | | 14631 46315 | 03713 | 14631 | 46315 | | |
| . | C3735 | TEN1 | | C 40004 | 03714 | 00000 | 40004 | | |
| . | C3736 | | | 12000 0 | 03715 | 12000 | 00000 | | |
| . | C3737 | TEN2 | | C 40007 | 03716 | 00000 | 40007 | | |
| . | C374C | | | 1440C 0 | 03717 | 14400 | 00000 | | |
| . | C3741 | TEN3 | | C 40012 | 03720 | 00000 | 40012 | | |
| . | C3742 | | | 1750C 0 | 03721 | 17500 | 00000 | | |
| . | C3743 | TEN4 | | C 40016 | 03722 | 00000 | 40016 | | |
| . | C3744 | | | 1161C 0 | 03723 | 11610 | 00000 | | |
| . | C3745 | TEN5 | | C 40021 | 03724 | 00000 | 40021 | | |
| . | C3746 | | | 14152 0 | 03725 | 14152 | 00000 | | |
| . | C3747 | TEN6 | | C 40024 | 03726 | 00000 | 40024 | | |
| . | C375C | | | 17204 40000 | 03727 | 17204 | 40000 | | |
| . | C3751 | TEN7 | | C 40030 | 03730 | 00000 | 40030 | | |
| . | C3752 | | | 11422 64000 | 03731 | 11422 | 64000 | | |
| . | C3753 | TEN1C | | C 40033 | 03732 | 00000 | 40033 | | |
| . | C3754 | | | 13727 41000 | 03733 | 13727 | 41000 | | |
| . | C3755 | TEN11 | | 0 40036 | 03734 | 00000 | 40036 | | |
| . | C3756 | | | 16715 31200 | 03735 | 16715 | 31200 | | |
| . | C3757 | TEN12 | | C 40042 | 03736 | 00000 | 40042 | | |
| . | C3760 | | | 1124C 27620 | 03737 | 11240 | 27620 | | |
| . | C3761 | TEN24 | | C 40103 | 03740 | 00000 | 40103 | | |
| . | C3762 | | | 12657 07274 | 03741 | 12657 | 07274 | | |
| . | C3763 | TEN36 | | C 40144 | 03742 | 00000 | 40144 | | |

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CARDS    LI IO LABEL      TA STATEMENT                              LOC    F JKB Y      NOTES

   .     C3764              14476     26234                        03743  14476 26234
   .     C3765 TEN5C        C    40205                             03744  00000 40205
   .     C3766              16543     12370                        03745  16543 12370
   .     C3767 ERROR        ENT  Q•77                              03746  10000 00077
   .     C377C              CLEAR     BOD•BUFFER-BOO               03747  70100 00120
                                                                   03750  16030 04623
   .     C3771              COM  MASK•0•ANOT                       03751  43500 00000  SOURCE PROGRAM ERROR
   .     C3772              JP   ERROR2                            03752  61000 03767  PROGRAM ERROR
   .     C3773              COM  MASK•20•ANOT                      03753  43500 00020  MAX LIMIT
   .     C3774              JP   ERROR4                            03754  61000 04013  MAX LIMIT
   .     C3775              COM  MASK•21•ANOT                      03755  43500 00021  MIN LIMIT
   .     C3776              JP   ERROR4A                           03756  61000 04014  MIN LIMIT
   .     C3777 ERRCR1       ENT  Q•12000                           03757  10000 12000
   .     C4CCC              ENT  A•ERROR1A                         03760  11000 03763
   .     C4CC1              ENT  B7•-17D                           03761  12700 77756
   .     C4C02              JP   ERROR5                            03762  61000 04024  COMMON ROUTINE
   .     C4CC3 ERRCR1A      FD   3•  FORMAT ERROR                  03763  05051 32427
                                                                   03764  22063 10512
                                                                   03765  27272 42705
   .     C4CC4              C403C     00000                        03766  04030 00000
   .     C4CC5 ERRCR2       ENT  A•0                               03767  11000 00000
   .     C4CC6              ENT  Q•L(INTERCOM)                     03770  10010 00002
   .     C4CC7              SUB  Q•2                               03771  27000 00002
   .     C4C10              ENT  B7•4                              03772  12700 00004
   .     C4C11              LSH  Q•15D                             03773  05000 00017
   .     C4C12              LSH  A•3                               03774  06000 00003
   .     C4C13              LSH  AQ•3                              03775  07000 00003
   .     C4C14              BJP  B7•$-2                            03776  72700 03774
   .     C4C15              SEL  SET•W(SIXTIES)                    03777  50030 01557
   .     C4016              STR  A•W(ERROR2B)                      04000  15030 04011
   .     C4C17              ENT  A•ERROR2A                         04001  11000 04005
   .     C4C20              ENT  Q•61000                           04002  10000 61000
   .     C4C21              ENT  B7•-27D                           04003  12700 77744
   .     C4C22              JP   ERROR5                            04004  61000 04024
   .     C4C23 ERROR2A      FD   3•  PROGRAM ERROR                 04005  05052 52724
                                                                   04006  14270 62205
                                                                   04007  12272 72427
   .     C4C24              C505C     50505                        04010  05050 50505
   .     C4C25 ERROR2B      C    0                                 04011  00000 00000
   .     C4C26              C403C     00000                        04012  04030 00000
   .     C4C27 ERROR4       ENT  Q•W(ERROR6A)•SKIP                 04013  10130 04077  MAX LIMIT
   .     C4C30 ERROR4A      ENT  Q•W(ERROR6B)                      04014  10030 04100  MIN LIMIT
   .     C4C31              STR  Q•W(ERROR6C)                      04015  14030 04101
   .     C4C32              ENT  Q•12000                           04016  10000 12000
   .     C4C33              STR  Q•U(COMPROCSW)                    04017  14020 00422
   .     C4034              STR  Q•U(INTINO3)                      04020  14020 00325
   .     C4C35              ENT  A•ERROR6C                         04021  11000 04101
   .     C4C36              ENT  B7•-34D                           04022  12700 77735
   .     C4C37              CL   W(BUFSLOT)                        04023  16030 04575
   .     C4C4C ERROR5       STR  A•L(ERROR5A)                      04024  15010 04045  COMMON ROUTINE
   .     C4C41              STR  Q•U(ERRORSW)                      04025  14020 04064
   .     C4C42              STR  B7•L(ERROR52)                     04026  16710 04040
   .     C4C43              RJP  SPACERITE                         04027  65000 00524
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CARDS    L1 IO LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C4C44               ENT  A•BUFFER                           04030  11000 04743
   .     C4C45               SUB  A•B7                               04031  21007 00000
   .     C4C46               STR  A•L(ERROR51)                       04032  15010 04037
   .     C4C47               SUB  A•1                                04033  21000 00001
   .     C4C50               STR  A•L(ERROR53)                       04034  15010 04052
   .     C4C51               ENT  A•05                               04035  11000 00005
   .     C4C52               RPT  B7•ADV                             04036  70107 00000
   .     C4C53 ERROR51       STR  A•W(NIL)                           04037  15030 00000
   .     C4C54 ERROR52       ENT  B7•NIL                             04040  12700 00000
   .     C4C55               ENT  A•L(ERROR51)                       04041  11010 04037
   .     C4C56               ADD  A•B7+I                             04042  20007 00001
   .     C4C57               STR  A•L(ERRBUFWC)                      04043  15010 04556
   .     C4C6C               CL   B6•                                04044  12600 00000
   .     C4C61 ERROR5A       ENT  Q•W(NIL)                           04045  10030 00000
   .     C4C62 ERROR5B       CL   A•                                 04046  11000 00000
   .     C4C63               LSH  AQ•6•ANOT                          04047  07500 00006
   .     C4C64               JP   ERROR5E                            04050  61000 04054
   .     C4C65               BSK  B7•77777                           04051  71700 77777
   .     C4C66 ERROR53       STR  A•W(NIL+B7)•SKIP                   04052  15137 00000
   .     C4C67               JP   ERROR5C                            04053  61000 04061
   .     C4C7C ERROR5E       BSK  B6•4                               04054  71600 00004
   .     C4C71               JP   ERROR5B                            04055  61000 04046
   .     C4C72               RPL  Y+1•L(ERROR5A)                     04056  36010 04045  YES-GET NEXT WORD
   .     C4073               COM  A•LIMIT+90•YLESS                   04057  04600 04115
   .     C4C74               JP   ERROR5A                            04060  61000 04045
   .     C4C75 ERROR5C       ENT  A•12000                            04061  11000 12000  SET INTERRUPT SWITCH TO NO-OP

   .     C4C76               STR  A•U(INTOUTSW)                      04062  15020 00143
   .     C4C77 ERROR5D       ENT  A•BUFFER-1                         04063  11000 04742  NO OF CHAR TO END OF BUFFER
   .     C41C0 ERRORSW       JP   ERROR6                             04064  61000 04066
   .     C41C1               ADD  A•W(BUFSLOT)                       04065  20030 04575
   .     C41C2 ERROR6        STR  A•U(ERRBUFWO)                      04066  15020 04556
   .     C41C3               ENT  Q•12000                            04067  10000 12000
   .     C41C4               STR  Q•U(INTOUTSWO)                     04070  14020 00142
   .     C41C5               STR  Q•U(KILLOUTSW)                     04071  14020 00240
   .     C41C6               OUT  KEYOUT•W(ERRBUFWO)•MONITOR         04072  76130 04556
   .     C41C7               RJP  WESTOUT•KEY3                       04073  65300 00630
   .     C4110               JP   $+2•KEY1                           04074  61100 04076
   .     C4111               RJP  HSPERRMESS                         04075  65000 04252
   .     C4112               JP   COMPROCO2+2                        04076  61000 00453
   .     C4113 ERROR6A       FO   1•  MAX                            04077  05052 20635
   .     C4114 ERROR6B       FO   1•  MIN                            04100  05052 21623
   .     C4115 ERROR6C       C    0                                  04101  00000 00000
   .     C4116               FO   2•  LIMIT =                        04102  05052 11622
                                                                     04103  16310 54405
   .     C4117 LIMIT         RESERVE   80                            04104  00000 00000
   .     C412C               C403C     00000                        04114  04030 00000
   .     C4121 HSPOUT        ENTRY                                   04115  61000 00000
   .     C4122               ENT  B2•1                               04116  12200 00001  INITIALIZE COUNTERS-TOTAL IN C
                                                                                        HARS
   .     C4123 LIN2          ENT  B4•0                               04117  12400 00000  NO OF OUT WORDS
   .     C4124               ENT  B3•4                               04120  12300 00004  5 CHAR PER WORD
   .     C4125               CL   A•                                 04121  11000 00000
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CARDS    LI ID LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES
   .     C4126 LOCHAR        ENT  Q•W(BUFFER-1+B2)              04122  10032 04742  GET CHARACTER
   .     C4127               SUB  Q•D4•QNOT                     04123  27500 000C4  TEST FOR END OF LINE
   .     C4130               JP   LINSW                         04124  61000 04145  YES GO SET SWITCH
   .     C4131               ACD  Q•C4                          04125  26000 00004  NO
   .     C4132               SUB  Q•C3•QZERO                    04126  27400 000C3  TEST FOR LINEFEED
   .     C4133               JP   $+4                           04127  61000 04133
   .     C4134               BSK  B2•W(BUFFCOUNT)               04130  71230 046C0
   .     C4135               JP   LOCHAR                        04131  61000 04122
   .     C4136               JP   HSPOUTFIN                     04132  61000 04152
   .     C4137               ACD  Q•D3                          04133  26000 000C3
   .     C414C               LSH  Q•24D                         04134  05000 00030
   .     C4141               LSH  AQ•6                          04135  07000 00006  PACK CHAR IN A REGISTER
   .     C4142               BSK  B2•W(BUFFCOUNT)               04136  71230 046C0  TEST FOR LAST CHAR
   .     C4143               JP   $+2                           04137  61000 04141
   .     C4144               JP   HSPOUTFIN                     04140  61000 04152  YES GO TO WINDUP
   .     C4145               BJP  B3•LOCHAR                     04141  72300 04122  TEST FOR FULL WORD
   .     C4146               STR  A•W(HSPBUF+B4)                04142  15034 044C4  YES STORE IN PRINT BUFFER
   .     C4147               BSK  B4•-1                         04143  71400 77776  INCR WORD COUNTER
   .     C415C               JP   LOCHAR-2                      04144  61000 04120  GO INITIALIZE FOR NEXT WORD

   .     C4151 LINSW         BSK  B2•W(BUFFCOUNT)               04145  71230 046C0
   .     C4152               ENT  Q•12000•SKIP                  04146  10100 12CC0
   .     C4153               JP   HSPOUTFIN                     04147  61000 04152
   .     C4154               STR  Q•U(CRSW)                     04150  14020 04162
   .     C4155               LSH  A•6                           04151  06000 00006
   .     C4156 HSPOUTFIN     BJP  B3•$-1                        04152  72300 04151  LOOP TO LEFT ADJ LAST WORD
   .     C4157               STR  A•W(HSPBUF+B4)                04153  15034 044C4  STORE IN PRINT BUFFER
   .     C4160               BSK  B4•-1                         04154  71400 77776  INCR WORD COUNTER
   .     C4161               STR  B4•U(PRPARAM)                 04155  16420 04157  SET NO OF WORDS
   .     C4162               RJP  U(PRLOG)                      04156  65020 63423  GO TO PRINT ROUTINE
   .     C4163 PRPARAM       C    HSPBUF                        04157  00000 044C4  UPPER-NO OF WORDS,LOWER-START
                                                                                    ADDRESS
   .     C4164               1    0                             04160  00001 000C0  ADV ONE LINE BEFORE PRINT
   .     C4165               JP   HSPOUT1                       04161  61000 04166
   .     C4166 CRSW          JP   HSPOUT                        04162  61000 04115  SWITCH-EXIT OR GET NEXT LINE
   .     C4167               ENT  Q•61000                       04163  10000 61000  JUMP  FINISHED WITH OUTPUT
   .     C4170               STR  Q•U(CRSW)                     04164  14020 04162
   .     C4171               JP   LIN2                          04165  61000 04117  GO ASSEMBLE NEXT LINE
   .     C4172 HSPOUT1       ENT  Q•61000                       04166  10000 61000
   .     C4173               STR  Q•U(KILLOUTSW)                04167  14020 00240
   .     C4174               TERM KEYIN•INPUT                   04170  66100 00000
   .     C4175               JP   CRSW                          04171  61000 04162
   .     C4176 HSPGIN        ENTRY                              04172  61000 00000
   .     C4177               RJP  HSPIN                         04173  65000 04306  ROUTINE TO ESTABLISH LINE INDE
                                                                                    NT
   .     C42C0               RJP  INCHAR                        04174  65000 04335  ROUTINE TO LOAD BUFFER WITH IN
                                                                                    PUT DATA
   .     C42C1               ENT  Q•W(BOTSTOP)                  04175  10030 00617  ENTER GOOD DATA SYMBOLS
   .     C42C2               LSH  Q•24D                         04176  05000 00030  LEFT ADJ
   .     C42C3               STR  Q•W(HSPBUF+B4)                04177  14034 04404  STORE IN PRINTER BUFFER
   .     C42C4               BSK  B4•-1                         04200  71400 77776  INCR WORD COUNTER
   .     C42C5               STR  B4•U(HSPRNT+2)                04201  16420 04372  SET NO OF WORDS
   .     C42C6               RJP  HSPRNT                        04202  65000 04370  GO TO PRINT ROUTINE
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| CARDS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C4207 | | | EXIT | 04203 | 61010 04172 | |
| . | C4210 | HSPATTN | | ENTRY | 04204 | 61000 00000 | |
| . | C4211 | | | RJP HSPIN | 04205 | 65000 043C6 | ROUTINE TO ESTABLISH LINE INOE NT |
| . | C4212 | | | RJP INCHAR | 04206 | 65000 04335 | ROUTINE TO LOAD INPUT DATA |
| . | C4213 | | | ENT Q•W(ATTEN) | 04207 | 10030 04215 | LOAD ATTEN WORD |
| . | C4214 | | | STR Q•W(HSPBUF+B4) | 04210 | 14034 04404 | STORE IN PRINT BUFFER |
| . | C4215 | | | BSK B4•-1 | 04211 | 71400 77776 | INCR WORD COUNTER |
| . | C4216 | | | STR B4•U(HSPRNT+2) | 04212 | 16420 04372 | SET NO OF WURDS |
| . | C4217 | | | RJP HSPRNT | 04213 | 65000 04370 | GO TO PRINT ROUTINE |
| . | C4220 | | | EXIT | 04214 | 61010 04204 | |
| . | C4221 | ATTEN | | FD 1• ATTN | 04215 | 05063 13123 | |
| . | C4222 | HSPACC | | ENTRY | 04216 | 61000 00000 | |
| . | C4223 | | | RJP HSPIN | 04217 | 65000 043D6 | ROUTINE TO ESTABLISH LINE INOE NT |
| . | C4224 | | | ENT Q•W(ACCPT1) | 04220 | 10030 04231 | LOAD FIRT WORD ( ACCE) |
| . | C4225 | | | STR Q•W(HSPBUF+B4) | 04221 | 14034 044C4 | STORE FIRT WORD |
| . | C4226 | | | BSK B4•-1 | 04222 | 71400 77776 | |
| . | C4227 | | | ENT Q•W(ACCPT1+1) | 04223 | 10030 04232 | LOAD SECOND WORD (PTED ) |
| . | C4230 | | | STR Q•W(HSPBUF+B4) | 04224 | 14034 04404 | STORE SECOND WORD |
| . | C4231 | | | BSK B4•-1 | 04225 | 71400 77776 | |
| . | C4232 | | | STR B4•U(HSPRNT+2) | 04226 | 16420 04372 | STORE NO OF WORDS |
| . | C4233 | | | RJP HSPRNT | 04227 | 65000 04370 | |
| . | C4234 | | | EXIT | 04230 | 61010 04216 | |
| . | C4235 | ACCPT1 | | FD 2•ACCEPTED$ | 04231 | 06101 01225 | |
| | | | | | 04232 | 31121 14705 | |
| . | C4236 | HSPNCTACC | | ENTRY | 04233 | 61000 00000 | |
| . | C4237 | | | RJP HSPIN | 04234 | 65000 043C6 | ROUTINE TO ESTABLISH LINE INOE NT |
| . | C4240 | | | RJP INCHAR | 04235 | 65000 04335 | ROUTINE TO LOAD INPUT DATA |
| . | C4241 | | | ENT B3•0 | 04236 | 12300 00000 | |
| . | C4242 | HSPNCT1 | | ENT Q•W(NOTACC1+B3) | 04237 | 10033 04247 | LOAD MESSAGE WORDS |
| . | C4243 | | | STR Q•W(HSPBUF+B4) | 04240 | 14034 04404 | STORE IN PRINT BUFFER |
| . | C4244 | | | BSK B4•-1 | 04241 | 71400 77776 | |
| . | C4245 | | | BSK B3•2 | 04242 | 71300 00002 | |
| . | C4246 | | | JP HSPNOT1 | 04243 | 61000 04237 | |
| . | C4247 | | | STR B4•U(HSPRNT+2) | 04244 | 16420 04372 | SET NO OF WURDS |
| . | C4250 | | | RJP HSPRNT | 04245 | 65000 04370 | GO TO PRINT |
| . | C4251 | | | EXIT | 04246 | 61010 04233 | |
| . | C4252 | NCTACC1 | | FD 3• NOT ACCEPTED | 04247 | 05232 43105 | |
| | | | | | 04250 | 05061 01012 | |
| | | | | | 04251 | 25311 21105 | |
| . | C4253 | HSPERRMESS | | ENTRY | 04252 | 61000 00000 | |
| . | C4254 | | | RJP HSPIN | 04253 | 65000 043C6 | ROUTINE TO ESTABLISH LINE INOE NT |
| . | C4255 | | | RJP INCHAR | 04254 | 65000 04335 | ROUTINE TO LOAD INPUT DATA |
| . | C4256 | | | ENT A•L(ERROR52) | 04255 | 11010 04040 | GET CHAR COUNT OF MESSAGE |
| . | C4257 | | | ADD A•3 | 04256 | 20000 00003 | |
| . | C4260 | | | STR A•CPL(ERRCNT) | 04257 | 15050 04555 | STORE NO OF CHAR |
| . | C4261 | | | ENT A•L(ERRBUFWO) | 04260 | 11010 04556 | GET STARTING ADDRESS |
| . | C4262 | | | STR A•LI(HSPEM1) | 04261 | 15010 04265 | |
| . | C4263 | | | ENT B2•0 | 04262 | 12200 00000 | |
| . | C4264 | | | ENT B3•4 | 04263 | 12300 00004 | |

| CARDS | LI (D | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C4265 | | | CL A• | 04264 | 11000 00000 | |
| . | C4266 | HSPEM1 | | ENT Q•L(NIL+B2) | 04265 | 10012 00000 | GET CHAR |
| . | C4267 | | | LSH Q•240 | 04266 | 05000 00030 | |
| . | C4270 | | | LSH AQ•6 | 04267 | 07000 00006 | PACK IN A REGISTER |
| . | C4271 | | | BSK B2•L(ERRCNT) | 04270 | 71210 04555 | TEST FOR LAST CHAR |
| . | C4272 | | | JP $+2 | 04271 | 61000 04273 | |
| . | C4273 | | | JP ERRMESSFIN | 04272 | 61000 04300 | YES GO TO WINDUP |
| . | C4274 | | | BJP B3•HSPEM1 | 04273 | 72300 04265 | TEST FOR FULL WORD |
| . | C4275 | | | STR A•W(HSPBUF+B4) | 04274 | 15034 04404 | STORE IN PRINT BUFFER |
| . | C4276 | | | BSK B4•-1 | 04275 | 71400 77776 | YES - INCR WORD COUNTER |
| . | C4277 | | | JP HSPEM1-2 | 04276 | 61000 04263 | START NEXT WORD |
| . | C4300 | | | LSH A•6 | 04277 | 06000 00006 | |
| . | C4301 | ERRMESSFIN | | BJP B3•$-1 | 04300 | 72300 04277 | LOOP TO LEFT ADJUST LAST WORD |
| . | C4302 | | | STR A•W(HSPBUF+B4) | 04301 | 15034 04404 | STORE IN PRINT BUFFER |
| . | C4303 | | | BSK B4•-1 | 04302 | 71400 77776 | INCR WORD COUNTER |
| . | C4304 | | | STR B4•U(HSPRNT+2) | 04303 | 16420 04372 | SET NO OF WORDS |
| . | C4305 | | | RJP HSPRNT | 04304 | 65000 04370 | GO TO PRINT ROUTINE |
| . | C4306 | | | EXIT | 04305 | 61010 04252 | |
| . | C4307 | HSPIN | | ENTRY | 04306 | 61000 00000 | |
| . | C4310 | | | STR Q•W(HSPQSTOR) | 04307 | 14030 04550 | SAVE REGISTERS |
| . | C4311 | | | STR B2•L(HSPB2STOR) | 04310 | 16210 04552 | |
| . | C4312 | | | STR B3•L(HSPB3STOR) | 04311 | 16310 04553 | |
| . | C4313 | | | STR B4•L(HSPB4STOR) | 04312 | 16410 04554 | |
| . | C4314 | | | ENT B2•1 | 04313 | 12200 00001 | INITIALIZE COUNTERS-TOTAL IN CHARS |
| . | C4315 | | | ENT B3•0 | 04314 | 12300 00000 | 5 PER WORD OUT |
| . | C4316 | | | ENT B4•0 | 04315 | 12400 00000 | |
| . | C4317 | | | RJP SPACERITE | 04316 | 65000 00524 | |
| . | C4320 | | | ENT A•B7 | 04317 | 11007 00000 | NO OF CHAR IN INDENT INPUT MESSAGE |
| . | C4321 | | | SUB A•BOD•ANEG | 04320 | 21700 00120 | ALLOW FOR MULTI-LINE OUTPUT MESSAGE |
| . | C4322 | | | JP $-1 | 04321 | 61000 04320 | |
| . | C4323 | | | ADD A•B00 | 04322 | 20000 00120 | |
| . | C4324 | | | ENT B7•A | 04323 | 12770 00000 | 5 SPACES OR COUNT ON LAST OUTPUT LINE |
| . | C4325 | HSPIN1 | | ENT Q•W(SPACES) | 04324 | 10030 03077 | |
| . | C4326 | | | LSH AQ•6 | 04325 | 07000 00006 | |
| . | C4327 | | | BSK B3•4 | 04326 | 71300 00004 | COUNT 5 PER WORD |
| . | C4330 | | | JP HSPIN2 | 04327 | 61000 04333 | NOT FULL WORD |
| . | C4331 | | | STR A•W(HSPBUF+B4) | 04330 | 15034 04404 | STORE IN PRINTER BUFFER |
| . | C4332 | | | CL A• | 04331 | 11000 00000 | |
| . | C4333 | | | BSK B4•-1 | 04332 | 71400 77776 | INCR WORD COUNTER |
| . | C4334 | HSPIN2 | | BJP B7•HSPIN1 | 04333 | 72700 04324 | COUNT SPACES NEEDED-GET NEXT CHAR |
| . | C4335 | | | EXIT | 04334 | 61010 04306 | SPACES SET-GO FOR INPUT DATA |
| . | C4336 | INCHAR | | ENTRY | 04335 | 61000 00000 | |
| . | C4337 | | | ENT Q•1 | 04336 | 10000 00001 | |
| . | C4340 | | | COM Q•W(SLOTSTOR)•YMORE | 04337 | 04330 04403 | |
| . | C4341 | | | EXIT | 04340 | 61010 04335 | |
| . | C4342 | INCHAR3 | | ENT Q•W(BUFFER-1+B2) | 04341 | 10032 04742 | GET INPUT CHAR |
| . | C4343 | | | LSH Q•240 | 04342 | 05000 00030 | |

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CARDS   L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .    C4344               LSH  AQ*6                         04343  07000 00006  PACK IN A REGISTER
   .    C4345               BSK  B3*4                         04344  71300 00004  TEST FOR FULL WORD
   .    C4346               JP   INCHAR1                      04345  61000 04352  GET ANOTHER CHAR
   .    C4347               STR  A*W(HSPBUF+B4)               04346  15034 04404  STORE IN PRINT BUFFER
   .    C4350               BSK  B4*150                       04347  71400 00017  TEST FOR FULL LINE
   .    C4351               ENT  A*0*SKIP                     04350  11100 00000
   .    C4352               JP   PRINTLIN                     04351  61000 04363
   .    C4353 INCHAR1       BSK  B2*W(SLOTSTOR)               04352  71230 04403  TEST FOR LAST CHAR
   .    C4354               JP   INCHAR3                      04353  61000 04341
   .    C4355               JP   INCHAR2*AZERO                04354  60400 04362  NO LEFT ADJUST IF A ZERO
   .    C4356               LSH  AQ*6                         04355  07000 00006
   .    C4357               BSK  B3*4                         04356  71300 00004  LOOP TO LEFT ADJ
   .    C4360               JP   $-2                          04357  61000 04355
   .    C4361               STR  A*W(HSPBUF+B4)               04360  15034 04404
   .    C4362               BSK  B4*-1                        04361  71400 77776
   .    C4363 INCHAR2       EXIT                              04362  61010 04335  GO TO CALLING ROUTINE
   .    C4364 PRINTLIN      RJP  U(PRLOG)                     04363  65020 63423  PRINT
   .    C4365               15   HSPBUF                      04364  00015 04404
   .    C4366               1    0                            04365  00001 00000
   .    C4367               JP   $+1                          04366  61000 04367  IF BUSY FRGET IT
   .    C4370               JP   INCHAR1-2                    04367  61000 04350
   .    C4371 HSPRNT        ENTRY                             04370  61000 00000
   .    C4372               RJP  U(PRLOG)                     04371  65020 63423  CALL HIGH SPEED PRINT ROUTINE

   .    C4373               C    HSPBUF                       04372  00000 04404  UPPER = NO OF WORDS,LOWER = ST
                                                                                    ART ADDR.
   .    C4374               1    0                            04373  00001 00000  FEED PAPER 1 LINE BEFORE PRINT

   .    C4375               NO-OP                             04374  12000 00000
   .    C4376               ENT  Q*W(HSPQSTOR)                04375  10030 04550  RESTORE SAVED REGISTERS
   .    C4377               ENT  B2*LIHSPB2STOR)              04376  12210 04552
   .    C44C0               ENT  B3*LIHSPB3STOR)              04377  12310 04553
   .    C44C1               ENT  B4*LIHSPB4STOR)              04400  12410 04554
   .    C44C2               EXIT                              04401  61010 04370
   .    C44C3 PRINTSW       C    0                            04402  00000 00000
   .    C44C4 SLOTSTOR      C    0                            04403  00000 00000
   .    C44C5 HSPBUF        RESERVE   1000                    04404  00000 00000
   .    C44C6 HSPQSTOR      RESERVE   1                       04550  00000 00000
   .    C44C7 HSPASTOR      RESERVE   1                       04551  00000 00000
   .    C4410 HSPB2STOR     RESERVE   1                       04552  00000 00000
   .    C4411 HSPB3STOR     RESERVE   1                       04553  00000 00000
   .    C4412 HSPB4STOR     RESERVE   1                       04554  00000 00000
   .    C4413 ERRCNT        RESERVE   1                       04555  00000 00000
   .    C4414 ERRBUFWC      RESERVE   1                       04556  00000 00000
   .    C4415 BINLMT        C    0                            04557  00000 00000
   .    C4416 CONVERT       C    0                            04560  00000 00000
   .    C4417 NUMOIG        C    0                            04561  00000 00000
   .    C4420 INFS1         C    0                            04562  00000 00000
   .    C4421 PLTS1         C    0                            04563  00000 00000
   .    C4422 PLTS2         C    0                            04564  00000 00000
   .    C4423 QSTORE        C    0                            04565  00000 00000
   .    C4424 CFASTOR       C    0                            04566  00000 00000
   .    C4425 CFQSTOR       C    0                            04567  00000 00000
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| CARDS | LI IO LABEL | TA STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|
| . | C4426 MCPASTOR | C 0 | 04570 | 00000 00000 | |
| . | C4427 MCPQSTOR | C 0 | 04571 | 00000 00000 | |
| . | C4430 INTASTOR | C 0 | 04572 | 00000 00000 | |
| . | C4431 INTQSTOR | C 0 | 04573 | 00000 00000 | |
| . | C4432 ACTIVITY | C 0 | 04574 | 00000 00000 | |
| . | C4433 BUFSLCT | C 0 | 04575 | 00000 00000 | |
| . | C4434 SPECTBLS | C 0 | 04576 | 00000 00000 | |
| . | C4435 BUFIN | C 0 | 04577 | 00000 00000 | |
| . | C4436 BUFFCOUNT | RESERVE 1 | 04600 | 00000 00000 | |
| . | C4437 PPADDR | RESERVE 1 | 04601 | 00000 00000 | |
| . | C4440 CCCE | RESERVE 1 | 04602 | 00000 00000 | |
| . | C4441 GAMMA | RESERVE 1 | 04603 | 00000 00000 | |
| . | C4442 BETA | RESERVE 1 | 04604 | 00000 00000 | |
| . | C4443 INTEGER | RESERVE 1 | 04605 | 00000 00000 | |
| . | C4444 FRACTION | C 0 | 04606 | 00000 00000 | |
| . | C4445 SIGN | RESERVE 1 | 04607 | 00000 00000 | |
| . | C4446 NCINTS | RESERVE 1 | 04610 | 00000 00000 | |
| . | C4447 EXPONENT | RESERVE 1 | 04611 | 00000 00000 | |
| . | C445C FFFRACTION | RESERVE 1 | 04612 | 00000 00000 | |
| . | C4451 ICINTEGER | RESERVE 2 | 04613 | 00000 00000 | |
| . | C4452 ICFRACTION | RESERVE 2 | 04615 | 00000 00000 | |
| . | C4453 ICEXPONENT | RESERVE 1 | 04617 | 00000 00000 | |
| . | C4454 EXPSIGN | RESERVE 1 | 04620 | 00000 00000 | |
| . | C4455 RJPIN | RJP INTIN | 04621 | 65000 00234 | |
| . | C4456 RJPOUT | RJP INTOUT | 04622 | 65000 00140 | |
| . | C4457 | RESERVE 800 | 04623 | 00000 00000 | |
| . | C4460 BUFFER | RESERVE 3000 | 04743 | 00000 00000 | |
| . | C4461 TTYBUF | RESERVE 3000 | 05417 | 00000 00000 | |
| . | C4462 TTYTBL | C0 00 | 06073 | 00000 00000 | NULL |
| . | C4463 | 33 12 | 06074 | 00033 00012 | E |
| . | C4464 | 37 03 | 06075 | 00037 00003 | LINE FEED |
| . | C4465 | C2 06 | 06076 | 00002 00006 | A |
| . | C4466 | 10 05 | 06077 | 00010 00005 | SPACE |
| . | C4467 | C4 30 | 06100 | 00004 00030 | S |
| . | C4470 | C3 16 | 06101 | 00003 00016 | I |
| . | C4471 | 31 32 | 06102 | 00031 00032 | U |
| . | C4472 | 16 04 | 06103 | 00016 00004 | CARRIAGE RETURN |
| . | C4473 | 11 11 | 06104 | 00011 00011 | D |
| . | C4474 | C1 27 | 06105 | 00001 00027 | R |
| . | C4475 | 15 17 | 06106 | 00015 00017 | J |
| . | C4476 | 32 23 | 06107 | 00032 00023 | N |
| . | C4477 | 24 13 | 06110 | 00024 00013 | F |
| . | C45CC | C6 10 | 06111 | 00006 00010 | C |
| . | C45C1 | 13 20 | 06112 | 00013 00020 | K |
| . | C45C2 | 17 31 | 06113 | 00017 00031 | T |
| . | C45C3 | 22 37 | 06114 | 00022 00037 | Z |
| . | C45C4 | 34 21 | 06115 | 00034 00021 | L |
| . | C45C5 | 14 34 | 06116 | 00014 00034 | W |
| . | C45C6 | 30 15 | 06117 | 00030 00015 | H |
| . | C45C7 | 26 36 | 06120 | 00026 00036 | Y |
| . | C451C | 27 25 | 06121 | 00027 00025 | P |
| . | C4511 | 12 26 | 06122 | 00012 00026 | Q |
| . | C4512 | 05 24 | 06123 | 00005 00024 | O |

| CARDS | LI | ID | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| . | C4513 | | | 20 | 07 | 06124 | 00020 | | 00007 | B |
| . | C4514 | | | 07 | 14 | 06125 | 00007 | | 00014 | G |
| . | C4515 | | | 36 | 00 | 06126 | 00036 | | 00000 | UPPER CASE |
| . | C4516 | | | 23 | 22 | 06127 | 00023 | | 00022 | M |
| . | C4517 | | | 35 | 35 | 06130 | 00035 | | 00035 | X |
| . | C4520 | | | 25 | 33 | 06131 | 00025 | | 00033 | V |
| . | C4521 | | | 21 | 00 | 06132 | 00021 | | 00000 | LOWER CASE |
| . | C4522 | | TTYTBLL | 22 | 00 | 06133 | 00022 | | 00000 | NULL |
| . | C4523 | | | C3 | 63 | 06134 | 00003 | | 00063 | 3 |
| . | C4524 | | | 32 | 03 | 06135 | 00032 | | 00003 | LINE FEED |
| . | C4525 | | | C0 | 41 | 06136 | 00000 | | 00041 | - |
| . | C4526 | | | C0 | 05 | 06137 | 00000 | | 00005 | SPACE |
| . | C4527 | | | C0 | 72 | 06140 | 00000 | | 00072 | - |
| . | C4530 | | | C0 | 70 | 06141 | 00000 | | 00070 | 8 |
| . | C4531 | | | 11 | 67 | 06142 | 00011 | | 00067 | 7 |
| . | C4532 | | | 32 | 04 | 06143 | 00032 | | 00004 | CARRIAGE RETURN |
| . | C4533 | | | 17 | 47 | 06144 | 00017 | | 00047 | $ |
| . | C4534 | | | 21 | 64 | 06145 | 00021 | | 00064 | 4 |
| . | C4535 | | | 16 | 77 | 06146 | 00016 | | 00077 | BELL |
| . | C4536 | | | 31 | 56 | 06147 | 00031 | | 00056 | , |
| . | C4537 | | | 15 | 55 | 06150 | 00015 | | 00055 | EXCLAMATION PT |
| . | C4540 | | | 14 | 53 | 06151 | 00014 | | 00053 | COLON |
| . | C4541 | | | 13 | 51 | 06152 | 00013 | | 00051 | ( |
| . | C4542 | | | 26 | 65 | 06153 | 00026 | | 00065 | 5 |
| . | C4543 | | | 27 | 52 | 06154 | 00027 | | 00052 | QUOTE |
| . | C4544 | | | 23 | 40 | 06155 | 00023 | | 00040 | ) |
| . | C4545 | | | C1 | 62 | 06156 | 00001 | | 00062 | 2 |
| . | C4546 | | | 12 | 76 | 06157 | 00012 | | 00076 | = |
| . | C4547 | | | 20 | 66 | 06160 | 00020 | | 00066 | 6 |
| . | C4550 | | | 25 | 60 | 06161 | 00025 | | 00060 | 0 |
| . | C4551 | | | C7 | 61 | 06162 | 00007 | | 00061 | 1 |
| . | C4552 | | | C6 | 71 | 06163 | 00006 | | 00071 | 9 |
| . | C4553 | | | 30 | 54 | 06164 | 00030 | | 00054 | QUESTION MARK |
| . | C4554 | | | C5 | 42 | 06165 | 00005 | | 00042 | + |
| . | C4555 | | | 36 | 00 | 06166 | 00036 | | 00000 | UPPER CASE |
| . | C4556 | | | 35 | 75 | 06167 | 00035 | | 00075 | . |
| . | C4557 | | | 34 | 74 | 06170 | 00034 | | 00074 | / |
| . | C4560 | | | C0 | 73 | 06171 | 00000 | | 00073 | SEMI-COLON |
| . | C4561 | | | 13 | 00 | 06172 | 00013 | | 00000 | LOWER CASE |
| . | C4562 | | MCPINIT | ENTRY | | 06173 | 61000 | | 00000 | INTERNAL MCP |
| . | C4563 | | DRIVER | ENT | A•W(00042) | 06174 | 11030 | | 00042 | |
| . | C4564 | | | STR | A•W(TEMP1) | 06175 | 15030 | | 06217 | |
| . | C4565 | | | ENT | A•W(00062) | 06176 | 11030 | | 00062 | |
| . | C4566 | | | STR | A•W(TEMP2) | 06177 | 15030 | | 06220 | |
| . | C4567 | | | ENT | Q•12000 | 06200 | 10000 | | 12000 | |
| . | C4570 | | | STR | Q•U(MCPSW) | 06201 | 14020 | | 06206 | SET SWITCH TO NO-OP |
| . | C4571 | | MCP | RPT | 77777 | 06202 | 70000 | | 77777 | |
| . | C4572 | | | ENT | 80•0 | 06203 | 12000 | | 00000 | KILL TIME |
| . | C4573 | | | RJP | L(KYBRD) | 06204 | 65010 | | 00000 | EXECUTE COMPROC |
| . | C4574 | | | JP | MCP2 | 06205 | 61000 | | 06212 | ATTENTION RETURN |
| . | C4575 | | MCPSW | JP | MCP | 06206 | 61000 | | 06202 | |
| . | C4576 | | | ENT | Q•61000 | 06207 | 10000 | | 61000 | |
| . | C4577 | | | STR | Q•U(MCPSW) | 06210 | 14020 | | 06206 | SET SWITCH TO JUMP |

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CARDS    L1 ID LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C46CC            EXIT                                        06211  61010 06173
   .     C46C1 MCP2       ENT  A•W(TEMP1)                             06212  11030 06217
   .     C46C2            STR  A•W(00042)                             06213  15030 00042
   .     C46C3            ENT  A•W(TEMP2)                             06214  11030 06220
   .     C46C4            STR  A•W(00062)                             06215  15030 00062
   .     C46C5            REX  TAKEOVER                               06216  64120 00141
   .     C46C6 TEMP1      C    0                                      06217  00000 000C0
   .     C46C7 TEMP2      0    0                                      06220  00000 0C0C0
   .     C4610            NO-OP                                       06221  12000 000C0  DUMMY
   .     C4611 FLTPT      PROGRAM   CORRB•16MAR64
   .     C4612            IGNORE    FLTPT
   .     C4613 PTR        MEANS     C4
   .     C4614 PCUT       MEANS     C4
   .     C4615 FLTPT      ENTRY                                       06222  61000 00000
   .     C4616            STR  B1•L(FP1)                              06223  16110 06231
   .     C4617            STR  B4•L(FP4)                              06224  16410 06232
   .     C4620            STR  B5•L(FP5)                              06225  16510 06233
   .     C4621            STR  B6•L(FP6)                              06226  16610 06234
   .     C4622            STR  B7•L(FP7)                              06227  16710 06235
   .     C4623            RJP  L(EFP+B7)                              06230  65017 06237
   .     C4624 FP1        ENT  B1•0                                   06231  12100 000C0
   .     C4625 FP4        ENT  B4•0                                   06232  12400 000C0
   .     C4626 FP5        ENT  B5•0                                   06233  12500 000C0
   .     C4627 FP6        ENT  B6•0                                   06234  12600 000C0
   .     C4630 FP7        ENT  B7•0                                   06235  12700 000C0
   .     C4631            EXIT                                        06236  61010 06222
   .     C4632 EFP        C    ADD                                    06237  00000 06261  ADDITION
   .     C4633            0    SUB                                    06240  00000 06320  SUBTRACTION    1
   .     C4634            C    MPL                                    06241  00000 06330  MULTIPLICATION
   .     C4635            C    DIV                                    06242  00000 06342  DIVISION
   .     C4636            C    STARTREAD                              06243  00000 07122  DATA INPUT
   .     C4637            C    PUNCH                                  06244  C0000 06465  PUNCH OUTPUT
   .     C4640            C    TYPE                                   06245  00000 06463  TYPE OUTPUT
   .     C4641            C    SET                                    06246  00000 06426  SET OUTPUT LENGTH
   .     C4642            0    FXTOFL                                 06247  00000 06430  FIX TO FLOAT
   .     C4643            0    FLTOFX                                 06250  00000 06440  FLOAT TO FIX
   .     C4644            C    SQR                                    06251  00000 06511  SQUARE ROOT
   .     C4645            C    SIN                                    06252  00000 07535  SINE OF ARGUMENT
   .     C4646            C    COS                                    06253  00000 07644  COS OF ARGUMENT
   .     C4647            0    ATAN                                   06254  00000 066C3  ARCTANGENT OF ARGUMENT
   .     C4650            C    EXP                                    06255  00000 06663  EXPONENTIAL OF ARGUMENT
   .     C4651            C    ASIN                                   06256  00000 07125
   .     C4652            0    ACOS                                   06257  00000 07331
   .     C4653            C    LOGE                                   06260  00000 07354
   .     C4654 ACC        ENTRY                                       06261  61000 000C0
   .     C4655            ENT  A•L(B4)                                06262  11014 00000
   .     C4656            SUB  A•L(B5)•ANEG                           06263  21715 000C0  C1 MINUS C2
   .     C4657            JP   POS                                    06264  61000 06277
   .     C4660            ENT  Q•L(B5)                                06265  10015 000C0  C2 IS THE
   .     C4661            STR  Q•W(B6)                                06266  14036 000C0  RESULTANT CHARACTERISTIC
   .     C4662            SEL  CP•X77777                              06267  51040 77777  C2 MINUS C1
   .     C4663            COM  A•35•YLESS                             06270  04600 00035  C2-C1 GREATER THAN 28
   .     C4664            STR  A•L(SFT1)•SKIP                         06271  15110 06310  NO
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| CAROS | L1 IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C4665 | | | JP MTR1 | 06272 | 61000 06315 | YES |
| . | C4666 | | | ENT A•W(1+B5) | 06273 | 11035 00001 | |
| . | C4667 | | | STR A•W(WS) | 06274 | 15030 06467 | STORE LARGER MANTISSA |
| . | C4670 | | | ENT A•W(1+B4) | 06275 | 11034 00001 | |
| . | C4671 | | | JP SFT | 06276 | 61000 063C7 | |
| . | C4672 | PCS | | ENT Q•L(B4) | 06277 | 10014 000C0 | C1 IS THE RESULTANT |
| . | C4673 | | | STR Q•W(B6) | 06300 | 14036 000C0 | CHARACTERISTIC |
| . | C4674 | | | COM A•35•YLESS | 06301 | 04600 00035 | C1-C2 GREATER THAN 28 |
| . | C4675 | | | STR A•L(SFT1)•SKIP | 06302 | 15110 06310 | NO |
| . | C4676 | | | JP MTR | 06303 | 61000 06314 | YES |
| . | C4677 | | | ENT A•W(1+B4) | 06304 | 11034 000C1 | |
| . | C47C0 | | | STR A•W(WS) | 06305 | 15030 06467 | STORE LARGER MANTISSA |
| . | C47C1 | | | ENT A•W(1+B5) | 06306 | 11035 00001 | |
| . | C47C2 | SFT | | ENT Q•0 | 06307 | 10000 000C0 | |
| . | C47C3 | SFT1 | | RSH AQ•0 | 06310 | 03000 000C0 | SET RADIX PUINTS |
| . | C47C4 | | | ADD A•W(WS) | 06311 | 20030 06467 | ADD LARGER MANTISSA |
| . | C47C5 | | | RJP SCL | 06312 | 65000 06362 | TO SCALE |
| . | C47C6 | | | EXIT | 06313 | 61010 06261 | |
| . | C47C7 | MTR | | ENT A•W(1+B4)•SKIP | 06314 | 11134 00001 | M1 RESULTANT MANTISSA |
| . | C4710 | MTR1 | | ENT A•W(1+B5) | 06315 | 11035 000C1 | M2 RESULTANT MANTISSA |
| . | C4711 | | | STR A•W(1+B6) | 06316 | 15036 00001 | STORE RESULTANT |
| . | C4712 | | | EXIT | 06317 | 61010 06261 | |
| . | C4713 | SUB | | ENTRY | 06320 | 61000 000C0 | |
| . | C4714 | | | ENT A•L(B5) | 06321 | 11015 000C0 | |
| . | C4715 | | | STR A•L(WS2) | 06322 | 15010 06471 | C2 |
| . | C4716 | | | ENT A•W(1+B5) | 06323 | 11035 000C1 | |
| . | C4717 | | | STR A•CPW(WS3) | 06324 | 15070 06472 | COMPLEMENT M2 |
| . | C4720 | | | ENT B5•WS2 | 06325 | 12500 06471 | SET B5 |
| . | C4721 | | | RJP ADD | 06326 | 65000 06261 | JUMP TO ADD ROUTINE |
| . | C4722 | | | EXIT | 06327 | 61010 06320 | |
| . | C4723 | MPL | | ENTRY | 06330 | 61000 00000 | |
| . | C4724 | | | ENT A•L(B4) | 06331 | 11014 000C0 | |
| . | C4725 | | | ADD A•L(B5) | 06332 | 20015 000C0 | C1 + C2 |
| . | C4726 | | | SUB A•40000 | 06333 | 21000 40000 | RESULTANT C |
| . | C4727 | | | STR A•W(B6) | 06334 | 15036 00000 | |
| . | C4730 | | | ENT Q•W(1+B4) | 06335 | 10034 00001 | |
| . | C4731 | | | MUL W(1+B5) | 06336 | 22035 00001 | (M1)(M2) |
| . | C4732 | | | LSH AQ•2 | 06337 | 07000 00002 | SHIFT FOR SCALE |
| . | C4733 | | | RJP SCL | 06340 | 65000 06362 | TO SCALE |
| . | C4734 | | | EXIT | 06341 | 61010 06330 | |
| . | C4735 | DIV | | ENTRY | 06342 | 61000 000C0 | |
| . | C4736 | | | ENT A•W(1+B5)•AZERO | 06343 | 11435 00001 | |
| . | C4737 | | | ENT A•L(B4)•SKIP | 06344 | 11114 00000 | |
| . | C4740 | | | JP ERR | 06345 | 61000 07011 | ZERO DIVISOR |
| . | C4741 | | | SUB A•L(B5) | 06346 | 21015 00000 | C1-C2 |
| . | C4742 | | | ADD A•40000 | 06347 | 20000 400C0 | RESULTANT C |
| . | C4743 | | | STR A•L(B6) | 06350 | 15016 00000 | |
| . | C4744 | | | ENT Q•0 | 06351 | 10000 000C0 | |
| . | C4745 | | | ENT A•W(1+B4) | 06352 | 11034 00001 | M1 |
| . | C4746 | | | RSH AQ•2 | 06353 | 03000 00002 | PREPARE FOR DIVISION |
| . | C4747 | | | DIV W(1+B5) | 06354 | 23035 00001 | M1 DIVIDED BY M2 |
| . | C4750 | | | STR Q•A•APOS | 06355 | 14640 00000 | QUOTIENT TO A. IS IT POS |
| . | C4751 | | | ENT Q•X-0•SKIP | 06356 | 10140 77777 | NO SET NEG |

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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C4752            CL   Q                                06357  10000 00000  YES SO SET TO PLUS ZERO
   .     C4753            RJP  SCL                              06360  65000 06362  TO SCALE
   .     C4754            EXIT                                  06361  61010 06342
   .     C4755 SCL        ENTRY                                 06362  61000 000C0
   .     C4756            JP   NEG•ANEG                         06363  60700 06375
   .     C4757            RPT  36                               06364  70000 00036
   .     C4760            LSH  AQ•1•ANEG                        06365  07700 00001
   .     C4761            JP   ZERO                             06366  61000 06417  RESULT ZERO
   .     C4762            SEL  CL•1                             06367  52000 00001
   .     C4763            ADD  A•2•APOS                         06370  20600 00002
   .     C4764            JP   AQR                              06371  61000 06404
   .     C4765            RPL  Y+1•W(B6)                        06372  36036 00000  ADD 1 TO C
   .     C4766            ENT  A•W(SCL2)                        06373  11030 06423  40000 00000 TO A
   .     C4767            JP   AQR                              06374  61000 06404
   .     C4770 NEG        RPT  36                               06375  70000 00036
   .     C4771            LSH  AQ•1•APOS                        06376  07600 00001
   .     C4772            JP   ZERO                             06377  61000 06417  RESULT ZERO
   .     C4773            SUB  A•2•ANEG                         06400  21700 00002
   .     C4774            JP   AQR                              06401  61000 06404  NO CHANGE
   .     C4775            RPL  Y+1•W(B6)                        06402  36036 00000
   .     C4776            ENT  A•W(SCL2+1)                      06403  11030 06424  37777 77777 TO A
   .     C4777 AQR        RSH  AQ•2                             06404  03000 00002  SET RADIX PT
   .     C5CC0            SEL  CP•W(SCL2+2)                     06405  51030 06425  SET FIRST TWO BITS  0
   .     C5CC1            STR  A•W(1+B6)                        06406  15036 00001  RESULTANT MANTISSA
   .     C5CC2            STR  B7•Q                             06407  16700 000C0  SHIFTS
   .     C5CC3            ADD  Q•W(B6)                          06410  26036 000C0  CR + SHIFTS
   .     C5CC4            SUB  Q•34•QNEG                        06411  27700 00034  CR + SHIFTS -28, SKIP IF Q NEG

   .     C5005            STR  Q•W(B6)•SKIP                     06412  14136 00000  STORE RESULTANT CHARACTERISTIC

   .     C5CC6            JP   ZERO                             06413  61000 06417  RESULT ZERO
   .     C5CC7            SUB  Q•77777•QPOS                     06414  27600 77777
   .     C5C10            EXIT                                  06415  61010 06362
   .     C5C11            JP   ERR                              06416  61000 07011  OVERFLOW
   .     C5C12 ZERO       STR  B0•W(B6)                         06417  16036 00000
   .     C5C13            STR  B0•W(1+B6)                       06420  16036 00001  RESULT IS ZERO
   .     C5C14            ENT  A•0                              06421  11000 00000
   .     C5C15 SCL1       EXIT                                  06422  61010 06362
   .     C5C16 SCL2       40000      00000                      06423  40000 00000
   .     C5C17            37777      77777                      06424  37777 77777
   .     C5C20            60000      00000                      06425  60000 00000
   .     C5C21 SET        ENTRY                                 06426  61000 00000
   .     C5C22            EXIT                                  06427  61010 06426
   .     C5C23 FXTOFL     ENTRY                                 06430  61000 000C0
   .     C5024            ENT  Q•X(B4)                          06431  10044 00000  SCALING POINT TO Q
   .     C5025            ENT  Y-Q•40034                        06432  31000 40034  40034-S
   .     C5026            STR  A•W(B6)                          06433  15036 00000  CHARACTERISTIC
   .     C5027            ENT  Q•0                              06434  10000 00000
   .     C5C30            ENT  A•W(B5)                          06435  11035 00000  FIX NO
   .     C5C31            RJP  SCL                              06436  65000 06362  SCALE
   .     C5C32            EXIT                                  06437  61010 06430
   .     C5C33 FLTOFX     ENTRY                                 06440  61000 00000
   .     C5034            ENT  Q•X(B4)                          06441  10044 00000  SCALING PT WITH SIGN
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| CARDS | LI ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C5C35 | | | ADD Q•L(B5) | 06442 | 26015 00000 | CHARACTERISTIC |
| . | C5C36 | | | SUB Q•40000 | 06443 | 27000 40000 | |
| . | C5C37 | | | ENT Y-Q•34•APOS | 06444 | 31600 00034 | |
| . | C5C40 | | | JP FLTOFX2 | 06445 | 61000 06455 | TO NEG BRANCH |
| . | C5C41 | | | STR A•L(FLTOFX1) | 06446 | 15010 06452 | SETUP SHIFT |
| . | C5C42 | | | SUB A•36•ANEG | 06447 | 21700 00036 | TEST FOR S GREATER THAN 29 |
| . | C5C43 | | | ENT A•0•SKIP | 06450 | 11100 00000 | CLEAR SHIFT GREATER THAN 30 |
| . | C5C44 | | | ENT A•W(1+B5) | 06451 | 11035 00001 | MANTISSA |
| . | C5C45 | FLTOFX1 | | RSH A•0 | 06452 | 02000 00000 | SHIFT |
| . | C5C46 | | | STR A•W(B6) | 06453 | 15036 00000 | RESULTS |
| . | C5C47 | | | EXIT | 06454 | 61010 06440 | |
| . | C5C50 | FLTOFX2 | | COM A•X77776•YLESS | 06455 | 04640 77776 | |
| . | C5C51 | | | JP ERR12 | 06456 | 61000 07031 | LEFT SHIFT GREATER THAN 1 |
| . | C5C52 | | | ENT A•W(1+B5) | 06457 | 11035 00001 | MANTISSA |
| . | C5C53 | | | LSH A•1 | 06460 | 06000 00001 | SHIFT |
| . | C5C54 | | | STR A•W(B6) | 06461 | 15036 00000 | RESULT |
| . | C5C55 | | | EXIT | 06462 | 61010 06440 | |
| . | C5C56 | TYPE | | ENTRY | 06463 | 61000 00000 | |
| . | C5C57 | | | EXIT | 06464 | 61010 06463 | |
| . | C5C60 | PUNCH | | ENTRY | 06465 | 61000 00000 | |
| . | C5C61 | | | EXIT | 06466 | 61010 06465 | |
| . | C5C62 | WS | | O 0 | 06467 | 00000 00000 | |
| . | C5C63 | WS1 | | O 0 | 06470 | 00000 00000 | |
| . | C5C64 | WS2 | | O 0 | 06471 | 00000 00000 | |
| . | C5C65 | WS3 | | O 0 | 06472 | 00000 00000 | |
| . | C5C66 | WS4 | | O 0 | 06473 | 00000 00000 | |
| . | C5C67 | WS5 | | O 0 | 06474 | 00000 00000 | |
| . | C5C70 | WS6 | | O 0 | 06475 | 00000 00000 | |
| . | C5C71 | WS7 | | O 0 | 06476 | 00000 00000 | |
| . | C5C72 | WS10 | | O 0 | 06477 | 00000 00000 | |
| . | C5C73 | WS11 | | O 0 | 06500 | 00000 00000 | |
| . | C5C74 | WS12 | | O 0 | 06501 | 00000 00000 | |
| . | C5C75 | WS13 | | O 0 | 06502 | 00000 00000 | |
| . | C5C76 | WS14 | | O 0 | 06503 | 00000 00000 | |
| . | C5C77 | WS15 | | O 0 | 06504 | 00000 00000 | |
| . | C5100 | WS16 | | O 0 | 06505 | 00000 00000 | |
| . | C5101 | RZERO | | STR B0•W(B6) | 06506 | 16036 00000 | |
| . | C5102 | | | STR B0•W(B6+1) | 06507 | 16036 00001 | |
| . | C5103 | | | JP FP4 | 06510 | 61000 06232 | |
| . | C5104 | SCR | | ENTRY | 06511 | 61000 00000 | |
| . | C5105 | | | ENT A•W(1+B4)•APOS | 06512 | 11634 00001 | IS MANTISSA POSITIVE |
| . | C5106 | | | JP ERR13 | 06513 | 61000 07033 | NO ERROR EXIT |
| . | C5107 | | | ENT Q•W(SQR1)•ANOT | 06514 | 10530 06562 | MASK FOR 2 EXP(-2), 2 EXP(-3) |
| . | C5110 | | | STR A•L(B6)•SKIP | 06515 | 15116 00000 | RESULT CHARACTERISTIC ZERO |
| . | C5111 | | | STR LP•A•SKIP | 06516 | 47140 00000 | EXTRACT RANGE FACTOR, SCALED 2 5 |
| . | C5112 | | | STR A•W(1+B6)•SKIP | 06517 | 15136 00001 | RESULT MANTISSA ZERO |
| . | C5113 | | | RSH A•25D•SKIP | 06520 | 02100 00031 | RANGE FACTOR SCALED 0 |
| . | C5114 | | | EXIT | 06521 | 61010 06511 | |
| . | C5115 | | | ENT B5•A | 06522 | 12570 00000 | LOAD B5 WITH FACTOR |
| . | C5116 | | | ENT Q•W(1+B4) | 06523 | 10034 00001 | M SCALED 28 |
| . | C5117 | | | MUL W(SQR2+B5) | 06524 | 22035 06567 | TIMES K SCALED 2 |

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CAROS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C5120               RSH  AQ•2                        06525  03000 000C2  M(1) SCALED 28
   .     C5121               STR  Q•W(WS)                     06526  14030 06467  SAVE M(1)
   .     C5122               RSH  Q•3                         06527  01000 000C3  T(MES 1/8
   .     C5123               ADD  Q•W(SQR1+1)                 06530  26030 06563  MINUS B
   .     C5124               MUL  W(WS)                       06531  22030 06467
   .     C5125               RSH  AQ•29D                      06532  03000 00035  SCALED 27
   .     C5126               ADD  Q•W(SQR1+2)                 06533  26030 06564  MINUS C
   .     C5127               STR  Q•W(WS+1)                   06534  14030 06470  SAVE -A SCALED 27
   .     C5130               CL   Q                           06535  10000 000C0  SET UP
   .     C5131               ENT  A•W(WS)                     06536  11030 06467  M(1)
   .     C5132               RSH  AQ•4                        06537  03000 000C4  SCALED 54
   .     C5133               DIV  W(WS+1)                     06540  23030 06470  M(1)/(-A) SCALED 27
   .     C5134               ADD  Q•W(WS+1)                   06541  26030 06470  MINUS A
   .     C5135               STR  Q•W(WS)                     06542  14030 06467  SAVE -2(SQRT M(1)
   .     C5136               ENT  A•L(B4)                     06543  11014 000C0  CHARACTER(STIC
   .     C5137               ADD  A•W(SQR1+3)                 06544  20030 06565  PLUS BIAS
   .     C514C               LSH  A•29D                       06545  06000 00035  HALVED
   .     C5141               STR  A•L(B6)•ANEG                06546  15716 000C0  TO RESULT CHECK EVEN/ODD
   .     C5142               MUL  W(SQR3+B5)•SK(P             06547  22135 06573  EVEN CHAR CORRECT(ON SCALED 29
   .     C5143               MUL  W(SQR4+B5)                  06550  22035 06577  ODD CHAR
   .     C5144               RSH  AQ•28D                      06551  03000 00034  N SCALED 28
   .     C5145               COM  Q•W(SQR1+4)•YLESS            06552  04230 06566  IS N NORMALIZED
   .     C5146               JP   SQRT1                       06553  61000 06560  YES
   .     C5147               ENT  A•L(B6)                     06554  11016 000C0  ADD 1
   .     C5150               ADD  A•1                         06555  20000 000C1  TO
   .     C5151               STR  A•L(B6)                     06556  15016 000C0  CHAR.
   .     C5152               RSH  Q•1                         06557  01000 00001  NORMALIZE
   .     C5153 SQRT1         STR  Q•W(1+B6)                   06560  14036 00001  STORE RESULT
   .     C5154               EXIT                             06561  61010 06511
   .     C5155 SQR1          C60CCC0000                       06562  06000 00000  MASK
   .     C5156               6376776144                       06563  63767 76144  -B SCALED 28
   .     C5157               7500402153                       06564  75004 02153  -C SCALED 27
   .     C516C               C000C40000                       06565  00000 40000  BIAS
   .     C5161               2000C00000                       06566  20000 00000  1.0 SCALED 28
   .     C5162 SQR2          C000C00007                       06567  00000 000C7  K(3) FOR BITS 00
   .     C5163               0000C0006                        06570  00000 00006  K(2)           01
   .     C5164               CC00C00C05                       06571  00000 000C5  K(1)          10
   .     C5165               0000C00004                       06572  00000 00004  K(0)          11
   .     C5166 SQR3          6371733412                       06573  63717 33412  7 EXP(-1/2)+2•10 EXP(-9) SCALE
                                                                                   D 29
   .     C5167               6273720435                       06574  62737 20435  6 EXP(-1/2)
   .     C5170               6154066433                       06575  61540 66433  5 EXP(-1/2)
   .     C5171               5777777776                       06576  57777 77776  4 EXP(-1/2)
   .     C5172 SQR4          5671230431                       06577  56712 30431  (2/7) EXP(1/2)
   .     C5173               5541454270                       06600  55414 54270  (1/3) EXP(1/2)
   .     C5174               5360566233                       06601  53605 66233  (2/5) EXP(1/2)
   .     C5175               5127660627                       06602  51276 60627  (1/2) EXP(1/2)
   .     C5176 ATAN          ENTRY                            06603  61000 000C0
   .     C5177               ENT  Q•L(B4)                     06604  10014 0C0C0  C
   .     C52C0               COM  Q•40001•YMORE               06605  04300 40001  LESS THAN 40001
   .     C52C1               JP   ERR16                       06606  61000 07037  NO-ARGUMENT TOO LARGE
   .     C52C2               COM  Q•37745•YLESS                06607  04200 37745
   .     C52C3               JP   RZERO                       06610  61000 06506
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| CARDS | LI ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C52C4 | ATAN1 | | ENT A•40000 | 06611 | 11000 40000 | |
| . | C52C5 | | | STR A-Q•W(WS5) | 06612 | 33030 06474 | TO A SET UP SHIFT |
| . | C52C6 | | | ENT Q•W(1+B4) | 06613 | 10034 00001 | MANTISSA |
| . | C52C7 | | | RSH Q•A | 06614 | 01070 00000 | CONVERT TO FIXED POINT |
| . | C5210 | | | STR Q•W(WS5) | 06615 | 14030 06474 | M |
| . | C5211 | | | MUL W(WS5) | 06616 | 22030 06474 | M2 |
| . | C5212 | | | RSH AQ•33 | 06617 | 03000 00033 | |
| . | C5213 | | | STR Q•W(WS6) | 06620 | 14030 06475 | M2 |
| . | C5214 | | | ENT B5•0 | 06621 | 12500 00000 | |
| . | C5215 | | | ENT Q•W(ATAN5) | 06622 | 10030 06655 | |
| . | C5216 | ATAN2 | | MUL W(WS6) | 06623 | 22030 06475 | HASTINGS CONSTANT |
| . | C5217 | | | RSH AQ•35 | 06624 | 03000 00035 | TO Q |
| . | C5220 | | | ADD Q•W(ATAN5+B5+1) | 06625 | 26035 06656 | |
| . | C5221 | | | BSK B5•4 | 06626 | 71500 00004 | |
| . | C5222 | | | JP ATAN2 | 06627 | 61000 06623 | |
| . | C5223 | | | MUL W(WS5) | 06630 | 22030 06474 | M |
| . | C5224 | | | RSH AQ•34 | 06631 | 03000 00034 | |
| . | C5225 | | | JP ATAN3•QNEG | 06632 | 60300 06644 | |
| . | C5226 | | | RPT 36 | 06633 | 70000 00036 | POS RESULT |
| . | C5227 | | | LSH Q•1•QNEG | 06634 | 05300 00001 | |
| . | C5230 | | | JP RZERO | 06635 | 61000 06506 | |
| . | C5231 | | | ENT A•37743+B7 | 06636 | 11007 37743 | |
| . | C5232 | | | STR A•W(B6) | 06637 | 15036 00000 | OF RESULT |
| . | C5233 | | | ENT A•0 | 06640 | 11000 00000 | CLEAR |
| . | C5234 | | | LSH AQ•34 | 06641 | 07000 00034 | |
| . | C5235 | | | STR A•W(1+B6) | 06642 | 15036 00001 | MANTISSA OF RESULT |
| . | C5236 | | | EXIT | 06643 | 61010 06603 | |
| . | C5237 | ATAN3 | | RPT 36 | 06644 | 70000 00036 | NEG RESULT |
| . | C5240 | | | LSH Q•1•QPOS | 06645 | 05200 00001 | |
| . | C5241 | | | JP RZERO | 06646 | 61000 06506 | |
| . | C5242 | | | ENT A•37743+B7 | 06647 | 11007 37743 | |
| . | C5243 | | | STR A•W(B6) | 06650 | 15036 00000 | OF RESULT |
| . | C5244 | | | ENT A•3 | 06651 | 11000 00003 | NEG SIGN |
| . | C5245 | | | LSH AQ•34 | 06652 | 07000 00034 | |
| . | C5246 | | | STR A•W(1+B6) | 06653 | 15036 00001 | MANTISSA FOR RESULT |
| . | C5247 | | | EXIT | 06654 | 61010 06603 | |
| . | C5250 | ATAN5 | | 77477 75334 | 06655 | 77477 75334 | K 11 |
| . | C5251 | | | C1536 53004 | 06656 | 01536 53004 | K9 |
| . | C5252 | | | 74214 27222 | 06657 | 74214 27222 | K7 |
| . | C5253 | | | 06143 01016 | 06660 | 06143 01016 | K5 |
| . | C5254 | | | 65266 23005 | 06661 | 65266 23005 | K3 |
| . | C5255 | | | 37777 50120 | 06662 | 37777 50120 | K1 |
| . | C5256 | EXP | | ENTRY | 06663 | 61000 00000 | |
| . | C5257 | | | ENT Q•W(1+B4)•QPOS | 06664 | 10234 00001 | MANTISSA |
| . | C5260 | | | JP EXP2 | 06665 | 61000 06700 | |
| . | C5261 | | | ENT A•L(B4) | 06666 | 11014 00000 | CHARACTERISTIC |
| . | C5262 | | | COM A•40034•YMURE | 06667 | 04700 40034 | C LESS THAN 40034 |
| . | C5263 | | | JP ERR17 | 06670 | 61000 07044 | NO-OVERFLOW |
| . | C5264 | | | COM A•37744•YMORE | 06671 | 04700 37744 | C LESS THAN 37744 |
| . | C5265 | | | JP EXP4 | 06672 | 61000 06705 | NO |
| . | C5266 | EXP1 | | ENT A•40001 | 06673 | 11000 40001 | |
| . | C5267 | | | STR A•W(B6) | 06674 | 15036 00000 | RESULT IS |
| . | C5270 | | | ENT A•W(EXP10) | 06675 | 11030 06742 | ONE |

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CARDS    L1 (O LABEL      TA STATEMENT                                  LOC    F JKB Y      NOTES

   .     C5271               STR  A•W(1+B6)                            06676  15036 00001
   .     C5272               EXIT                                      06677  61010 06663
   .     C5273 EXP2          ENT  A•L(84)                              06700  11014 00000
   .     C5274               COM  A•40034•YMORE                        06701  04700 40034
   .     C5275               JP   RZERO                                06702  61000 06506
   .     C5276 EXP3          COM  A•37744•YLESS                        06703  04600 37744  C LESS THAN 37744
   .     C5277               JP   EXP1                                 06704  61000 06673  YES
   .     C53C0 EXP4          MUL  W(EXP10+1)                           06705  22030 06743  LOGE1/LN10
   .     C53C1               STR  A•W(WS12)                            06706  15030 06501
   .     C53C2               ENT  A•40032                              06707  11000 40032
   .     C53C3               SUB  A•W(84)                              06710  21034 00000  CHARACTER(STIC
   .     C53C4               STR  A•W(WS13)                            06711  15030 06502  SET UP SH(FT
   .     C53C5               ENT  A•W(WS12)                            06712  11030 06501
   .     C53C6               RSH  AQ•W(WS13)•APOS                      06713  03630 06502  CONVERT TO FIXED POINT
   .     C5307               JP   EXP7                                 06714  61000 06737  NEG NUMBER
   .     C5310               ADD  A•40001                              06715  20000 40001
   .     C5311               STR  A•W(B6)                              06716  15036 00000
   .     C5312 EXP5          ENT  A•0                                  06717  11000 00000
   .     C5313               RSH  AQ•1                                 06720  03000 00001
   .     C5314               MUL  W(EXP10+2)                           06721  22030 06744
   .     C5315               RSH  AQ•35                                06722  03000 00035
   .     C5316               STR  Q•W(WS14)                            06723  14030 06503
   .     C5317               ENT  B5•0                                 06724  12500 00000  CLEAR
   .     C5320               ENT  Q•W(EXP10+3)                         06725  10030 06745  K6
   .     C5321 EXP6          MUL  W(WS14)                              06726  22030 06503  K6X
   .     C5322               RSH  AQ•34                                06727  03000 00034
   .     C5323               ADD  Q•W(EXP10+B5+4)                      06730  26035 06746
   .     C5324               BSK  B5•5                                 06731  71500 00005
   .     C5325               JP   EXP6                                 06732  61000 06726
   .     C5326               ENT  A•0                                  06733  11000 00000
   .     C5327               LSH  AQ•35                                06734  07000 00035
   .     C5330               STR  A•W(1+B6)                            06735  15036 00001  RESULT
   .     C5331               EXIT                                      06736  61010 06663
   .     C5332 EXP7          ADD  A•40000                              06737  20000 40000
   .     C5333               STR  A•W(B6)                              06740  15036 00000
   .     C5334               JP   EXP5                                 06741  61000 06717
   .     C5335 EXP10         10000     0                               06742  10000 00000  MANTISSA OF 1
   .     C5336               27052     43542                           06743  27052 43542  LOGE1/LN10
   .     C5337               11504     04651                           06744  11504 04651  PROGRAM CONSTANT
   .     C5340               00056     24630                           06745  00056 24630  K
   .     C5341               00155     74340                           06746  00155 74340  K5
   .     C5342               01152     16565                           06747  01152 16565  K4
   .     C5343               04035     41132                           06750  04035 41132  K3
   .     C5344               12466     00553                           06751  12466 00553  K2
   .     C5345               22327     26210                           06752  22327 26210  K1
   .     C5346               20000     0                               06753  20000 00000  FIXED POINT 1
   .     C5347 AERR1         STR  A•L(AERR2+2)                         06754  15010 06776
   .     C5350               CONSOLE   HOLD                            06755  64120 00142
                                                                       06756  03000 00000
   .     C5351               TYPET     $CR$$LF$$LF$FP ERROR$CR$AOOR$$O 06757  61000 06764
                             P$$SP$
                                                                       06760  04030 31325
                                                                       06761  05122 72724
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| CARDS | L1 ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| | | | | | 06762 | 27040 61111 | |
| | | | | | 06763 | 27050 50000 | |
| | | | | | 06764 | 64120 00142 | |
| | | | | | 06765 | 00000 00022 | |
| | | | | | 06766 | 00000 06760 | |
| . | C5352 | | | ENT Q•L(FLTPT) | 06767 | 10010 06222 | |
| . | C5353 | | | SUB Q•1 | 06770 | 27000 00001 | |
| . | C5354 | | | TYPEC Q•$SP$•$SP$•$SP$•$SP$•$SP$ | 06771 | 64110 00141 | |
| | | | | | 06772 | 00000 00000 | |
| | | | | | 06773 | 77050 50505 | |
| . | C5355 | AERR2 | | TYPE 100•AERR2 | 06774 | 64120 00142 | |
| | | | | | 06775 | 00000 00012 | |
| | | | | | 06776 | 00000 06774 | |
| . | C5356 | | | ENT B4•L(FP4) | 06777 | 12410 06232 | |
| . | C5357 | | | ENT B5•L(FP5) | 07000 | 12510 06233 | |
| . | C5360 | | | ENT B6•L(FP6) | 07001 | 12610 06234 | |
| . | C5361 | | | ENT B7•L(FP7) | 07002 | 12710 06235 | |
| . | C5362 | | | CL A | 07003 | 11000 00000 | |
| . | C5363 | | | CL Q | 07004 | 10000 00000 | |
| . | C5364 | | | CONSOLE RELEASE | 07005 | 64120 00142 | |
| | | | | | 07006 | 04000 00000 | |
| . | C5365 | FFSTOP | | REX STOPRUN | 07007 | 64120 00142 | |
| | | | | | 07010 | 05000 00000 | |
| . | C5366 | ERR | | ENT B7•L(FP7) | 07011 | 12710 06235 | |
| . | C5367 | | | ENT A•L(AERR+B7) | 07012 | 11017 07014 | |
| . | C5370 | | | JP AERR1 | 07013 | 61000 06754 | |
| . | C5371 | AERR | | C ADDFL | 07014 | 00000 07020 | |
| . | C5372 | | | C SBCFL | 07015 | 00000 07022 | |
| . | C5373 | | | C MLCFL | 07016 | 00000 07024 | |
| . | C5374 | | | C DVOFL | 07017 | 00000 07026 | |
| . | C5375 | ACCFL | | C611110524 | 07020 | 06111 10524 | |
| . | C5376 | | | 1321C50505 | 07021 | 13210 50505 | |
| . | C5377 | SPCFL | | 3032C70524 | 07022 | 30320 70524 | |
| . | C54C0 | | | 1321C50505 | 07023 | 13210 50505 | |
| . | C54C1 | MLCFL | | 2232210524 | 07024 | 22322 10524 | |
| . | C54C2 | | | 1321C50505 | 07025 | 13210 50505 | |
| . | C54C3 | DVCFL | | 1116330524 | 07026 | 11163 30524 | |
| . | C54C4 | | | 1321C50505 | 07027 | 13210 50505 | |
| . | C54C5 | ERR11 | | ENT A•ERR20•SKIP | 07030 | 11100 07046 | |
| . | C54C6 | ERR12 | | ENT A•ERR21 | 07031 | 11000 07050 | |
| . | C54C7 | | | JP AERR1 | 07032 | 61000 06754 | |
| . | C541C | ERR13 | | ENT A•ERR22•SKIP | 07033 | 11100 07052 | |
| . | C5411 | ERR14 | | ENT A•ERR23 | 07034 | 11000 07054 | |
| . | C5412 | | | JP AERR1 | 07035 | 61000 06754 | |
| . | C5413 | ERR15 | | ENT A•ERR24•SKIP | 07036 | 11100 07056 | |
| . | C5414 | ERR16 | | ENT A•ERR25 | 07037 | 11000 07060 | |
| . | C5415 | | | JP AERR1 | 07040 | 61000 06754 | |
| . | C5416 | ERR16A | | ENT A•ERR40 | 07041 | 11000 07066 | LOG ERROR |
| . | C5417 | | | JP AERR1 | 07042 | 61000 06754 | |
| . | C5420 | ERR1C | | ENT A•ERR27•SKIP | 07043 | 11100 07064 | |
| . | C5421 | ERR17 | | ENT A•ERR26 | 07044 | 11000 07062 | |
| . | C5422 | | | JP AERR1 | 07045 | 61000 06754 | |
| . | C5423 | ERR2C | | 1621210530 | 07046 | 16212 10530 | ILL SET NO |

| CARDS | LI IO | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C5424 | | | 1231C52324 | 07047 | 12310 52324 | |
| . | C5425 | ERR21 | | 3010C62112 | 07050 | 30100 62112 | SCALE OFL |
| . | C5426 | | | 0524132105 | 07051 | 05241 32105 | |
| . | C5427 | ERR22 | | 3026270523 | 07052 | 30262 70523 | |
| . | C5430 | | | 1214C52324 | 07053 | 12140 52324 | |
| . | C5431 | ERR23 | | 3016230524 | 07054 | 30162 30524 | |
| . | C5432 | | | 1321C50505 | 07055 | 13210 50505 | |
| . | C5433 | ERR24 | | 10243 00524 | 07056 | 10243 00524 | |
| . | C5434 | | | 1321050505 | 07057 | 13210 50505 | |
| . | C5435 | ERR25 | | C631C62305 | 07060 | 06310 62305 | |
| . | C5436 | | | 2413210505 | 07061 | 24132 10505 | |
| . | C5437 | ERR26 | | 1235250524 | 07062 | 12352 50524 | |
| . | C5440 | | | 1321C50505 | 07063 | 13210 50505 | |
| . | C5441 | ERR27 | | 2432312532 | 07064 | 24323 12532 | |
| . | C5442 | | | 3105241321 | 07065 | 31052 41321 | |
| . | C5443 | ERR4C | | 2124141205 | 07066 | 21241 41205 | |
| . | C5444 | | | 1227272427 | 07067 | 12272 72427 | |
| . | C5445 | LERR | | STR A•L(LERR+3) | 07070 | 15010 07073 | |
| . | C5446 | | | RPL Y+1•L(POW14) | 07071 | 36010 07124 | |
| . | C5447 | | | STR A•L(FLTPT) | 07072 | 15010 06222 | |
| . | C5450 | | | ENT A•0 | 07073 | 11000 00000 | |
| . | C5451 | | | JP AERR1 | 07074 | 61000 06754 | |
| . | C5452 | ERR2 | | ENT A•ERR30•SKIP | 07075 | 11100 07106 | |
| . | C5453 | ERR3 | | ENT A•ERR31 | 07076 | 11000 07110 | |
| . | C5454 | | | JP LERR | 07077 | 61000 07070 | |
| . | C5455 | ERR4 | | ENT A•ERR32•SKIP | 07100 | 11100 07112 | |
| . | C5456 | ERR5 | | ENT A•ERR33 | 07101 | 11000 07114 | |
| . | C5457 | | | JP LERR | 07102 | 61000 07070 | |
| . | C5460 | ERR6 | | ENT A•ERR34•SKIP | 07103 | 11100 07116 | |
| . | C5461 | ERR7 | | ENT A•ERR35 | 07104 | 11000 07120 | |
| . | C5462 | | | JP LERR | 07105 | 61000 07070 | |
| . | C5463 | ERR3C | | 2324310524 | 07106 | 23243 10524 | |
| . | C5464 | | | 1031C50505 | 07107 | 10310 50505 | |
| . | C5465 | ERR31 | | 2324C53106 | 07110 | 23240 53106 | NO TAB |
| . | C5466 | | | 0705C50505 | 07111 | 07050 50505 | |
| . | C5467 | ERR32 | | 2324310511 | 07112 | 23243 10511 | NOT DEC |
| . | C5470 | | | 1210C50505 | 07113 | 12100 50505 | |
| . | C5471 | ERR33 | | 2324C51112 | 07114 | 23240 51112 | NO DEC PT |
| . | C5472 | | | 1005253105 | 07115 | 10052 53105 | |
| . | C5473 | ERR34 | | 2706231412 | 07116 | 27062 31412 | RANGE ERR |
| . | C5474 | | | C512272705 | 07117 | 05122 72705 | |
| . | C5475 | ERR35 | | 1223110510 | 07120 | 12231 10510 | END CODE |
| . | C5476 | | | 2411120505 | 07121 | 24111 20505 | |
| . | C5477 | STARTREAD | | ENTRY | 07122 | 61000 00000 | |
| . | C55C0 | | | EXIT | 07123 | 61010 07122 | |
| . | C55C1 | PCW14 | | NO-OP | 07124 | 12000 00000 | |
| . | C55C2 | ASIN | | ENTRY | 07125 | 61000 00000 | |
| . | C5503 | | | ENT A•40001 | 07126 | 11000 40001 | BIASED CHAR EQUALS 1 |
| . | C55C4 | | | SUB A•L(B4)•APOS | 07127 | 21614 00000 | 1-C, TEST C GREATER THAN 1 |
| . | C5505 | | | JP ERR16 | 07130 | 61000 07037 | YES ERROR |
| . | C55C6 | | | ENT B5•A | 07131 | 12570 00000 | B5 EQUALS 1-C TEST C EQUALS 1 |
| . | C55C7 | | | JP ASIN4•AZERO | 07132 | 60400 07274 | |

| CARDS | LI ID LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|
| . | C5510 | SUB | A•1•ANOT | 07133 | 21500 00001 | -C TEST C EQUALS 0 |
| . | C5511 | JP | ASIN3 | 07134 | 61000 07215 | YES TO TEST ABS(M) EQUALS 1/2 |
| . | C5512 | COM | A•140•YMORE | 07135 | 04700 00016 | |
| . | C5513 | ENT | A•C•SKIP | 07136 | 11100 00000 | |
| . | C5514 HERE | ENT | A•W(1+84)•SKIP | 07137 | 11134 00001 | |
| . | C5515 | JP | ASIN2 | 07140 | 61000 07211 | |
| . | C5516 | LSH | A•1 | 07141 | 06000 00001 | SCALED 29 |
| . | C5517 | STR | A•W(WS) | 07142 | 15030 06467 | SAVED |
| . | C552C | RSH | AQ•29D+85 | 07143 | 03005 00035 | M•2••C EQUALS Y SCALED 29 EQUALS X |
| . | C5521 | STR | Q•W(WS+1) | 07144 | 14030 06470 | |
| . | C5522 | MUL | W(WS+1) | 07145 | 22030 06470 | |
| . | C5523 | RSH | AQ•29D | 07146 | 03000 00035 | SCALED 29 0 IN A |
| . | C5524 ASIN1 | STR | A•W(WS+1) | 07147 | 15030 06470 | STORE P |
| . | C5525 | MUL | W(ASINK) | 07150 | 22030 07313 | K•X••2 |
| . | C5526 | RSH | AQ•29D | 07151 | 03000 00035 | SCALED 29 EQUALS Z |
| . | C5527 | ENT | Y+Q•W(ASINK+3) | 07152 | 30030 07316 | Z+C |
| . | C5530 | STR | A•W(WS+2) | 07153 | 15030 06471 | SAVED |
| . | C5531 | ENT | A•W(ASINK+1) | 07154 | 11030 07314 | A |
| . | C5532 | STR | A+Q•Q | 07155 | 32000 00000 | +Z |
| . | C5533 | MUL | A | 07156 | 22070 00000 | (A+Z)••2 |
| . | C5534 | RSH | AQ•29D | 07157 | 03000 00035 | SCALED 29 |
| . | C5535 | ADD | Q•W(ASINK+2) | 07160 | 26030 07315 | +B EQUALS U |
| . | C5536 | STR | Q•W(WS+3) | 07161 | 14030 06472 | SAVE U |
| . | C5537 | MUL | W(WS+2) | 07162 | 22030 06471 | U•(Z+C) |
| . | C5540 | RSH | AQ•29D | 07163 | 03000 00035 | SCALED 29 EQUALS V |
| . | C5541 | ENT | Y+Q•W(ASINK+4) | 07164 | 30030 07317 | V+D |
| . | C5542 | SUB | Q•W(WS+3) | 07165 | 27030 06472 | V-D |
| . | C5543 | ADD | Q•W(ASINK+5) | 07166 | 26030 07320 | +E |
| . | C5544 | STR | A•W(WS+3) | 07167 | 15030 06472 | |
| . | C5545 | MUL | W(WS+3) | 07170 | 22030 06472 | |
| . | C5546 | RSH | AQ•29D | 07171 | 03000 00035 | SCALED 29 |
| . | C5547 | ADD | Q•W(ASINK+6) | 07172 | 26030 07321 | +F EQUALS ARCSIN X/2X |
| . | C5550 | MUL | W(WS) | 07173 | 22030 06467 | •M EQUALS (1/2)ARCSIN X SCALED 28+C |
| . | C5551 | RSH | AQ•27D+85 | 07174 | 03005 00033 | •(4•2••C) EQUALS 2ARCSIN X SC 28 |
| . | C5552 | ENT | A•W(WS+1)•AZERO | 07175 | 11430 06470 | P SCALED 28 SKIP IF P EQUALS 0 |
| . | C5553 | STR | A+Q•Q•SKIP | 07176 | 32100 00000 | P-2•ARCSIN X EQUALS ARCSIN Y |
| . | C5554 | RSH | Q•1 | 07177 | 01000 00001 | ARCSIN Y SCALED 28 |
| . | C5555 | STR | Q•A•QPOS | 07200 | 14240 00000 | TEST M LESS THAN 0 |
| . | C5556 | STR | A•A | 07201 | 15040 00000 | YES FORM ABS(M) |
| . | C5557 | RPT | 29D | 07202 | 70000 00035 | NORMALIZE |
| . | C556C | LSH | A•1•ANEG | 07203 | 06700 00001 | SCALED 30 |
| . | C5561 | JP | ASIN2+2 | 07204 | 61000 07213 | M EQUALS 0 |
| . | C5562 | LSH | A•29D | 07205 | 06000 00035 | PRESERVE SIGN |
| . | C5563 | RSH | A•1•QPOS | 07206 | 02200 00001 | M SCALED 28 TEST M LESS THAN 0 |
| . | C5564 | STR | A•A | 07207 | 15040 00000 | YES -ABS(M) |
| . | C5565 | ENT | Q•37745+87•SKIP | 07210 | 10107 37745 | C EQUALS (27-SF)-27+BIAS |
| . | C5566 ASIN2 | ENT | Q•A | 07211 | 10070 00000 | C EQUALS 0 |
| . | C5567 | STR | Q•L(86) | 07212 | 14016 00000 | STORE ARCSIN Y |

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CARDS    L1 (O LABEL      TA STATEMENT                          LOC    F JK8 Y      NOTES

   .     C557C               STR  A•W(1+86)                    07213  15036 000C1  AS C,M
   .     C5571               EX(T                              07214  61010 07125
   .     C5572 AS(N3         ENT  Q•W(1+84)                    072(5  10034 0000(  M EQUALS Y SCALED 28
   .     C5573               STR  Q•A•QNEG                     07216  (4340 000C0  FORM
   .     C5574               STR  A•A                          07217  15040 000C0  -ABS(Y)
   .     C5575               ADD  A•W(AS(NP+2)•ANOT            07220  20530 07324  1/2-ABS(Y) TEST ZERO
   .     C5576               JP   AS(N5                        07221  61000 073C3  YES USE (P1)/6
   .     C5577               ADD  A•W(AS(NP+2)•QPOS            07222  20230 07324  (1-ABS(Y))/2 SCALED 29
   .     C56CC               STR  A•CPW(WS+()•SK(P             07223  15170 06470  STORE X••2 AND
   .     C56C1               STR  A•W(WS+1)                    07224  15030 06470  SAVE SIGN OF Y
   .     C56C2               RPT  29C•                         07225  70000 00035  NORMAL(ZE
   .     C56C3               LSH  A•1•ANEG                     07226  06700 000C1  SCALED 30
   .     C56C4               JP   AS(N5-1                      07227  61000 07302  ABS(X) LESS THAN 2••-13 USE (P
                                                                                   ()/2
   .     C56C5               ENT  Q•A                          07230  10070 00000  SAVE X••2
   .     C56C6               STR  87•A                         07231  16740 00000  26-SF
   .     C56C7               SUB  A•300                        07232  21000 0C036  -(2+SF) EQUALS -(2-2C)
   .     C56(0               LSH  A•290•ANEG                   07233  06700 00035  -(1-C) TEST SF EVEN
   .     C5611               LSH  Q•270•SK(P                   07234  05100 00033  NO (1/4)•X••2 SCALED 29EQUALS
                                                                                   T/2
   .     C56(2               LSH  Q•280                        07235  05000 00034  YES (1/2)•X••2 SCALED 29 EQUAL
                                                                                   S T/2
   .     C56(3               STR  A•A                          07236  15040 00CC0  1-C
   .     C5614               ENT  85•A                         07237  12570 00000  TO 85
   .     C56(5               STR  Q•W(WS+2)                    07240  14030 06471  SAVE T/2
   .     C56(6               MUL  W(AS(NQ)                     0724(  22030 07326  A(T/2)
   .     C56(7               RSH  AQ•290                       07242  03000 00035  SCALED 29
   .     C5620               ADD  Q•W(AS(NQ+1)                 07243  26030 07327  +(8/2)
   .     C562(               MUL  W(WS+2)                      07244  22030 06471  •(T/2)
   .     C5622               RSH  AQ•290                       07245  03000 00035  SCALED 29 0 1N A-REG
   .     C5623               ADD  Q•W(AS(NQ+2)                 07246  26030 07330  +(C/4)
   .     C5624               STR  Q•W(WS)                      07247  14030 06467   EQUALS (T••1/2)/4 APPROX EQUA
                                                                                   LS R1
   .     C5625               ENT  Q•W(WS+2)                    07250  10030 06471  T/2
   .     C5626               LSH  AQ•260                       07251  07000 00032  •(1/8) EQUALS T/16 SCALED 58
   .     C5627               D(V  W(WS)                        07252  23030 06467  (T/16)/R1
   .     C5630               ADD  Q•W(WS)                      07253  26030 06467  +R1
   .     C5631               RSH  Q•1                          07254  01000 00001  •(1/2) EQUALS R2
   .     C5632               STR  Q•W(WS)                      07255  14030 06467  SAVE R2
   .     C5633               ENT  A•W(WS+2)                    07256  11030 06471  ONE MORE
   .     C5634               CL   Q                            07257  10000 000C0  (TERATION
   .     C5635               RSH  AQ•4                         07260  03000 00004  Y(ELOS
   .     C5636               D(V  W(WS)                        07261  23030 06467  (T••1/2)/2
   .     C5637               ADD  Q•W(WS)                      07262  26030 06467  •2
   .     C5640               LSH  AQ•310                       07263  07000 00037   EQUALS T••1/2 SCALED 29 EQUAL
                                                                                   S ABS(M)
   .     C5641               ENT  Q•W(WS+()•QNEG               07264  10330 06470  X••2 TEST SIGN
   .     C5642               STR  A•CPW(WS)•SK(P               07265  15170 06467  STORE -M
   .     C5643               STR  A•W(WS)                      07266  15030 06467  STORE -M
   .     C5644               ENT  A•W(ASINP+()•QPOS            07267  11230 07323  (P()/2 SCALED 28
   .     C5645               STR  Q•Q•SK(P                     07270  14100 00000  CHANGE SIGN
   .     C5646               JP   AS(N1                        07271  61000 07147  TO CALC FOR Y GREATER .5
   .     C5647               STR  A•A                          07272  15040 000C0  -(P()/2
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CARDS    L1 (O LABEL      TA STATEMENT                                LOC    F JKB Y      NOTES

   .     C5650            JP   AS(N1                                 07273  61000 07147  TO CALC FOR Y LESS THAN -.5

   .     C5651 AS(N4      ENT  Q•W(1+B4)                             07274  10034 00001  M
   .     C5652            STR  Q•A•QNEG                              07275  14340 00000  FORM
   .     C5653            STR  A•A                                   07276  15040 00CC0  -ABS(M)
   .     C5654            ADD  A•W(AS(NP+2)•AZERO                    07277  20430 07324  +(1/2) TEST AZERO
   .     C5655            JP   ERR16                                 07300  61000 07037  NO ERROR
   .     C5656            ENT  B5•40001                              07301  12500 40001  C FOR (PI)/2
   .     C5657            JP   AS(N5+1                               07302  61000 073C4
   .     C5660 AS(N5      ENT  B5•40000                              07303  12500 40000  C FOR (PI)/6
   .     C5661            ENT  A•W(AS(NP-40000+B5)•QPOS              07304  11235 47321  (PI)/6ORIP()/2 TEST M LESS
   .     C5662            STR  A•A                                   07305  15040 00000  YES -(PI)/6 OR -(P()/2
   .     C5663            RSH  A•1                                   07306  02000 00001  M SCALED 28
   .     C5664            STR  B5•Q                                  07307  16500 0C0C0  C
   .     C5665            STR  Q•L(B6)                               07310  14016 0C0C0  STORE ARCSIN Y
   .     C5666            STR  A•W(1+B6)                             07311  15036 00001  AS C,M
   .     C5667            EXIT                                       07312  61010 07125
   .     C5670 AS(NK      2041C15167                                 07313  20410 15167  K
   .     C5671            (070502075                                 07314  10705 02075  A
   .     C5672            1507662270                                 07315  15076 62270  B
   .     C5673            C125170245                                 07316  01251 70245  C
   .     C5674            C151206634                                 07317  01512 06634  D
   .     C5675            3121124150                                 07320  31211 24150  E
   .     C5676            1720500666                                 07321  17205 00666  F
   .     C5677 AS(NP      2060251072                                 07322  20602 51072  (PI)/6 SCALED 29
   .     C57CC            3110375526                                 07323  31103 75526  (P()/2 SCALED 28
   .     C57C1            1000C00000                                 07324  10000 00000  1/2 SCALED 28
   .     C57C2            1444176653                                 07325  14441 76653  (PI)/2 SCALED 27
   .     C57C3 AS(NQ      6570132340                                 07326  65701 32340  -A SCALED 29
   .     C57C4            2065211354                                 07327  20652 11354  B/2 SCALED 29
   .     C57C5            C2046C0545                                 07330  02046 00545  C/4 SCALED 29
   .     C57C6 ACCS       ENTRY                                      07331  61000 00000
   .     C57C7            RJP  AS(N                                  07332  65000 07125  GET ARCS(N Y
   .     C5710            ENT  A•40001                               07333  11000 400C1  BIASED CHARACTERISTIC
   .     C5711            SUB  A•L(B6)                               07334  21016 000C0  1-C
   .     C5712            ENT  Q•W(1+B6)                             07335  10036 00001  M SCALED 28
   .     C5713            RSH  Q•A                                   07336  01070 000C0  ARCSIN Y SCALED 27
   .     C5714            SUB  Q•W(AS(NP+3)•QNEG                     07337  27730 07325  -(P()/2 SCALED 27
   .     C5715            JP   ACOS1                                 07340  61000 07350  ARCOS Y EQUALS 0
   .     C5716            RPT  290                                   07341  70000 00035  NORMALIZE (-ARCOS Y)
   .     C5717            LSH  Q•1•QPOS                              07342  05200 000C1  WITH 26+C IN B7
   .     C5720            JP   ACOS1                                 07343  61000 07350  (ARCOS Y EQUALS 0)
   .     C5721            LSH  Q•290                                 07344  05000 00035  SAVE SIGN OF -M
   .     C5722            RSH  Q•1                                   07345  01000 00001  AND SCALE 28
   .     C5723            STR  B7•A                                  07346  16740 000C0  26+C
   .     C5724            ADD  A•37746•SKIP                          07347  20100 37746  +BIAS-26 EQUALS C
   .     C5725 ACCS1      STR  Q•Q                                   07350  14000 000C0  SET FOR C EQUALS 0
   .     C5726            STR  A•L(B6)                               07351  15016 00000  STORE ARCOS Y
   .     C5727            STR  Q•CPW(1+B6)                           07352  14076 00001  AS C,M
   .     C573C            EXIT                                       07353  61010 07331
   .     C5731 LCGE       ENTRY                                      07354  61000 00000   LN(Y) IN FLOATING PT
   .     C5732            ENT  Q•W(1+B4)                             07355  10034 00001  MANTISSAEQMEQQ
   .     C5733            COM  Q•W(LOGER)•YMORE                      07356  0433C 07465  TEST M LESS1
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| CARDS | L1 ID | LABEL | TA | STATEMENT | LOC | F JKB Y | NOTES |
|---|---|---|---|---|---|---|---|
| . | C5734 | | JP | ERR16A | 07357 | 61000 07041 | |
| . | C5735 | | ENT | Y-Q•W(LOGER+1)•ANEG | 07360 | 31730 07466 | TEST M GREATER 1/2 |
| . | C5736 | | JP | LOGE1 | 07361 | 61000 07410 | NO,TRY M EQ 1/2 |
| . | C5737 | | ENT | LP•W(LOGER+2) | 07362 | 40030 07467 | GET ( |
| . | C574C | | RSH | A•24D | 07363 | 02000 00030 | FOR K(1) |
| . | C574( | | ENT | B5•A | 07364 | 12570 00000 | IN TABLE |
| . | C5742 | | MUL | W(LOGEK+B5) | 07365 | 22035 07507 | K(1)•Q |
| . | C5743 | | RSH | AQ•29D | 07366 | 03000 00035 | SCALED 27 |
| . | C5744 | | SUB | Q•W(LOGER+1) | 07367 | 27030 07466 | -1 EQ X |
| . | C5745 | | ENT | Y+Q•W(LOGEA+2) | 07370 | 30030 07473 | X+C |
| . | C5746 | | STR | A•W(WS) | 07371 | 15030 06467 | SAVED |
| . | C5747 | | ENT | Y+Q•W(LOGEA) | 07372 | 30030 07471 | X+A |
| . | C575D | | STR | A•W(WS+1) | 07373 | 15030 06470 | |
| . | C5751 | | MUL | W(WS+1) | 07374 | 22030 06470 | |
| . | C5752 | | RSH | AQ•27D | 07375 | 03000 00033 | SCALED 27 |
| . | C5753 | | STR | Q•W(WS+1) | 07376 | 14030 06470 | SAVED |
| . | C5754 | | ADD | Q•W(LOGEA+1) | 07377 | 26030 07472 | Z+B |
| . | C5755 | | MUL | W(WS) | 07400 | 22030 06467 | •(X+C) |
| . | C5756 | | RSH | AQ•27D | 07401 | 03000 00033 | SCALED 27 EQ W |
| . | C5757 | | ENT | Y+Q•W(LOGEA+4) | 07402 | 30030 07475 | W+E |
| . | C576D | | ADD | Q•W(LOGER+3) | 07403 | 26030 07470 | W-3 |
| . | C5761 | | ADD | Q•W(LOGEA+3) | 07404 | 26030 07474 | +(D+3) |
| . | C5762 | | ADD | Q•W(WS+() | 07405 | 26030 06470 | +Z |
| . | C5763 | | STR | A•W(WS+() | 07406 | 15030 06470 | |
| . | C5764 | | MUL | W(WS+()•SK(P | 07407 | 22130 06470 | |
| . | C5765 | LOGE1 | ENT | Q•W(LOGEA+5)•SKIP | 07410 | 10130 07476 | LN(2) |
| . | C5766 | | DIV | W(LOGER+3)•SK(P | 07411 | 23130 07470 | (-1/6) EQLN(X)-F•(-1/6) |
| . | C5767 | | STR | Q•Q•SK(P | 07412 | 14100 00000 | -LN(2) |
| . | C577D | | ADD | Q•W(LOGEF+B5)•SK(P | 07413 | 26135 07477 | +F•(-1/L)-LN(K(()) |
| . | C577( | | JP | ERR16A•ANOT | 07414 | 60500 07041 | |
| . | C5772 | | STR | Q•W(WS) | 07415 | 14030 06467 | EQ LN(Q) SCALED28 |
| . | C5773 | | ENT | A•L(B4) | 07416 | 11014 00000 | CHAR EQ P+2••14 |
| . | C5774 | | SUB | A•400000•ANOT | 07417 | 21500 40000 | -B(ASEQP,TEST P EQD |
| . | C5775 | | JP | LOGE2 | 07420 | 61000 07445 | YES SKIP CALC |
| . | C5776 | | ENT | Q•A•QPOS | 07421 | 10270 00000 | TEST PLESSO |
| . | C5777 | | STR | Q•Q | 07422 | 14000 00000 | USE ABS(P) |
| . | C6CC0 | | RPT | 4•AOV | 07423 | 70100 00004 | RANGE OF P |
| . | C6CC( | | COM | Q•L(LOGES)•YMORE | 07424 | 04310 07517 | TO DETR MIN SHIFTS |
| . | C6CC2 | | JP | LOGEM | 07425 | 61000 07523 | |
| . | C6CC3 | | ENT | B5•U(LOGES+B7) | 07426 | 12527 07517 | FOR SCALING |
| . | C6CC4 | LOGE1A | MUL | W(LOGEA+5) | 07427 | 22030 07476 | |
| . | C6CC5 | | LSH | AQ•B5 | 07430 | 07005 00000 | SCALED 45 47 50 53 56 |
| . | C6CC6 | | JP | LOGEM+2 | 07431 | 61000 07525 | |
| . | C6CC7 | | RPT | L(COUNT) | 07432 | 70010 07534 | NORMALIZE |
| . | C6CID | | LSH | AQ•1•ANEG | 07433 | 07700 00001 | PRODUCT |
| . | C6C11 | | JP | ERR16A | 07434 | 61000 07041 | |
| . | C6C12 | | LSH | AQ•58D | 07435 | 07000 00072 | RETURN SIGN SCALED 28 |
| . | C6C13 | | ENT | Q•L(B4) | 07436 | 10014 00000 | P |
| . | C6C14 | | COM | Q•400000•YLESS | 07437 | 04200 40000 | TEST P LESS 0 |
| . | C6C15 | | STR | A•A | 07440 | 15040 00000 | YES -ABS(P)•LN(2) |
| . | C6C16 | | ENT | Q•W(WS) | 07441 | 10030 06467 | LN(Q) |
| . | C6C17 | | ENT | B5•B7-26D | 07442 | 12507 77745 | |
| . | C6C20 | | BJP | B5•LOGE2-1 | 07443 | 72500 07444 | |

| CARDS | LI | IO | LABEL | TA | STATEMENT | LOC | F | JKB | Y | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|
| . | C6C21 | | | | RSH Q•85•SKIP | 07444 | 01105 | 00000 | | |
| . | C6C22 | | LOGE2 | | ENT B7•270 | 07445 | 12700 | 00033 | | SET FOR NO SHIFTS(P EQ 0) |
| . | C6C23 | | | | STR A•Q•Q•QPOS | 07446 | 32200 | 00000 | | LN(Y) |
| . | C6C24 | | | | STR Q•Q | 07447 | 14000 | 00000 | | ABS(LN(Y)) |
| . | C6C25 | | | | JP LOGE3•AZERO | 07450 | 60400 | 07461 | | SKIP IF Y EQ 1 |
| . | C6C26 | | | | STR B7•W(WS) | 07451 | 16730 | 06467 | | SAVE FACTOR |
| . | C6C27 | | | | RPT 29D | 07452 | 70000 | 00035 | | NORMALIZE |
| . | C6C30 | | | | LSH Q•1•QNEG | 07453 | 05300 | 00001 | | ABS(LN(Y)) |
| . | C6C31 | | | | JP ERR16A | 07454 | 61000 | 07041 | | |
| . | C6C32 | | | | LSH Q•28D•APOS | 07455 | 05600 | 00034 | | RETURN SIGN SCALED 28 |
| . | C6C33 | | | | STR Q•Q | 07456 | 14000 | 00000 | | AS MANTISSA |
| . | C6C34 | | | | ENT A•W(WS) | 07457 | 11030 | 06467 | | FORM |
| . | C6C35 | | | | ADD A•37712+B7•SKIP | 07460 | 20107 | 37712 | | CHARACTER(STIC |
| . | C6C36 | | LOGE3 | | CL Q | 07461 | 10000 | 00000 | | |
| . | C6C37 | | | | STR A•L(B6) | 07462 | 15016 | 00000 | | STORE |
| . | C6C40 | | | | STR Q•W(1+B6) | 07463 | 14036 | 00001 | | RESULT |
| . | C6C41 | | | | EXIT | 07464 | 61010 | 07354 | | |
| . | C6C42 | | LOGER | | 2000C00000 | 07465 | 20000 | 00000 | | 1SCALED 28 |
| . | C6C43 | | | | 1000C00000 | 07466 | 10000 | 00000 | | 1/2SCALED28 |
| . | C6C44 | | | | C70CC00000 | 07467 | 07000 | 00000 | | MASK FOR I |
| . | C6C45 | | | | 4777777777 | 07470 | 47777 | 77777 | | -3 SCALED 27 -6 SCALED26 |
| . | C6C46 | | LOGEA | | 5770232732 | 07471 | 57702 | 32732 | | A SCALED 27 |
| . | C6C47 | | | | 3427564132 | 07472 | 34275 | 64132 | | B |
| . | C6C50 | | | | C724376530 | 07473 | 07243 | 76530 | | C |
| . | C6C51 | | | | 4341324241 | 07474 | 43413 | 24241 | | D+3 |
| . | C6C52 | | | | 5712656427 | 07475 | 57126 | 56427 | | E |
| . | C6C53 | | | | 1305620600 | 07476 | 13056 | 20600 | | LN(2) SCALED 28 |
| . | C6C54 | | LOGEF | | 5366557053 | 07477 | 53665 | 57053 | | |
| . | C6C55 | | | | 5557247242 | 07500 | 55572 | 47242 | | I |
| . | C6C56 | | | | 5733156444 | 07501 | 57331 | 56444 | | 2 |
| . | C6C57 | | | | 6074650576 | 07502 | 60746 | 50576 | | 3 |
| . | C6C60 | | | | 6225723447 | 07503 | 62257 | 23447 | | 4 |
| . | C6C61 | | | | 6347732466 | 07504 | 63477 | 32466 | | 5 |
| . | C6C62 | | | | 6463606732 | 07505 | 64636 | 06732 | | 6 |
| . | C6C63 | | | | 6572323037 | 07506 | 65723 | 23037 | | 7 |
| . | C6C64 | | LOGEK | | 3600000000 | 07507 | 36000 | 00000 | | I EQ 0 IN K(I) EQ15/(8+I) SCALED 28 |
| . | C6C65 | | | | 3252525253 | 07510 | 32525 | 25253 | | 1 |
| . | C6C66 | | | | 3000CC0C00 | 07511 | 30000 | 00CC0 | | 2 |
| . | C6C67 | | | | 2564272135 | 07512 | 25642 | 72135 | | 3 |
| . | C6C70 | | | | 2400C00000 | 07513 | 24000 | 00000 | | 4 |
| . | C6071 | | | | 2235423542 | 07514 | 22354 | 23542 | | 5 |
| . | C6C72 | | | | 2111111111 | 07515 | 21111 | 11111 | | 6 |
| . | C6C73 | | | | 2000C00000 | 07516 | 20000 | 00000 | | 7 |
| . | C6C74 | | LOGES | | C002300014 | 07517 | 00023 | 00014 | | UPPER HALF |
| . | C6C75 | | | | C002600135 | 07520 | 00026 | 00135 | | SHIFT CONSTANTS |
| . | C6076 | | | | C003101343 | 07521 | 00031 | 01343 | | LOWER HALF |
| . | C6077 | | | | C003413426 | 07522 | 00034 | 13426 | | CHAR RANGE |
| . | C61C0 | | LOGEM | | ENT B5•170 | 07523 | 12500 | 00021 | | |
| . | C61C1 | | | | JP LOGE1A | 07524 | 61000 | 07427 | | |
| . | C61C2 | | | | STR A•W(SAVE) | 07525 | 15030 | 07533 | | |
| . | C61C3 | | | | ENT A•590 | 07526 | 11000 | 00073 | | |
| . | C61C4 | | | | SUB A•B5 | 07527 | 21005 | 00000 | | |

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CARDS    L1 IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C61C5            STR  A•W(COUNT)                       07530  15030 07534
   .     C61C6            ENT  A•W(SAVE)                        07531  11030 07533
   .     C61C7            JP   LOGE1A+3                         07532  61000 07432
   .     C6110 SAVE       RESERVE   1                           07533  00000 00000
   .     C6111 COUNT      RESERVE   1                           07534  00000 00000
   .     C6112 SIN        ENTRY                                 07535  61000 00000
   .     C6113            ENT  A•L(B4)                          07536  11014 00000
   .     C6114            COM  A•37767•YMORE                    07537  04700 37767  TEST EXPONENT LES 2EXP-10
   .     C6115            JP   $+5                              07540  61000 07545  NO
   .     C6116            STR  A•L(B6)                          07541  15016 00000  SET SIN(X) EQ X
   .     C6117            ENT  A•W(B4+1)                        07542  11034 00001
   .     C6120            STR  A•W(B6+1)                        07543  15036 00001
   .     C6121            EXIT                                  07544  61010 07535
   .     C6122            COM  A•40034•YMORE                    07545  04700 40034
   .     C6123            JP   $•STOP                           07546  61400 07546  EXPONENT GEQ 2EXP27
   .     C6124            CL   L(SINCOS2+1)                     07547  16010 07562
   .     C6125            ENT  A•W(1+B4)                        07550  11034 00001
   .     C6126 SINCOS1    STR  A•W(SINCOS20)•APOS               07551  15630 07642  ARG IN SINCOS20
   .     C6127            CP   A•ANOT                           07552  15540 00000
   .     C6130            JP   SINCOS7+1•AZERO                  07553  60400 07630
   .     C6131            ENT  Q•40033                          07554  10000 40033
   .     C6132            SUB  Q•L(B4)                          07555  27014 00000
   .     C6133            STR  Q•L(SINCOS2)                     07556  14010 07561
   .     C6134            ENT  Q•A                              07557  10070 00000  $ARG$ TO Q
   .     C6135            MUL  W(SINCOS10)                      07560  22030 07633  $ARG$ TIMES 2/PI IN AQ
   .     C6136 SINCOS2    RSH  AQ•0                             07561  03000 00000  QTREV IN AQ AT B30
   .     C6137            ADD  A•0                              07562  20000 00000  ADD 1 IF COSINE
   .     C6140            SEL  CL•X77774                        07563  52040 77774
   .     C6141            ENT  B7•A                             07564  12770 00000  QUADRANT TO B7
   .     C6142            RSH  AQ•1                             07565  03000 00001  FRAC IN Q AT B29
   .     C6143            JP   $+1+B7                           07566  61007 07567
   .     C6144            JP   $+3                              07567  61000 07572  QUADRANT I
   .     C6145            CP   Q•SKIP                           07570  14100 00000  QUADRANT II
   .     C6146            CP   Q                                07571  14000 00000  QUADRANT III
   .     C6147            ENT  A•W(SINCOS20)•APOS               07572  11630 07642  QUADRANT IV, ARG TO A
   .     C6150            CP   Q                                07573  14000 00000  -FRAC IF ARG NEGATIVE
   .     C6151            STR  Q•W(SINCOS20)                    07574  14030 07642  STORE X EQ + OR - FRAC AT B29

   .     C6152            MUL  W(SINCOS20)                      07575  22030 07642  Y EQ X••2 IN AQ AT B58
   .     C6153            RSH  AQ•290                           07576  03000 00035  Y IN Q AT B29
   .     C6154            STR  Q•W(SINCOS20+1)                  07577  14030 07643
   .     C6155            ENT  B7•3                             07600  12700 00003
   .     C6156            ENT  Q•W(SINCOS11+4)                  07601  10030 07641  KSUB9 IN Q AT B32
   .     C6157            MUL  W(SINCOS20+1)                    07602  22030 07643  Y TIMES POLY
   .     C6160            ENT  Q•A                              07603  10070 00000  TO Q
   .     C6161            ADD  Q•W(SINCOS11+B7)                 07604  26037 07635  POLY EQ POLY+KSUB1
   .     C6162            BJP  B7•$-3                           07605  72700 07602
   .     C6163            MUL  W(SINCOS20)                      07606  22030 07642  X•POLY IN AQ AT B57
   .     C6164            JP   SINCOS6•ANEG                     07607  60700 07615
   .     C6165            CL   L(SINCOS6+6)                     07610  16010 07623
   .     C6166            RPT  320                              07611  70000 00040
   .     C6167            LSH  AQ•1•ANEG                        07612  07700 00001
   .     C6170            JP   SINCOS7                          07613  61000 07627  SIN(X) EQ 0
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CARDS    LI IO LABEL      TA STATEMENT                          LOC    F JKB Y      NOTES

   .     C6171               JP   $+5                          07614  61000 07621
   .     C6172 SINCOS6       CL   CPL($+6)                     07615  16050 07623
   .     C6173               RPT  32C                          07616  70000 00040
   .     C6174               LSH  AQ•1•APOS                    07617  07600 000C1
   .     C6175               JP   SINCOS7                      07620  61000 07627  SIN(X) EQ 0
   .     C6176               ENT  Q•37743+B7                   07621  10007 37743
   .     C6177               STR  Q•W(B6)                      07622  14036 00CC0
   .     C62C0               ENT  Q•0                          07623  10000 00CC0  PUT PROPER SIGN IN Q
   .     C62C1               LSH  AQ•580                       07624  07000 00072  SIN(X) IN A
   .     C6202               STR  A•W(1+B6)                    07625  15036 000C1
   .     C62C3               EXIT                              07626  61010 07535
   .     C6204 SINCCS7       CL   A                            07627  11000 00000  SIN(X) EQ 0
   .     C62C5               CL   W(B6)                        07630  16036 0CCC0
   .     C62C6               CL   W(1+B6)                      07631  16036 000C1
   .     C62C7               EXIT                              07632  61010 07535
   .     C6210 SINCCS1C      2427630I55                        07633  24276 30155  2/PI AT B29
   .     C621I               I000C00000                        07634  10000 00CC0  I.0 AT B27
   .     C6212 SINCOS11      3110375522                        07635  31103 75522  K1 AT B28
   .     C6213               5325C41750                        07636  53250 41750  K3 AT B29
   .     C6214               C506321276                        07637  05063 21276  K5 AT B30
   .     C6215               7731554634                        07640  77315 54634  K7 AT B31
   .     C6216               C002366574                        07641  00023 66574  K9 AT B32
   .     C6217 SINCCS2C      C                                 07642  00000 00000  X HERE AT B29
   .     C6220               C                                 07643  00000 0CCC0  Y EQ X••2 AT B29
   .     C6221 CCS           ENTRY                             07644  61000 00CC0
   .     C6222               ENT  Q•L(COS)                     07645  10010 07644
   .     C6223               STR  Q•L(SIN)                     07646  14010 07535  SET EXIT ADDRESS
   .     C6224               ENT  A•L(B4)                      07647  11014 00CC0
   .     C6225               COM  A•37764•YLESS                07650  04600 37764  TEST EXPONENT GTR 2EXP-13
   .     C6226               JP   SINCOS8                      07651  61000 07663  NO, SET COS(X) EQ 1.0
   .     C6227               COM  A•40034•YMORE                07652  04700 40034  TEST EXPONENT TOO LARGE
   .     C6230               JP   $•STOP                       07653  61400 07653  YES
   .     C623I               ENT  A•I                          07654  11000 00001
   .     C6232               STR  A•L(SINCOS2+1)               07655  15010 07562
   .     C6233               ENT  A•W(1+B4)•APOS               07656  11634 00001
   .     C6234               CP   A•AZERO                      07657  15440 00000  $ARG$ IN A
   .     C6235               JP   SINCOS1•ANOT                 07660  60500 07551
   .     C6236               ENT  Q•A                          07661  10070 00CC0
   .     C6237               JP   SINCOS1                      07662  61000 07551
   .     C6240 SINCCS8       ENT  A•40001                      07663  11000 40001  COS(X) EQ 1.0
   .     C6241               STR  A•W(B6)                      07664  15036 00000
   .     C6242               ENT  A•W(SINCOS10+1)              07665  11030 07634
   .     C6243               STR  A•W(B6+I)                    07666  15036 00001
   .     C6244               EXIT                              07667  61010 07644

END OF LISTING
```

..... SPURT OUTPUT NO. 211 .....

NTERCOM AOAMS-ASSOC*7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| A$$$$$1111 | 06764 | A$$$$$1112 | 06760 | ACOS | 07331 |
| ACOS1 | 07350 | ACCPT1 | 04231 | ACQAZIM | 63071 |
| ACCELEV | 63075 | ACQUI | 63427 | ACTIVITY | 04574 |
| ACTUALTIME | 63142 | ADDFL | 07020 | ADD | 06261 |
| ACSCN | 63416 | AERR | 07014 | AERR1 | 06754 |
| AERR2 | C6774 | AESCN | 63417 | ALNGOFFSET | 63517 |
| AQR | C6404 | ARCOFAZIM | 63524 | ARCOFDEC | 63526 |
| ARCOFELEV | 63522 | ARCOFRA | 63530 | ASIN | 07125 |
| ASIN1 | 07147 | ASIN2 | 07211 | ASIN3 | 07215 |
| ASIN4 | 07274 | ASIN5 | 07303 | ASINK | 07313 |
| ASINP | C7322 | ASINQ | 07326 | ASTRODEC | 63106 |
| ASTRORA | 63105 | ATAN | 06603 | ATAN1 | 06611 |
| ATAN2 | 06623 | ATAN3 | 06644 | ATAN5 | 06655 |
| ATTEN | C4215 | ATTNBIT | 00001 | ATTNBUF | 00544 |
| ATTNWDLC | C0077 | ATTNWDUC | 00057 | AUPEREQUAT | 63341 |
| AZFLOTIME | 63532 | AZELBXSCAN | 63500 | AZIM | 63053 |
| AZIMOFFSET | 63512 | AZIMOUT | 64000 | AZIMOVER | 63325 |
| AZIMADD | 63442 | AZIMIN | 75000 | AZMTHSCAN | 63501 |
| BCOYSIZE | 63462 | BOTOK | 00605 | BOTATN | 00602 |
| BCTCR | C0570 | BOTDEL | 00552 | BOTSTOP | 00617 |
| BETA | C4604 | BINOCTFLO | 02573 | BINOCTFLO1 | 02576 |
| BINCCTFLO2 | 02577 | BINDECFRA | 02703 | BINDECFRA1 | 02713 |
| BINDECFRA2 | 02714 | BINDECINT | 02514 | BINDECINT1 | 02525 |
| BINCECINT2 | 02526 | BINDECINT3 | 02542 | BINLMT | 04557 |
| BITS | 03076 | BLASTOFF | 63146 | BUFOUTWD | 00537 |
| BUFFCOUNT | 04600 | BUFFER | 04743 | BUFFSTORE | 02506 |
| BUFIN | C4577 | BUFINWD | 00540 | BUFLMT | 00453 |
| BUFSLOT | 04575 | COCON | 63414 | COOE | 04602 |
| CCFFI | 03253 | COFFIX | 03240 | COFFTEM1 | 03271 |
| CCFFTEM2 | 03272 | COFRND | 02763 | COFRND1 | 02774 |
| CCFRND1C | 03062 | COFRND11 | 03065 | COFRNO2 | 02776 |
| CCFRND3 | C3C00 | COFRND4 | 03007 | COFRND41 | 03012 |
| CCFRND5 | 03015 | COFRND51 | 03025 | COFRNO52 | 03032 |
| CCFRND6 | 03035 | COFRND7 | 03040 | COFRND8 | 03044 |
| CCFRND81 | 03053 | COFRND9 | 03056 | COMPROC | 00004 |
| CCMPROCCO | C0350 | COMPROCO1 | 00444 | COMPROCO2 | 00451 |
| COMPROCC3 | C0460 | COMPROCO4 | 00475 | COMPROCO6 | 00442 |
| COMPROCC7 | 00432 | COMPROCOB | 00407 | COMPROCO9 | 00373 |
| CCMPROCSW | C0422 | CONVERT | 04560 | CONVERTIME | 63135 |
| CCRCT | 63420 | COS | 07644 | COSORIENT | 63065 |
| CCSAZEL | 63070 | COT1 | 03467 | COT11 | 03500 |
| CCT2 | 03510 | COT3 | 03513 | COT4 | 03523 |
| CCT5 | C3526 | COT6 | 03535 | COT7 | 03546 |
| CCTFLT | 03441 | COTNEG1 | 03604 | COTNEG11 | 03616 |
| CCTNEG2 | 03626 | COTNEG3 | 03631 | COTNEG4 | 03641 |
| CCTNEG5 | 03647 | COTXT | 03577 | COUNT | 07534 |
| CASESET | C0730 | CAZIM | 63060 | CELBODY | 63113 |
| CELCOMPGM | 63424 | CELEV | 63061 | CELTIME | 63133 |
| CHARO | 02175 | CHCOR | 63422 | CHPAR | 63431 |
| CINF1 | 03106 | CINF21 | 03134 | CINF3 | 03175 |
| CINF30 | C3155 | CINFCALL | 03201 | CINFERR1 | 03233 |

NTERCOM ADAMS-ASSDC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| CINFERR2 | 03234 | CINFERR3 | 03235 | CINF1X | 03100 |
| CINFLT | 03275 | CINFMSK | 03232 | CINFSTRP | 03110 |
| CINFTP3 | 03212 | CINFXT | 03231 | CINFXT1 | 03225 |
| CNFLNON | 03351 | CNFLNONO1 | 03355 | CNFLNON1 | 03365 |
| CNFLNON2 | 03375 | CNFLT | 03345 | CNFLTO1 | 03402 |
| CNFLTO11 | 03406 | CNFLT11 | 03413 | CNFLT12 | 03417 |
| CNFLT3 | 03422 | CNFLTERR1 | 03431 | CNFLTP1 | 03432 |
| CNFLTP2 | 03433 | CNFLTP3 | 03435 | CNFLTP4 | 03436 |
| CNFLTP5 | 03437 | CNFLTP6 | 03440 | CNFLTPSIN | 03434 |
| CNFLTXT | 03424 | CPASTOR | 04566 | CPB6STOR | 00131 |
| CPBSTOR | 00130 | CPQSTOR | 04567 | CROUT | 00546 |
| CRANGE | 63057 | CRBUF | 00541 | CRBUF1N | 00550 |
| CRCOMP | 00622 | CRSSOFFSET | 63516 | CRSW | 04162 |
| CRWORD | 00004 | DOPPOUT | 66000 | DOPPADO | 63444 |
| DATANALYZE | 63425 | DAY | 63150 | DEC | 63003 |
| DECOFFSET | 63515 | DECDOT | 63010 | DECIN | 01127 |
| DECLO1 | 01643 | DECLO2 | 01651 | DECLINSCAN | 63505 |
| DECLMT | 01634 | DELBIT | 00002 | DELBUF | 00543 |
| DELTATEE | 63316 | DIV | 06342 | DRIVER | 06174 |
| DSECONDS | 63141 | DUMSEC TTG | 63154 | DVOFL | 07026 |
| DYOMP | 63421 | EFP | 06237 | ELEV | 63054 |
| ELEVOFFSET | 63513 | ELEVOUT | 65000 | ELEVADD | 63443 |
| ELEVIN | 76000 | ELVINSCAN | 63502 | EQUATOR | 63323 |
| ERR | 07011 | ERROR | 03746 | ERROR1 | 03757 |
| ERROR1A | 03763 | ERROR2 | 03767 | ERROR2A | 04005 |
| ERROR2B | 04011 | ERROR4 | 04013 | ERROR4A | 04014 |
| ERROR5 | 04024 | ERROR51 | 04037 | ERROR52 | 04040 |
| ERROR53 | 04052 | ERROR5A | 04045 | ERROR5B | 04046 |
| ERROR5C | 04061 | ERROR5D | 04063 | ERROR5E | 04054 |
| ERROR6 | 04066 | ERROR6A | 04077 | ERROR6B | 04100 |
| ERROR6C | 04101 | ERRORSW | 04064 | ERR10 | 07043 |
| ERR11 | 07030 | ERR12 | 07031 | ERR13 | 07033 |
| ERR14 | 07034 | ERR15 | 07036 | ERR16 | 07037 |
| ERR16A | 07041 | ERR17 | 07044 | ERR2 | 07075 |
| ERR20 | 07046 | ERR21 | 07050 | ERR22 | 07052 |
| ERR23 | 07054 | ERR24 | 07056 | ERR25 | 07060 |
| ERR26 | 07062 | ERR27 | 07064 | ERR3 | 07076 |
| ERR30 | 07106 | ERR31 | 07110 | ERR32 | 07112 |
| ERR33 | 07114 | ERR34 | 07116 | ERR35 | 07120 |
| ERR4 | 07100 | ERR40 | 07066 | ERR5 | 07101 |
| ERR6 | 07103 | ERR7 | 07104 | ERRBUFWO | 04556 |
| ERRCNT | 04555 | ERRMESSFIN | 04300 | ESTSHIFTED | 63143 |
| EXP | 06663 | EXPONENT | 04611 | EXP1 | 06673 |
| EXP10 | 06742 | EXP2 | 06700 | EXP3 | 06703 |
| EXP4 | 06705 | EXP5 | 06717 | EXP6 | 06726 |
| EXP7 | 06737 | EXPNAME | 63350 | EXPSIGN | 04620 |
| FCBUFCNT | 00726 | FIRSTELEV | 63104 | FIRSTHRU | 63153 |
| FIXIN | 01330 | FIXIN1 | 01335 | FIXIN2 | 01336 |
| FIXLO1 | 01677 | FIXLO15 | 01706 | FIXLO2 | 01710 |
| FIXLMT | 01670 | FLOATIN | 01321 | FLOATIN1 | 01325 |
| FLATTENING | 63337 | FLTO3 | 01726 | FLTOFX | 06440 |

NTERCOM ADAMS-ASSDC*7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| FLTCFX1 | 06452 | FLTOFX2 | 06455 | FLTLO1 | 01721 |
| FLTLO2 | 01731 | FLTLOLMT1 | 01760 | FLTLOLMT2 | 01777 |
| FLTLOLMT3 | 01771 | FLTLMT | 01712 | FLTNUMEL | 02023 |
| FLTNUMFU | 02020 | FLTNUMGX | 02026 | FLTNUMLMT | 01751 |
| FLTPT | 06222 | FLTSTR | 01617 | FLTUP1 | 02005 |
| FLTUP2 | 02016 | FLTUPLMT | 02001 | FP1 | 06231 |
| FP4 | 06232 | FP5 | 06233 | FP6 | 06234 |
| FP7 | 06235 | FPFRACTION | 04612 | FPSTOP | 07007 |
| FRABCDBIN | 02641 | FRABCDBIN1 | 02650 | FRABCDBIN2 | 02677 |
| FRABCDBIN3 | 02701 | FRABCDBIN4 | 02702 | FRACTION | 04606 |
| FRAMESIZE | 63101 | FREQUENCY | 63317 | FSHIFT | 00033 |
| FX1 | 01366 | FX2 | 01404 | FXB4STOR | 01412 |
| FXB5STOR | 01413 | FXCODE | 03274 | FXCR | 01415 |
| FXCR1 | 01420 | FXCR2 | 01425 | FXCR3 | 01423 |
| FXCR4 | 01430 | FXCRF7 | 01434 | FXDIG | 01453 |
| FXDIG1 | 01454 | FXDIG2 | 01457 | FXDIGF | 01471 |
| FXDIGF1 | 01500 | FXDIGI | 01504 | FXE | 01520 |
| FXF1 | 01524 | FXE2 | 01522 | FXERR | 01412 |
| FXPER | 01443 | FXPER1 | 01445 | FXPER2 | 01447 |
| FXPREPEN | 01341 | FXSIGN | 01536 | FXSIGN1 | 01540 |
| FXSIGN2 | 01547 | FXSIGN3 | 01551 | FXTOFL | 06430 |
| GAMMA | 04603 | GEDCENLAT | 63322 | GEODETLAT | 63321 |
| GMTMDOU24 | 63145 | GMTSHIFTED | 63144 | GREO1 | 02227 |
| GREEKCONV | 02203 | HOCIIN | 01140 | HOCTLO1 | 01662 |
| HOCTLO2 | 01666 | HOCTLMT | 01653 | HOKBUF | 00547 |
| HOLDNOHOLD | 63511 | HOURMINUTE | 63137 | HOURREG | 63151 |
| HEIGHT | 63326 | HERE | 07137 | HIBIT | 03071 |
| HSPOUT | 04115 | HSPOUT1 | 04166 | HSPOUTFIN | 04152 |
| HSPACC | 04216 | HSPASTOR | 04551 | HSPATTN | 04204 |
| HSPB2STOR | 04552 | HSPB3STOR | 04553 | HSPB4STOR | 04554 |
| HSPBUF | 04404 | HSPEM1 | 04265 | HSPERRMESS | 04252 |
| HSPGIN | 04172 | HSPIN | 04306 | HSPIN1 | 04324 |
| HSPIN2 | 04333 | HSPNOT1 | 04237 | HSPNOTACC | 04233 |
| HSPOSTOR | 04550 | HSPRNT | 04370 | IDEXPONENT | 04617 |
| ICFRACTION | 04615 | IOINTEGER | 04613 | IO10RADIO | 66777 |
| IC11RADIO | 67776 | IO12RADIO | 67777 | IO13RADIO | 70775 |
| IC14RADIO | 70776 | IO15RADIO | 71776 | IO16RADIO | 71777 |
| IC17RADIO | 72776 | IO18RADIO | 72777 | IO19RADIO | 73776 |
| IC1CELCOR | 63000 | IO1ENTPNT | 63410 | IO1RADCOR | 63050 |
| IC1RADIO | 63440 | IO1RECRO | 63210 | IO1SYSENT | 77576 |
| IC1SYSNAM | 77676 | IO1SYSPAR | 63310 | IO1TIME | 63130 |
| IO2CRADIO | 73777 | IO21RADIO | 74776 | IO22RADIO | 74777 |
| IC23RADIO | 75776 | IO24RADIO | 75777 | IO25RADIO | 76775 |
| IC26RADIO | 76776 | IO2CELCOR | 63001 | IO2ENTPNT | 63411 |
| IC2RADCOR | 63051 | IO2RADIO | 63441 | IO2RECRO | 63211 |
| IO2SYSENT | 77577 | IO2SYSNAM | 77677 | IO2SYSPAR | 63311 |
| IC2TIME | 63131 | IO3RADIO | 63776 | IO4RADIO | 63777 |
| IC5RADIO | 64776 | IO6RADIO | 64777 | IO7RADIO | 65776 |
| IC8RADIO | 65777 | IO9RADIO | 66776 | INAZIMADD | 63446 |
| INB5STOR | 00765 | INCOOMAX | 00010 | INCOOTBL | 01014 |
| INCOMP | 00010 | INCHAR | 04335 | INCHAR1 | 04352 |

NTERCOM AOAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| INCHAR2 | 04362 | INCHAR3 | 04341 | INELEVADO | 63447 |
| INERRX | 00764 | INFOO | 00751 | INFO1 | 00753 |
| INFC2 | 00761 | INFO3 | 00767 | INFO31 | 00776 |
| INFC4 | 01001 | INFO5 | 01005 | INFO6 | 01006 |
| INFC7 | 01010 | INFO8 | 01012 | INFORMINT | 00734 |
| INFS1 | 04562 | INPUTA | 01047 | INPUTA1 | 01053 |
| INPUTA1A | 01063 | INPUTA2 | 01065 | INPUTA3 | 01071 |
| INPUTA5 | 01075 | INPUTLA | 01077 | INPUTLA1 | 01104 |
| INPUTLA3 | 01106 | INPUTMA | 01117 | INPUTMA1 | 01124 |
| INPUTMA3 | 01126 | INPUTNA | 01107 | INPUTNA1 | 01114 |
| INPUTNA3 | 01116 | INTOCTBIN | 02543 | INTOCTBIN1 | 02547 |
| INTOCTBIN2 | 02550 | INTOCTBIN3 | 02566 | INTOCTBIN4 | 02567 |
| INTOCTBIN5 | 02572 | INTOUT | 00140 | INTOUTO1 | 00147 |
| INTOUTO2 | 00153 | INTOUTO3 | 00160 | INTOUTO35 | 00164 |
| INTOUTO4 | 00170 | INTOUTO5 | 00173 | INTOUTSW | 00143 |
| INTOUTSWO | 00142 | INTASTOR | 04572 | INTBCOBIN | 02607 |
| INTBCOBIN1 | 02614 | INTBCOBIN2 | 02615 | INTBCOBIN3 | 02634 |
| INTBCOBIN5 | 02640 | INTBSTOR | 00321 | INTCOMO1 | 00043 |
| INTCOMO2 | 00106 | INTCOMO3 | 00110 | INTCOMO4 | 00057 |
| INTEGER | 04605 | INTER | 63413 | INTERAZIM | 72000 |
| INTERCOM | 63426 | INTERDOPP | 74000 | INTERELEV | 73000 |
| INTERLCKSW | 63460 | INTERRANGE | 76777 | INTEXIT | 00120 |
| INTIN | 00234 | INTINO1 | 00272 | INTINO2 | 00315 |
| INTINO29 | 00323 | INTINO3 | 00325 | INTINO35 | 00327 |
| INTINO4 | 00332 | INTINO5 | 00335 | INTINSW | 00312 |
| INTGSTOR | 04573 | KILLOUT1 | 00257 | KILLOUT2 | 00340 |
| KILLOUT3 | 00343 | KILLOUTSW | 00240 | KMPERNM | 63342 |
| KYBRD | 00000 | KYBRDLEVEL | 63110 | LOCOUTINT | 00062 |
| LOCININT | 00042 | LOCTTYOUT | 00060 | LOCTTYIN | 00040 |
| LOGE | 07354 | LOGE1 | 07410 | LOGE1A | 07427 |
| LOGE2 | 07445 | LOGE3 | 07461 | LOGEA | 07471 |
| LOGEF | 07477 | LOGEK | 07507 | LOGEM | 07523 |
| LOGER | 07465 | LOGES | 07517 | LONGITUDE | 63320 |
| LOCHAR | 04122 | LERR | 07070 | LFBUF | 00542 |
| LFBUFIN | 00551 | LFIN | 00600 | LIMIT | 04104 |
| LIN2 | 04117 | LINSW | 04145 | LMTCOMP | 00623 |
| LMTCHK | 01036 | LMTSTR1 | 02030 | LMTSTR2 | 02044 |
| LMTSTR3 | 02057 | LSHIFT | 00037 | LSPERAU | 63336 |
| M6L | 03074 | MAINSWITCH | 63334 | MCP | 06202 |
| MCP2 | 06212 | MCPASTOR | 04570 | MCPB6STOR | 00455 |
| MCPB7STOR | 00456 | MCPFILLER | 71000 | MCPGM | 63412 |
| MCPINIT | 06173 | MCPQSTOR | 04571 | MCPSW | 06206 |
| MILLSTNADD | 63451 | MINREG | 63152 | MINUS | 00041 |
| MLOFL | 07024 | MPL | 06330 | MSFREQ | 63332 |
| MTEN1 | 03660 | MTEN10 | 03676 | MTEN11 | 03700 |
| MTEN12 | 03702 | MTEN2 | 03662 | MTEN24 | 03704 |
| MTEN3 | 03664 | MTEN36 | 03706 | MTEN4 | 03666 |
| MTEN5 | 03670 | MTEN50 | 03710 | MTEN6 | 03672 |
| MTEN7 | 03674 | MTR | 06314 | MTR1 | 06315 |
| NCINTS | 04610 | NOLMT | 01630 | NOTACC1 | 04247 |
| NEG | 06375 | NIL | 00000 | NMPERAU | 63340 |

..... SPURT OUTPUT NO. 211 .....

NTERCOM ADAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| NTERCOM | 00002 | NUMOO | 01160 | NUMO1 | 01171 |
| NUMO2 | 01175 | NUMO3 | 01220 | NUMO4 | 01230 |
| NUMO5 | 01232 | NUMO6 | 01243 | NUMO7 | 01245 |
| NUMO8 | 01236 | NUMOIG | 04561 | NUMERR | 01241 |
| NUMIN | 01151 | NUMLMT | 01733 | NUMLMTO1 | 01744 |
| NUMSTR | 01560 | POLE | 63324 | POS | 06277 |
| POWI4 | 07124 | PERIODAZIM | 63523 | PERIOOOEC | 63525 |
| PERIODELEV | 63521 | PERIODRA | 63527 | PLOTP | 63436 |
| PLANP | 63434 | PLUS | 00042 | PPA | 02273 |
| PPAO | 02277 | PPA1 | 02306 | PPA2 | 02316 |
| PPA3 | 02317 | PPA4 | 02330 | PPAOOR | 04601 |
| PPB | 02352 | PPBO | 02356 | PPB1 | 02364 |
| PPB3 | 02372 | PPB4 | 02374 | PPB4STOR | 02502 |
| PPB5 | 02375 | PPB5STOR | 02503 | PPB6 | 02406 |
| PPB6STOR | 02504 | PPC | 02407 | PPCO | 02422 |
| PPCCO | 02417 | PPC1 | 02426 | PPO | 02436 |
| PPOI | 02444 | PPO2 | 02445 | PPE | 02455 |
| PPE1 | 02460 | PPE2 | 02463 | PPE3 | 02472 |
| PPERREXIT | 02473 | PPFINAL | 02476 | PREVIOUSTM | 63461 |
| PRINTLIN | 04363 | PRINTSW | 04402 | PRLOG | 63423 |
| PRPARAM | 04157 | PUNCH | 06465 | PUTO1 | 02075 |
| PUTC2 | 02101 | PUTO25 | 02107 | PUTO3 | 02114 |
| PUTC4 | 02122 | PUTO5 | 02126 | PUTO6 | 02136 |
| PUTC7 | 02145 | PUTO71 | 02155 | PUTOB | 02164 |
| PUTCOOMAX | 00004 | PUTCOOTBL | 02176 | PUTCOMP | 00004 |
| PUTERRX | 02112 | PUTFORMINT | 02072 | PUTLM | 00012 |
| PUTPREP | 02235 | PUTS1 | 04563 | PUTS2 | 04564 |
| QMWORO | 00054 | QSTORE | 04565 | ROTATEAEBX | 63507 |
| ROTATERADN | 63506 | ROTATEROBX | 63510 | RA | 63002 |
| RAOFFSET | 63514 | RAOOT | 63007 | RAOARMOOE | 63312 |
| RADCBXSCAN | 63503 | RAOECO TIME | 63531 | RAOIOOEC | 63541 |
| RADIOMETER | 63102 | RAOIORA | 63540 | RAOIUS | 63006 |
| RADIUSOOT | 63011 | RANGE | 63052 | RANGEOUT | 70777 |
| RANGEAOC | 63445 | RANGEOOT | 63062 | RASCINSCAN | 63504 |
| RCMIR | 63430 | RDXXX | 63433 | RECOROSIZE | 63112 |
| RECAZIM | 67000 | RECELEV | 70000 | RECFILE | 63212 |
| RECRO | 63415 | RECROSWTCH | 63155 | RELEASESW | 63156 |
| RJPOUT | 04622 | RJPIN | 04621 | RJPTTYIN | 00725 |
| RZERO | 06506 | SAVE | 07533 | SAZIM | 63055 |
| SBOFL | 07022 | SCELTIME | 63134 | SCL | 06362 |
| SCLI | 06422 | SCL2 | 06423 | SOEC | 63005 |
| SECONDS | 63140 | SELEV | 63056 | SET | 06426 |
| SEVENTYONE | 03075 | SFT | 06307 | SFT1 | 06310 |
| SIDERTIME | 63012 | SIGN | 04607 | SIN | 07535 |
| SINORIENT | 63064 | SINAZEL | 63066 | SINCOS1 | 07551 |
| SINCOS10 | 07633 | SINCOS11 | 07635 | SINCOS2 | 07561 |
| SINCOS20 | 07642 | SINCOS6 | 07615 | SINCOS7 | 07627 |
| SINCOS8 | 07663 | SINTEMP | 03657 | SIXTIES | 01557 |
| SIXTY | 03072 | SIXTYFIVE | 03073 | SKIP | 63331 |
| SLOTSTOR | 04403 | SPACE | 00005 | SPACEO1 | 00535 |
| SPACERITE | 00524 | SPACES | 03077 | SPECO1 | 01254 |

..... SPURT OUTPUT NO. 211 .....

NTERCOM AOAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| SPECO2 | 01271 | SPECO3 | 01270 | SPECERR | 00000 |
| SPECIN | 01247 | SPECTBLS | 04576 | SPECWO | 00076 |
| SQR | 06511 | SQR1 | 06562 | SQR2 | 06567 |
| SQR3 | 06573 | SQR4 | 06577 | SQRT1 | 06560 |
| SRA | 63004 | SRADTIME | 63136 | STOPBUF | 00545 |
| STORE | 01036 | STARTREAD | 07122 | STRB5STOR | 01615 |
| STRING | 01567 | STRINGO1 | 01575 | STRINGO2 | 01577 |
| STRINGO3 | 01603 | STRINGO4 | 01607 | STRINGO5 | 01612 |
| SUB | 06320 | SUPBSTOR | 02761 | SUPZRO | 02726 |
| SUPZRO1 | 02736 | SUPZRO2 | 02737 | SUPZRO3 | 02747 |
| SUPZRO4 | 02754 | SUPZRO5 | 02760 | SYNCTIMING | 63542 |
| SYSCOMREGI | 63452 | SYSCOMREG2 | 63453 | SYSCOMREG3 | 63454 |
| SYSCOMREG4 | 63455 | SYSCOMREG5 | 63456 | SYSCOMREG6 | 63457 |
| SYSENTRIES | 77600 | SYSNAMES | 77700 | SYSTAT1 | 63313 |
| SYSTAT2 | 63314 | SYSTATO | 63315 | TOPATN | 00604 |
| TOPCR | 00576 | TOPDEL | 00576 | TOPSTOP | 00621 |
| TEMP1 | 06217 | TEMP2 | 06220 | TEN | 03712 |
| TEN1 | 03714 | TEN10 | 03732 | TEN11 | 03734 |
| TEN12 | 03736 | TEN2 | 03716 | TEN24 | 03740 |
| TEN3 | 03720 | TEN36 | 03742 | TEN4 | 03722 |
| TEN5 | 03724 | TEN50 | 03744 | TEN6 | 03726 |
| TEN7 | 03730 | TEST | 01025 | TIMECORR | 63107 |
| TIMEMODE | 63103 | TIMEP | 63435 | TIMETOHOLO | 63520 |
| TRUERANGE | 63063 | TRUETIME | 63132 | TTYOUTWO | 00727 |
| TTYASTOR | 00230 | TTYBSTOR | 00216 | TTYBUF | 05417 |
| TTYIN1 | 00211 | TTYIN2 | 00220 | TTYIN3 | 00221 |
| TTYIN4 | 00214 | TTYINTNT | 00176 | TTYINWO | 00232 |
| TTYCSTOR | 00231 | TTYSTATUS | 63111 | TTYTBL | 06073 |
| TTYTBLL | 06133 | TWOSECDOP | 63017 | TXYBUF | 00227 |
| TYPE | 06463 | VELOFLIGHT | 63335 | VIZOEC1 | 63014 |
| VIZDEC2 | 63016 | VIZRA1 | 63013 | VIZRA2 | 63015 |
| WESTOUT | 00630 | WESTOUTBF | 00733 | WESTOUTWO | 00676 |
| WESTASTOR | 00731 | WESTB4STOR | 00677 | WESTB5STOR | 00700 |
| WESTB6STOR | 00701 | WESTB7STOR | 00702 | WESTCONV | 00656 |
| WESTCHAR | 00652 | WESTIN | 00624 | WESTLRCS | 00715 |
| WESTQSTCR | 00732 | WESTUPCS | 00706 | WFORO | 63432 |
| WFADO | 63450 | WFFREQ | 63333 | WS | 06467 |
| WS1 | 06470 | WS10 | 06477 | WS11 | 06500 |
| WS12 | 06501 | WS13 | 06502 | WS14 | 06503 |
| WS15 | 06504 | WS16 | 06505 | WS2 | 06471 |
| WS3 | 06472 | WS4 | 06473 | WS5 | 06474 |
| WS6 | 06475 | WS7 | 06476 | YEARMONTH | 63147 |
| YESOO | 01275 | YESO1 | 01307 | YESO2 | 01312 |
| YESO3 | 01315 | YESIN | 01273 | YRTRAN | 63327 |
| ZERO | 06417 | ZROSUPINT | 02421 | ZRTRAN | 63330 |

END OF LISTING

..... SPURT OUTPUT NO. 212 .....

NTERCOM AOAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| SPECERR | COCOU | NIL | 00000 | KYBRO | 00000 |
| ATTNBIT | COC01 | NTERCOM | 00002 | DELBIT | 00002 |
| PUTCOMP | 00C04 | PUTCOOMAX | 00004 | CRWORO | 00004 |
| CCMPROC | COC04 | SPACE | 00005 | INCOMP | 00010 |
| INCODMAX | 00010 | PUTLM | 00012 | FSHIFT | 00033 |
| LSHIFT | C0037 | LOCTTYIN | 00040 | MINUS | 00041 |
| PLUS | 00042 | LOCININT | 00042 | INTCOMO1 | 00043 |
| CMWCRD | 00054 | INTCOM04 | 00057 | ATTNWOUC | 00057 |
| LCCTTYOUT | 00060 | LOCOUTINT | 00062 | SPECWO | 00076 |
| ATTNWDLC | 00077 | INTCOM02 | 00106 | INTCOM03 | 00110 |
| INTEXIT | 00120 | CPBSTOR | 00130 | CPB6STOR | 00131 |
| INTOUT | 00140 | INTOUTSWO | 00142 | INTOUTSW | 00143 |
| INTOUTO1 | 00147 | INTOUTO2 | 00153 | INTOUTO3 | 00160 |
| INTOUTO35 | 00164 | INTOUTO4 | 00170 | INTOUTO5 | 00173 |
| TTYININT | 00176 | TTYIN1 | 00211 | TTYIN4 | 00214 |
| TTYBSTOR | 00216 | TTYIN2 | 00220 | TTYIN3 | 00221 |
| TXYBUF | 00227 | TTYASTOR | 00230 | TTYQSTOR | 00231 |
| TTYINWO | C0232 | INTIN | 00234 | KILLOUTSW | 00240 |
| KILLOUT1 | 00257 | INTINO1 | 00272 | INTINSW | 00312 |
| INTINO2 | 00315 | INTBSTOR | 00321 | INTINO29 | 00323 |
| INTINO3 | 00325 | INTINO35 | 00327 | INTINO4 | 00332 |
| INTINO5 | 00335 | KILLOUT2 | 00340 | KILLOUT3 | 00343 |
| COMPROCOO | 00350 | COMPROCO9 | 00373 | COMPROCO8 | 00407 |
| CCMPROCSW | 00422 | COMPROCO7 | 00432 | COMPROCO6 | 00442 |
| COMPROCO1 | 00444 | COMPROCO2 | 00451 | BUFLMT | 00453 |
| MCP86STCR | 00455 | MCPB7STOR | 00456 | COMPROCO3 | 00460 |
| CCMPROCO4 | 00475 | SPACERITE | 00524 | SPACEO1 | 00535 |
| BUFCUTWC | 00537 | BUFINWO | 00540 | CRBUF | 00541 |
| LFBUF | 00542 | DELBUF | 00543 | ATTNBUF | 00544 |
| STOPBUF | 00545 | CROUT | 00546 | HOKBUF | 00547 |
| CRBUFIN | 00550 | LFBUFIN | 00551 | BOTOEL | 00552 |
| BCTCR | 00570 | TOPDEL | 00576 | TOPCR | 00576 |
| LFIN | 00600 | BOTATN | 00602 | TOPATN | 00604 |
| BCTCK | 00605 | BOTSTOP | 00617 | TOPSTOP | 00621 |
| CRCCMP | 00622 | LMTCOMP | 00623 | WESTIN | 00624 |
| WESTOUT | 00630 | WESTCHAR | 00652 | WESTCONV | 00656 |
| WESTOUTWC | 00676 | WEST84STOR | 00677 | WEST85STOR | 00700 |
| WEST86STOR | C0701 | WESTB7STOR | 00702 | WESTUPCS | 00706 |
| WESTLRCS | 00715 | RJPTTYIN | 00725 | FOBUFCNT | 00726 |
| TTYCUTWC | 00727 | CASESET | 00730 | WESTASTOR | 00731 |
| WESTQSTOR | 00732 | WESTOUTBF | 00733 | INFORMINT | 00734 |
| INFCO | 00751 | INFO1 | 00753 | INFO2 | 00761 |
| INERRX | 00764 | INB5STOR | 00765 | INFO3 | 00767 |
| INFC31 | 00776 | INFO4 | 01001 | INFO5 | 01005 |
| INFC6 | 01006 | INFO7 | 01010 | INFOB | 01012 |
| INCCOTBL | 01014 | TEST | 01025 | STORE | 01036 |
| LMTCHK | 01036 | INPUTA | 01047 | INPUTA1 | 01053 |
| INPUTA1A | 01063 | INPUTA2 | 01065 | INPUTA3 | 01071 |
| INPUTA5 | 01075 | INPUTLA | 01077 | INPUTLA1 | 01104 |
| INPUTLA3 | 01106 | INPUTNA | 01107 | INPUTNA1 | 01114 |
| INPUTNA3 | 01116 | INPUTMA | 01117 | INPUTMA1 | 01124 |

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| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| INPUTMA3 | 01126 | DECIN | 01127 | HOCTIN | 01140 |
| NUMIN | 01151 | NUMOO | 01160 | NUMO1 | 01171 |
| NUMC2 | 01175 | NUMO3 | 01220 | NUMO4 | 01230 |
| NUMC5 | 01232 | NUMOB | 01236 | NUMERR | 01241 |
| NUMC6 | 01243 | NUMO7 | 01245 | SPECIN | 01247 |
| SPECO1 | 01254 | SPECO3 | 01270 | SPECO2 | 01271 |
| YESIN | 01273 | YESOO | 01275 | YESO1 | 01307 |
| YESC2 | 01312 | YESO3 | 01315 | FLOATIN | 01321 |
| FLOATIN1 | 01325 | FIXIN | 01330 | FIXIN1 | 01335 |
| FIXIN2 | 01336 | FXPREPEN | 01341 | FX1 | 01366 |
| FX2 | 01404 | FXERR | 01412 | FXB4STOR | 01412 |
| FXB5STOR | 01413 | FXCR | 01415 | FXCR1 | 01420 |
| FXCR3 | 01423 | FXCR2 | 01425 | FXCR4 | 01430 |
| FXCRF7 | 01434 | FXPER | 01443 | FXPER1 | 01445 |
| FXPER2 | 01447 | FXDIG | 01453 | FXDIG1 | 01454 |
| FXDIG2 | 01457 | FXDIGF | 01471 | FXDIGF1 | 01500 |
| FXDIGI | 01504 | FXE | 01520 | FXE2 | 01522 |
| FXE1 | 01524 | FXSIGN | 01536 | FXSIGN1 | 01540 |
| FXSIGN2 | 01547 | FXSIGN3 | 01551 | SIXTIES | 01557 |
| NUMSTR | 01560 | STRING | 01567 | STRINGO1 | 01575 |
| STRINGO2 | 01577 | STRINGO3 | 01603 | STRINGO4 | 01607 |
| STRINGO5 | 01612 | STRB5STOR | 01615 | FLTSTR | 01617 |
| NOLMT | 01630 | DECLMT | 01634 | DECLO1 | 01643 |
| DECLO2 | 01651 | HOCTLMT | 01653 | HOCTLO1 | 01662 |
| HOCTLO2 | 01666 | FIXLMT | 01670 | FIXLO1 | 01677 |
| FIXLO15 | 01706 | FIXLO2 | 01710 | FLTLMT | 01712 |
| FLTLO1 | 01721 | FLTO3 | 01726 | FLTLO2 | 01731 |
| NUMLMT | 01733 | NUMLMTO1 | 01744 | FLTNUMLMT | 01751 |
| FLTLOLMT1 | 01760 | FLTLOLMT3 | 01771 | FLTLOLMT2 | 01777 |
| FLTUPLMT | 02001 | FLTUP1 | 02005 | FLTUP2 | 02016 |
| FLTNUMEU | 02020 | FLTNUMEL | 02023 | FLTNUMGX | 02026 |
| LMTSTR1 | 02030 | LMTSTR2 | 02044 | LMTSTR3 | 02057 |
| PUTFORMINT | 02072 | PUTO1 | 02075 | PUTO2 | 02101 |
| PUTC25 | 02107 | PUTERRX | 02112 | PUTO3 | 02114 |
| PUTC4 | 02122 | PUTO5 | 02126 | PUTO6 | 02136 |
| PUTC7 | 02145 | PUTO71 | 02155 | PUTO8 | 02164 |
| CHARO | 02175 | PUTCOOTBL | 02176 | GREEKCONV | 02203 |
| GREO1 | 02227 | PUTPREP | 02235 | PPA | 02273 |
| PPAC | 02277 | PPA1 | 02306 | PPA2 | 02316 |
| PPA3 | 02317 | PPA4 | 02330 | PPB | 02352 |
| PPBO | 02356 | PPB1 | 02364 | PPB3 | 02372 |
| PPB4 | 02374 | PPB5 | 02375 | PPB6 | 02406 |
| PPC | 02407 | PPCOO | 02417 | ZROSUPINT | 02421 |
| PPCC | 02422 | PPC1 | 02426 | PPD | 02436 |
| PPD1 | 02444 | PPO2 | 02445 | PPE | 02455 |
| PPE1 | 02460 | PPE2 | 02463 | PPE3 | 02472 |
| PPERREXIT | 02473 | PPFINAL | 02476 | PPB4STOR | 02502 |
| PPB5STOR | 02503 | PPB6STOR | 02504 | BUFFSTORE | 02506 |
| BINDECINT | 02514 | BINDECINT1 | 02525 | BINDECINT2 | 02526 |
| BINDECINT3 | 02542 | INTOCTBIN | 02543 | INTOCTBIN1 | 02547 |
| INTOCTBIN2 | 02550 | INTOCTBIN3 | 02566 | INTOCTBIN4 | 02567 |

INTERCOM ADAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| INTCCTBIN5 | 02572 | BINOCTFLO | 02573 | BINOCTFLO1 | 02576 |
| BINOCTFLO2 | 02577 | INTBCOBIN | 02607 | INTBCOBIN1 | 02614 |
| INTBCOBIN2 | 02615 | INTBCOBIN3 | 02634 | INTBCOBIN5 | 02640 |
| FRABCOBIN | 02641 | FRABCOBIN1 | 02650 | FRABCOBIN2 | 02677 |
| FRABCOBIN3 | 02701 | FRABCOBIN4 | 02702 | BINDECFRA | 02703 |
| BINDECFRA1 | 02713 | BINDECFRA2 | 02714 | SUPZRO | 02726 |
| SUPZRO1 | 02736 | SUPZRO2 | 02737 | SUPZRO3 | 02747 |
| SUPZRO4 | 02754 | SUPZRO5 | 02760 | SUPBSTOR | 02761 |
| COFRND | 02763 | COFRND1 | 02774 | COFRND2 | 02776 |
| COFRND3 | 03000 | COFRND4 | 03007 | COFRND41 | 03012 |
| COFRND5 | 03015 | COFRND51 | 03025 | COFRND52 | 03032 |
| COFRND6 | 03035 | COFRND7 | 03040 | COFRND8 | 03044 |
| COFRND81 | 03053 | COFRND9 | 03056 | COFRND10 | 03062 |
| COFRND11 | 03065 | HIBIT | 03071 | SIXTY | 03072 |
| SIXTYFIVE | 03073 | M6L | 03074 | SEVENTYONE | 03075 |
| BIT5 | 03076 | SPACES | 03077 | CINFIX | 03100 |
| CINF1 | 03106 | CINFSTRP | 03110 | CINF21 | 03134 |
| CINF30 | 03155 | CINF3 | 03175 | CINFCALL | 03201 |
| CINFTP3 | 03212 | CINFXT1 | 03225 | CINFXT | 03231 |
| CINFMSK | 03232 | CINFERR1 | 03233 | CINFERR2 | 03234 |
| CINFERR3 | 03235 | COFFIX | 03240 | COFF1 | 03253 |
| COFFTEM1 | 03271 | COFFTEM2 | 03272 | FXCODE | 03274 |
| CINFLT | 03275 | CNFLT | 03345 | CNFLNON | 03351 |
| CNFLNONC1 | 03355 | CNFLNON1 | 03365 | CNFLNON2 | 03375 |
| CNFLT01 | 03402 | CNFLT011 | 03406 | CNFLT11 | 03413 |
| CNFLT12 | 03417 | CNFLT3 | 03422 | CNFLTXT | 03424 |
| CNFLTERR1 | 03431 | CNFLTP1 | 03432 | CNFLTP2 | 03433 |
| CNFLTPSIN | 03434 | CNFLTP3 | 03435 | CNFLTP4 | 03436 |
| CNFLTP5 | 03437 | CNFLTP6 | 03440 | COTFLT | 03441 |
| CCT1 | 03467 | COT11 | 03500 | COT2 | 03510 |
| CCT3 | 03513 | COT4 | 03523 | COT5 | 03526 |
| CCT6 | 03535 | COT7 | 03546 | COTXT | 03577 |
| CCTNEG1 | 03604 | COTNEG11 | 03616 | COTNEG2 | 03626 |
| CCTNEG3 | 03631 | COTNEG4 | 03641 | COTNEG5 | 03647 |
| SINTEMP | 03657 | MTEN1 | 03660 | MTEN2 | 03662 |
| MTEN3 | 03664 | MTEN4 | 03666 | MTEN5 | 03670 |
| MTEN6 | 03672 | MTEN7 | 03674 | MTEN10 | 03676 |
| MTEN11 | 03700 | MTEN12 | 03702 | MTEN24 | 03704 |
| MTEN36 | 03706 | MTEN50 | 03710 | TEN | 03712 |
| TEN1 | 03714 | TEN2 | 03716 | TEN3 | 03720 |
| TEN4 | 03722 | TEN5 | 03724 | TEN6 | 03726 |
| TEN7 | 03730 | TEN10 | 03732 | TEN11 | 03734 |
| TEN12 | 03736 | TEN24 | 03740 | TEN36 | 03742 |
| TEN50 | 03744 | ERROR | 03746 | ERROR1 | 03757 |
| ERROR1A | 03763 | ERROR2 | 03767 | ERROR2A | 04005 |
| ERROR2B | 04011 | ERROR4 | 04013 | ERROR4A | 04014 |
| ERROR5 | 04024 | ERROR51 | 04037 | ERROR52 | 04040 |
| ERROR5A | 04045 | ERROR5B | 04046 | ERROR53 | 04052 |
| ERROR5E | 04054 | ERROR5C | 04061 | ERROR50 | 04063 |
| ERRORSW | 04064 | ERROR6 | 04066 | ERROR6A | 04077 |
| ERROR6B | 04100 | ERROR6C | 04101 | LIMIT | 04104 |

NTERCOM ADAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| HSPOUT | 04115 | LIN2 | 04117 | LOCHAR | 04122 |
| LINSW | 04145 | HSPOUTFIN | 04152 | PRPARAM | 04157 |
| CRSW | 04162 | HSPOUT1 | 04166 | HSPGIN | 04172 |
| HSPATTN | 04204 | ATTEN | 04215 | HSPACC | 04216 |
| ACCPT1 | 04231 | HSPNOTACC | 04233 | HSPNOT1 | 04237 |
| NOTACC1 | 04247 | HSPERRMESS | 04252 | HSPEM1 | 04265 |
| ERRMESSFIN | 04300 | HSPIN | 04306 | HSPIN1 | 04324 |
| HSPIN2 | 04333 | INCHAR | 04335 | INCHAR3 | 04341 |
| INCHAR1 | 04352 | INCHAR2 | 04362 | PRINTLIN | 04363 |
| HSPRNT | 04370 | PRINTSW | 04402 | SLOTSTOR | 04403 |
| HSPBUF | 04404 | HSPQSTOR | 04550 | HSPASTOR | 04551 |
| HSPB2STOR | 04552 | HSPB3STOR | 04553 | HSPB4STOR | 04554 |
| ERRCNT | 04555 | ERRBUFWD | 04556 | BINLMT | 04557 |
| CONVERT | 04560 | NUMOIG | 04561 | INFS1 | 04562 |
| PUTS1 | 04563 | PUTS2 | 04564 | QSTORE | 04565 |
| CPASTOR | 04566 | CPQSTOR | 04567 | MCPASTOR | 04570 |
| MCPQSTOR | 04571 | INTASTOR | 04572 | INTQSTOR | 04573 |
| ACTIVITY | 04574 | BUFSLOT | 04575 | SPECTBLS | 04576 |
| BUFIN | 04577 | BUFFCOUNT | 04600 | PPADDR | 04601 |
| CODE | 04602 | GAMMA | 04603 | BETA | 04604 |
| INTEGER | 04605 | FRACTION | 04606 | SIGN | 04607 |
| NOINTS | 04610 | EXPONENT | 04611 | FPFRACTION | 04612 |
| IOINTEGER | 04613 | IOFRACTION | 04615 | IOEXPONENT | 04617 |
| EXPSIGN | 04620 | RJPIN | 04621 | RJPOUT | 04622 |
| BUFFER | 04743 | TTYBUF | 05417 | TTYTBL | 06073 |
| TTYTBLL | 06133 | MCPINIT | 06173 | DRIVER | 06174 |
| MCP | 06202 | MCPSW | 06206 | MCP2 | 06212 |
| TEMP1 | 06217 | TEMP2 | 06220 | FLTPT | 06222 |
| FP1 | 06231 | FP4 | 06232 | FP5 | 06233 |
| FP6 | 06234 | FP7 | 06235 | EFP | 06237 |
| ADD | 06261 | POS | 06277 | SFT | 06307 |
| SFT1 | 06310 | MTR | 06314 | MTR1 | 06315 |
| SUB | 06320 | MPL | 06330 | DIV | 06342 |
| SCL | 06362 | NEG | 06375 | AQR | 06404 |
| ZERO | 06417 | SCL1 | 06422 | SCL2 | 06423 |
| SET | 06426 | FXTOFL | 06430 | FLTOFX | 06440 |
| FLTOFX1 | 06452 | FLTOFX2 | 06455 | TYPE | 06463 |
| PUNCH | 06465 | WS | 06467 | WS1 | 06470 |
| WS2 | 06471 | WS3 | 06472 | WS4 | 06473 |
| WS5 | 06474 | WS6 | 06475 | WS7 | 06476 |
| WSIC | 06477 | WS11 | 06500 | WS12 | 06501 |
| WSI3 | 06502 | WS14 | 06503 | WS15 | 06504 |
| WS16 | 06505 | RZERO | 06506 | SQR | 06511 |
| SQRT1 | 06560 | SQR1 | 06562 | SQR2 | 06567 |
| SQR3 | 06573 | SQR4 | 06577 | ATAN | 06603 |
| ATAN1 | 06611 | ATAN2 | 06623 | ATAN3 | 06644 |
| ATAN5 | 06655 | EXP | 06663 | EXP1 | 06673 |
| EXP2 | 06700 | EXP3 | 06703 | EXP4 | 06705 |
| EXP5 | 06717 | EXP6 | 06726 | EXP7 | 06737 |
| EXP10 | 06742 | AERR1 | 06754 | A$$$$$1112 | 06760 |
| A$$$$$I111 | 06764 | AERR2 | 06774 | FPSTOP | 07007 |

..... SPURT OUTPUT NO. 212 .....

NTERCOM AOAMS-ASSOC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| ERR | 07011 | AERR | 07014 | ADOFL | 07020 |
| S8DFL | 07022 | MLOFL | 07024 | DVOFL | 07026 |
| ERR11 | 07030 | ERR12 | 07031 | ERR13 | 07033 |
| ERR14 | 07034 | ERR15 | 07036 | ERR16 | 07037 |
| ERR16A | 07041 | ERR10 | 07043 | ERR17 | 07044 |
| ERR20 | 07046 | ERR21 | 07050 | ERR22 | 07052 |
| ERR23 | 07054 | ERR24 | 07056 | ERR25 | 07060 |
| ERR26 | 07062 | ERR27 | 07064 | ERR40 | 07066 |
| LERR | 07070 | ERR2 | 07075 | ERR3 | 07076 |
| ERR4 | 07100 | ERR5 | 07101 | ERR6 | 07103 |
| ERR7 | 07104 | ERR30 | 07106 | ERR31 | 07110 |
| ERR32 | 07112 | ERR33 | 07114 | ERR34 | 07116 |
| ERR35 | 07120 | STARTREAD | 07122 | POW14 | 07124 |
| ASIN | 07125 | HERE | 07137 | ASIN1 | 07147 |
| ASIN2 | 07211 | ASIN3 | 07215 | ASIN4 | 07274 |
| ASIN5 | 07303 | ASINK | 07313 | ASINP | 07322 |
| ASINQ | 07326 | ACOS | 07331 | ACOS1 | 07350 |
| LOGE | 07354 | LOGE1 | 07410 | LOGE1A | 07427 |
| LOGE2 | 07445 | LOGE3 | 07461 | LOGER | 07465 |
| LOGEA | 07471 | LOGEF | 07477 | LOGEK | 07507 |
| LOGES | 07517 | LOGEM | 07523 | SAVE | 07533 |
| COUNT | 07534 | SIN | 07535 | SINCOS1 | 07551 |
| SINCOS2 | 07561 | SINCOS6 | 07615 | SINCOS7 | 07627 |
| SINCOS10 | 07633 | SINCOS11 | 07635 | SINCOS20 | 07642 |
| COS | 07644 | SINCOS8 | 07663 | ID1CELCOR | 63000 |
| ID2CELCOR | 63001 | RA | 63002 | DEC | 63003 |
| SRA | 63004 | SDEC | 63005 | RADIUS | 63006 |
| RADOT | 63007 | DECDOT | 63010 | RADIUSDOT | 63011 |
| SIDERTIME | 63012 | VIZRA1 | 63013 | VIZDEC1 | 63014 |
| VIZRA2 | 63015 | VIZDEC2 | 63016 | TWOSECOOP | 63017 |
| ID1RADCOR | 63050 | ID2RADCOR | 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 |
| CCSAZEL | 63070 | ACQAZIM | 63071 | ACQELEV | 63075 |
| FRAMESIZE | 63101 | RADIOMETER | 63102 | TIMEMODE | 63103 |
| FIRSTELEV | 63104 | ASTRORA | 63105 | ASTRODEC | 63106 |
| TIMECORR | 63107 | KYBROLEVEL | 63110 | TTYSTATUS | 63111 |
| RECORDSIZE | 63112 | CELBODY | 63113 | IOITIME | 63130 |
| ID2TIME | 63131 | TRUETIME | 63132 | CELTIME | 63133 |
| SCELTIME | 63134 | CONVERTIME | 63135 | SRADTIME | 63136 |
| HOURMINUTE | 63137 | SECONDS | 63140 | OSECONDS | 63141 |
| ACTUALTIME | 63142 | ESTSHIFTED | 63143 | GMTSHIFTED | 63144 |
| GMTMODU24 | 63145 | BLASTOFF | 63146 | YEARMONTH | 63147 |
| DAY | 63150 | HOURREG | 63151 | MINREG | 63152 |
| FIRSTHRU | 63153 | DUMSECTTG | 63154 | RECROSWTCH | 63155 |
| RELEASESW | 63156 | IO1RECRD | 63210 | IO2RECRD | 63211 |
| RECFILE | 63212 | IO1SYSPAR | 63310 | IO2SYSPAR | 63311 |
| RADARMODE | 63312 | SYSTAT1 | 63313 | SYSTAT2 | 63314 |
| SYSTATD | 63315 | DELTATEE | 63316 | FREQUENCY | 63317 |

..... SPURT OUTPUT NO. 212 .....

NTERCOM ADAMS-ASSUC•7/1/65

| LABEL | LOC | LABEL | LOC | LABEL | LOC |
|---|---|---|---|---|---|
| LENGITUDE | 63320 | GEODETLAT | 63321 | GEOCENLAT | 63322 |
| EQUATOR | 63323 | POLE | 63324 | AZIMOVER | 63325 |
| HEIGHT | 63326 | YRTRAV | 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 | MCPGM | 63412 | INTER | 63413 |
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| ARCOFDEC | 63526 | PERIODRA | 63527 | ARCOFRA | 63530 |
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| IO4RADIO | 63777 | AZIMOUT | 64000 | IO5RADIO | 64776 |
| IO6RADIO | 64777 | ELEVOUT | 65000 | IO7RADIO | 65776 |
| IO8RADIO | 65777 | DOPPOUT | 66000 | IO9RADIO | 66776 |
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| IO12RADIO | 67777 | RECELEV | 70000 | IO13RADIO | 70775 |
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| IO15RADIO | 71776 | IO16RADIO | 71777 | INTERAZIM | 72000 |
| IO17RADIO | 72776 | IO18RADIO | 72777 | INTERELEV | 73000 |
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13. ABSTRACT

The Intercom program in the Haystack pointing system provides communications between the pointing system and an experimenter at Haystack using the console keyboard-typewriter. A user at the Millstone or the West Ford site may also direct the pointing system via a teletypewriter. The structure of the program, the calling sequence for it, and the conventions affecting the operator are described.

14. KEY WORDS

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