

# Software Reference Manual

## HDOS SYSTEM

### *Chapter 4*

### HEATH TEXT EDITOR EDIT

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## INTRODUCTION

The Heath Text Editor (EDIT) converts your system into a very sophisticated typewriter. This typewriter is not only capable of generating text, but also has powerful editing capabilities. With these capabilities, even if you are a poor typist, you can create error-free text, organized as you desire.

EDIT is a very powerful utility program with many uses. You can use it to enter and edit assembly language programs and BASIC programs, as well as to create and edit reports, letters, and manuscripts. Note that EDIT supports the ASCII TAB character to conserve space in the text files.

You can do your editing by command, referencing the desired line, and text is stored in a section of memory called the **buffer**. When the buffer is full, you can transfer the text to a disk file. Additional text can be read in from previously created files, or you can place it in the buffer from the terminal keyboard. EDIT's file handling capabilities allow it to edit large files on a piecemeal basis.

All of the RAM in your system that is not used by HDOS or by the EDIT program is available in the buffer. A computer containing 16K of RAM has approximately 4K bytes for a buffer, which provides sufficient room for a well-documented, 300-line program. You can conveniently edit larger files by using the file handling capabilities of EDIT. Systems containing more RAM will have proportionally larger buffers.

EDIT has many unique features that are discussed in detail on the following pages. Some of these features are:

- 15 commands for text editing versatility.
- Terminal control of output and input operations.
- Command completion and command error analysis.

## Character Set

EDIT supports the entire 96 character ASCII character set, including lower case characters, Form-Feed, and TAB. You may enter text and commands in lower case. With the exception of TAB (CTRL-I) and Form-Feed (CTRL-L), you may not use control characters in the text.

EDIT is called by HDOS as follows

```
>EDIT Ⓢ  
EDIT ISSUE #103.00.00
```

```
--
```

## EDITOR MODES OF OPERATION

Two modes of operation called the "Command Mode" and the "Text Mode" are available in EDIT. These two modes distinguish between editing commands and text being entered into the buffer.

### The Command Mode

The command mode can be subdivided into three areas: input commands, output commands, and editing commands. You execute all commands by typing the appropriate command on the terminal, and follow this with a carriage return; this will be indicated throughout this reference Manual by the symbol  $\text{CR}$ . In actual use, no symbol is printed when a carriage return is typed on the terminal, as the carriage or cursor simply moves to the first column of the next line. In the command mode, the prompt character -- (a double dash) appears in the first two columns.

### The Text Mode

In this mode you can add text to the buffer from the terminal keyboard, the normal source for most text. Once a source file has been created, it can be stored on a file. Later, you can use this file as a source of text to be read into the buffer.

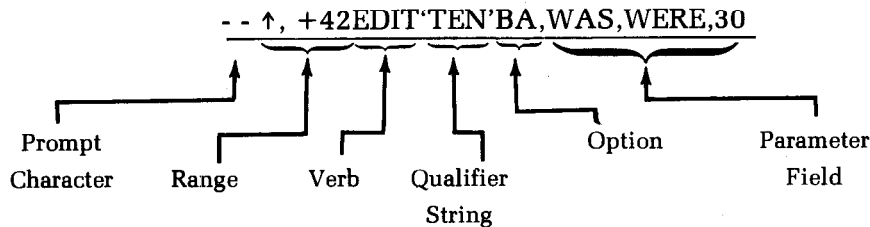
Type CTRL-C when you wish to return from the text mode to the command mode. This performs two functions. First, it discards the line of text which it was on when the keys were struck. Second, it returns the Text Editor to the command mode. To preserve the last line of text, type a carriage return to generate a new line before striking CTRL-C.

## THE COMMAND STRUCTURE

The basic commands for EDIT have the following form:

```
[<range>] [<verb>] [<qualifier string>] [<option>] [<parameters>]
```

The **range** indicates what lines in the buffer the command affects; the **verb** is the basic command. The **qualifier string** limits the command to those lines containing a given string, and the **option** permits you to view the line before or after (or both). The **parameters** (parameter field) contains specific instructions for some commands. For example, the command



is read as follows:

The lines starting with the first line (↑) and ending with the 43rd line (+42) are to be edited (EDIT). The EDIT command replaces one string with another. The affected lines are limited to those containing the string "TEN" (the optional **qualifier string**). The **option** (BA) indicates that you wish to view the lines before and after editing. And in this particular case, the **parameter field** specifies the old and new strings and the number of times the old string is to be replaced by the new string. In this example, the word WAS is to be replaced by the word WERE a maximum of 30 times. NOTE: The EDIT string used in the **range expression** or **qualifier strings** must be enclosed in a single quote ('). Each of the various fields of this command is discussed below.

### Range Expressions

The range expressions define the buffer lines on which the command is to operate. They may define a single line, or two expressions may be used to define the range over which the command works.

A range expression may consist of:

- A line expression.
- A multiple-line expression.
- A null.
- A blank.
- An equal sign.

These different range expressions are explained below.

NOTE: Text must be in the buffer before a range expression will be accepted. If the text is not in the buffer, a bell code will sound as you try to complete the range expression. To use the following examples, use the INSERT command (see Page 4-13).

### SINGLE-LINE EXPRESSIONS

You may use any of the following expressions to specify a single line:

<u>THIS SYMBOL</u>	<u>SPECIFIES</u>
↑	The first line*
\$	The last line
+n	The "n"th line beyond the current line pointer.
-n	The "n"th line preceding the current pointer.
+ 'string'	The first line in the text buffer beyond the current line pointer which contains the designated 'string'.
- 'string'	The first line in the text buffer preceding the current line pointer which contains the designated 'string'.

\* You can produce the up-arrow character on the H9 by holding down the SHIFT key and typing N. On most keyboards, it is produced when the SHIFT key is held down and a 6 is typed.

EDIT has a "pointer" which is always pointing to some line of text. After you have inserted text or invoked a text file, the EDIT pointer always points to the first line of text.

The effect of the various range commands is to reposition the pointer. Once you have used a range expression to specify a line, EDIT repositions the current pointer at the line indicated by the range expression. For example, suppose the buffer contains:

```
--INSERT Ⓢ  
THIS IS THE FIRST LINE Ⓢ  
MARY HAD A LITTLE LAMB Ⓢ  
THIS IS THE THIRD LINE Ⓢ  
ITS FLEECE WAS WHITE AS SNOW Ⓢ  
THIS IS THE FIFTH LINE Ⓢ  
AND EVERYWHERE THAT MARY WENT Ⓢ  
THIS IS THE SEVENTH LINE Ⓢ  
THE LAMB WAS SURE TO GO Ⓢ  
THIS IS THE LAST LINE Ⓢ  
^C (user-typed CTRL-C)
```

If you type

```
--+1PRINT Ⓢ
```

EDIT will reposition the pointer from the first line to the second line and print:

```
MARY HAD A LITTLE LAMB
```

Since the current pointer is now positioned at the second line, the command

```
--+1PRINT
```

indicates to EDIT that it should reposition the pointer to the line that is one line past the current pointer and then print that line:

```
THIS IS THE THIRD LINE
```

Therefore, once you have specified a line, your future range commands should take into account the distance from the current pointer to the line you want to manipulate.

Assume the buffer still contains:

```
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
AND EVERYWHERE THAT MARY WENT
THIS IS THE SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS IS THE LAST LINE
^C
```

(user typed CTRL-C)

EDIT responds as follows to the range commands.

```
--↑PRINT Ⓢ
THIS IS THE FIRST LINE
--$PRINT Ⓢ
THIS IS THE LAST LINE
--↑+2PRINT Ⓢ
THIS IS THE THIRD LINE
--↑+'FLEECE'PRINT Ⓢ
ITS FLEECE WAS WHITE AS SNOW
--$-1PRINT Ⓢ
THE LAMB WAS SURE TO GO
--$-'EVERYWHERE'PRINT Ⓢ
AND EVERYWHERE THAT MARY WENT
--
```

### MULTIPLE-LINE EXPRESSION

Use a multiple-line expression when you want to define a group of lines to be operated on by the command. Use the comma as a delimiter to separate the start line from the stop line. The symbols ↑, \$, +, +n, -n, + 'string', and - 'string' have the same meaning as they do with a single-line command. NOTE: A wide range of combinations may be used to identify the first and last lines of a multiple-line expression.



For example, you could print the contents of the previous buffer using these commands:

--↑,↑+3PRINT Ⓢ

THIS IS THE FIRST LINE  
MARY HAD A LITTLE LAMB  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW

--↑+2,+3PRINT Ⓢ

THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE  
AND EVERYWHERE THAT MARY WENT

--↑+'FLEECE',+1PRINT Ⓢ

ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE

--\$-'THAT',+'SURE'PRINT Ⓢ

AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO

--\$-'THAT',+2PRINT Ⓢ

AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO

--

## THE BLANK

When the verb is preceded by a single blank (space), the range is the entire buffer. For example, printing the entire buffer is accomplished by:

--△PRINT Ⓢ

THIS IS THE FIRST LINE  
MARY HAD A LITTLE LAMB  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO  
THIS IS THE LAST LINE

--

Note the blank (space) between the prompt character (--) and the word PRINT. The blank is created by typing the space bar on the console terminal.

### THE NULL

The NULL expression (the absence of any range expression) causes EDIT to apply the command to whatever text is indicated by the current line pointer. The position of the current pointer is unchanged.

For example:

```
--↑+2,+'FIFTH'PRINT Ⓞ  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE  
--PRINT Ⓞ  
THIS IS THE THIRD LINE  
--
```

Note that there is no blank between the prompt (--) and the word PRINT.

```
--↑+2,+1PRINT Ⓞ  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
--, +2PRINT Ⓞ  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE  
--
```

NOTE: In this example, the NULL starts the range at the position of the current pointer, and the, "+2" directs EDIT to print two additional lines. Again, the position of current pointer in this example remains unchanged.

## THE EQUAL (=)

The = expression sets the range to the range of the previous command. For example:

```
--$'MARY',+'GO'PRINT Ⓢ  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO  
--=PRINT Ⓢ  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO  
—
```

Note that the command =PRINT causes the same lines to be printed in the first and second halves of the example.

## The Verb

The verb specifies the action to be taken by the Editor. For example, the command PRINT or the command EDIT are verbs within the Text Editor's vocabulary.

All verbs are command completed. As soon as the Text Editor receives enough characters to know that only one command is possible, it prints the balance of the command without any additional keys being struck.

The verb will be refused if it is not valid for the current EDIT condition. For example, an attempt to PRINT an empty buffer is meaningless and the PRINT verb will be rejected.

For example, when you type the P key, the Text Editor knows that no other command begins with P. Therefore, the P is immediately followed by RINT. However, if you type the N, it does not know if the command NEWIN, NEWOUT, or NEXT is to be used. So the Editor prints NE and waits for a W or X. If it receives a W, it then waits for an I or an O. It completes these by filling in the N or UT. If it receives an X following the E, it then prints the T. A complete list of all of the command verbs and their specific actions and limitations follows in "Commands" (Page 4-13).

## The Qualifier String

The qualifier string is a further restriction upon the range expression. It is completely optional. If it is not indicated, it is not used.

The range expression may indicate work over a certain number of sequential lines, starting with a given line. The qualifier string further limits these lines to those within the range containing the string specified in the qualifier field. This string is enclosed in single quotes (') and contains all normal ASCII characters with the exception of the single quote (').

For example, to print the entire buffer (of the previous example), but only those lines with the string 'line':

```
--ΔPRINT'LINE' Ⓞ  
THIS IS THE FIRST LINE  
THIS IS THE THIRD LINE  
THIS IS THE FIFTH LINE  
THIS IS THE SEVENTH LINE  
THIS IS THE LAST LINE
```

## The Option Field

The option field contains characters which let you view the line to be worked on, and/or the line after it has been reworked.

As its name implies, it is completely optional. You may insert any one of the following three option forms, or none at all.

1. B . . . . . The BEFORE option displays the line **before** the command is executed.
2. A . . . . . The AFTER option displays the line **after** the command execution.
3. BA . . . . . This is a combination of the previous two commands. The line is displayed **before** and **after** command execution.

For example, suppose that the buffer erroneously contained:

```
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS RED AS SNOW
THIS IS THE FIFTH LINE
AND EVERYWHERE THAT MARY WENT
THIS IS THE SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS IS THE LAST LINE
--
```

It may be edited to read correctly by means of the command:

```
--↑+'RED' EDITBA, RED, WHITE, 1 Ⓢ
ITS FLEECE WAS RED AS SNOW
ITS FLEECE WAS WHITE AS SNOW
--
```

Note that after the command EDIT, the options B & A are used to check the work.

NOTE: There are certain times when the command renders the option meaningless; DELETE BA, for example. The AFTER portion of the command is meaningless, as the line (or lines) cannot be displayed after deletion.

## THE PARAMETER FIELD

This is a special field used with the EDIT, NEWIN, and NEWOUT commands. These commands require additional operating information, which is placed in the parameter field. The nature of this information depends upon the command used. The exact format is discussed under those commands.

## THE COMMANDS

The following paragraphs give a complete description of each of the command verbs. Examples of many commands are also given to demonstrate some of the combinations of range expressions, qualifier strings, options, and parameter fields (if required) that may be used with this command. NOTE: All possible combinations of range expressions, qualifier strings, options, and parameter fields are not given. You must review the section for each of these expressions to determine all possible command structures.

### INSERT

The INSERT command places EDIT in the text mode and is used to add text to the buffer from the console keyboard. This command adds text to the buffer on the

next line following the first line specified in the range expression. If you use a null in the range expression, the text will be inserted on the line immediately following the text indicated by the current pointer. If the range expression is given in the form “-n”, the line or lines are still inserted after the line specified in the range command. The range command “ $\Delta$ INSERT” is a special case used to insert a line before the first line in the buffer.

For example:

```

-- $\Delta$ PRINT Ⓢ
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
AND EVERYWHERE THAT MARY WENT
THIS IS THE SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS IS THE LAST LINE
--

```

```

-- $\$$ INSERT Ⓢ
THIS IS AN ADDITIONAL LAST LINE Ⓢ
<CTRL-C>
--

```

```

-- $\uparrow$ 'FIFTH'INSERT Ⓢ
THIS IS A NEW LINE INSERTED AFTER THE FIFTH LINE Ⓢ
<CTRL-C>
--

```

```

-- $\Delta$ PRINT Ⓢ
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
THIS IS A NEW LINE INSERTED AFTER THE FIFTH LINE
AND EVERYWHERE THAT MARY WENT
THIS IS THE SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS IS THE LAST LINE
THIS IS AN ADDITIONAL LAST LINE

```

NOTE: Use CTRL-C to return to the command mode. If you strike CTRL-C after inserting a partial line, that partial line will be lost. Therefore, to preserve the last line of inserted text, type a carriage return (this will create a new blank line in the text buffer) prior to typing CTRL-C.

## REPLACE

This command causes the eligible line(s) in the command range to be replaced. After you have typed some form of REPLACE and  $\text{\textcircled{R}}$ , the cursor moves to the beginning of the new line so you can enter the replacement text. Type the replacement lines one at a time, following each with a carriage return. You may use tabs as part of the replacement text; and you may use BACKSPACE, DELETE, and RUBOUT to edit the new line you are entering. However, simply typing a carriage return without entering any text will cause EDIT to replace the old line with a blank line.

After the lines indicated by the range expression have been replaced, EDIT reverts to the command mode. Typing CTRL-C returns the editor to the command mode, erasing the current line.

The qualifier strings and option may be used. There is no parameter field for the REPLACE command.

For example:

```
--△PRINT  $\text{\textcircled{R}}$   
THIS IS THE FIRST LINE  
MARY HAD A LITTLE LAMB  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH LINE  
THIS IS A NEW LINE INSERTED AFTER THE FIFTH LINE  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO  
THIS IS THE LAST LINE  
THIS IS AN ADDITIONAL LAST LINE  
--
```

```
--↑+5REPLACEB  $\text{\textcircled{R}}$   
THIS IS A NEW LINE INSERTED AFTER THE FIFTH LINE  
THIS LINE IS REPLACED  $\text{\textcircled{R}}$   
--
```

```
--↑+6,+'LAST'REPLACE'LINE'  $\text{\textcircled{R}}$   
THIS REPLACES THE OLD SEVENTH LINE  $\text{\textcircled{R}}$   
THIS REPLACES THE OLD LAST LINE  $\text{\textcircled{R}}$   
--
```

```

--ΔPRINT ☺
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
THIS LINE IS REPLACED
AND EVERYWHERE THAT MARY WENT
THIS REPLACES THE OLD SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS REPLACES THE OLD LAST LINE
THIS IS AN ADDITIONAL LAST LINE
--

```

Note: Only lines containing the string 'line' are replaced in the second example, as the string 'line' is used as a qualifier.

### DELETE

The DELETE command causes the eligible line(s) in the command range to be deleted. You may use the option B; however, the option A is meaningless. You may also use the qualifier string. There is no parameter field accompanying the DELETE command. Once you have used DELETE, the current pointer is reset to the first line of the text buffer. You may not delete the entire buffer. To do this, you would use the BLITZ command.

For example:

```

--ΔPRINT ☺
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
THIS LINE IS REPLACED
AND EVERYWHERE THAT MARY WENT
THIS REPLACES THE OLD SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS REPLACES THE OLD LAST LINE
THIS IS AN ADDITIONAL LAST LINE
--

```

```

--$DELETE ☺
--$PRINT ☺
THIS REPLACES THE OLD LAST LINE
--

```



```

--↑,$-1DELETEB Ⓢ
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
THIS LINE IS REPLACED
AND EVERYWHERE THAT MARY WENT
THIS REPLACES THE OLD SEVENTH LINE
THE LAMB WAS SURE TO GO
--PRINT Ⓢ
THIS REPLACES THE OLD LAST LINE
--

```

## EDIT

Use the EDIT command to replace one string with another. The string to be replaced and the new string are given in the parameter field of the EDIT command. The parameter field of the EDIT command takes the form:

```
<delimiter> old string <delimiter> new string <delimiter> <count>
```

The **delimiter** is an arbitrary delimiting character. (It may not be a carriage return). The **count** is a decimal count showing the number of replacements to be made. NOTE: Only ONE replacement is made PER LINE. If the count is left null, it defaults to one. If an asterisk (\*) is substituted for the count, the value 65,536 is assumed.

The EDIT command makes full use of all range expressions, qualifier strings, and options; and as noted, a specific parameter field.

The following is an example of a text buffer prior to using an EDIT command, and text buffer after the EDIT command is executed.

```

--△PRINT Ⓢ
THIS IS THE FIRST LINE
MARY HAD A LITTLE LAMB
THIS IS THE THIRD LINE
ITS FLEECE WAS WHITE AS SNOW
THIS IS THE FIFTH LINE
AND EVERYWHERE THAT MARY WENT
THIS IS THE SEVENTH LINE
THE LAMB WAS SURE TO GO
THIS IS THE LAST LINE
--

--△EDIT'LINE',LINE,OF MANY LINES,5 Ⓢ
--

```

```
--△PRINT Ⓢ  
THIS IS THE FIRST OF MANY LINES  
MARY HAD A LITTLE LAMB  
THIS IS THE THIRD OF MANY LINES  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTH OF MANY LINES  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH OF MANY LINES  
THE LAMB WAS SURE TO GO  
THIS IS THE LAST OF MANY LINES  
--
```

NOTE: The delimiting characters may not appear in the old or new strings. For example, if a comma is used as a delimiter, EDIT will not allow you to enter 'MARY,' as either the old or new string. If either string contains a comma, use a slash (/) or some other character which does not appear in the string as a delimiter.

### **PRINT**

The PRINT command causes the eligible line(s) in the command range to be printed. This is the most common method for viewing portions of the text buffer or the entire text buffer. All forms of the range expressions are utilized. The option commands have no effect. You may use the qualifier string to limit the range expression. There is no parameter field for the PRINT command.

NOTE: While the PRINT command is executing, you may type control characters to aid in viewing the text buffer. See "Character Set," Page 4-3.

### **BLITZ**

The BLITZ command discards all text in the working buffer. Because of the drastic action this command takes, BLITZ followed by a carriage return results in the question "SURE?" A Y in response to SURE? proceeds with BLITZ. You may abort the BLITZ by typing an N or any character except Y. The range option, and qualifier and parameter fields are ignored in a BLITZ command.

## USE

The USE command displays the number of lines in the command range, the number of memory bytes currently used, and the number of free bytes. The USE command replies giving three values:

1. A line count. The number of lines within the command range. Type USE to display the total number of lines presently used within the buffer.
2. A byte count. The number of bytes used by the entire working buffer, not simply the lines within the command range.
3. A bytes free count. This is the number of remaining bytes in memory.

You can use the range expression and qualifier strings, but they have little meaning. There is no parameter field. The following example demonstrates the USE command. The computer employed in this example has 16K of memory with the following text:

```
*      DETERMINE MEMORY LIMIT

INIT1  MOV  M,A    MOVE BYTE
        DAD  D      INCREMENT TRIAL ADDRESS
        MOV  A,M
        DCR  M
        CMP  M
        JNE  INIT1  IF MEMORY CHANGED

INIT2  DCX  H
        SPHL          SET STACK POINTER=MEMORY LIMIT-1
        PUSH H       SET *PC* VALUE ON STACK
        LXI  H,ERROR
        PUSH H       SET:RETURN ADDRESS:

--
```

NOTE: EDIT requires some room for work space. It refuses to allow more text when there are still 200 free bytes. These 200 bytes are its work space.

```
--△USE Ⓢ  
LINES = 00015  
USED   = 00273  
FREE   = 08299  
--
```

## NEWIN

The NEWIN command opens a disk file for reading. It is not necessary to have an input disk file to do editing. You may create a new file in the buffer by using the INSERT command. The name of the disk file to be opened is contained in the NEWIN command parameter field. The parameter field for the NEWIN command is in the form:

```
<delimiter> <fspec> <delimiter>
```

The default device for <fspec> is SY $\phi$ :; there is no default extension.

After the NEWIN command is executed, the file is open for reading. You must use the READ command to read text into the buffer. Note that the NEXT, FLUSH, and BYE commands also cause text to be read. When the end of the file is read, the message "End of File" is typed on the console. EDIT will automatically close the file.

NOTE: If an input file is opened but not read to the end-of-file record, the NEWIN command asks for a go-ahead prior to searching for a new file. The reply Y, to SURE?, instructs NEWIN to proceed to find the new file.

For example.

```
--NEWIN/WORK .TXT/ Ⓢ  
  
OLD INPUT FILE NOT FINISHED. ARE YOU SURE?Y Ⓢ
```

## READ

The READ command is used to input text into the working buffer. Lines are read into the buffer until the end of file is reached, or until less than 700 free bytes of buffer space remain. In the first case, EDIT prints the message:

```
END OF FILE
```

In the second case, EDIT prints:

```
NOT ENOUGH RAM
```

Text inputted by the READ command is appended to the working buffer.

## NEWOUT

Use the NEWOUT command to open a new output file. The file name is supplied in the parameter field in the same manner as in the NEWIN command. The form of the parameter field is:

```
<delimiter> <fspec> <delimiter>
```

EDIT will open the file for WRITE, leaving it ready for text. Use the WRITE, FLUSH, or BYE commands, as appropriate, to write text onto the file. Note that any existing file by that name will be overwritten.

The NEWOUT command does not use range expressions, options, or qualifier strings.

If you use NEWOUT without closing a previously opened file, NEWOUT responds with SURE? A reply of Y permits NEWOUT to close the current output file and open the new one. Note that the closing of the previous file will cause any pre-existing file by that name to be replaced by the newly closed one. For example:

```
--NEWOUT/WORK2.TXT/ Ⓢ
```

## WRITE

The WRITE command outputs text from the buffer into the output file. It starts at the top of the buffer and continues to the first line of the command range. Thus, the command

```
$WRITE Ⓢ
```

writes the entire buffer.

This command uses range expressions and options. It has no parameter field.

You can use the WRITE command to output only certain lines of text to the output file. To do this, first specify the lines to be written, and then use the BLITZ command to delete all other lines of text from the buffer. Then enter a BYE or FLUSH command. For example:

```
-- PRINT ☺
10 LINE INPUT "WHAT IS YOUR NAME";B$
20 PRINT "HELLO, ";B$;". "
30 END
--NEWOUT/SY2:TEST.BAS/ ☺
--+1WRITE ☺
--BLITZ ☺
Are You Sure?Y
--BYE ☺

End of File
>TYPE SY2:TEST.BAS ☺
10 LINE INPUT "WHAT IS YOUR NAME";B$
20 PRINT "HELLO, ";B$;". "
```

Note that all lines up to and including the line specified in the WRITE command are included in the output file.

## FLUSH

Use the FLUSH command when editing is complete. It causes the working buffer to be written to the output file, and then any remaining text on the input file is copied over to the output file without modification. The FLUSH command then closes both the input and the output files.

The FLUSH command does not use range expressions, options, qualifier strings, or parameter fields. **NOTE: After the lines are written, they are deleted from the buffer.**

## NEXT

The NEXT command performs the following sequence:

```
$WRITE
READ
```

This command causes all the text in the buffer to be written to the output file and then refills the buffer from the input file. This command is particularly useful when you are generating large files or when you perform minor editing on large files. The NEXT command does not use a range expression, options, or qualifier strings. It has no parameter field.

## BYE

The BYE command is the normal way to exit from EDIT back to the operating system. The BYE command first performs a FLUSH, which causes all remaining text in the buffer and on the input file to be written to the output file. EDIT then closes both input and output files and exits to the operating system.

If no output file has been specified (i.e., no NEWOUT command performed), BYE types the message:

```
NO NEWOUT FILE
```

An output file should be specified via NEWOUT, and the BYE command re-typed. If you wish to exit the editor without writing a file, type CTRL-D.

## SEARCH

The SEARCH command scans through a text file for a given character string. The desired character string is specified in the qualifier field. This command begins the scan at the first line in the command range and continues to the end of the buffer (regardless of the last line in the command range). If the given character string is still not found, the buffer is written onto the output file and more text is added from the input file. The SEARCH stops when the end of the file is reached, or when the string is found.

When the string is found, the command range is set to that line. Subsequent commands can reference the line containing the desired string by using an equal (=) for the range expression. The SEARCH command uses the range expression, but does not use option or parameter fields.

For example:

```
--△PRINT Ⓢ  
THIS IS THE FIRST LINE  
MARY HAD A LITTLE LAMB  
THIS IS THE THIRD LINE  
ITS FLEECE WAS WHITE AS SNOW  
THIS IS THE FIFTHE LINE  
AND EVERYWHERE THAT MARY WENT  
THIS IS THE SEVENTH LINE  
THE LAMB WAS SURE TO GO  
THIS IS THE LAST LINE  
--  
  
--SEARCH" FIFTHE" Ⓢ  
--=EDITBA, FIFTHE, FIFTH, Ⓢ  
THIS IS THE FIFTHE LINE  
THIS IS THE FIFTH LINE  
--
```

NOTE: The given character string is enclosed in double quotes ("), not single quotes (').

## COMMAND COMPLETION

When EDIT is in the command mode, each terminal keystroke is considered for validity. If the character belongs to no possible command, it is refused and the bell code is echoed to the terminal. If the character is accepted and the command syntax allows only one next character, EDIT supplies and prints this character for you.

In addition to simple syntax checking, EDIT processes command range expressions as they are being entered. If you should enter a range expression referring to nonexistent lines, EDIT refuses further entry and echoes a bell code. Thus, should valid characters be rejected, it indicates that the command range expression is invalid. For example, if you should attempt to type

```
-↑+'TUESDAY'
```

and EDIT refuses the "P" in PRINT, it means that it found no line containing Tuesday. This check is done before the command is executed, so you can use a backspace to eliminate the TUESDAY and replace this string with a valid string for the text.

**NOTE:** If no information exists in the text buffer, EDIT will not accept commands which need text to be valid. For example, the command PRINT is invalid when no text exists in the text buffer, as there is nothing to print.



## Appendix A

### ERROR MESSAGES

<BELL>

EDIT rings the terminal's bell when an illegal command character (for the current command) is typed. EDIT also rings the bell if the line expression just entered applies to no line in the text file.

FIRST <= LAST

The line matching the "first line" expression must occur before, or be the same line as, the line matching the "last line" expression.

OLD INPUT FILE NOT FINISHED

ARE YOU SURE?

You have attempted to specify a new input file (via NEWIN) before the end-of-file was read on the old one. Replying YES closes the old input file and opens the new one. Replying NO leaves the old input file open.

OLD OUTPUT FILE NOT FINISHED

ARE YOU SURE?

You have attempted to specify a new output file (via NEWOUT) before the old one was closed. Replying YES closes the old output file and opens the new one. Replying NO leaves the old output file open.

ILLEGAL FILE NAME

The file specification used in a NEWIN or NEWOUT command contains too many characters. The file specification should contain no blanks or spurious characters.

## END OF FILE

The end-of-file was reached on the input file. The file was automatically closed. This message is informative and does not indicate an error of any kind.

## NOT FOUND

The line specified in the SEARCH command could not be located.

## NO OUTPUT FILE

EDIT could not write the text buffer to disk because no output file has been opened. This message can come in response to a WRITE, FLUSH, SEARCH, NEXT, or BYE command; all of which can cause text to be written to disk.

## NOT ENOUGH RAM

There is not enough free RAM to complete the operation. You can free up RAM by deleting some text lines or by writing some text lines to the output file. Note that this message is a typical response to the READ or NEXT command, and only means that EDIT ran out of RAM space before it read the end-of-file. EDIT automatically stops reading with several hundred bytes still free to allow room for editing.

## ERROR - xxx ... xxx

The operating system detected the error "xxx...xxx". The message is normally self-explanatory and is discussed in Chapter Two, "General Operation."

## Appendix B

### Command Summary

Each of the commands for the Heath Text Editor are summarized in this Appendix. For a detailed explanation of each command, refer to "The Commands," Page 4-13 to 4-24.

### Command Structure (Page 4-5)

The general form for an editor command is:

[<RANGE EXPRESSION>] [<VERB>] [<QUALIFIER STRING>] [< OPTION>] [<PARAMETERS>]

### Range Expression Forms (Page 4-5)

1. NULL — First line in previous command range.
2. BLANK — The entire working buffer.
3. = — The previous command range.
4. A single line expression.
5. Multiple expressions.

### Multiple Line Expression Forms (Page 4-8)

<u>Expression</u>	<u>Definition</u>
1. ↑	The first line in the buffer.
2. \$	The last line in the buffer.
3. NULL	The first line in the previous command range.
4. COMMA	Separates multiple line expressions.
5. +n	Move forward n decimal lines.
6. -n	Move backward n decimal lines.
7. +'STRING'	Move forward until 'STRING' is located.
8. -'STRING'	Move backward until 'STRING' is located.

## Verb (Command) Forms (Page 4-11)

<b>BLITZ</b>	Discards all text after a Y reply to ARE YOU SURE? (Page 4-18).
<b>BYE</b>	Exit to Operating System after flushing text and closing files (Page 4-23).
<b>DELETE</b>	Deletes eligible lines in command range (*except entire buffer) (Page 4-16).
<b>EDIT</b>	Replaces old string with new string once per line. Parameter field: <arbitrary delimiter> old string <arbitrary delimiter> count. Count is decimal number of replacements (Page 4-17).
<b>FLUSH</b>	Writes working buffer, balance of input file, and end-of-file character onto output file. Use when editing is complete. Text is deleted from buffer when complete (Page 4-22).
<b>INSERT</b>	Add to text buffer from keyboard. CTRL-C returns Editor to command mode (Page 4-13).
<b>NEWIN</b>	Opens a new file to be read in. Parameter field specifies file name <delimiter> <name> <delimiter> (Page 4-20).
<b>NEWOUT</b>	Opens a new file for output. Parameter field specifies file name <delimiter><name><delimiter> (Page 4-21).
<b>NEXT</b>	Writes working buffer onto output file. Then fills buffer from input file (Page 4-22).
<b>PRINT</b>	Print eligible lines on console terminal (Page 4-18).
<b>READ</b>	Reads text into memory from input file (page 4-21).

- REPLACE** Replace eligible lines in command range from keyboard. CTRL-C returns Editor to command mode (Page 4-15).
- SEARCH "string"** Searches text buffer and input file after initial line for 'STRING'. Search stops when STRING is found or end-of-file is found. Command range set to line containing 'STRING' (Page 4-23).
- USE** Displays number of lines in buffer, bytes used, and bytes free (Page 4-19).
- WRITE** Writes text from the working buffer to output file. Writes start of buffer to first line of common range. After writing, lines are not deleted (Page 4-21).

## **Qualifier String** (Page 4-12)

Qualifier string, if present, takes the form 'string'. A qualifier string limits range expression to those lines containing the qualifier string.

## **Option** (Page 4-12)

The option field is:

B Print line before operating on it.

A Print line after operating on it.

BA Print line before and after operating on it.

NULL No option specified.

## **Parameter Field** (Page 4-13)

This field contains extra parameters needed by the EDIT, NEWIN, and NEWOUT commands. Format is command dependent.

## Appendix C

The following edited source file is typical of one you might create using EDIT. It is intended to show examples of some of EDIT's editing capabilities.

```

-- PRINT
      ORG      100000A-160Q
FPNRM  EQU      073173A
      INX      B          TO
      INX      B          EXPONENT
      LDAX     A
      ANA      B          SET CONDX CODE
      RZ
      DCR      A          /2
      JZ       USRI      IF UNDER FLOW
      DCR      A          /2 again (/4)
USRI   STAX     B
      CALL     FPNRM
      RET

      END      START

--↑↑'EQU'INSERTB
      FPNRM    EQU      073173A
      START    INX      B          INC
--↑↑'073173A'EDITBA,073173A,063207A,1
      FPNRM    EQU      073173A
      FPNRM    EQU      063207A
      -- PRINT
      ORG      100000A-160Q
FPNRM  EQU      063207A
      START    INX      B          INC
      INX      B          TO
      INX      B          EXPONENT
      LDAX     A          (A) = ACCX EXP
      ANA      B          SET CONDX CODE
      RZ
      DCR      A          /2
      JZ       USRI      IF UNDER FLOW
      DCR      A          /2 again (/4)
USRI   STAX     B
      CALL     FPNRM
      RET

      END      START

```

```

--↑+'EXPONENT' INSERTB
                INX      B      EXPONENT
                LDAX     A      (A)=ACCX EXP
--'ACC'+1DELETEB
                LDAX     A
--↑+' /4' INSERTB
                DCR      A      /2AGAIN(/4)
                USRI     STAX   B      RET TO ACCX
--'ACCX'+1DELETEB
                USRI     STAX   B
--'ACCX' INSERTB
                USRI     STAX   B      RET TO ACCX
                CALL     FPNRM  NORMALIZE
--'NORMALIZE'+1DELETEB
                CALL     FPNRM
-- PRINT
                ORG      120000A-160Q
FPNRM           EQU      063207A
START          INX      B      INC UP
                INX      B      TO
                INX      B      EXPONENT
                LDAX     B      (A)=ACCX EXP
                ANA      A      SET CONDX CODE
                RZ
                DCR      A      /2
                JZ       USRI   IF UNDER FLOW
                DCR      A      /2AGAIN(/4)
                USRI     STAX   B      RET TO ACCX
                CALL     FPNRM  NORMALIZE
                RET      IN CASE 0

                END      START

```

```

--NEWOUT"SY1:TEXT.ASM" ☺
--BYE ☺
END OF FILE
> (HDOS prompt)

```



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