NOS Full Screen Editor

User's Guide

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features and parameters.

Publication Number 60460420
Revision D reflects NOS 2.5.2 released April 23, 1987 at PSR Level 678.

This revision includes the following major changes:

- The addition of the TeleVideo TV924, TV950, and TV955 terminals.
- Changes to the header line of the FSE display screen.

Miscellaneous technical and editing changes reflect the new enhancements.

Technical changes in this manual are indicated by bars in the margins. If an entire page is affected, a dot is placed near the page number.

This edition obsoletes all previous editions.

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<th>System Version</th>
<th>Date</th>
</tr>
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<td>A</td>
<td>2.2</td>
<td>October 11, 1983</td>
</tr>
<tr>
<td>B</td>
<td>2.3</td>
<td>October 12, 1984</td>
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<tr>
<td>C</td>
<td>2.4.2</td>
<td>September 30, 1985</td>
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About This Manual

The CONTROL DATA® Network Operating System (NOS) enables you to edit files page-by-page. The CDC® NOS Full Screen Editor (FSE) enables you to edit sequenced and unsequenced files both page-by-page (screen mode) and line-by-line (line mode).

This manual explains how to access and use FSE in both line mode and screen mode. The text incorporates examples and illustrations.

Audience

This guide is written for persons familiar with the interactive use of NOS. Some knowledge of NOS file types is helpful but is not required. All examples use the CONTROL DATA Viking 721 terminal. Familiarity with this terminal is helpful but not essential. For information on the interactive use of NOS, refer to the NOS Version 2 Reference Set, Volume 1, Introduction to Interactive Usage. For detailed hardware descriptions of the Viking 721 terminal, refer to the 721-10/20/30 Hardware Reference Manual.

Organization

Section 1 introduces FSE and its capabilities. It describes the Viking 721 terminal and the differences between the Viking and other terminals. Section 2 describes the basic screen editing functions. Section 3 describes the FSE command that starts FSE. Section 4 describes the FSE directives. Section 5 presents a sample session, using many of the advanced FSE functions. Section 6 describes the advanced FSE functions. Section 7 describes how to use FSE as a line editor. Section 8 contains worksheets to help you use FSE on terminals other than the Viking 721.

The order in which you read these sections depends on the mode of editing you use. For screen editing, read the manual from section 1 through section 7. For line editing, read section 1 followed by sections 3, 4, and 7.
Appendix A gives a code conversion chart for the ASCII character sets. Appendix B lists FSE diagnostic messages and explains how to recover from screen editing errors. Appendix C defines terms used in this manual. Appendix D describes how to use FSE with the CDC722 and 722–30; DEC VT100; Zenith Z19 and Z29; Heathkit H19; IBM 3270; Lear Siegler ADM3A and ADM5; Tektronix 4115; and TeleVideo TV924, TV950, and TV955 terminals.† Appendix E lists the directive strings for the various FSE functions. Appendix F describes the Viking 721 terminal settings needed to ensure proper operation of FSE.

† DEC VT100 is a product of the Digital Equipment Corporation. Zenith Z19 and Z29 are products of the Zenith Radio Corporation. Heathkit H19 is a product of the Heath Company. IBM 3270 is a product of International Business Machines Corporation. Lear Siegler ADM3A and ADM5 are products of the Lear Siegler Corporation. Tektronix 4115 is a product of the Tektronix Corporation. TeleVideo TV924, TV950, and TV955 are products of TeleVideo Systems, Inc.
Conventions

This manual uses simplified symbols to represent actual keys when instructing you to press a key. For example,

![Symbol](next.png)

is represented as

**NEXT**

and

![Symbol](clear.png)

is shown as

**CLEAR**

When two keys appear side by side, hold down the first key while pressing the second. For example,

![Symbol](clear.png) **CLEAR**

means hold down ![Symbol](clear.png) and press **CLEAR**

When you have to press more than one key in succession to execute a certain function, this is indicated with a + sign. For example,

![Symbol](clear.png) **CLEAR** + **NEXT**

means hold down ![Symbol](clear.png), press **CLEAR**, release both, then press **NEXT**.

---

**NOTE**

The Viking 721 terminal keyboard is used as a model in describing keys and functions.
Function keys appear on the screen accompanied by labels. For example, the \( \text{F1} \) key has the following screen label.

\[ \text{F1  MARK} \]

This manual includes the screen label when instructing you to press a function key.

Keys are sometimes combined. For example, to page backward on the DEC VT100 terminal, you use:

\[ \text{SHIFT} \text{ F1  BK} + \text{RETURN} \]

Descriptions of directives or parameters use the following printing conventions:

- **Underscore** Indicates the shortest valid abbreviation (usually the first letter).

- **UPPERCASE** Indicates a parameter that must be entered exactly as shown. Examples show directives and parameters abbreviated in uppercase letters. To improve readability, spaces are left between many parameters, although they are not required. (A directive entered as \( \text{M20 50T} 100 \) would appear in examples as \( \text{M20 50T 100} \).)

- **lowercase** Indicates a variable parameter.

- **italics** Indicates an optional parameter. In most cases, it appears that all parameters are optional. This is technically true, but once a particular parameter is included, others may no longer be optional.

- **blue** Indicates an entry made by the operator.

- **shading** Indicates cursor position. Blue shading is used for operator action. Gray shading is used for system action. A white vertical bar is used when cursor position is on a blue screen display.
Related Publications

The following Control Data publications are available if you want additional information on NOS or the Viking 721 terminal.

<table>
<thead>
<tr>
<th>Control Data Manual</th>
<th>Publication Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOS Version 2 Reference Set, Volume 1,</td>
<td>60459660</td>
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<tr>
<td>Introduction to Interactive Usage</td>
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</tr>
<tr>
<td>721-10/20/30 Hardware Reference Manual</td>
<td>62940020</td>
</tr>
<tr>
<td>721-21/31 Owner’s Manual</td>
<td>62950101</td>
</tr>
<tr>
<td>Loose Leaf Binder (6” x 9”) for manuals</td>
<td>60086200</td>
</tr>
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The last page of this manual is a comment sheet. Please use it to give us your opinion of the manual's usability, to suggest improvements, and to report any errors. If the comment sheet has already been used, mail your comments to:

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Technology and Publications Division ARH219
4201 Lexington Avenue North
St. Paul, MN 55126-6198

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Please tell us if you want a written response.

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From other countries: (612) 851-4131

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Literature and Distribution Services
308 North Dale Street
St. Paul, Minnesota 55103

or call (612) 292-2101. If you are a Control Data employee, call (612) 292-2100.
Introduction

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Introduction

When you use the NOS Full Screen Editor (FSE) on a video display terminal, you can display a page of text on the screen, move through a file page-by-page, and make most of your changes with the touch of a key. To be used as a screen editor, FSE must be placed in screen mode.

When you work on a printing terminal, you must use FSE's other editing capability, line editing. In contrast to screen editing, you see only a limited number of lines at any one time. Line editing is also available on video display terminals. To be used as a line editor on any type of terminal, FSE must be placed in line mode.

In either mode, you can edit both sequenced and unsequenced files.

FSE Capabilities

Using FSE, you can:

- Create or change a file.
- Undo changes you made to a file during your current terminal session.
- Display and edit two files (or two sections of the same file) on one screen.
- Search for and replace text according to the column in which the text appears.
- Move or copy parts of a file within the same file or into another file.
- Search for and replace words.
- Create FSE procedures using FSE directives.
- Manipulate words, lines (of up to 250 characters), and paragraphs of text with the FSE word processing directives.
- Access a tutorial file and practice editing.

These and the many other FSE capabilities are described in detail in this manual.
Terminals

FSE supports almost all display terminals. First, however, the terminal type must be defined to the system. Some terminals are already defined by Control Data. Others are defined by the site or by the user.

Control Data has defined the following terminals.

- CDC Viking 721.
- CDC Viking 721 Version 3.
- CDC 722.
- CDC 722-30.
- DEC VT100.
- Zenith Z19/Z29.
- Heathkit H19.
- IBM 3270.
- Lear Siegler ADM3A.
- Lear Siegler ADM5.
- Tektronix 4115.
- TeleVideo 924/950/955.

A terminal other than one of these may have been defined by the site. If not, you may be able to define it yourself. The process is described in the next section under *Getting Started*. 


Viking 721 Terminal

The Viking 721 is one of the terminals already defined to the system. This manual uses the Viking 721 as a model in describing keys and functions.

To log in to NOS and start FSE, the Viking 721 must be set up correctly. Appendix F explains the setup procedure. However, if your terminal has been used with NOS before, try using it without changing the settings.
The most-used keys on the Viking 721 are:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>Return, carriage return, or new line.</td>
</tr>
<tr>
<td></td>
<td>Backspace.</td>
</tr>
<tr>
<td></td>
<td>Shift.</td>
</tr>
<tr>
<td></td>
<td>Shift lock.</td>
</tr>
<tr>
<td></td>
<td>Tab forward.</td>
</tr>
<tr>
<td></td>
<td>Tab backward.</td>
</tr>
<tr>
<td></td>
<td>Cursor movement.</td>
</tr>
</tbody>
</table>

![Keyboard diagram](image)
Other Terminals

If you are using a terminal other than the Viking 721, you may have to substitute other keys for those used in the examples. If you have one of the Control Data-defined terminals listed previously, refer to appendix D, *Terminal Support Information*, for a list of the keys on your terminal that are equivalent to the Viking 721 keys. Section 8, *Using Other Terminals*, has worksheets for recording equivalent keys.

The following list shows typical differences between the Viking 721 and other terminals.

<table>
<thead>
<tr>
<th>Viking 721</th>
<th>Typical Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEXT</td>
<td>RETURN or CR</td>
</tr>
<tr>
<td>☐</td>
<td>SHIFT</td>
</tr>
<tr>
<td>F1 through</td>
<td>PF1 through PF16 or 1 through 16</td>
</tr>
<tr>
<td>F16</td>
<td>Shifted keys on a keypad or no equivalent keys.</td>
</tr>
</tbody>
</table>

The F1 through F16 keys are programmable function keys and are described later. Many terminals require you to press RETURN, NEW LINE, or CR after a programmable function key. For example:

<table>
<thead>
<tr>
<th>Viking 721</th>
<th>Equivalent on Zenith Z19</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>F1 + RETURN</td>
</tr>
</tbody>
</table>
# Screen Editing

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<tr>
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<td>Stopping FSE and Returning to NOS</td>
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<td>Stopping FSE and Making Your Changes Permanent</td>
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</tbody>
</table>
Getting Started

To get started on FSE, you must be logged in to NOS. For information on NOS login procedures, refer to the NOS Version 2 Reference Set, Volume 2, Guide to System Usage.

Establishing Screen Mode

After you are logged into NOS, use the following command to identify your terminal type and tell NOS that you want to be in screen editing mode whenever possible.

```
SCREEN, model
```

where model represents the name that identifies your terminal type. If you have one of the following terminals, use the model name shown (Control Data has defined the terminals to the system and assigned the model name).

Most models have a type-ahead feature. To specify type-ahead, enter the model name followed by a T. (Type-ahead allows you to press a function key two or more times in quick succession, rather than pressing it once and waiting for the system to execute it before pressing it a second time.)

**NOTE**

Screen editing mode remains in effect for the entire terminal session, even if you change editing modes while using FSE.

If you do not enter a SCREEN command prior to starting FSE, FSE will act as a line editor (the default mode). Refer to section 7, Line Editing, for information about this function.

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Model</th>
<th>Model with Type-Ahead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viking 721</td>
<td>721</td>
<td>721T</td>
</tr>
<tr>
<td>Viking 721 Version 3</td>
<td>721V3</td>
<td>721V3T</td>
</tr>
<tr>
<td>CDC 722</td>
<td>722</td>
<td>722T</td>
</tr>
<tr>
<td>CDC 722-30</td>
<td>72230</td>
<td>72230T</td>
</tr>
<tr>
<td>DEC VT100</td>
<td>VT100</td>
<td>VT100T</td>
</tr>
<tr>
<td>Terminal</td>
<td>Model</td>
<td>Model with Type-Ahead</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Zenith Z19/Z29 and Heathkit H19</td>
<td>Z19</td>
<td>Z19T</td>
</tr>
<tr>
<td>IBM 3270</td>
<td>3270</td>
<td></td>
</tr>
<tr>
<td>Lear Siegler ADM3A</td>
<td>ADM3A</td>
<td>ADM3AT</td>
</tr>
<tr>
<td>Lear Siegler ADM5</td>
<td>ADM5</td>
<td>ADM5T</td>
</tr>
<tr>
<td>Tektronix 4115</td>
<td>T4115</td>
<td>T4115T</td>
</tr>
<tr>
<td>TeleVideo 924</td>
<td>TV924</td>
<td>TV924T</td>
</tr>
<tr>
<td>TeleVideo 950</td>
<td>TV950</td>
<td>TV950T</td>
</tr>
<tr>
<td>TeleVideo 955</td>
<td>TV955</td>
<td>TV955T</td>
</tr>
</tbody>
</table>

To establish screen mode for the Viking 721 terminal, you enter:

SCREEN, 721

and press:

NEXT

Other terminals may be defined to the system by the site. To determine if this is the case, access your site’s terminal file library (model is the name of a compiled and stored terminal definition file). Enter the following commands:

GET, TERMLIB/UN=LIBRARY
CATALOG, TERMLIB, R, U, N

If your terminal is not defined, you can define it by using the Terminal Definition Utility (TDU). Enter the commands:

ATTACH, TDUFILE/UN=LIBRARY
FSE, TDUFILE, A

(Section 3 describes the FSE command and its parameters.)

You will get a file containing pretyped terminal definition statements. Edit the file to define your terminal. You will also need to define your programmable function keys (these keys are described later in this section.) For details, refer to the NOS Screen Formatting Reference Manual.
Selecting a Character Set

To move or copy uppercase and lowercase text to or from the file you are editing, you must enter the NOS command

ASCII

before starting FSE. This command allows you to use the ASCII 95-character set. If you do not enter the ASCII command before starting FSE, the text you want to copy is placed in uppercase only (the ASCII 64-character set).

NOTE

To edit a file in uppercase and lowercase (when you do not intend to move or copy text to or from another file), you may specify the ASCII 95-character set on a parameter of the FSE command (refer to section 3, FSE Command).
Starting FSE

Having established the screen mode and character set for your terminal session, you can start FSE and specify the name of the file you want to edit. For example, to start FSE and specify that you want to edit a local file named MYFILE, you enter:

FSE,MYFILE

and press:

NEXT

If MYFILE does not already exist as a local file, it is created. Your screen then clears and displays the following.
Sample Display Screen

The following sample display screen contains an uppercase file called MYFILE. This file will be used in the demonstrations of editing techniques that follow. It contains intentional errors, which will be corrected later. MYFILE is not released with the system. If you want to practice as you read, you can create this file and enter the appropriate text.

The numbers to the left of the screen have been added to help you locate lines referenced in the exercises on the following pages.
1. Directive Line. The line on which you enter FSE directives. To position the cursor at this line, press \texttt{HOME} or the equivalent key for your terminal.

2. Message Line. The line on which FSE displays messages and prompts.

3. File Header. The file name, lines currently displayed, total number of lines in the file, and the status of the file ((No Changes), (Changed), (Read-Only)). If the file is uppercase, the prefix \texttt{Upper Case} appears on this line. If the file is lowercase, no prefix appears.


5. Programmable Function Key Prompts. The labels currently assigned to function keys \texttt{(F1)} through \texttt{(F8)} and shifted \texttt{(F1)} through shifted \texttt{(F8)}. These keys, along with the eight other programmable function keys, are described later in this section.

6. Cursor. Your current position in the file, where text may be entered or edited.
Sample Editing Session

You can do most of your editing by positioning the cursor at the text to be changed and typing the corrections over the old text. Other editing functions can be performed with only the touch of a key.

Using basic screen editing techniques, the errors in the previously introduced sample file (MYFILE) will now be corrected. Use this session for an overview of basic screen editing. More advanced aspects of screen editing, including descriptions of function keys and FSE directives, appear later in this manual. In the sample session you will:

- Set screen mode.
- Start FSE.
- Position the cursor.
- Type over text.
- Insert and delete characters.
- Insert and delete lines.
- Page forward and backward.
- Move lines.
- Copy lines.
- Undo changes made to a file.
- Access the FSE online help file.
- Stop and restart FSE.
- Make changes permanent.
- Edit sequenced files.
- Create multi-record and multi-file files.
Setting Screen Mode

After you log in to NOS on a Viking 721 terminal, enter one of the following commands to set screen mode.

SCREEN,721

or

SCREEN,721T
# Starting FSE

Enter the following command to start FSE and to specify that you want to edit file MYFILE.

```
FSE MYFILE
```

FSE accesses file MYFILE. If MYFILE does not already exist as a local file, it is created.

If MYFILE is already a permanent file but is not local, enter the following FSE command to make MYFILE local and start FSE.

```
FSE MYFILE, G
```

The following screen appears.

<table>
<thead>
<tr>
<th>Upper Case file MYFILE</th>
<th>Lines 1 - 25 Size 293 (No Changes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM INDEX</td>
<td></td>
</tr>
<tr>
<td>INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY FORMATTED MANUAL INDEX. THE PROGRAM RECOGNIZES PRIMARY, SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE CONTINUATION LINES.</td>
<td></td>
</tr>
<tr>
<td>IMPLICIT INGETER (A-Z)</td>
<td></td>
</tr>
<tr>
<td>PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)</td>
<td></td>
</tr>
<tr>
<td>PARAMETER ((MSC=50)</td>
<td></td>
</tr>
<tr>
<td>PARAMETER (MAXLEN=160,MAXSLEN=310,MAXOLEN=160)</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+40 COND.</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+1 CO,CN</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+40:COND.</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+10:SLANTS</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+12:FMST</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+(MAXLEN) INPLIN</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+7: PVAL,PNAME</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+7: INPFILE,OUTFILE</td>
<td></td>
</tr>
<tr>
<td>CHARACTER+50 PENTRY,ENTRY,ENTRY,ENTRY,BLANK</td>
<td></td>
</tr>
<tr>
<td>DIMENSION TAB(1),TAB(2),TAB(3)</td>
<td></td>
</tr>
</tbody>
</table>


DATA OUTFILE/OUTPUT/INPFILE/INPUT/ |
DATA TAB(1)/TAB(2)/TAB(3)/TAB(4)/ |
MRKCHR ONEOPY DELB LAST UNMARK LOCNXT BOCOL |
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL |
Positioning the Cursor

To move the cursor around on the screen, use the arrow keys. On the Viking 721, these keys are located on the numeric keypad to the right of the main keyboard, and appear as:

\[
\begin{align*}
\uparrow & \quad 8 \\
\downarrow & \\
\leftarrow & \\
\rightarrow & \\
\downarrow & \\
\end{align*}
\]

You do not have to press \( \Rightarrow \) to use these keys. When you hold them down, they automatically repeat.

NOTE

These characteristics of the terminal are set during terminal installation. If the nonvolatile memory in the terminal fails, they will no longer be available. Information on resetting them is in the CDC 721-21/31 Owner’s Manual.
Typing Over Text

You can make most corrections to text by positioning the cursor at the text to be corrected and typing the correction over the existing text. For example, in the eighth line of MYFILE, you can change INGETER to INTEGER by positioning the cursor at the G:

```
IMPLICIT INGETER (A-Z)
```

and typing T.

```
IMPLICIT INTETER (A-Z)
```

(When you type the T, the cursor moves one character forward.)

Then, position the cursor at the second T and type G.

```
IMPLICIT INTEGER (A-Z)
```
Inserting Characters

Position the cursor where you want to insert a character and press:

(INSRT)

For example, the 24th line of file MYFILE is missing a / following 'OUTPUT'.

DATA OUTFILE/'OUTPUT',INFILE/'INPUT'/

To add the slash, position the cursor at the comma following 'OUTPUT'. Then press:

(INSRT)

FSE inserts a blank where the cursor is positioned. Type the slash into this blank.

DATA OUTFILE/'OUTPUT'/'INFILE/'INPUT'/

(After you type the slash, the cursor again moves one character forward.)

Deleting Characters

Position the cursor at the character you want to delete. For example, file MYFILE has an extra parenthesis on the 10th line.

PARAMETER ((MSC=50)

Position the cursor at the extra parenthesis. Then press:

(DELETE)

The result is:

PARAMETER (MSC=50)
Inserting Lines

The line:

```
LOGICAL PARMERR
```

needs to be inserted in file MYFILE between the following two lines (lines 20 and 21).

```
CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
DIMENSION TAB(3)
```

To do this, position the cursor at the beginning of the second line.

```
CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
DIMENSION TAB(3)
```

Then press:

![INSRT](image)

FSE inserts a blank line above the line the cursor was on and positions the cursor on the blank line.

```
CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK

DIMENSION TAB(3)
```

Type the new line in the blank line space.

```
CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
LOGICAL PARMERR
DIMENSION TAB(3)
```
Deleting Lines

In file MYFILE, the 14th line duplicates the 12th line.

```plaintext
CHARACTER*40  COND
CHARACTER*1  CO, CN
CHARACTER*40  COND
CHARACTER*10  SLANTS
```

To delete the second of these duplicate lines, position the cursor anywhere on the line to be deleted. Then press:

```plaintext
DELETE
```

The result is:

```plaintext
CHARACTER*40  COND
CHARACTER*1  CO, CN
CHARACTER*10  SLANTS
```

Each time you delete a line, the lines below it move up, leaving a blank space at the end of your text on the screen. FSE fills in the blank space with appropriate lines from your file when you press:

```plaintext
NEXT
```
Paging Forward and Backward

Pressing:

**FWD**

advances the screen display to the next page forward in the file. The bottom line of the page you were on carries over and reappears at the top of the new display. The following screen is the second page of sample file MYFILE.
To see the previous page, press:

(BKW)

FSE displays the previous page.

<table>
<thead>
<tr>
<th>Upper Case File MYFILE</th>
<th>Lines 1 - 25</th>
<th>Size 293</th>
<th>(Changed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROGRAM INDEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMATTED MANUAL INDEX: THE PROGRAM RECOGNIZES PRIMARY,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINUATION LINES.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMPLICIT INTEGER (A-Z)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARAMETER (MSC=50)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PARAMETER (MAXLEN=160,MAXSLN=310,MAXOLEN=160)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=40 COND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=1 CO,CN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=10 SLANTS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=12 FMTST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=(MAXLEN) INLIN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=7 PVAL,PNAME</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=7 INPFILE,OUTFILE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARACTER=50 PENTRY,SENTRY,TENTRY,BLANK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOGICAL PARERR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIMENSION TAB(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA PENTRY/''/SENTRY/''/TENTRY/''/BLANK/''/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA OUTFILE/OUTPUT/INPFILE/INPUT/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA TAB(1)/1,/TAB(2)/5,/TAB(3)/9/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRKCHR ONECPY DELB LAST UNMARK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Moving Lines

In sample file MYFILE, the following lines must be moved.

```
IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
```

To do this, place the cursor on the first line of the group to be moved (line 8).

```
IMPLICIT INTEGER (A-Z)
```

Then press:

```
F1  MARK
```

This marks the line as the beginning of a group of lines to be moved. Then place the cursor on the last line of the group (line 11).

```
PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
```

Again press:

```
F1  MARK
```

This marks the line as the last of the group to be moved. The entire block is highlighted as inverse video display.

```
IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
```

(If you want to move just one line, only one mark is needed.)
The block is to be relocated between lines 20 and 21.

LOGICAL PARMERR
DIMENSION TAB(3)

Position the cursor anywhere on the DIMENSION TAB(3) line. Then press:

F2 MOVE

The screen now appears as:

LOGICAL PARMERR
IMPLICIT INTEGER (A=2)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TETR=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAXSLEN=310,MAXOLEN=160)
DIMENSION TAB(3)

The lines you marked no longer exist at their old location, and are no longer highlighted.

Copying Lines

If you want to copy lines without deleting them from their previous location, follow the steps described for moving lines, but press:

COPY instead of F2 MOVE

After the copy is complete, the copied lines are still at their original location and are still highlighted. Therefore, the group of lines may be copied to several places in the file without re-marking the group of lines after each copy. You need only position the cursor where you want each copy to be inserted and press:

COPY

To turn off the highlighting, press:

F5 UNMARK

NOTE

To continue to copy or move sections of text, you need not explicitly cancel the previous highlighting. When you mark the new text, the previous highlighting automatically turns off.
Undoing Changes Made to a File

Suppose at this point, you realize that the lines should not have been moved. Rather than marking the lines again to move them back to their original position, all you need to do is press:

F5 UNDO

FSE cancels the previous operation. In this example, the lines are moved back to their original position.

C

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
CHARACTER*40 COND

F5 UNDO will undo all the changes you made to file MYFILE during the current editing session in the reverse order in which they were made. Just press:

F5 UNDO

once for each change you made. You can repeat the step until the original file is restored.

NOTE

To turn off the UNDO command, use the SET directive (SET UNDO NO). For details, refer to the description of the SET directive in section 4.
Undoing Marks

To turn off highlighting after copying text, press:

(F5 UNMARK)

(The cursor need not be positioned on the highlighted text.) The highlighting is turned off and the message:

MARKS CANCELLED

appears.

NOTE

To continue to copy or move sections of text, you need not explicitly cancel the previous highlighting. When you mark the new text, the previous highlighting automatically turns off.
Accessing Online Help

To access online FSE information, press:

(HELP)

FSE splits the screen in half, with the FSE help file on the lower half of the screen.
By changing the position of the cursor, you can manipulate each half of a split screen separately. For example, to page forward in the help file without disturbing MYFILE, move the cursor to the help file text and press:

(FWD)

For practice, you can edit MYFILE while reading FSE help. To return to MYFILE only, either press:

(EDIT)

or enter EDIT on the directive line.

The FSE help screen is a read-only file. Therefore, any changes you might make to it are not permanent.
Stopping FSE and Returning to NOS

To return to NOS, press:

F6 QUIT

Any files you have edited, including changes, remain as local files, ready for use by compilers or other programs. The exception is a direct access file attached in write mode. In this case, any changes are immediately made permanent.

Stopping FSE and Making Your Changes
Permanent

To complete your editing session and make any changes to your files permanent, press:

HOME

This moves the cursor to the FSE directive line. To save the files you've edited as permanent files and to stop FSE, enter:

QUIT REPLACE

or its abbreviation:

GR

When you stop FSE, the following messages appear, informing you whether the changes to your file(s) are permanent.

FILE: MYFILE (PERMANENT)
FILE: FSEPROC (NO CHANGES) (NOT REPLACED)
FILE: FSEHELP (NO CHANGES) (READ-ONLY) (NOT REPLACED)

You access the FSEPROC file every time you start FSE. The file is described in detail in section 6, Advanced FSE Functions.

Restarting FSE

Having stopped FSE, you can, during your current terminal session, return to editing a file where you left off. To do this, enter the FSE command without parameters.

FSE
For example, suppose you finish editing MYFILE at the point shown by the cursor.

You then press:

**HOME**

and enter:

**QR + NEXT**

stopping FSE and making your changes to the file permanent. The following messages appear.

**FILE: MYFILE (PERMANENT)**

**FILE: FSEPROC (NO CHANGES)**
After doing other things on NOS, you want to return to editing MYFILE. Enter:

FSE + (NEXT)

You are returned to the exact point at which you left MYFILE.

The file header line now reads, No Changes, since you have not yet changed the file in this editing session.
NOTE

If you make any changes to another file between FSE editing sessions, be sure to specify the file name when you reenter FSE. For example, enter:

FSE, MYFILE

rather than

FSE

If you do not specify the file name, the FSE command returns you to the local file you were editing when last in FSE. This local file will not contain the changes you made to the file outside of FSE.
Editing Sequenced Files

When you create or edit a sequenced file in the BASIC or FORTRAN subsystem, FSE assumes the file is a numbered sequenced file. Within directives, you can refer to the lines by their sequence numbers, rather than the numbers FSE assigns.

NOTE

If the first line of your sequenced file does not begin with a sequence number, FSE assumes the file is not a numbered sequenced file. If only the first line of your file begins with a number, FSE assumes the file is a numbered sequenced file only if the file was created under the BASIC or FORTRAN subsystem.

If you change a sequence number by typing over it, FSE does not allow you to make that number less than the preceding nor greater than the following sequence number. If you try to do so, FSE deletes the sequence number. For example, lines 00140 through 00160 appear as:

00140 Line 1
00150 Line 2
00160 Line 3

If you type 00165 over 00150, the lines appear as:

00140 Line 1
   Line 2
00160 Line 3

In this example, the same happens if you try to type a sequence number less than 00140.

Refer to the description of the SET NUMBER directive in section 4 for more information on manipulating sequence numbers.
Creating Multi-Record and Multi-File Files

FSE automatically inserts an end-of-record (EOR) or end-of-file (EOF) mark after every single-record file you create. These are internal file structure marks that are not visible on your screen.

If you want to create multi-record or multi-file files, you must insert the EOR and EOF marks between the records and files yourself. Type these marks on a separate line beginning in column 1, as shown in the following sample file. (The marks can be deleted in the same way you delete any other text.)

<table>
<thead>
<tr>
<th>First</th>
<th>Second</th>
<th>Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Jones</td>
<td>Esther Bluebonnet</td>
<td>Carl Smiles</td>
</tr>
<tr>
<td>1234 Happy Street</td>
<td>5678 Happy Street</td>
<td>9012 Happy Street</td>
</tr>
<tr>
<td>Harmonious, USA</td>
<td>Harmonious, USA</td>
<td>Harmonious, USA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F1</th>
<th>MARK</th>
<th>F2</th>
<th>NOVE</th>
<th>F3</th>
<th>INSB</th>
<th>F4</th>
<th>FIRST</th>
<th>F5</th>
<th>UNDO</th>
<th>F6</th>
<th>QUIT</th>
<th>F7</th>
<th>LOCATE</th>
<th>FB 132COL</th>
</tr>
</thead>
</table>
Viking 721 Terminal Function Keys

In addition to the standard ASCII character keys, like A and 5, FSE supports three types of function keys: editing, CDC standard, and programmable.

Editing Keys

The editing keys are:
The editing keys usually perform their functions locally (in your terminal) and instantaneously. The editing key functions are:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSRT</td>
<td>Inserts a blank space for a character.</td>
</tr>
<tr>
<td>⌂ INSRT</td>
<td>Inserts a blank line.</td>
</tr>
<tr>
<td>DELETE</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>⌂ DELETE</td>
<td>Deletes the current line and moves the following lines up. Press:</td>
</tr>
<tr>
<td>NEXT</td>
<td>to fill in the lines at the bottom of the screen.</td>
</tr>
<tr>
<td>ERASE</td>
<td>Backspaces a single character and deletes it. When shifted, it deletes the current line and moves the cursor back to the first column.</td>
</tr>
<tr>
<td>←</td>
<td>Moves the cursor forward to the next tab. Default tab settings are 1, 7, and 72. Refer to the SET directive description in section 4 for information on setting tabs.</td>
</tr>
<tr>
<td>←</td>
<td>Moves the cursor backward to the immediately preceding tab.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>Deletes all characters from the cursor to the end of the line.</td>
</tr>
<tr>
<td>⌂ CLEAR</td>
<td>Clears the entire screen (useful when you suspect the text on the screen has been garbled). To rewrite the screen, press:</td>
</tr>
<tr>
<td>NEXT</td>
<td></td>
</tr>
</tbody>
</table>
CDC Standard Function Keys

The CDC standard function keys are:

The CDC standard function keys perform operations that are used for nearly all applications. Specific operations are assigned either to a key or a combination of keys on all supported terminals.
The functions are:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>FWD</td>
<td>Advances to the last screen of the file.</td>
</tr>
<tr>
<td>BKW</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>BKW</td>
<td>Moves backward to the first screen of the file.</td>
</tr>
<tr>
<td>UP</td>
<td>Moves the current line (the line the cursor is on) to the top of the screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td>Moves the current line (the line the cursor is on) to the bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td>Displays the FSE help file in the lower half of a split screen.</td>
</tr>
<tr>
<td>EDIT</td>
<td>Terminates split screen mode, returning the top half of the screen to full screen. If you are not in split screen mode, EDIT returns to the initial FSE file with which you started this editing session.</td>
</tr>
<tr>
<td>BACK</td>
<td>Returns to the section of a file you marked with the (DATA) key or with your last (BACK) key.</td>
</tr>
<tr>
<td>COPY</td>
<td>Copies the marked text (or the line the cursor is on if there are no marks) to the present position of the cursor.</td>
</tr>
<tr>
<td>DATA</td>
<td>Marks a section of the file to which you can return with the (BACK) key.</td>
</tr>
<tr>
<td>STOP</td>
<td>In screen mode, (STOP) switches your terminal to line mode. In line mode, it stops a search or replacement in progress.</td>
</tr>
<tr>
<td>NEXT</td>
<td>Terminates an input line.</td>
</tr>
<tr>
<td>HOME</td>
<td>Moves cursor to the directive line, enabling you to enter directives.</td>
</tr>
</tbody>
</table>
Programmable Function Keys

The programmable function keys can be defined to execute any of the FSE directives (refer to section 6, Advanced FSE Functions). The default functions of the programmable function keys are displayed at the bottom of your screen.

Usually, only the F1 through F8 function key prompts are displayed. The default prompts and their corresponding keys are:

![](image)

The F9 through F16 prompts are displayed using the SET PROMPT directive described in section 4. The default prompts and their corresponding keys are:

![](image)
The lower line of the prompt indicates the unshifted key function. The upper line indicates the shifted key function. Some of the programmable function keys also have labels on the keys. These labels are used for other applications and have no significance within FSE. The default functions for the Viking 721 programmable function keys are:

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Pressed once, marks a line for future use with another function. Pressed twice, marks a range of lines. If you accidentally mark the wrong line or line range, press:</td>
</tr>
<tr>
<td></td>
<td>F5 <strong>UNDO</strong></td>
</tr>
<tr>
<td></td>
<td>to unmark the line or range.</td>
</tr>
<tr>
<td></td>
<td>When shifted,</td>
</tr>
<tr>
<td></td>
<td>F1 <strong>MRKCHR</strong></td>
</tr>
<tr>
<td></td>
<td>marks a character. Pressed twice, it marks a character range.</td>
</tr>
<tr>
<td>F2</td>
<td>Moves the range of lines set by the MARK function, or characters set by the MRKCHR function, to the position marked by the cursor. After the move operation is complete, the marks are automatically turned off.</td>
</tr>
<tr>
<td></td>
<td>When shifted,</td>
</tr>
<tr>
<td></td>
<td>F2 <strong>ONECPY</strong></td>
</tr>
<tr>
<td></td>
<td>copies the range of lines or characters set by the MARK or MRKCHR functions. After the copy operation is complete, the marks are automatically turned off.</td>
</tr>
<tr>
<td>F3</td>
<td>Inserts a number of blank lines at the position marked by the cursor. The number inserted depends on the number of lines presently displayed on your screen.</td>
</tr>
<tr>
<td></td>
<td>When shifted,</td>
</tr>
<tr>
<td></td>
<td>F3 <strong>DELB</strong></td>
</tr>
<tr>
<td></td>
<td>deletes blank lines, starting with the line the cursor is at, until a nonblank line is encountered.</td>
</tr>
</tbody>
</table>
Key | Description
--- | ---
**LAST** | Positions the cursor at the first line in the file.
**FIRST** | When shifted,
F4 **LAST** | positions the cursor to the last line in the file.
F5 | Cancels the most recent change made to your file during your current editing session (does not cancel marks).
**UNMARK** | Pressing:
F5 **UNMARK** | again removes the next most recent change, and so on.
When shifted,
F5 **UNMARK** | cancels any marks you have set.
**QUIT** | Stops the current editing session. If your file is an indirect access file, the changes you make do not become permanent when you end the terminal session. If your file is direct access, the changes become permanent.
**LOCNXT** | Prompts you to enter the text you want to locate. When you enter the text and press:
**NEXT** | FSE locates the text, positioning the cursor at the first character of the text string.
When shifted,
F7 **LOCNXT** | locates the next occurrence of the last text located.
<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F8 132COL</td>
<td>Sets the terminal to 132-column mode. When shifted,</td>
</tr>
<tr>
<td></td>
<td>F8 30COL. sets the terminal to 80-column mode (default).</td>
</tr>
<tr>
<td>F9 MIDDLE</td>
<td>Positions the line the cursor is at to the middle of the screen.</td>
</tr>
<tr>
<td>F10 ENDLIN</td>
<td>Moves the cursor to the end of the line it is on.</td>
</tr>
<tr>
<td>F11 SPLIT</td>
<td>Splits the line the cursor is on into two lines. If the cursor is at the beginning of the line, it inserts a blank line above it. Otherwise, it splits the line at the cursor position.</td>
</tr>
<tr>
<td>F12 JOIN</td>
<td>Joins the line the cursor is at with the next line.</td>
</tr>
<tr>
<td>F13 PARA</td>
<td>Reformats the paragraph the cursor is within to conform to margins set with the SET WORD FILL directive (default margins are 1 and 65).</td>
</tr>
<tr>
<td></td>
<td>Paragraphs are delimited by blank lines. Refer to the description of the SET WORD FILL directive in section 4 for more information.</td>
</tr>
<tr>
<td>F14 COPY</td>
<td>Copies the lines or characters set by the MARK or MRKCHR function. (If no marks are set, it copies the line the cursor is on.) The marks remain on, allowing you to copy the marked area repeatedly.</td>
</tr>
<tr>
<td>F15 CENTER</td>
<td>Centers the line the cursor is on according to the boundaries set by the SET WORD FILL directive (described in section 4). Default margins are 1 and 65.</td>
</tr>
<tr>
<td>F16</td>
<td>Undefined.</td>
</tr>
</tbody>
</table>

For instructions on defining or redefining programmable function keys, refer to section 6, *Advanced FSE Functions*.

For information on default programmable function key settings for other supported terminals, refer to appendix D, *Terminal Support Information*. 
Entering Directives

For the occasions when the previously described terminal keys do not meet your editing needs, FSE provides a number of directives. (These directives are described in detail in section 4, FSE Directives).

To enter a directive, press:

(HOME)

This positions the cursor on the FSE directive line at the top of the screen. There you enter the FSE directive followed by:

(NEXT)

The directive uses the position the cursor was in just before you pressed:

(HOME)

If you enter an invalid FSE directive, FSE positions the cursor at the point where the directive becomes unrecognizable. For example, suppose you enter a misspelled form of the QUIT directive.

QUIT

FSE positions the cursor at the Y because that is the point at which it could not recognize the entry.

QUIT

Type the correction over the mistake and press:

(NEXT)

to try again. If you press:

(NEXT)

without making a correction, FSE ignores the incorrect directive and erases the directive line. Check the spelling of the directive and try again.
The FSE command starts the Full Screen Editor. (This FSE command is not the same as the FSE directive of the same name documented in section 4.) The FSE command tells NOS which file is to be edited, and gives other, optional, information. The optional parameters are shown in italics in the following descriptions. The shortest valid abbreviations for the values are underlined.

You can use two formats for the FSE command. The first format is order-independent, that is, you can enter parameters in any order. The format is:

\[ \text{FSE, } \text{FN=filename, } \text{OP=access, } I=input, L=output, IP=procedure, } \text{WF=workfile.directive(s)} \]

The second is order-dependent, that is, you must enter the parameters in the order shown. The format is:

\[ \text{FSE, } \text{filename, access, input, output, procedure, workfile.directive(s)} \]

You can enter the optional FSE parameters in either uppercase or lowercase letters. FSE interprets both forms as uppercase letters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{FN=filename}</td>
<td>Specifies the file you want to edit. filename must be a local file, unless you specify the \text{OP=GET} parameter. If you do not include a filename on the FSE command, FSE either resumes your previous editing session or, if you had no previous editing session, prompts you for a file name.</td>
</tr>
<tr>
<td>\text{OP=access}</td>
<td>Specifies the character set and/or the location of the file to be edited. The following are valid access parameter entries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{DISPLAY}</td>
<td>Specifies the ASCII 64-character set, internally represented in 6-bit display code.</td>
</tr>
<tr>
<td>\text{NORMAL}</td>
<td>Specifies the ASCII 64-character set, internally represented in 6-bit display code (default if your terminal is in normal mode).</td>
</tr>
<tr>
<td>\text{ASCII}</td>
<td>Specifies the ASCII 95-character set, internally represented in NOS 6/12-bit display code (default if your terminal is in ASCII mode).</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>ASCII8</td>
<td>Specifies the ASCII 128-character set, internally represented in 7-bit ASCII code right-justified in a 12-bit byte.</td>
</tr>
<tr>
<td>GET</td>
<td>Accesses the specified file by either getting an indirect access file or attaching a direct access file in write mode.</td>
</tr>
</tbody>
</table>

Both character set and location can be specified as single-letter abbreviations, and must not be separated by commas, for example:

0P=GA or GA

When you specify access, you must also specify a file name.

I=input Specifies an input (directive) file other than the default file INPUT.

L=output Specifies an output (listing) file other than the default file OUTPUT.

IP=procedure Enables you to change the default procedure library from FSEPROC to the file of your choice.

WF=workfile Enables you to specify a work file other than the default file ZZZWORK. This file is not to be used as a permanent file. The permanent file version of your edited file is specified by the FN=filename parameter.

directive(s) Allows you to enter FSE directives within the FSE command itself. This parameter must be preceded by a period. To enter more than one directive on the FSE command, separate them with a semicolon. The directives can use all of the command line. If you have sequence numbers on the right end of command lines, terminate the last directive on the line with the delimiters ;--.
If neither the input file nor output file you specify is assigned to your terminal, FSE executes in batch mode.

NOTE

When FSE executes with noninteractive input (in other words, in batch mode), the input file must be in the ASCII 95-character set format. To increase the efficiency of batch processing, set the undo feature to NO. (For details, refer to the description of the UNDO parameter of the SET directive in section 4).

Before entering the FSE command, you determine the editing mode by entering either the NOS SCREEN or the NOS LINE command. During an editing session, you can change to the other mode of editing by using the SET directive (described in section 4). This directive affects only the editing session during which it is entered. The NOS command you entered before starting FSE is still in effect for subsequent editing sessions, including any editing session that you resume.

For example, suppose you enter the NOS SCREEN command and start FSE, editing file MYFILE. Then, within FSE you use the SET LINE directive to switch to line editing. After line editing for a while, you enter the QUIT directive. The next time you enter the FSE directive without parameters (to resume your FSE editing session), you are returned to file MYFILE in screen mode (your original NOS SCREEN command is still in effect).
# FSE Directives

<table>
<thead>
<tr>
<th>Directive</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive Syntax</td>
<td>4-1</td>
</tr>
<tr>
<td>Abbreviations and Spaces</td>
<td>4-1</td>
</tr>
<tr>
<td>Parameter Order</td>
<td>4-2</td>
</tr>
<tr>
<td>String Delimiters</td>
<td>4-2</td>
</tr>
<tr>
<td>Misspelled Directives</td>
<td>4-3</td>
</tr>
<tr>
<td>Combining Directives</td>
<td>4-3</td>
</tr>
<tr>
<td>Common Parameters</td>
<td>4-4</td>
</tr>
<tr>
<td>ALTER</td>
<td>4-8</td>
</tr>
<tr>
<td>BACK</td>
<td>4-11</td>
</tr>
<tr>
<td>COPY</td>
<td>4-12</td>
</tr>
<tr>
<td>DATA</td>
<td>4-14</td>
</tr>
<tr>
<td>DELETE</td>
<td>4-16</td>
</tr>
<tr>
<td>EDIT</td>
<td>4-21</td>
</tr>
<tr>
<td>FSE</td>
<td>4-23</td>
</tr>
<tr>
<td>GET</td>
<td>4-25</td>
</tr>
<tr>
<td>HELP</td>
<td>4-29</td>
</tr>
<tr>
<td>INSERT</td>
<td>4-32</td>
</tr>
<tr>
<td>LOCATE</td>
<td>4-35</td>
</tr>
<tr>
<td>MOVE</td>
<td>4-41</td>
</tr>
<tr>
<td>PRINT</td>
<td>4-43</td>
</tr>
<tr>
<td>QUIT</td>
<td>4-45</td>
</tr>
<tr>
<td>REPLACE</td>
<td>4-49</td>
</tr>
<tr>
<td>SET</td>
<td>4-56</td>
</tr>
<tr>
<td>TEACH</td>
<td>4-65</td>
</tr>
<tr>
<td>UNDO</td>
<td>4-67</td>
</tr>
<tr>
<td>UNMARK</td>
<td>4-68</td>
</tr>
</tbody>
</table>
FSE directives tell FSE what to do. When screen editing, you enter directives on the directive line. When line editing, you enter directives after the `??` prompt. In both modes, you must press:

`NEXT`

after the directive to begin execution.

**Directive Syntax**

Most directives begin with a verb, followed by qualifiers called directive parameters. (Some directives begin with a special character followed by a verb.)

You can often figure out how to specify a directive by thinking of it as a sentence. For example:

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Directive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locate all occurrences of <em>abc</em>.</td>
<td>LOCATE ALL /abc/</td>
</tr>
<tr>
<td>Move line 12 to just after line 50.</td>
<td>MOVE 12 TO 50</td>
</tr>
<tr>
<td>Delete the next three lines.</td>
<td>DELETE NEXT 3</td>
</tr>
</tbody>
</table>

**Abbreviations and Spaces**

In directives, you can abbreviate words (other than file names) by specifying either the first letter or the first three letters. An entry can use uppercase letters, lowercase letters, or a combination. For example, you can enter `LOCATE` as:

```
L
Loc
locate
```
Although spaces or commas are required between numbers, they are not required between words. Using abbreviations and eliminating unnecessary spaces results in compact entries, as in the following examples.

<table>
<thead>
<tr>
<th>Long Version</th>
<th>Compact Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPY 20 TO 50</td>
<td>C20T50</td>
</tr>
<tr>
<td>MOVE 20 50 TO 100</td>
<td>M20 50T100</td>
</tr>
<tr>
<td>LOCATE ALL WORD/XVAR/</td>
<td>LAW/XVAR/</td>
</tr>
</tbody>
</table>

**Parameter Order**

With few exceptions, you can specify directive parameters in any order. For example, the following directives all locate each occurrence of the word XVAR.

LAW/XVAR/

L/XVAR/AW

LW/XVAR/A

**String Delimiters**

In the preceding directives, slashes serve as delimiters for the string XVAR. However, if a string is the last parameter on a directive line, and the string does not end in a blank, you can omit the closing string delimiter, as, for example, in the directive:

LAW/XVAR

For other valid string delimiters, refer to the string parameter under *Common Parameters* in this section.

**NOTE**

In batch jobs and FSE procedures, do not omit the closing string delimiter.
Misspelled Directives

FSE does not recognize that a directive is misspelled. Instead, it assumes that any directive it does not recognize is abbreviated and reads as parameters any characters following the first. For example, suppose you enter the following misspelled COPY directive.

\texttt{CORY 10 TO 50}

Because FSE does not recognize a directive, it assumes you used the C abbreviation for COPY and it then tries to read the O as a parameter. In this case, there is no COPY parameter that can be abbreviated to O, so FSE displays an error message.

Combining Directives

By separating directives with semicolons, you can enter more than one directive on a line. The following example combines the LOCATE and VIEW directives.

\texttt{L/SUBROUTINE/;V}

If there is an error in the syntax of a directive, FSE stops and displays an error message. It does not execute any subsequent directives.
Common Parameters

Most directives use at least one parameter from the following common set. How to use these parameters with a particular directive is described later in this section. The following table describes the possible values for each parameter.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>direction</td>
<td>Specifies the direction FSE is to move through the file, and the number of times it is to execute the directive. The defaults are forward and 1, respectively. Possible values and their descriptions are:</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>NEXT num</td>
<td>Instructs FSE to move forward through the file, beginning the specified operation on the next line and executing it on num number of lines (when num is greater than 1). When num is 1 (the default setting), the specified operation is executed only once.</td>
</tr>
<tr>
<td>PREVIOUS num</td>
<td>Instructs FSE to move backward through the file, beginning the specified operation on the previous line and executing it on num number of lines (when num is greater than 1). When num is 1 (the default setting), the specified operation is executed only once.</td>
</tr>
<tr>
<td>REPEAT num</td>
<td>Specifies the number of times an operation is to be executed starting at the current line. REPEAT always moves forward. The default setting for num is 1.</td>
</tr>
<tr>
<td>(file)</td>
<td>Specifies a NOS local file name. NOS file names can be seven or fewer alphanumeric characters. The default is the current file. The parentheses are required.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>line</strong></td>
<td>Specifies the line or lines affected by the directive. The default line setting is the current line. Possible values are:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>line number</td>
<td>The number of a particular line within the file.</td>
</tr>
<tr>
<td></td>
<td>In an unsequenced file, line number 1 is the first line of the file, line number 10 is the 10th, and so on.</td>
</tr>
<tr>
<td></td>
<td>In a sequenced file, line number is the sequence number of the line. For example, line number 20 is the line assigned the sequence number 20, rather than the 20th line of the file. (They may be the same, but not necessarily.)</td>
</tr>
<tr>
<td><strong>ALL</strong></td>
<td>All lines in the file.</td>
</tr>
<tr>
<td>direction</td>
<td>One of the direction parameter values:</td>
</tr>
<tr>
<td></td>
<td>NEXT num</td>
</tr>
<tr>
<td></td>
<td>PREVIOUS num</td>
</tr>
<tr>
<td></td>
<td>REPEAT num</td>
</tr>
<tr>
<td></td>
<td>When num is greater than 1, num is the number of lines on which the directive is executed. When num is 1 or unspecified, the directive is executed once.</td>
</tr>
<tr>
<td><strong>CURRENT</strong></td>
<td>The current line, that is, either the line the cursor is on (for screen editing) or the last line displayed (for line editing).</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>FIRST</strong></td>
<td>The first line in the file.</td>
</tr>
<tr>
<td><strong>LAST</strong></td>
<td>The last line in the file.</td>
</tr>
<tr>
<td><strong>line + num</strong></td>
<td>The number of a particular line plus a specified value. For example, in an unsequenced file, 38 + 45 specifies the 83rd line in the file. In a sequenced file, 38 + 45 specifies the 45th line after the line with the sequence number 38 (this may not be the 83rd line). For both file types, C + 10 specifies the 10th line after the current line.</td>
</tr>
<tr>
<td><strong>line - num</strong></td>
<td>The number of a particular line minus a specified value. For example, in an unsequenced file, 83 - 45 specifies the 38th line in the file. In a sequenced file, 83 - 45 specifies the 45th line before the line with the sequence number 83 (this may not be the 38th line). For both file types, L - 1 specifies the next to last line in the file.</td>
</tr>
<tr>
<td><strong>X or Y or Z</strong></td>
<td>Specifies the X, Y, and Z position pointers, which can be used to reference lines by their numbers within your file. If two pointers are specified in a range parameter, the lines referenced by the pointers must be in the same file. The line number you assign to a pointer remains in effect throughout your current editing session, unless you reset the pointer to another line number. Refer to the SET directive for more information on the X, Y, and Z pointers.</td>
</tr>
<tr>
<td><strong>line (file)</strong></td>
<td>Specifies a line from another file. Any of the line parameter values can be followed by a file name. The parentheses are required.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>range</td>
<td>Specifies either a line or a range of lines affected by the directive. The default is the current line. Valid range parameter entries are:</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>line</td>
<td>One of the line parameter values.</td>
</tr>
<tr>
<td>line line</td>
<td>A group of lines delimited by two line parameter values.</td>
</tr>
<tr>
<td>MARK</td>
<td>Lines marked with the F1 MARK key or the SET MARK directive.</td>
</tr>
<tr>
<td>SCREEN</td>
<td>Lines appearing on the current screen (screen mode only).</td>
</tr>
<tr>
<td>string</td>
<td>Specifies a text string. The default string parameter is the last specified string. If a string parameter is the last parameter on a directive, you do not need a closing delimiter. Valid string parameter entries are:</td>
</tr>
<tr>
<td>Value</td>
<td>Meaning</td>
</tr>
<tr>
<td>/text/</td>
<td>Specifies the string text.</td>
</tr>
<tr>
<td>&quot;text&quot;</td>
<td>Specifies the string text.</td>
</tr>
<tr>
<td>'text'</td>
<td>Specifies the string text.</td>
</tr>
<tr>
<td>\text\</td>
<td>Specifies the string text.</td>
</tr>
<tr>
<td>/text1../text2/</td>
<td>Specifies the string beginning with text1 and ending with text2 on the same line and including any text between.</td>
</tr>
</tbody>
</table>

The remainder of this section lists the FSE directives in alphabetical order, shows their formats, and describes their parameters. For a parameter that is part of the common set, refer to one of the following:

- **Common Parameter Index** (inside the back cover of this manual), for lists of possible entries

- **Common Parameters** (discussed earlier in this section), for detailed descriptions
ALTER

Enables you to change lines by entering either a string or one of the modification characters (described later).

Without Parameters

When you are screen editing and you enter ALTER with no parameters, FSE prompts you with:

ALTER WHAT?

You then enter the text or modification character to change the current line. The modification characters are:

<table>
<thead>
<tr>
<th>Character</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
<td>Deletes a character.</td>
</tr>
<tr>
<td>&amp;</td>
<td>Replaces a character with a space.</td>
</tr>
<tr>
<td>!</td>
<td>Erases the current character and any subsequent characters. Anything entered after ! is moved to the end of the shortened line.</td>
</tr>
<tr>
<td>^characters#</td>
<td>Inserts string characters before the character under which the ^ is positioned.</td>
</tr>
</tbody>
</table>

When you enter an alphanumeric character other than those listed here, it replaces the existing character.

When you are line editing and you enter ALTER with no parameters, FSE displays the current line and prompts you for changes, as for example:

```
75 DIMENSION TAB(3))xx
A??
```

You then space over to the position under the character to be edited and use one of the modification characters to make your change.

In this example, you could make the following changes.

```
75 DIMENSION TAB(3))xx
A??    N   )!
```

The line appears as:

```
75 DIMENSION TAB(3)
```
Format

```
ALTER END direction string range QUIET
```

Parameters

**END**

Adds a string at the end of a line. For example,

```
A E/abc/
```

adds the string abc to the end of the current line.

**direction**

Specifies the direction ALTER is to move and the number of times the directive is to be executed. (This is a common parameter. For a list of possible entries, refer to the *Common Parameter Index* inside the back cover of this manual.)

The following ALTER directive:

```
A P 2/##/
```

deletes the first character of the two previous lines.

**string**

Specifies the text or modification characters to change or replace the current line. (This is a common parameter. For a list of possible entries, refer to the *Common Parameter Index* inside the back cover of this manual.)

For a description of the modification characters, refer to *Without Parameters* at the beginning of the ALTER description in this section.

A `~` at the end of an ALTER string tells FSE to change the line, then prompt you for more changes.
range

Specifies the lines to be altered. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

The following ALTER directive:

\[ A \quad A/\^\quad #/ \]

inserts a space at the beginning of all lines in the file.

If you specify a group of lines on an ALTER directive, you are prompted only once. The same corrections are made to all the lines in the group.

A primary use of ALTER during screen editing is to indent blocks of text. For example, the following ALTER directives perform the described function on lines you have previously marked.

<table>
<thead>
<tr>
<th>Directive</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>A M/###/</td>
<td>Deletes the three leftmost characters from all marked lines.</td>
</tr>
<tr>
<td>A M/^\quad #/</td>
<td>Inserts three spaces at the beginning of the marked lines.</td>
</tr>
</tbody>
</table>

QUIET

Instructs FSE not to display the results of the ALTER directive.
BACK

Returns you either to a section of a file you marked with the DATA directive, or to the position where you last entered the BACK directive. The BACK directive does not become operative until you enter the DATA directive. For more information on BACK, refer to the DATA directive in this section.

Format

BACK
Copies lines from one location to another, either within a file or between two files.

**Without Parameters**

If you do not specify parameters, the copied line appears immediately below the original.

**Format**

COPY range (file1) TO line (file2) QUIET

**Parameters**

*range*

Specifies the lines to be copied. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

*(file1)*

Specifies the file containing the lines to be copied. Any NOS file name is valid. The default is the current file.

**TO**

Separates the copied lines from their destination.

*line*

Specifies the line after which the copied lines appear. This can be either a line in the current file or, when combined with the (file2) parameter, a line in another file. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

For example, to copy lines 17 through 25 immediately after line 65, enter:

```
COPY 17 25 TO 65
```
When you are line editing, FSE displays the copied lines with their new line numbers.

```fortran
66 6 IF(.NOT.PARMERR) GO TO 5
67 OPEN(3,FILE='OUTPUT')
68 WRITE(3,* ) COND
69 STOP 'INVALID PARAMETER.'
70 C
71 4 IF (TAB(1).GT.TAB(2) .OR. TAB(2).GT.TAB(3)) THEN
72 COND='INVALID TABS (T1>T2 OR T2>T3).
73 GO TO 6
74 ENDF
```

**NOTE**

When you are screen editing, FSE automatically moves the cursor to the first copied line in its new position in the file. If you specify the (file2) parameter, the cursor is moved to the first copied line in the destination file (file2).

When you are screen editing and use the **COPY** key, it copies before, not after, the line indicated, because **COPY** executes the following directive.

```
C M TO P (COPY MARK TO PREVIOUS)
```

(file2)

Specifies the file (any NOS file name) to which the lines are to be copied. Used only if the destination is other than (file1). For example, the following directive copies all of file X to the end of file Y.

```
C A (X) TO L (Y)
```

To specify the line after which the copied lines are to appear, include the line parameter before the (file2) parameter. For example, to copy lines 10 through 50 of file MYFILE (the current file) to after line 20 of file Y, enter:

```
C 10 50 TO 20 (Y)
```

**QUIET**

Instructs FSE not to display the results of the COPY directive.
DATA

Marks a section of your file for easy reference during an FSE editing session. Once you have marked a section with the DATA directive you can return to that section from a different file by entering the BACK directive (this also applies if your file is in split-screen mode). Thus, you enter the DATA directive only once to mark a section of a file. The BACK directive works in conjunction with the DATA directive, returning you to the last defined DATA reference.

Format

DATA

Example

You are editing file MYFILE, but you would like to edit file FOOT1 briefly and then return to your work on MYFILE. On the page of MYFILE you want to return to, either enter DATA on the directive line or press

(Data)

on the Viking 721 terminal. The message

FILE DATA STORED FOR USE WITH 'BACK'

appears. You can now leave file MYFILE (by entering FSE FOOT1 on the directive line) and begin editing file FOOT1.

NOTE

The DATA and BACK directives are not intended to move from point A to point B within the same file.

When you want to return to MYFILE from file FOOT1, either enter the BACK directive or press

(BACK)

on the Viking 721 terminal. The MYFILE screen at which you entered the DATA directive is displayed (the line on which the cursor was positioned when you entered DATA is now the first line of the screen). If you enter BACK again, you are returned to the position of file FOOT1 at which you first entered BACK.
However, if you then begin editing a third file (file FOOT2), and you enter BACK from file FOOT2, you are returned to file MYFILE, not FOOT1 (unless you specified DATA in FOOT1). The next BACK directive, from MYFILE, returns you to FOOT2. Remember, BACK returns you to the last defined DATA reference.

NOTE

The DATA directive cannot be abbreviated. If you enter D, FSE executes the DELETE command, deleting the line at your present cursor position. If you enter DA, all the lines in your file are deleted.

The BACK directive moves you from your current line in a file (FOOT2) to the line in another file where you executed the DATA directive (MYFILE). If you press \texttt{BACK} a second time, you will return to the line in the first file (FOOT2). Once the DATA directive has marked a line, the BACK directive allows you to easily swap between two files. For more information on BACK, refer to the BACK directive in this section.
**DELETE**

Deletes one or more lines.

**Without Parameters**

If you do not specify any parameters, the current line is deleted.

**Format**

```
DELETE range BLANK WORD IN tab QUIET
```

**Parameters**

`range`

Specifies the lines to be affected by the directive. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

For example, to delete lines 30 through 33, enter:

```
D 30 33
```

In line editing mode, lines 30 through 33 are then printed, showing you the lines you have deleted.

```
30 5 ERR=0
31 PARMERR=.FALSE.
32 CALL GETPARM(PNAME,PVAL,ERR)
33 IF(ERR)4,3,5
```

When you are screen editing, the lines just disappear.

After a DELETE directive, the current line is the line just before the deleted lines. In the preceding example, this is line 29.

When you are screen editing, a quick way to delete a group of lines is to mark the first and last lines of the group using:

```
F1 MARK
```

Then enter:

```
D M
```

and the marked lines are deleted.
DELETE followed by INSERT can be used to replace lines. For example,

D;I

deletes the current line and prompts you to insert new lines in its place.

**BLANK**

Deletes all blank lines, from the current cursor position to the first nonblank line.

In the following example, to delete all the blank lines but one, you position the cursor on the second blank line and enter **DELETE BLANK** (or press F3 DEL).
The following screen results:

Upper Case File MYFILE Lines 1 - 25 Size 293 (Changed)

PROGRAM INDEX

C
C INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY
C FORMATTED MANUAL INDEX. THE PROGRAM RECOGNIZES PRIMARY,
C SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE
C CONTINUATION LINES.
C
C IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAXSL=310,MAXLEN=160)
CHARACTER*40 COND
CHARACTER*12 CN
CHARACTER*10 SLANTS
CHARACTER*7 FNTST
CHARACTER*(MAXLEN) NPLN
CHARACTER*7 PV,PNAME
CHARACTER*7 INP,OUTFILE
CHARACTER*50 PENTRY,ENTRY,ENTRY,ENTRY,ENTRY
LOGICAL PMERR
DIMENSION TAB(3)
C
DATA PENTRY '/' '/SENTRY '/' '/ENTRY '/' '/,ENTRY '/' '/,ENTRY '/' '/,ENTRY '/' '/,ENTRY '/' '/
DATA OUTFILE 'OUTPUT' '/' 'INFILE' '/' 'INPUT' /
DATA TAB (1) ':',TAB(2):'/',TAB(3):'/'

MARK ONECPY DELB LAST UNMARK LOCNXT BOCOL
F3 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL
WORD

Deletes characters within a line without deleting the line. Its exact function depends on where the cursor is positioned.

If the cursor is on a blank, DELETE WORD deletes that blank and any blanks immediately after it.

If the cursor is on an alphanumeric character, DELETE WORD deletes that character, any alphanumeric characters immediately after it, and any blanks immediately after that.

If the cursor is on any other kind of character, only that character is deleted.

For example, you want to delete the first occurrence of the word *provides* on the following screen. Position the cursor at the *p* in *provides*.
Then press:

```
(HOME)
```

and enter:

```
D W
```

The first occurrence of the word *provides* is deleted.

This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide. To access the help file, press HELP.

For information on deleting one character at a time, refer to the *(Dot)* directive later in this section.

**IN tab**

Deletes a specified tab field. For example, if you set tabs to 1, 7, and 72,

```
D IN 1
```

deletes columns 1 through 6 in the current line and shifts the remaining text left six columns.

**QUIET**

Instructs FSE not to display the results of a deletion.

**NOTE**

To delete all lines containing a string, use the following FSE procedures. (These procedures may already be on your system-supplied FSEPROC. For information on FSE procedures, refer to section 6, *Advanced FSE Functions*.)

```
REMOVE
    -- REMOVE DELETES LINES CONTAINING A SPECIFIED STRING.
    SX
    L/\&?/1; -REMOVE 2
    QP

REMOVE2
    -- REMOVE2 IS USED BY REMOVE.
    D; PN; L; -REMOVE2
    VX
    SA/LINES REMOVED FROM FILE/
    QP
```
EDIT

Terminates split-screen mode, returning the file in the upper half of the screen to full-screen length.

Format

EDIT

Example

You are editing file MYFILE and enter

HELP

This accesses the FSE help file and prints the first 12 lines in split-screen mode.

USE "EDIT" TO UNSPLIT SCREEN
Upper Case File MYFILE: Lines 1 - 12 Size 293 (Changed)

PROGRAM INDEX

INDEX ALPHABETIZES AND Sorts A FILE CONTAINING A CORRECTLY
FORMATTED MANUAL INDEX; THE PROGRAM RECOGNIZES PRIMARY,
SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE
CONTINUATION LINES.

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAXLEN=310,MAXLEN=160)
CHARACTER=40, COND

File FSEHELP Lines 1 - 12 Size 868 (Read-Only)

FULL SCREEN EDITOR HELP (for more information see the FSE User's Guide)

FSE directives tell FSE what to do. For help, enter HELP and the directive or its abbreviation. For example: HELP VIEW or HV. You may also abbreviate a parameter. HW, for example, takes you to the NEXT parameter of the VIEW directive. If no help exists for a parameter that you enter, you will be positioned back to this screen. FSE has the following directives:

ALTER BACK COPY DATA DELETE EDIT FSE GET HELP INSERT LOCATE MOVE PRINT QUIT REPLACE SET TEACH UNDO UNMARK VIEW .(DOT) -(DASH) & (MICRO) / (SLASH)
MRCHR ONECOPY DELB LAST UNMARK LOCNT 80COL
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL
To erase the FSE help file from the screen and return to editing file MYFILE only, enter either the EDIT directive or press

(EDIT)

on the Viking 721 terminal. It makes no difference where the cursor is positioned when you enter the EDIT directive.

Refer to the FSE directive description for another way to exit split-screen mode.
FSE

Specifies a different file to edit. The cursor is positioned at the first line of the file. If you were previously editing the file, the line you were working on is moved to the top of screen.

Without Parameters

You must specify a file parameter on the FSE directive.

Format

_FSE file charset GET READ SPLIT_

Parameters

_file_

Specifies the name of the file you want to edit. Any NOS file name is valid.

If you do not specify the GET or READ parameters, FSE uses its latest copy of the file. If the file does not exist, FSE creates a new file with the specified name.

_charset_

Specifies the character set to be used by FSE. Enter one of the following:

<table>
<thead>
<tr>
<th>Entry</th>
<th>Character Set and Internal Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISPLAY</td>
<td>ASCII 64-character set, internally represented in 6-bit display code (default).</td>
</tr>
<tr>
<td>NORMAL</td>
<td>ASCII 64-character set, internally represented in 6-bit display code.</td>
</tr>
<tr>
<td>ASCII</td>
<td>ASCII 95-character set, internally represented in 6/12-bit display code.</td>
</tr>
<tr>
<td>ASCII8</td>
<td>ASCII 128-character set, internally represented in 7-bit ASCII code, right-justified in a 12-bit byte.</td>
</tr>
</tbody>
</table>
GET

Instructs FSE to retrieve a permanent file and refreshes the editor workspace. A GET retrieves indirect access files. ATTACH retrieves direct access files. Any changes made that are not permanent are lost. If there is no permanent copy of the file, FSE reads a local copy.

READ

 refreshes the file image in the editor workspace without a GET or ATTACH operation. Whatever is local (indirect access) or attached (direct access) is read. All changes that are not permanent are lost.

SPLIT

Divides the screen horizontally to allow editing of two different files. The current file is displayed in the upper half of the screen. The file specified with the FSE directive is displayed in the lower half. You can split one file to edit different parts of it. To do this, specify the current file name in the FSE directive. If the two displays overlap the same text, changes are made to both simultaneously.

The SET VIEW SPLIT directive allows you to specify the number of lines in the second portion of the screen. The default is half the screen.
Either displays information on the files you are editing or lists the column numbers.

**Without Parameters**

You must specify either STATUS or ALIGN.

**Format**

`GET STATUS ALIGN`

**Parameters**

**STATUS**

Displays information on the files you are editing. Following is an example of the information you receive when you enter `GET STATUS` in screen mode.

```
PRESS NEXT TO CONTINUE
EDITOR STATUS INFORMATION:

FILES:   NAME | LOCK | CHANGE | CHARSET | NUMBERED | SIZE | POSITION
FILE1   NO | YES  | DISPLAY | NO      | 293    | 1
FSEPROC NO | NO   | DISPLAY | NO      | 405    | 1
FSEHELP YES | NO   | ASCII   | NO      | 867    | 34
(CURRENT) TEXT NO | YES  | ASCII6 | NO      | 103    | 9

TAB COLUMNS: 7 72
SET VIEW WARN: 160 SET UNDO: YES TAB CHARACTER: (NONE)
SET VIEW EDIT: 250 SET JUMP: NO SET WORD FILL: 1 65 5 JUSTIFY: NO

FUNCTIONS: KEY | LABEL | DIRECTIVES      | KEY | LABEL | DIRECTIVES
F1 MARK | SM | SHIFT F1 MKCHR | SW | F2 MOVE | MMTMP | SHIFT F2 ONECPY | CMTMP;UM;SA
F3 INSB | JBP | SHIFT F3 DBL | DB | F4 FIRST | PF | SHIFT F4 LAST | VL
F5 UNDO | UNDO | SHIFT F5 UNMARK | UM | F6 QUIT | QUIT |
F7 LOCATE | L/8?/ | SHIFT F7 LOCNT | LN | F8 132COL | SVC2 | SHIFT F8 80COL | SVC80
F9 MIDDLE | V |
F10 ENDLIN | .END |
F11 SPLIT | .S |
F12 JOIN | .J |
F13 PARA | .F |
F14 COPY | CMTMP |
F15 CENTER | .C |
F16 |
```
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>Local files you have been editing. The current file is prefixed with (CURRENT).</td>
</tr>
<tr>
<td>LOCK</td>
<td>Read-only status. YES means a read-only file: you cannot make changes. NO means you can make changes.</td>
</tr>
<tr>
<td>CHANGE</td>
<td>Specifies whether you made any changes to the file. YES means you have. NO means you have not.</td>
</tr>
<tr>
<td>CHARSET</td>
<td>Character set currently in effect for the specified file. Possible entries are:</td>
</tr>
<tr>
<td>DISPLAY ASCII ASCII8</td>
<td></td>
</tr>
<tr>
<td>NUMBERED</td>
<td>Line number status. YES means it is a sequenced file. NO means it is not a sequenced file.</td>
</tr>
<tr>
<td>SIZE</td>
<td>Total number of lines in the file.</td>
</tr>
<tr>
<td>POSITION</td>
<td>Line number of the current cursor position in the file. For local files not currently being edited, this is the position at which the cursor is located when you reenter the file.</td>
</tr>
<tr>
<td>TAB COLUMNS</td>
<td>Column numbers of the current tabs.</td>
</tr>
<tr>
<td>SET VIEW WARN</td>
<td>Current line length warning limit.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SET UNDO</td>
<td>Current undo status. YES activates the UNDO feature. NO disables it.</td>
</tr>
<tr>
<td>TAB CHARACTER</td>
<td>Current soft tab character. Default is .</td>
</tr>
<tr>
<td>SET VIEW EDIT</td>
<td>Current editing limit.</td>
</tr>
<tr>
<td>SET JUMP</td>
<td>Current auto-indentation status. YES activates the JUMP feature. NO disables it.</td>
</tr>
<tr>
<td>JUSTIFY</td>
<td>Right justify status for .FILL directive. YES activates flush right margin. NO disables it.</td>
</tr>
<tr>
<td>SET WORD FILL</td>
<td>Current margins set for use by the .FILL and .CENTER directives [refer to the . (Dot) directive]. The first two numbers are the left and right margins. The third number is the column in which the first line of a paragraph begins.</td>
</tr>
<tr>
<td>FUNCTIONS</td>
<td>Current labels and directives associated with the programmable function keys.</td>
</tr>
</tbody>
</table>
When screen editing, press:

(NE)X(T)

to return to the screen you were editing.

ALIGN

Writes the column numbers of the current line over the text on the line. The alignment information has no effect on the line over which it is written. The following example shows the information you receive when you enter GET ALIGN.

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
1234567890[1234567890]1234567890[1234567890]1234567890[1234567890]
CHARACTER=10 SLANTS
CHARACTER=12 FMTST
CHARACTER=(MAXILEN) INPLIN

When you are screen editing, the alignment information is written on the current line and stays on the screen until that part of the screen is rewritten.
HELP

Displays the FSE help file, which describes the FSE directives and their parameters.

Without Parameters

If a directive is not specified, the cursor is positioned at the first line of the help file.

Format

HELP directive

Parameters

directive

Specifies the name of a directive. The cursor is positioned at the first occurrence of the directive in the help file.

For example, to locate information on the REPLACE directive, enter:

    H REPLACE

The cursor is then positioned at the description of the REPLACE directive within the help file. You can also abbreviate the directive for which you want help. For example, HELP REPLACE can be entered as:

    HR

If FSE cannot find the help directive you specify, the cursor is positioned at the first line of the help file.
When you enter the HELP directive (or press \texttt{(HELP)}) while screen editing, the screen is split into two equal parts, with the help file displayed on the lower half of the screen.

\textbf{USE "EDIT" TO UNSPLIT SCREEN}

Upper Case File MYFILE Lines 1 - 12 Size 293 (Changed)

\begin{verbatim}
PROGRAM INDEX

INDEX ALPHABETIZES AND Sorts A FILE CONTAINING A CORRECTLY
FORMATTED MANUAL INDEX. THE PROGRAM RECOGNIZES PRIMARY,
SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE
CONTINUATION LINES.

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAKLEN=310,MAKLEN=160)
CHARACTER=60 COND
\end{verbatim}

File FSEPHELP Lines 1 - 12 Size 868 (Read-Only)

\textbf{FULL SCREEN EDITOR HELP} (For more information see the FSE User's Guide)

FSE directives tell FSE what to do. For help, enter HELP and the directive or its abbreviation. For example: HELP VIEW or HV. You may also abbreviate a parameter. HW, for example, takes you to the NEXT parameter of the VIEW directive. If no help exists for a parameter that you enter, you will be positioned back to this screen. FSE has the following directives:

\textbf{ALTERN BACK COPY DATA DELETE EDIT FSE GET}
\textbf{HELP INSERT LOCATE MOVE PRINT QUIT REPLACE SET}
\textbf{TEACH UNDO UNMARK VIEW \texttt{:(DOT)} \texttt{:(DASH)} \texttt{&:(MICRO)} \texttt{/:(SLASH)}}
\textbf{MRKCHR ONECPY DELB LAST UNMARK LOCNXT 80COL}
\textbf{F1 MARK F2 MOVE F3 INSF F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL}
Remarks

When you use the HELP directive while line editing, FSE not only accesses the help file, but also prints several lines of text. You are then positioned in the help file so you can display more text with PRINT directives.

By default the help file is a direct access, public, read-only, permanent file. The default name is FSEHELP from user name LIBRARY. You can, however, assign any file you want as the default help file. To do this, create a local file named FSEHELP and, when the HELP directive is entered (or the HELP key is pressed) your local copy of FSEHELP is used as the default help file.

To exit the help file, either enter the EDIT directive or press EDIT.
**INSERT**

Inserts text.

**Without Parameters**

When you are screen editing and enter the INSERT directive without parameters, you are prompted with the following message.

**INSERT WHAT?**

You then enter the text you want to insert. This text appears as a line after the current line.

When you are line editing and enter the INSERT directive without parameters, you are prompted to enter new lines of text until you enter either a line with a tab character at the end or an empty line (\texttt{NEXT}) only. In the following example, the current line is line 31.

```
?? I
32? inserted line 1
33? inserted line 2
34? inserted line 3
35? \texttt{NEXT} (The user ends the insert.)
??
```

If you want the inserted line to begin at a certain tab, include the appropriate number of tab characters before the text you insert. For example, if tabs are set at columns 7 and 72 and you want the inserted line 32 to begin at column 7, enter:

```
32? \ inserted line 1
```

\ is the soft tab character. Refer to the SET CHAR directive for information on the soft tab character.
Format

_INSERT line PREVIOUS string BLANK WORD

Parameters

line

The lines affected by the insert. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.) The text of the insert (string) appears as a new line following the line you specify, unless you also specify the PREVIOUS parameter.

PREVIOUS

Specifies that you want the insertion before a character or line rather than after.

string

The text you want to insert. When you specify a string, the string is inserted as a single line after the current or specified line. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

NOTE

If you want to insert a string within a line rather than on a separate line, use the .INSERT directive (refer to .(DOT) later in this section).

BLANK

When you are screen editing, this parameter inserts blank lines after the current or specified line (useful for entering large amounts of text). Lines of text are left at the top and bottom of the screen. When you are line editing, this parameter inserts nine blank lines in front of the current line. To remove excess blank lines, position the cursor at the first blank line you want to eliminate and use DELETE BLANK (all subsequent blank lines are deleted also).

You cannot specify both BLANK and WORD.
WORD

Inserts 30 blank characters at the current cursor position. When you are screen editing, this is sometimes more convenient than repeatedly pressing (INSRT). To delete excess blank characters, position the cursor at the first blank character you want to remove and enter:

DELETE WORD

All subsequent blank characters are also deleted.

You cannot specify both BLANK and WORD.
LOCATE

Locates a specified character string.

Without Parameters

If you enter LOCATE without parameters, the last LOCATE string you specify is used. If you have not entered a LOCATE directive, you are prompted to enter the text you want to locate.

Format

LOCATE WORD direction string range IN tab UPPER QUIET

Parameters

WORD

Instructs FSE to search for a word (defined as the specified string when it is contained within either nonalphanumeric characters or blanks).

If you are line editing, it positions the cursor on the line containing the string.

If you are screen editing, it positions the cursor at the first character in the found string. For example, suppose you want to locate the word topic in the following text.

This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the topic-search capability of the HELP or TEACH directive. Be sure your topic is listed in this file.

Press:

(HOME)

and enter:

L W/topic
FSE positions the cursor at the first character of the specified string.

This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the Topic-search capability of the HELP or TEACH directive. Be sure your topic is listed in this file.

Note that FSE passes the word topics in the first line because it is plural. It would not do so, had you not specified WORD.

direction

Specifies the direction in which LOCATE is to move in the file to find the specified string. FSE searches forward by default, beginning at the current cursor position.

(This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

When you specify the NEXT parameter, FSE begins its search at the next occurrence of the string.

When you specify PREVIOUS, FSE searches backward, beginning at the current cursor position.

The number used with the NEXT, PREVIOUS, and REPEAT parameters refers to the number of lines located, not the number of strings. The lines located need not be consecutive. For example,

```
  L N 2 /abc/
```

means locate the next two lines containing abc, no matter how many times abc occurs on each line and regardless of whether or not the second line containing abc immediately follows the first line.

If you do not specify a number,

```
  LOCATE NEXT/abc/
```

finds the next occurrence of abc, and

```
  LOCATE PREVIOUS/abc/
```

finds the previous occurrence of abc (even if it appears on the current line).
For example, you are positioned at line 36 when line editing.

36 This is the first and the last of the located lines

You then enter:

\texttt{L N /the/}

You remain at line 36 because the line contains more than one occurrence of the string \textit{the}.

\textit{string}

Specifies the string you want to locate. (This is a common parameter. For a list of possible entries, refer to the \textit{Common Parameter Index} inside the back cover of this manual.)

The following directive locates the string abc.

\texttt{L/abc}

If the search is successful, LOCATE moves the cursor to the first character of the located string. If the search is unsuccessful, the cursor is not moved and the message \texttt{NOT FOUND} is displayed.

If the line located is on the screen already, the cursor is simply positioned at that line. Otherwise, the screen is rewritten with the located line at the top. If you prefer to display the located line in the middle of the screen, follow the LOCATE directive with a VIEW directive.

\texttt{L/abc;/V}

If you do not specify a string, FSE locates the string on the most recently specified LOCATE directive. If you have not previously entered a LOCATE directive in your editing session, you are prompted with:

\texttt{LOCATE WHAT?}

You then enter the string you want to find.

To save effort when searching for a long string contained on one line, you can use the ellipsis search technique. If, for example, you want to locate the following string:

\begin{quote}
I will inform you next Monday if a meeting is necessary.
\end{quote}

you can enter:

\texttt{L/I/\ldots/ary/}

rather than specifying the entire string. You are then positioned at the first character of the specified string.
range

Specifies the lines in which you want FSE to search for the specified string. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

When you are screen editing and locate more than one occurrence of a string, FSE displays a directory of all the lines affected. For example, if you were to enter:

```
L A/PARAMETER/
```

the screen might display:

```
ENTER LINE NUMBER OR PRESS NEXT
File MYFILE  Displaying located lines
  9  PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
 10  PARAMETER (MSC=50)
 11  PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
 62  COND='INVALID PARAMETER - ' /* FNNAME
 69  STOP 'INVALID PARAMETER.'
```

You then press:

(NEXT)

either to view another page of affected lines or, if there are no more pages, to position the cursor in the file at the last line affected.

If you either enter a line number on the directive line or position the cursor at a line in the directory and then press:

(NEXT)

the cursor is positioned at that line in the file.
IN tab

Locates a specified string appearing within a field bounded by tabs (tab represents the tab field). For example, if tabs are set at columns 5, 20, and 40, the tab fields are:

<table>
<thead>
<tr>
<th>Tab Field</th>
<th>Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 through 4</td>
</tr>
<tr>
<td>2</td>
<td>5 through 19</td>
</tr>
<tr>
<td>3</td>
<td>20 through 39</td>
</tr>
<tr>
<td>4</td>
<td>40 through the end of the line</td>
</tr>
</tbody>
</table>

To locate all occurrences of the string ABC in columns 20 through 39 (tab field 3), you enter:

L A/ABC/IN 3

Refer to the SET directive description for information on setting tabs.

UPPER

Instructs FSE to search the file as if it were all capitalized. For example, if you enter:

L U/the/N 3

FSE might display:

14 The first occurrence
43 THE second occurrence
87 the third occurrence

The UPPER parameter is the default setting for display code files. For ASCII files, you must enter the exact string you want to locate.

QUIET

Instructs FSE not to display the located lines and positions the cursor at the last line located.
Remarks

If LOCATE is unsuccessful from within an FSE procedure, no more directives are read from that procedure line. The procedure continues at the start of the next line in the procedure. You can use this to conditionally execute parts of a procedure (for examples, refer to Conditional Processing in Procedures, section 6).

Examples

The following entries are all valid LOCATE directives.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>L F/abc</td>
<td>Locates first occurrence of abc in the file.</td>
</tr>
<tr>
<td>L\ab/c</td>
<td>Locates the string ab/c.</td>
</tr>
<tr>
<td>L 20 50/abc</td>
<td>Locates all occurrences of abc in lines 20 through 50.</td>
</tr>
<tr>
<td>L/abc/20 50</td>
<td>Locates all occurrences of abc in lines 20 through 50.</td>
</tr>
<tr>
<td>L A/abc</td>
<td>Locates all occurrences of abc in the edit file.</td>
</tr>
<tr>
<td>L/abc/.../xyz/</td>
<td>Locates the text string that begins with abc and ends with xyz on the same line.</td>
</tr>
<tr>
<td>L A/abc/IN 2</td>
<td>Locates all occurrences of abc between the first and second tab (tab field 2).</td>
</tr>
<tr>
<td>L P 3/abc</td>
<td>Locates the previous three lines containing abc. Positions the cursor at the first occurrence of abc on the third line.</td>
</tr>
<tr>
<td>L N</td>
<td>Locates the next line in which the previously specified string occurs.</td>
</tr>
<tr>
<td>L W/boat</td>
<td>Word-oriented search. Finds the next occurrence of the word boat.</td>
</tr>
</tbody>
</table>
**MOVE**

Moves text from one place to another within a file or between two files.

**Without Parameters**

If you do not specify a parameter, nothing happens.

**Format**

\texttt{MOVE range (file1) \textit{TO} line (file2) QUIET}

**Parameters**

\texttt{range}

Specifies the lines to be moved. (This is a common parameter. For a list of possible entries, refer to the \textit{Common Parameter Index} inside the back cover of this manual.)

\texttt{(file1)}

Specifies the file containing the lines to be moved. It can be any NOS file name. The default is the current file.

\texttt{TO}

Separates the lines to be moved from their destination.

\texttt{line}

Specifies the line after which the moved lines will appear. (This is a common parameter. For a list of possible entries, refer to the \textit{Common Parameter Index} inside the back cover of this manual.)

This parameter can designate a line either from the current file or from another file. The default is the last line of the file.
For example, to move lines 45 through 50 immediately after line 20, enter:

\texttt{M 45 50 TO 20}

When you are line editing, FSE displays the moved lines with their new line numbers.

\begin{verbatim}
21 \hspace{1em} READ(PVAL,'(I1)') TAB(3)
22 \hspace{1em} ELSE IF(PNAME.EQ.'SEP') THEN
23 \hspace{1em} READ(PVAL,'(I1)') SEPCNT
24 \hspace{1em} IF(SEPCNT.LT.2 .OR. SEPCNT.GT.5) THEN
25 \hspace{2em} COND='SEP MUST BE 2, 3, 4, OR 5.'
26 \hspace{2em} PARMERR=.TRUE.
\end{verbatim}

When you are screen editing, the cursor is positioned at the first moved line. If you use the F2 \texttt{MOVE} key when screen editing, the lines are moved before, rather than after, the indicated line, because F2 \texttt{MOVE} executes the following directive.

\texttt{M M TO P (MOVE MARK TO PREVIOUS)}

\texttt{(file2)}

Specifies the file to which the lines are to be moved. Used only if the destination is other than (file1). Any NOS file name is valid.

For example, the following directive moves lines 20 through 50 of file MYFILE to the end of file Y.

\texttt{M 20 50 (MYFILE) TO L(Y)}

The default is the current file.

\texttt{QUIET}

Instructs FSE not to display the changes, only the resulting text.
PRINT

Either prints (displays) a range of lines (line editing) or positions the cursor (screen editing).

Without Parameters

If you do not specify a parameter, the current line is printed.

Format

PRINT range QUIET

Parameters

range

Specifies either the lines to be printed (line editing) or the position of the cursor (screen editing). (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

For example, to print the next three lines when line editing, you enter:

P N 3

If you are positioned on line 30, lines 31 through 33 are printed.

31 5 ERR=0
32 PARMERR=.FALSE.
33 CALL GETPARM(PNAME,PVAL,ERR)

To print the current line (line 30) plus the next two, you enter:

P R 3

Lines 30 through 32 are printed.

30 LOGICAL PARMERR
31 5 ERR=0
32 PARMERR=.FALSE.

When you are screen editing, rather than printing the lines, the PRINT directive positions the cursor at the last line of the range you specify.
The following example illustrates the difference between line editing and screen editing when specifying the PRINT directive.

When line editing, if you specify:

```
P 10 15
```
lines 10 through 15 are printed.

```
10   PARAMETER (MSC=50)
11   PARAMETER (MAXILEN=160, MAXSLEN=310, MAXOLEN=160)
12   CHARACTER*40 COND
13   CHARACTER*1 CO,CN
14   CHARACTER*10 SLANTS
15   CHARACTER*12 FMTST
```

When screen editing, if you specify the same directive:

```
P 10 15
```
the cursor is positioned at line 15.

```
CHARACTER*40 COND
CHARACTER*1 CO,CN
CHARACTER*10 SLANTS
CHARACTER*12 FMTST
CHARACTER*(MAXILEN) INPLIN
CHARACTER*7 PVAL,PNAME
CHARACTER*7 INPFILE,OUTFILE
CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
LOGICAL PARMERR
```

When screen editing, think of the PRINT directive as a positioning directive, because it positions the cursor at a specified line. The following PRINT directives may be useful during screen editing.

```
P L   Positions you to the last line of the file.
```

```
P F   Positions you to the first line of the file.
```

```
P n   where n is a line number you specify. This directive positions
     you to line n, which is displayed at the top of the screen.
```

**QUIET**

Instructs FSE not to print the specified lines, but instead to position the cursor at the last line specified.
**QUIT**

Exits FSE or an FSE procedure.

**Without Parameters**

If you enter QUIT without parameters, you exit FSE, changing only the local copies of your files. The exception is when you have attached a direct access file in write mode. In this case, entering QUIT without parameters makes your changes permanent.

**Format**

QUIT REPLACE QUIET UNDO PROC range/command

**Parameters**

**REPLACE**

Instructs FSE to make your changes permanent by defining, replacing, or copying to permanent storage as necessary. If you have created a new file within FSE, use the REPLACE parameter to make it permanent.

The REPLACE and UNDO parameters cannot be included in the same QUIT directive.

**QUIET**

Instructs FSE not to print the file status messages.

**UNDO**

Cancels all changes made during your current editing session. If you specify the UNDO parameter, all changes made since the last time you entered FSE are lost. It also becomes impossible to return to the point at which you stopped FSE during this editing session.

The REPLACE and UNDO parameters cannot be included in the same QUIT directive.

**NOTE**

You must spell out the UNDO parameter.
**PROC range**

Has two uses:

- Used in place of an EOR mark to separate procedures (without the range parameter).

- Used to stop processing the current procedure without exiting FSE (with or without the range parameter).

The range parameter specifies the line number range in which the procedure is to operate (such as QP CL, where C stands for current line and L for last line). Once the procedure can no longer operate within the range (in this case, once the end-of-file has been reached), the range condition fails and QP executes, terminating the procedure.

There is no default value for range. For a complete list of values that can be specified for range, refer to the *Common Parameters Index* inside the back cover of this manual.

When used to separate procedures, QP must be on a line by itself, without the range parameter. For an example, refer to *Creating and Using FSE Procedures* in section 6.

When used to stop processing the current procedure under specified conditions, QP can be used with or without the range parameter. Without the range parameter, QP terminates the procedure when the directives to its left on the same line have successfully executed. (There is no default value for range.)

When QP is used with the range parameter, however, two conditions must be met before the procedure terminates:

- The directives to the left of QP on the same line (if any) must successfully execute.

- The range specified by the range parameter must be exceeded.

The PROC parameter cannot be included with any other parameter (such as REPLACE or UNDO) in the same QUIT directive.

For a discussion of the use of QP in FSE procedures, with examples, refer to *Conditional Processing in Procedures* in section 6.

/command

Performs the function specified by the NOS command you enter. For example, to stop FSE, replace changed files, and reenter FSE, enter:

```
Q R/FSE
```

Anything on the line following the / is considered part of the NOS command.
Remarks

When you exit FSE using the QUIT directive, a message of the following type appears.

**FILE: filename (status)**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>Name of a file you have accessed during your editing session.</td>
</tr>
<tr>
<td>status</td>
<td>May be any of the following.</td>
</tr>
<tr>
<td>LOCAL</td>
<td>Either you have created a file and have not made it permanent (it will disappear when you log off NOS) or you have changed a permanent file and have not made the changes permanent (the changes will not be there the next time you access the file). To make a file (or changes to a file) permanent, enter the QUIT REPLACE directive (QR).</td>
</tr>
<tr>
<td>LOCAL - COULD NOT BE SAVED</td>
<td>The file could not be saved because of a permanent file error or your validation limits: either the file is too long or you have exceeded your allowable number of files.</td>
</tr>
<tr>
<td>NO CHANGES</td>
<td>The file has not been changed.</td>
</tr>
<tr>
<td>PERMANENT</td>
<td>You have replaced the permanent copy of the file with the changed local copy.</td>
</tr>
<tr>
<td>READ-ONLY</td>
<td>You may not change the permanent copy of the specified file.</td>
</tr>
<tr>
<td>NOT REPLACED</td>
<td>The file did not change during the edit session. Therefore, it was not replaced.</td>
</tr>
<tr>
<td>REBUILDING</td>
<td>Informative message indicating FSE is still processing. One of the other status messages will appear on the next line when FSE completes its processing.</td>
</tr>
</tbody>
</table>
For example, if you enter the QUIT REPLACE directive to stop FSE while editing file MYFILE, the following messages might appear.

_FILE_: MYFILE (PERMANENT)
_FILE_: FSEPROC (NO CHANGES) (NOT REPLACED)
_FILE_: FSEHELP (NO CHANGES) (READ-ONLY) (NOT REPLACED)

The PERMANENT message tells you the changes you made to file MYFILE are permanent. This message appears when you use the REPLACE parameter.

File FSEPROC is always one of the files FSE accesses. In this example, the NO CHANGES message means you have not changed file FSEPROC. Therefore, it is not replaced.

File FSEHELP is the online help file available to FSE when you enter the HELP directive or press `[HELP]`. The READ-ONLY message means you cannot make permanent changes to the file.

If you do not want these messages displayed when you stop FSE, include the QUIET parameter.
REPLACE

Replaces one text string with another.

The REPLACE directive works much like the LOCATE directive. The difference is that the REPLACE directive locates the string you specify and then replaces it with another string (that you also specify).

Without Parameters

If you do not specify a parameter, REPLACE uses the last string specified and executes the directive. If you have not previously specified a REPLACE string, you are prompted for the intended text.

Format

\texttt{REPLACE \textit{WORD} direction string1 string2 range}
\texttt{\hspace{1em} \textit{IN} tab \texttt{UPPER} QUIET}

Parameters

\textit{WORD}

Instructs FSE to search for and replace a word (word is defined as string1 when it is contained within either nonalphanumeric characters or blanks). For example, to replace the word \textit{topic} with the word \textit{subject} in the following text:

\begin{quote}
This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the topic-search capability of the HELP or TEACH directive. Be sure your topic is listed in this file.
\end{quote}

press:

\texttt{(HOME)}

and enter:

\texttt{R W/topic/subject/}

FSE replaces the first occurrence of the word \textit{topic} with the word \textit{subject}.

Notice that FSE passed the word topics in the first line, because it is plural. It would not have done so, had you not specified \textit{WORD}. 


direction

The direction in which REPLACE is to move in the file. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

FSE searches forward by default, beginning at the current cursor position.

When you specify NEXT, FSE begins its replacement at the next occurrence of string1.

When you specify PREVIOUS, FSE searches backward, beginning at the current cursor position and skipping the last string1 located.

Using a number greater than 1 with the NEXT, PREVIOUS, and REPEAT parameters specifies the number of lines on which to make the replacement (rather than the number of occurrences to replace). The lines need not be consecutive.

For example:

```
R N 2 /abc/xyz/
```

replaces all occurrences of abc with xyz on the first two lines on which abc is found, beginning with the line on which the cursor is positioned. If the cursor is positioned on line 1, and there are two occurrences of abc on line 1, none on line 2, and one occurrence on line 3, the occurrences of abc on lines 1 and 3 are replaced with xyz.

On the other hand,

```
R N /abc/xyz/ or R N 1 /abc/xyz/
```

replaces the next single occurrence of abc with xyz, no matter how many occurrences of abc there are on the first line containing abc.

```
R C C /abc/xyz
```

replaces all occurrences from one end of the current line to the other.

Examples:

Suppose that the cursor is positioned at the beginning of the following lines.

```
A line of abc,abc,abc.
A second line of def,def,def.
A third line of abc,abc.
```
Press:

\textbf{HOME}

and enter:

\texttt{RN /abc/xyz/} (or \texttt{RN 1 /abc/xyz/})

and you get:

A line of $\text{xyz,abc,abc.}$
A second line of $\text{def,def,def.}$
A third line of $\text{abc,abc.}$

Now enter:

\texttt{RN 2 /abc/xyz/}

and you produce:

A line of $\text{xyz,xyz,xyz.}$
A second line of $\text{def,def,def.}$
A third line of $\text{xyz,xyz.}$

Then, with the cursor positioned on the third line, enter:

\texttt{RC /xyz/abc/}

and the result is:

A line of $\text{xyz,xyz,xyz.}$
A second line of $\text{def,def,def.}$
A third line of $\text{abc,abc.}$

\textit{string1}

The string you want replaced. (This is a common parameter. For a list of possible entries, refer to the \textit{Common Parameter Index} inside the back cover of this manual.)

If you do not specify \textit{string1}, FSE uses \textit{string1} on the most recently specified REPLACE directive. If, however, you have not previously entered a REPLACE directive in your editing session, you are prompted to enter the intended text.
To replace a long string on a line, use the ellipsis search technique. This allows you to replace a long string without typing it out entirely. For example, you want to replace the string:

I will inform you next Monday if a meeting is necessary.

with the string:

No meeting is necessary.

Rather than specifying the entire first string, enter:

R/I/.../ary./No meeting is necessary./

The first string is then replaced with the second.

If FSE cannot find string1, it displays the message NOT FOUND. If FSE cannot find string1 while executing from within an FSE procedure, no more directives are read from this procedure line (if the line contains more than one directive). Execution continues at the start of the next line in the procedure.

string2

The string you want to substitute for string1. (This is a common parameter. For a list of possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

For example, suppose the cursor is positioned at a line containing an error, as in the following sentence:

I will inform you next Monday if a meeting is necessary.

and you want to replace the first i with w, enter:

R/i/w

FSE locates the first line containing i and replaces the first i with w. The following line results:

I will inform you next Monday if a meeting is necessary.

When you are screen editing, if the line affected by REPLACE is on the screen, the cursor is positioned at that line. Otherwise, the screen is rewritten with the affected line at the top. If you prefer to display the affected line in the middle of the screen, follow the REPLACE directive with a VIEW directive, as follows:

R/abc/xyz/ ; V
range

Specifies the lines to be affected by the REPLACE directive. (This is a common parameter. For a list of all possible entries, refer to the Common Parameter Index inside the back cover of this manual.)

When you are screen editing and replace more than one occurrence of a string, FSE displays a directory of all the lines affected. For example, if you were to enter:

R A/PARAMETER/PARAM/

the screen might display:

```
ENTER UNDO OR PRESS NEXT TO END
File MYFILE  Displaying changed Lines
  9   PARAM (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
 10   PARAM (MSC=50)
 11   PARAM (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
 62   COND= 'INVALID PARAM - ' // PNAME
 69   STOP 'INVALID PARAM.'
```

Press:

(NEXT)

either to view another page of affected lines or, if there are no more pages, to position the cursor in the file at the last line affected.

If you enter a line number on the directive line and press:

(NEXT)

the cursor is positioned at that line in the file. If you either enter:

UNDO

or press:

F5 UNDO

the REPLACE operation is undone.
IN tab

Replaces text appearing only in certain tab fields. tab represents a tab field. For example, if tabs are set at columns 5, 20, and 40, the tab fields are:

<table>
<thead>
<tr>
<th>Tab Field</th>
<th>Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 through 4</td>
</tr>
<tr>
<td>2</td>
<td>5 through 19</td>
</tr>
<tr>
<td>3</td>
<td>20 through 39</td>
</tr>
<tr>
<td>4</td>
<td>40 through the end of the line</td>
</tr>
</tbody>
</table>

To replace all occurrences of abc with xyz in columns 20 through 39 (tab field 3), enter:

   R A/abc/xyz/ IN 3

Refer to the SET directive description for information on setting tabs.

UPPER

Instructs FSE to search the file as if it were all uppercase, that is, capitalization is ignored. If, for example, you enter:

   R U/abc/xyz/N3

REPLACE replaces each of the following lines with xyz.

14  ABC
43  Abc
87  abc

The UPPER parameter is always in effect for display code files.

QUIET

Instructs FSE to display the results of the changes without displaying the lines that changed. Positions the cursor at the last line replaced.
# Examples

The following are all valid REPLACE directives.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/abc/xyz</td>
<td>Replaces next occurrence of abc with xyz.</td>
</tr>
<tr>
<td>R A/abc/xyz</td>
<td>Replaces all occurrences of abc in the file with xyz.</td>
</tr>
<tr>
<td>R\ab/c\c/pm</td>
<td>Replaces the string ab/c with the string c/pm.</td>
</tr>
<tr>
<td>R 20 50/abc/xyz</td>
<td>Replaces all occurrences of abc in lines 20 through 50 with xyz.</td>
</tr>
<tr>
<td>R/abc/ ../xyz/1234/</td>
<td>Replaces text string beginning with abc and ending with xyz with the string 1234.</td>
</tr>
<tr>
<td>R/abc/xyz/IN 2</td>
<td>Replaces the next occurrence of abc with xyz in tab field 2.</td>
</tr>
<tr>
<td>R N 3/abc/xyz</td>
<td>Replaces all occurrences of abc with xyz on the next 3 lines on which abc is found (beginning with the current line).</td>
</tr>
<tr>
<td>R/abc///</td>
<td>Deletes the next occurrence of abc.</td>
</tr>
<tr>
<td>R//xyz/</td>
<td>Replaces the previously specified REPLACE string with xyz.</td>
</tr>
<tr>
<td>R</td>
<td>Uses both previously specified strings and performs another REPLACE.</td>
</tr>
<tr>
<td>R/abc/xyz/M</td>
<td>Replaces abc with xyz on marked lines.</td>
</tr>
<tr>
<td>R/abc/xyz/S</td>
<td>Replaces abc with xyz on all lines currently on the screen.</td>
</tr>
</tbody>
</table>
SET

Sets various FSE and file parameters.

Without Parameters

You must enter a keyword after the SET directive.

Format

SET keyword

Parameters

There are many valid keywords you can use with the SET directive. The following list of keywords is in alphabetical order.

`ANNOUNCE/string/`

Enables you to display prompts or messages, usually from within FSE procedures. The string you specify is displayed on the FSE message line before the next input is accepted. A dollar sign ($) cannot be included in this string.

`CHAR character`

Sets the specified punctuation character as the soft tab character. The reverse slant (\) is the default soft tab character.

If you want to specify the semicolon, use SEMI.

If you want to specify the blank character, use BLANK.

If you want no soft tab character (as is often appropriate when screen editing), specify SET CHAR either with no parameter or followed by a semicolon.
**DCOLON value**

Tells FSE how to handle display code colons that appear in an ASCII file. If value is YES, FSE leaves the colons in display code format. If value is NO, FSE changes the colons to ASCII code format.

**FILENAME file**

Changes the name of the current file. Using this parameter, you can change a file and then have FSE copy the changed version to a new file, keeping the original file intact.

**HEADER value**

Tells FSE how to display the title line. If value is YES, FSE displays the entire title line (also the default). If value is NO, FSE abbreviates the title line to the file name.

**INCREMENT number**

Sets the line number increment for lines inserted into BASIC or interactive FORTRAN sequenced files. The default increment is 100. For information on sequenced files, refer to the NUMBER keyword.

**JUMP value**

Enables (value=YES) or disables (value=NO) automatic indentation of the cursor to the first character of the current line (if striking over text) or the previous line (if adding new text). This is useful when entering higher level language programs or other column-dependent data. Default is NO.
KEY number SHIFT string LABEL string

Redefines a programmable function key to execute the directive or
directives you specify with the string parameter.

*number* is a number from 1 through 16 (the numbers of the function keys).

Including the *SHIFT* parameter defines the shifted function key (you can
define up to 32 functions).

To separate directives, use a semicolon. The following SET KEY directive
redefines function key F1 to execute the LOCATE NEXT and VIEW
directives.

```
S K 1/L N;V
```

If you do not include the LABEL and string parameters, the key label is
the same as the directive string. If you do not include the directive string,
but do include the LABEL and string parameters, the label changes but
the directive executed by the key remains the same. The directive string
can be up to 244 characters. The label string can be up to six characters.
For example, the following default function keys for the Viking 721
terminal are set as follows:

```
S K 1/S M/L/MARK/
S K 2/M M T P/L/MOVE
S K S 2/C M T P/L/COPY/
```

Function key F2 *MOVE* can be redefined to move lines after instead of
before the current line by entering:

```
S K 2/M M/
```

You can include blanks in a function key label to make the label more
readable. A good rule is to leave a space before labels of five or fewer
characters.
LINE

Sets line mode for the current editing session. It does not affect other editing sessions or other parts of your terminal session. To set the line mode for your job, rather than for just the current editing session, set it to function either by default or by entering a NOS LINE command before starting FSE. (Refer to section 7, Line Editing.)

While you are editing a file in screen mode, the STOP key on the Viking 721 terminal (or CTRL-T on any terminal) can also be used to set line mode for the current editing session.

MARK range WORD

Sets one or two temporary markers to be used with another directive.

When you are screen editing, the SET MARK directive performs the same function as the F1 MARK key, while the SET MARK WORD directive performs the same function as the shifted F1 MARKCHR key. Refer to section 2, Screen Editing, for an example using the F1 MARK key.

By default, SET MARK marks an entire line or range of lines. You can then refer to these lines in a later directive by using the MARK parameter. For example,

    S M 5 10

marks lines 5 through 10. Later, the directive:

    C M T 50

copies lines 5 through 10 immediately after line 50.

SET MARK is frequently used in screen editing to mark the current line for later copying, moving, and so forth. A single SET MARK directive marks the current line. A second SET MARK directive marks the current line and all lines between the first and second marks.

The WORD parameter has two effects. The first causes characters to be marked instead of lines. The second causes any later operations using the MARK parameter to perform character-oriented operations instead of line-oriented operations. For example, the word character is marked in the following text.

    The character mark causes later operations to affect only characters within lines.

A DELETE MARK directive results in:

    The mark causes later operations to affect only characters within lines.

The UNMARK directive clears any previously set marks.
NUMBER type

Instructs FSE whether to treat a file as sequenced or unsequenced. The types are:

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTO</td>
<td>Instructs FSE to treat the file as if it were unsequenced (default). In line editing, FSE automatically generates line numbers when lines are displayed. These numbers are for reference and are not part of the text of the file.</td>
</tr>
</tbody>
</table>
| BASIC | Instructs FSE to assume the file is sequenced. If you are creating a file and you number the lines, FSE adds zeros to increase the number to five digits and automatically inserts a blank. For example, when you type 10 THE first line, the line is printed as: 00010 THE FIRST LINE. If you don’t number the lines, for example The first line, FSE prints only the text. THE FIRST LINE. If you insert text using the INSERT directive, FSE automatically generates a sequence number. For lines added to the end of a file, it adds 100 (the default increment value) to the last number. For example, assume the following lines are the last two lines in a file. 00010 THE FIRST LINE 00020 THE SECOND LINE. If you position the cursor at line 00020 (the last line) and use the INSERT directive to specify the new line, FSE writes: 00010 THE FIRST LINE 00020 THE SECOND LINE 00120 THE NEW LINE. For lines inserted between existing lines, FSE adds half the value of the preceding line. If you position the cursor at line 00010 in the preceding example and follow the same procedure, FSE prints: 00010 THE FIRST LINE 00015 THE NEW LINE 00020 THE SECOND LINE.
<table>
<thead>
<tr>
<th>type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>FORTRAN</em></td>
<td>The same as BASIC except that it doesn't insert a space between the line number and the first character.</td>
</tr>
<tr>
<td>NONE</td>
<td>Instructs FSE to treat the file as if it were unsequenced. When line editing, FSE displays lines without generating line numbers.</td>
</tr>
</tbody>
</table>

**PROMPT value**

Enables you to specify whether you want the programmable function key prompts to be displayed on the screen. Values can be:

<table>
<thead>
<tr>
<th>value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Instructs FSE not to display programmable function key prompts.</td>
</tr>
<tr>
<td>1</td>
<td>Instructs FSE to display the first eight programmable function key prompts (default).</td>
</tr>
<tr>
<td>2</td>
<td>Instructs FSE to display all 16 programmable function key prompts.</td>
</tr>
</tbody>
</table>

**REWRITE value**

Allows you to set (value=YES) or clear (value=NO) the changed flag for the current file (unless the file is read-only).

The changed status of the file (as shown on the file header) indicates whether the file will be rewritten when you exit FSE.

**SCREEN**

Sets screen editing mode and rewrites the screen if you are already in screen mode.

**TAB col1 col2 col3...col20**

Sets the tab stop at the specified column number (col_n). Default tab settings are 7 and 72. You are allowed up through 20 tab settings. If no column numbers are specified, all tabs are cleared. You cannot add tabs to existing tab settings. For example, if you need to add a tab at column 15 between 7 and 72, enter:

```
S T 7 15 72
```

When you are screen editing, FSE sets a hardware tab at column 1, allowing you to use the key to position the cursor at the beginning of the line. This does not affect the SET TAB values.
UNDO value

Sets the UNDO feature on or off. Values can be YES or NO. YES enables you to use the UNDO directive as described previously in this section. When you specify NO, you cannot use the UNDO directive. However, with the UNDO feature off, massive changes to files use less system resources and are completed more quickly. This is particularly important if you are doing batch processing. The default is YES.

VIEW value

Enables you to change the format of your screen. Valid value entries are:

<table>
<thead>
<tr>
<th>value</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLUMN num</td>
<td>Specifies the number of columns (num) to be displayed. The default is 80 columns. SET VIEW COLUMN is a hardware option and a software option. It tells your terminal to display the number of columns you specify. For example, on a Viking 721 terminal, SET VIEW COLUMN 81 sets the terminal to 132-column mode, and all 132 columns of text are displayed. The minimum allowable value is 10. SET VIEW COLUMN affects only the text displayed, not the FSE header and function key prompt lines.</td>
</tr>
<tr>
<td>EDIT num</td>
<td>Defines a column width (num) of text that can be edited. The number specified is always the right margin and 1 is always the left margin. For example, to limit yourself to editing only columns 1 through 20, enter 20 as the EDIT value. Any column following column 20 will not be affected by succeeding edit functions.</td>
</tr>
<tr>
<td>LINE num</td>
<td>Specifies the number of lines (num) to be displayed. The default is the capacity of your terminal.</td>
</tr>
<tr>
<td>OFFSET num</td>
<td>Changes the leftmost column displayed so you can view wide lines. num represents the column number of the new left margin. The maximum allowable value for num is 171 (the maximum line length within FSE is 250 characters). To return to the default column range of 1 through 72, enter:</td>
</tr>
</tbody>
</table>

S V O 1
<table>
<thead>
<tr>
<th><strong>value</strong></th>
<th><strong>Function</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPLIT num</td>
<td>Specifies the number of lines (num) used for the bottom half of a split screen edit. The default is one-half the capacity of your terminal.</td>
</tr>
<tr>
<td>WARN num</td>
<td>Specifies a line length limit. The default limit is 160. If, in the course of directive processing, a line is encountered that exceeds the SET WARN limit, directive processing stops and a warning message is displayed.</td>
</tr>
</tbody>
</table>

Refer to *Changing Your Screen's Format* in section 6 for more examples of SET VIEW directives.

**WORD value**

The SET WORD directive enables you to set character attributes and specify margins. Valid value entries are:

<table>
<thead>
<tr>
<th><strong>value</strong></th>
<th><strong>Function</strong></th>
</tr>
</thead>
</table>
| CHAR character | Defines the character attribute of the character you specify as alphanumeric or punctuator. The directive reverses the current attribute of the indicated character and issues a status message. A space cannot be redefined. It is treated as a filler and punctuator for the DELETE WORD option. The semicolon can be redefined using the directive: 

```
S W C SEMI
```

The character attribute value affects the UPPER and WORD options of the LOCATE and REPLACE directives, the WORD option of the DELETE directive, and the &W micro symbol. |
value | Function
---|---
The UPPER option of the LOCATE and REPLACE directives accepts the following pairs of lowercase to uppercase mappings (provided both characters have been defined by a SWC directive as alphanumeric).
\[ \begin{array} \{ \{ \\
\} \} \\
\\& \\
\_ \\
\_ \\
\end{array} \]

\_FILL margin1 margin2 margin3 value
Sets margins other than the default settings (1, 65, and 5) for use with the .CENTER and .FILL directives. The first entry, margin1, sets the left margin. Margin2 sets the right margin. Margin3 sets the paragraph indentation. value can be YES or NO and specifies if the right margin is to be justified on the .FILL directive. Refer to section 5, Sample Screen Editing Session, for examples of word processing functions. For information on the .CENTER and .FILL directives, refer to .(DOT) later in this section.

X line \_WORD
Y line \_WORD
Z line \_WORD
Sets the X, Y, or Z pointer to the specified line value. These pointers can be used in any directive in which a line parameter is allowed. If two pointers are specified in a range parameter, the lines the pointers reference must be in the same file. These pointers are permanent (as compared with those set by the MARK function) but can be reset at any time.

The WORD parameter sets the pointer to a character position rather than a line value. Any subsequent directives that use a pointer directive are character-oriented rather than line-oriented. Refer to the SET MARK directive for more information.
TEACH

Provides a practice file named FSTEACH on which you can try some of the FSE operations. If you have a Viking 721 terminal, the file also includes a tutorial to guide you through the basic editing functions.

If your site has defined terminal-specific tutorial files, you can also use the TEACH directive.

Without Parameters

If you enter TEACH with no parameter specified, the cursor is positioned to the first line of the FSTEACH file.

Format

TEACH parameter

Parameters

The parameters are titles of topics. When you specify a parameter (applicable only to Viking 721 terminals), the cursor is positioned at the first occurrence of the topic in the FSTEACH file. If you enter an unrecognized parameter, the cursor is positioned at the beginning of the FSTEACH file. Valid parameters are:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKSPACE</td>
<td>KEYS</td>
</tr>
<tr>
<td>BKTAB</td>
<td>LOCATE</td>
</tr>
<tr>
<td>BKW</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>CENTER</td>
<td>MARK</td>
</tr>
<tr>
<td>COPY</td>
<td>MOVE</td>
</tr>
<tr>
<td>CURSOR</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>DLETE</td>
<td>PARA</td>
</tr>
<tr>
<td>SHIFTDL</td>
<td>QUIT</td>
</tr>
<tr>
<td>FWD</td>
<td>REPLACE</td>
</tr>
<tr>
<td>HOME</td>
<td>SHIFT</td>
</tr>
<tr>
<td>INSRT</td>
<td>TAB</td>
</tr>
<tr>
<td>SHIFTIN</td>
<td>UNDO</td>
</tr>
<tr>
<td>JOIN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WORDPRO</td>
</tr>
<tr>
<td></td>
<td>F1</td>
</tr>
<tr>
<td></td>
<td>SHIFTF1</td>
</tr>
<tr>
<td></td>
<td>F2</td>
</tr>
<tr>
<td></td>
<td>SHIFTF2</td>
</tr>
<tr>
<td></td>
<td>F5</td>
</tr>
<tr>
<td></td>
<td>F6</td>
</tr>
<tr>
<td></td>
<td>F7</td>
</tr>
<tr>
<td></td>
<td>SHIFTF7</td>
</tr>
<tr>
<td></td>
<td>F12</td>
</tr>
<tr>
<td></td>
<td>F13</td>
</tr>
<tr>
<td></td>
<td>F15</td>
</tr>
</tbody>
</table>
Remarks

To return to the file you were editing, press:

(EDIT)

or enter EDIT on the directive line.

Unlike the HELP file, the FSTEACH file is not protected. Its purpose is to teach you how various features work, and you are encouraged to change it as much as you like.

The tutorial accessed for the Viking 721 terminal does not cover every feature of FSE. Its purpose is to acquaint you with the basics of screen editing.
UNDO

Cancels changes made to the current file.

Format

UNDO

Remarks and Examples

Successive UNDO directives work backward through the file to restore it to previous conditions. For example, suppose you made changes to the current file in the following order.

1. Replaced all a’s with b’s.

2. Moved the first three lines of the file to the end of the file.

3. Changed a line of text by overtyping the correction.

The first time you enter UNDO, the changed line of text is restored to its original form.

The second time you enter UNDO, the three lines now at the end of the file are returned to the beginning of the file.

The third time you enter UNDO, the b’s are restored to a’s.

UNDO can undo your changes if you exit FSE using the QUIT or QUIT REPLACE directives. Just enter the FSE command without parameters and enter UNDO as many times as needed.

The UNDO directive provides an element of security. If you can’t quite recall how a directive works, you can try it out. If you don’t like the results, undo them.

To unmark characters or lines, refer to the UNMARK directive.
**UNMARK**

Cancels marks you have set on characters or lines of text. Only the UNMARK directive can cancel marks. The UNDO directive cancels previous operations but does not cancel marks.

**Format**

`UNMARK`

**Remarks**

- The cursor need not be positioned on the marked (highlighted) text when you enter the UNMARK directive.

- After the marks are cancelled, the message

  `MARKS CANCELLED`

  appears on the message line.

- For information on setting marks, refer either to the SET MARK directive in this section, or to F1 `MARK` under *Programmable Function Keys* in section 2.


**VIEW**

Allows you to view a group of lines.

**Without Parameters**

If you do not specify a parameter while line editing, the four preceding lines, the current line, and the four succeeding lines are displayed. If you do not specify a parameter while screen editing, the current line is centered vertically on the screen.

**Format**

```plaintext
VIEW line direction SCREEN HOME
```

**Parameters**

*line*

Specifies the line you want to view. (This is a common parameter. For a list of possible entries, refer to the *Common Parameter Index* inside the back cover of this manual.)

*direction*

Specifies the direction you want to view. The direction parameter can only be NEXT or PREVIOUS (described in *Common Parameters*, earlier in this section).

When you are line editing, the *VIEW* directive enables you to look at a number of lines at once. The following are valid line mode *VIEW* directives.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Displays the current line, the four preceding lines, and the four succeeding lines.</td>
</tr>
<tr>
<td>VN</td>
<td>Displays the current line and the next eight lines.</td>
</tr>
<tr>
<td>VP</td>
<td>Displays the previous eight lines and the current line.</td>
</tr>
</tbody>
</table>

Successive *VIEW NEXT* or *VIEW PREVIOUS* directives page through the file.
**SCREEN**

Available only when screen editing. Enables you to view the previous or next screen.

**HOME**

Available only when screen editing. Moves the cursor to the FSE directive line without changing your view of the file text.

**Examples**

When you are screen editing, VIEW is used to position text on the screen. The following are valid screen mode VIEW directives.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Vertically centers the current line on the screen.</td>
</tr>
<tr>
<td>VN</td>
<td>Positions the current line at the top of the screen. Same as the <strong>UP</strong> key.</td>
</tr>
<tr>
<td>VP</td>
<td>Positions the current line at the bottom of the screen. Same as the <strong>DOWN</strong> key.</td>
</tr>
<tr>
<td>V NS</td>
<td>Moves forward one screen. Same as the <strong>FWD</strong> key.</td>
</tr>
<tr>
<td>V PS</td>
<td>Moves backward one screen. Same as the <strong>BKW</strong> key.</td>
</tr>
<tr>
<td>VH</td>
<td>Moves the cursor to the directive line. Same as the <strong>HOME</strong> key.</td>
</tr>
</tbody>
</table>
. (DOT)

Performs word processing functions according to the specified parameter.

**Format**

`parameter`

**Parameters**

**CENTER**

Centers the current line horizontally within preset margins. The default margin settings are 1 and 65. Use the SET WORD FILL directive to change these margins.

**DELETE**

Deletes the current character.

**END**

Moves the cursor to the end of the current line.

**FILL**

Adjusts the words or sentences within a paragraph of text to bring line lengths as close as possible to preset margins. A paragraph of text is a group of lines that does not contain a blank line. Margin defaults are 1, 65, and 5. Use the SET WORD FILL directive to change these margins.
**INSERT**

 Inserts one blank character before the current cursor position.

**INSERT/STRING**

 Inserts a string before the current cursor position.

**JOIN**

 Combines the current line with the line following it.

**POS n**

 Moves the cursor position to column n of the current line.

**SPLIT**

 Divides one line into two. The line is split at the cursor position.

**NOTE**

 During line editing, only the .CENTER and .FILL directives function visibly as indicated. The other directives do not function visibly; you see the results when the file is listed. For this reason, they are not useful for line editing. For more information on word processing functions in line editing, refer to section 7, *Line Editing.*
- (DASH)

Calls an FSE procedure. An FSE procedure is one or more directives in a named record in a file. More information on FSE procedures follows the parameter descriptions.

Format

-procname (file)

Parameters

procname

The name of the FSE procedure you want to execute.

(file)

Calls a procedure from a local or permanent file other than the default file FSEPROC. You always have an FSEPROC file. If there is no local file named FSEPROC, a NOS GET command is executed. If there is no indirect access FSEPROC file, a system default FSEPROC file is retrieved from the user name LIBRARY.

To call procedure FIND from local file PROCFIL, enter:

-FIND (PROCFIL)

FSE goes to file PROCFIL and executes the FIND procedure.
Remarks

An FSE procedure must begin with its name alone on the first line, followed by one or more lines of FSE directives. The procedure must then end with either an end-of-record (EOR) line or a QUIT PROC directive. (You cannot leave comment lines between procedures.) For example, the following two procedures delete all lines containing a specified string.

```
DELL
S A/DELETE WHAT?/
L F/&?;/ -DA
QP
DA
D;L; -DA
(EOR)
```

Assuming these records are in your FSEPPROC file, you can call the first procedure by entering:

```
-DELL
```

The procedure then prompts you with DELETE WHAT?. You enter a string and all lines in the current file containing that string are deleted.

Each directive in a procedure is executed in sequence. If a directive attempts to position the cursor outside the current file or to locate a string that does not exist, FSE stops executing that line of the procedure and continues with the next line. FSE returns to your editing session whenever it encounters (EOR) or a QUIT PROC directive.

Procedure calling is only one level deep. That is, the - directive jumps to the named procedure, terminating the execution of any current procedure.

The procedure named STARTUP in FSEPPROC is executed each time you start FSE, but not when you resume a previous session. You must create your own STARTUP procedure.
When certain two-character sequences, called micros, are in FSE procedures or programmable function key strings, FSE interprets them in a particular way. They are not interpreted when they are entered as directives or when they are in your files.

<table>
<thead>
<tr>
<th>Micro</th>
<th>Interpreted as</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;C</td>
<td>Column number of the current character position beginning at 1.</td>
</tr>
<tr>
<td>&amp;F</td>
<td>Name of the current file.</td>
</tr>
<tr>
<td>&amp;L</td>
<td>Number of the current line beginning at 1.</td>
</tr>
<tr>
<td>&amp;T</td>
<td>Current terminal type (721, 722, VT100, Z19, and so forth).</td>
</tr>
<tr>
<td>&amp;W</td>
<td>The word on which the cursor is positioned, or, if the cursor is not positioned on a word, the next word to the right.</td>
</tr>
<tr>
<td>&amp;Z</td>
<td>The name of the current workfile, ZZZWORK by default, unless specified on the initial FSE command.</td>
</tr>
<tr>
<td>&amp;n</td>
<td>The nth parameter of a procedure call, for example, &amp;2. (In a procedure, a parameter consists of either a series of nonblank characters or a string.)</td>
</tr>
<tr>
<td>&amp;?</td>
<td>A prompt for you to enter input. (Your input replaces the &amp;?).</td>
</tr>
<tr>
<td>&amp; &amp;</td>
<td>&amp;</td>
</tr>
</tbody>
</table>
For example, suppose you have a procedure in FSEPROC defined as:

```
FCOMP
\FTP$5,I=\&F,L=0.
QP
```

To compile the current file as a FORTRAN 5 program, you enter:

```
-FCOMP
```

For added convenience, the procedure can be assigned to a programmable function key. To define the F9 key as -FCOMP, enter:

```
S K 9 /-FCOMP/L/FORT/
```

Whenever you press:

```
F9 FORT
```

the current file is compiled as a FORTRAN 5 program (FCOMP).

Procedure parameters are taken from the directive that calls the procedure. A parameter is a consecutive sequence of nonblank characters or a string. For example, in the following procedure call:

```
-XYZ /hi there/ bye now
```

micro &1 within procedure XYZ is replaced by /hi there/ &2 is replaced by bye. &3 is replaced with now.

Refer to section 6, Advanced FSE Functions, for more examples of FSE procedures.

**NOTE**

If you use a procedure to redefine a function key with a micro, the ampersand contained in the micro must be written twice. At the time the procedure is executed, the double ampersand is reduced to a single ampersand and stored in the function key. When the function key is pressed, the single ampersand and letter are identified as the correct micro.

Failure to double the ampersand in the procedure results in the micro being processed at start up time rather than when the function key is pressed (that is, you will have redefined the key incorrectly).
-- (COMMENT)

Enables you to include comments following FSE directives.

Format

-- comment

Example and Remarks

comment is the remark you want to make after an FSE directive, for example:

```
L L Z
   -- Locate last two procedures
S A/LAST TWO OF WHAT?/
   -- Prompt user
L L P 2/?
   -- Locate specified string
Q P
```

These comments have no effect.

NOTE

Comments cannot appear on the line containing the procedure name, the QUIT PROC directive, or the (EOR) line.
/ (SLASH)

Exits FSE and executes the characters following the slash as a NOS command.

NOTE

Some NOS commands will not work with the / directive. These include LIB, NOSORT, RUN, the -procname format of the BEGIN command, and primary file editing commands (refer to the NOS Version 2 Reference Set, Volume 3).

Format

/command

Examples and Remarks

/command is the NOS command you want to execute. For example, to enter the NOS CATLIST command while you are editing a file, enter:

/CATLIST

To reenter your editing session at the point you entered the NOS command, enter the FSE command with no parameters.

FSE

If the / directive is used to execute a NOS procedure that ends with the following command, the procedure automatically reenters when it is finished.

REVERT,EX.FSE.

The / directive is simply shorthand for the QUIT directive with a string parameter. That is,

/command

is equivalent to:

Q/command

You can use the Q/command format to specify other QUIT parameters. For example,

QR/FSE

replaces all changed files and restarts FSE.
Sample Screen Editing Session

Starting FSE .......................................................... 5-2
Copying Lines Between Files ....................................... 5-3
Word Processing ....................................................... 5-8
Changing the Lines Displayed ...................................... 5-13
Stopping FSE .......................................................... 5-14
Restarting FSE ......................................................... 5-15
In this section, sample files will be edited using some of the advanced screen editing functions, including:

- Copying lines between files using split-screen editing.
- Performing word processing functions.
- Changing your screen's format.

The editing session does not include all the advanced functions. For a comprehensive description, refer to section 6, *Advanced FSE Functions*.

**NOTE**

For each task, sample display screens show you how a hypothetical file looks before and after editing. The sample files are not released with the system. You must create your own files if you want to perform the tasks in the examples.
Starting FSE

Suppose you want to edit file MYFILE. To start FSE and get your file out of permanent storage, enter:

FSE,MYFILE,G

The file is displayed on the screen.

Notice that the label for function key F6 is different from that described in section 2. The default setting:

F6 QUIT

has been redefined to include the shifted F6 function QUIT REPLACE, abbreviated QR. (Redefining programmable function keys is described in section 6.)
Copying Lines Between Files

To copy lines from file MYFILE to file PARTS, use split-screen editing.

First, display file PARTS on the lower half of the screen by pressing:

\(\text{HOME}\)

and entering the FSE directive:

\(\text{F PARTS A S}\)

A specifies the ASCII 95-character set, and S specifies a split screen. The following screen results.

---

Upper Case File MYFILE: Lines 1 – 12 Size 293 (No Changes)

| C | INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY |
| C | FORMATTED MANUAL INDEX, THE PROGRAM RECOGNIZES PRIMARY, |
| C | SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE |
| C | CONTINUATION LINES. |
| C | IMPLICIT INTEGER (A-Z) |
| C | PARAMETER (PRM=1, PRMC=2, SEC=3, SECC=4, TER=5, TERCC=6) |
| C | PARAMETER (MSC=50) |
| C | PARAMETER (MAXILEN=160, MAXSLEN=310, MAXOLEN=160) |
| C | CHARACTER=40, COND |

File PARTS Lines 1 – 3 Size 3 (No Changes)

---

This file contains a part of another file copied directly from the other file. The following text is taken from file MYFILE:

---

MRKCHR ONECPY DELB LAST UNMARK GR LOCNXT 80COL
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL

---
Then, position the cursor at the first line of the range to be copied.

```
Upper Case File: MYFILE  Lines 1 - 12 Size 293 (No Changes)

PROGRAM INDEX

INDEX ALPHABETIZES AND Sorts a FILE containing a correctly
formatted MANUAL INDEX. The PROGRAM recognizes PRIMARY,
SECONDARY, and TERTIARY ENTRIES as well as their respective
CONTINUATION LINES.

Implicit Integer (A-Z)
PARAMETER (PRM=1, PRMC=2, SEC=3, SECC=4, TER=5, TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160, MAXSLN=310, MAXOLEN=160)
CHARACTER*40: COND

File: PARTS  Lines 1 - 3 Size 3 (No Changes)

This file contains a part of another file copied directly from
the other file. The following text is taken from file MYFILE:

```

```

Press:

F1  MARK

FSE highlights the marked line.

Implicit Integer (A-Z)
Then, move the cursor to the last line of the range to be copied.

Press:

F1  MARK

again and FSE highlights the range of lines marked.
Next, move the cursor to the point in file PARTS at which you want the lines from file MYFILE to be inserted.

This file contains a part of another file copied directly from the other file. The following text is taken from file MYFILE:
Press:

\[ \text{\textbf{F2} \ ONECOPY} \]

to insert the lines in file PARTS.†

---

PROGRAM INDEX

INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY
FORMATTED MANUAL INDEX. THE PROGRAM RECOGNIZES PRIMARY,
SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE
CONTINUATION LINES.

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAXSLEN=310,MAXOLEN=160)
CHARACTER*40 : COND

File PARTS Lines 1 - 9 Size 9 (Changed)

This file contains a part of another file copied directly from
the other file. The following text is taken from file MYFILE:

IMPLICIT INTEGER (A-Z)
PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
PARAMETER (MSC=50)
PARAMETER (MAXLEN=160,MAXSLEN=310,MAXOLEN=160)
CHARACTER*40 : COND

MRCHR ONECOPY DELB LAST UNMARK QR LOCNXT 8BCOL
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL

To return to editing file MYFILE only, either press:

\[ \text{EDIT} \]

or enter the EDIT directive.

† After shifted \textbf{F2 ONECOPY} is pressed and the marked lines are copied, the
marks are automatically unmarked. To copy the same marked text to more
than one location without having to re-mark the text after each copy,
use \textbf{F14 COPY} instead of shifted \textbf{F2 ONECOPY}. For more information on all
16 programmable function keys on the Viking 721 terminal, refer to section
2.
Word Processing

This editing example requires the use of function key prompts that contain word processing functions. To display the additional prompts, press:

(HOME)

and enter:

S  P  2

which stands for:

SET PROMPT 2

FSE displays all 16 function key prompts.
To edit a permanent file called TEXT, created in the ASCII 95-character set, you press:

```
(HOME)
```

and enter:

```
F TEXT A G
```

File TEXT  Lines 1 - 25  Size 103  (No Changes)

This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide.

This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the topic-search capability of the HELP or TEACH directive.

(TOPICS)  (TOPIC)

Study Guide: Directory of Topics

- **DIRECTIVE**: How directives are processed
- **FUNC**: Using function keys
- **SETKEY**: How to redefine function keys
- **RANGE or RANGES**: All the syntax options for range parameters
- **PROC or PROCs**: How to make procedures
- **WORD**: Word processing
- **GLOBAL**: Global (menu-driven). Searching
- **FORMAT**: How to change screen format

MRKCHR  ONECPY  DELB  F1  MARK  F2  MOVE  F3  INSB  F4  FIRST  F5  UNDO  F6  QUIT  F7  LOCNXT  80COL

To insert a paragraph between the first and second paragraphs, position the cursor between them and press:

F3 [INS]

This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide.

This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the topic-search capability of the HELP or TEACH directive.

FSE inserts blank lines over which you can type your new paragraph.
Type the new paragraph.

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

Position the cursor anywhere in the new paragraph and press:

F13 PABA

to ensure that the lines conform to the boundaries set by the SET WORD FILL directive (defaults are 1, 65, 5, and NO).

To delete the unused blank lines, press:

F3 DELR

---

This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide.

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

This document is organized by topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, you can use the topic-search capability of the HELP or TEACH directive.

(TOPICS) (TOPIC)

Study Guide: Directory of Topics

DIRECTIVE

FUNCTION

SETKEY

RANGE or RANGES

MRKCHR ONECOPY DELB LAST UNMARK QR LOCNXT 80COL


To enter a heading above the new paragraph, position the cursor at the first line of the new paragraph.

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

Press:

(INS)

twice. Then enter the heading.

Paragraph Number 2

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

To center this heading, position the cursor anywhere on the heading line.

Press:

F15 CENTER

Paragraph Number 2

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

To return the screen to displaying only the first line of programmable function key prompts, press:

(HOME)

and enter:

S P 1
Changing the Lines Displayed

You might prefer to display a smaller number of lines on the screen than the default number. For example, to limit the screen to only 16 lines, including the directive line, message line, file header, and function key prompts, press:

HOME

and enter the SET VIEW LINE directive.

SVL 16

The first screen for file TEXT would then appear as:

File TEXT. Lines 1 - 11 Size 108 (Changed)

This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide.

Paragraph Number 2

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

MRKCHR ONECOPY DELB LAST UNMARK QR LOCNXT 80COL

The remaining space on the screen is left blank and is not used by FSE.

Note that the SVL directive enforces a minimum of 10 lines.
Stopping FSE

To stop FSE and make the changes to files TEXT and PARTS permanent, enter the QUIT REPLACE directive by pressing:

\[ \text{F6} \]

The following messages appear.

- FILE: MYFILE (NO CHANGES) (NOT REPLACED)
- FILE: PARTS (PERMANENT)
- FILE: TEXT (PERMANENT)
- FILE: FSEPROC (NO CHANGES) (NOT REPLACED)
Restarting FSE

During a terminal session, you can return to editing a file at the exact spot you left it by restarting FSE. For example, to return to sample file TEXT, enter:

FSE

The screen appears just as you left it when you changed the number of lines displayed.

You can then continue editing. For example, to delete the paragraph heading, position the cursor on the heading line and press:

(DELETE)

Press:

(DELETE)

again to remove the extra blank line. The following screen results.
This document provides information in addition to that available in the help file. You should read the entire help file before using this study guide.

To access the help file, press HELP or enter the HELP directive described in the FSE manual. Further help is available in this file.

MRKCHR ONECPY DELB LAST UNMARK QR LOCNXCT 80COL
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL

To stop FSE and make the change to file TEXT permanent, either press:

(HOME)

and enter QR, or (if you have redefined it) press:

(←) F6 (QR)
Advanced FSE Functions

Editing Two Files at the Same Time .............................................. 6-2
Creating and Using FSE Procedures ........................................... 6-4

SET ANNOUNCE Directive ......................................................... 6-6
Micros .................................................................................. 6-7
 Specifying the Current Column Number (&C) ............................. 6-7
 Specifying the Current File (&F) ............................................. 6-8
 Specifying the Current Line (&L) ............................................ 6-8
 Specifying the Current Terminal Type (&T) ............................... 6-9
 Specifying the Current Word (&W) .......................................... 6-10
 Specifying the Current Workfile (&Z) ...................................... 6-10
 Specifying the n-th Parameter of a Procedure Call (&n) .......... 6-11
 Entering Parameters Interactively (&?) .................................... 6-11
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Conditional Processing in Procedures ....................................... 6-13
 Procedure Looping .................................................................. 6-13
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 Specifying the Number of Lines Displayed ............................... 6-26
 Specifying the Number of Columns Displayed ......................... 6-27
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  Split-Screen Editing ................................................................ 6-27
 Specifying the Number of Columns for Editing ........................ 6-27
 Changing the Line Length Limit .............................................. 6-28
 Changing the First Column Displayed ..................................... 6-28
This section describes the following advanced features of FSE.

- Editing two files at the same time.
- Creating and using FSE procedures. (You should be familiar with the directives before attempting to create FSE procedures.)
- Redefining programmable function keys.
- Labeling programmable function key prompts.
- Changing your screen's format.

NOTE

For each task, sample display screens show you how a hypothetical file looks before and after editing. The sample files are not released with the system. You must create your own file if you want to perform the tasks in the examples.
Editing Two Files at the Same Time

In screen editing mode, FSE allows you to simultaneously display two files or two parts of one file. To do so, you must enter the FSE directive with the SPLIT parameter. For example, suppose you are editing file MYFILE, and you also want to edit permanent file TEXT in ASCII mode. Enter:

```
F TEXT A G S
```

FSE splits the screen, displaying file TEXT in the bottom half of the screen in the ASCII 95-character set.

You can edit and page through the two files independently of each other. For example, if the cursor is positioned in the MYFILE text area and you press \textbf{FWD}, only file MYFILE is advanced one page.

This document is intended to provide background information to add to the body of knowledge provided by the Help file. You should read and understand the entire Help file as a prerequisite to using this study guide.

To access the Help file, press HELP or enter the HELP directive described in the FSE manual. Further HELP is available in this file.

This document is simply organized as topics, like the help file. If you assign this file as either FSEHELP or FSTEACH, then you can use the:

```
MARKCHR ONECPY DELB LAST UNMARK LOCNX 80COL
F1 MARK F2 MOVE F3 INSB F4 FIRST F5 UNDO F6 QUIT F7 LOCATE F8 132COL
```
To display different parts of the same file, specify the name of the current file on the FSE directive with the SPLIT parameter. For example, to display different parts of file MYFILE at the same time, enter:

```
F MYFILE S
```

FSE splits the screen, showing the first page of file MYFILE on the bottom half of the screen. Changes you make to one copy of the file are made simultaneously to the other.

You can page through each copy independently by positioning the cursor in the copy you want to edit. In the sample screen, the first page of MYFILE is on the top half; another part of file MYFILE is on the bottom half.
Creating and Using FSE Procedures

FSE enables you to create procedures containing any of the FSE directives described in section 4. Each procedure is usually on a separate record in a file named FSEPPROC. If you do not have a local file or a permanent file by this name, FSE accesses a site-defined version of it and makes it local each time you start. You may alter this copy and save it to use during editing.

The first line of each procedure must be the procedure’s name (from one through seven characters). Procedures must be separated by either an end-of-record (EOR) statement or a QUIT PROC (QP) directive. For example, an FSEPPROC file could contain the following procedures.

```
STARTUP
SKS5/LP/
(EOR)
PROC1
SKS1/LP/
QP
PROC2
LNAV
QP
```

**NOTE**

Because a record requires a minimum of one PRU, using the QP directive to separate procedures may save disk space.

To execute the procedures within FSEPPROC, use the - (dash) directive. For example, you have the following procedure on file FSEPPROC.

```
PROC1
SKS6/LN2/
QP
```

To execute PROC1 enter:

```
(HOME)
-PROC1
```

FSE goes to file FSEPROC and looks for procedure PROC1. When PROC1 is executed, the shifted F6 key is redefined to execute the LOCATE NEXT 2 (LN 2) directive.
To call a procedure from a local or permanent file other than FSEPROC, include the other file name in parentheses. The following example executes procedure SEARCH from file ALTFILE.

```
HOME
-SEARCH (ALTFILE)
```

If you have certain functions you want executed every time you start FSE, use the procedure name STARTUP in your FSEPROC file. Each time you start (but not restart) FSE, it looks for the record named STARTUP on FSEPROC and executes the FSE directives.

For example, to redefine the shifted F5 key as the LOCATE PREVIOUS function, create the following procedure.

```
STARTUP
SK55/LP/
QP
```

Each time you start FSE, the STARTUP procedure redefines the shifted F5 key.

**NOTE**

To greatly increase the efficiency and speed of batch processing operations, move the procedures that will be used most often to the beginning of FSEPROC (or your own procedure file) and use comments ( — ) sparingly.
SET ANNOUNCE Directive

The SET ANNOUNCE directive enables you to specify, within a procedure, the prompts or messages to be displayed on the FSE message line.

For example, suppose you have a procedure called TOP that appears as:

```
TOP
P 1
QP
```

This procedure positions you at the first line of a file. If you want the message:

```
FIRST LINE OF THE FILE
```

to be printed each time this procedure is executed, add the following line to the procedure.

```
S A/FIRST LINE OF THE FILE/
```

From now on, every time you use the TOP procedure to go to the first line of a file,

```
FIRST LINE OF THE FILE
```

is printed on the FSE message line.

This message disappears when you perform the next function. The maximum message length is 78 characters, and the dollar sign ($) cannot be used. Refer to section 4 for more information on the SET directive.
Micros

Micros enable you to specify the current character, word, line, or file as a parameter either in an FSE procedure or in a directive string assigned to a programmable function key. You can also create your own prompts for input or specify different parameters each time you call a procedure. These micros, all preceded by an ampersand (&), are:

<table>
<thead>
<tr>
<th>Micro</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;C</td>
<td>Specifies the current column number.</td>
</tr>
<tr>
<td>&amp;F</td>
<td>Specifies the current file name.</td>
</tr>
<tr>
<td>&amp;L</td>
<td>Specifies the current line number.</td>
</tr>
<tr>
<td>&amp;T</td>
<td>Specifies the current terminal type (Viking 721, CDC 722, VT100, and so forth).</td>
</tr>
<tr>
<td>&amp;W</td>
<td>Specifies the word on which the cursor is positioned, or, if the cursor is not positioned on a word, the next word to the right.</td>
</tr>
<tr>
<td>&amp;Z</td>
<td>Specifies the current workfile (normally ZZZWORK) that was specified on the initial FSE command.</td>
</tr>
<tr>
<td>&amp;n</td>
<td>Specifies the nth parameter of a procedure call.</td>
</tr>
<tr>
<td>&amp;?</td>
<td>Enables you to enter procedure parameters interactively.</td>
</tr>
<tr>
<td>&amp;&amp;</td>
<td>Specifies an ampersand (&amp;).</td>
</tr>
</tbody>
</table>

Specifying the Current Column Number (&C)

To specify the current column number, use the &C micro. For example, the following procedure uses the current column number as the parameter in a SET VIEW OFFSET directive.

```
COL
S V C &C
QP
```

When you enter:

```
-COL
```

the current column number becomes the left margin on the screen.
Specifying the Current File (&F)

To specify the current file, use the &F micro. For example, the following procedure compiles the current file as a FORTRAN 5 program, no matter what the current file is.

```
FTN
/FTN5,I=&F,L=0.
QP
```

Each time you enter:

```
-FTN
```

the current file is compiled as a FORTRAN 5 program. To return to the point in the file where you entered -FTN, enter:

```
FSE
```

Specifying the Current Line (&L)

To specify the current line of a file, use the &L micro. For example, the following procedure copies the current line to end of the file.

```
CPYL
COPY&L TO LAST
QP
```

When you enter:

```
-CPYL
```

the current line is copied to the end of the file.
Specifying the Current Terminal Type (&T)

To create a procedure whose execution depends on the type of terminal used, use the &T micro. For example, using this micro you can create the following STARTUP procedure, which calls a second procedure based on the current terminal type.

```
STARTUP
-XX&T
QP
XX721
S K S 6/GET STATUS/
S A/STATUS IS ON SHIFT-F6/
QP
XX722
S K S 9/GET STATUS/
S A/STATUS IS ON SHIFT-F9/
QP
```

This STARTUP procedure automatically changes the keyboard functions, depending on whether a Viking 721 or a CDC 722 terminal is used.

An identical STARTUP procedure could be written for any of the supported terminal types (refer to the beginning of section 2 for supported terminals and model names).
Specifying the Current Word (&W)

To specify the current word of a file, use the &W micro. For example, the following procedure locates the next occurrence of the current word and centers vertically on the screen the line containing it.

```
NW
L N/&W/;V
QP
```

If the cursor is positioned at the word INTEGER and you enter:

```
-NW
```

FSE locates the next occurrence of INTEGER and centers the line in which it appears.

Specifying the Current Workfile (&Z)

To specify the current workfile, use the &Z micro. For example, the following procedure displays your current workfile.

```
WF
SA/Current workfile is &Z/
QP
```

The FSE message line prints the message showing the current workfile name. The workfile name defaults to ZZZWORK, which is a parameter on the FSE command.
Specifying the nth Parameter of a Procedure Call (&n)

To specify different parameters for a procedure each time the procedure call is used, use the &n micro (n is the number of the parameter you want to specify). For example, the following procedure is on FSEPROC.

```
TOEND
C &1 &2 TO L
QP
```

This procedure copies the range you specify to the end of the file. Using this procedure, you can copy lines 20 through 30 to the end of the file by entering:

```
-TOEND 20 30
```

The next time you can specify a different range by including it on the call to the TOEND procedure.

Entering Parameters Interactively (&?)

To create a procedure that prompts you for input, use the &? micro. For example, the following FIND procedure prompts you to enter the string you want to find and then centers the line containing the string.

```
FIND
L/&?;/;V
QP
```

When you enter:

```
-FIND
```

the prompt:

```
ENTER TEXT
```

appears in the FSE message area. If you then enter DATA, FSE locates the next occurrence of DATA and centers the line containing it on the screen.

`ENTER TEXT` is the default prompt. To create your own prompts, include a `SET ANNOUNCE` directive in your procedure before the directive containing the &? micro. For example, to create the prompt `FIND WHAT?` in the FIND procedure, insert the `SET ANNOUNCE` directive as follows:

```
FIND
  S A/FIND WHAT?/
L/&?;/;V
QP
```
Now when you enter:

-FIND

you are prompted with FIND WHAT? instead of ENTER TEXT.

**Micro Values**

You may write a procedure in which the value of a micro changes within the procedure, as for example in:

```
PROC1
  .P3
  .P&C+4
  .P&C+7
  .P&C+3
  QP
```

FSE changes the value of the &C micro (which represents the current column) at the end of each line of the procedure and, therefore, positions itself sequentially at columns 3, 7, 14, and 17. Even though value &C is sequentially repositioned, the only current column (cursor) position you see is 17.

The procedure just described has only one directive per line. Suppose you write a procedure combining two or more directives on one line.

```
PROC1A
  .P10
  .P20;SA/&C;/;P40
  .P&C+10
  QP
```

PROC1A positions FSE at columns 10, 40, and 50 in addition to displaying 10 on the FSE message line (SA/&C/). When two or more directives (including directives associated with the same micro) are combined on one line, FSE interprets all the micros and directives on that line before executing the line.

On line 2 (.P20;SA/&C;/;P40) of PROC1A, FSE substitutes the micro (&C) with the determining value (.P10) from the preceding line. FSE then interprets the remaining directives (.P20 and .P40) for final evaluation. Since .P40 is the last directive of the current line, its value then becomes the determining value for the next line of directives.
Conditional Processing in Procedures

Conditional processing in procedures depends on the occurrence of a specific condition or event (for example, on the end of the file, or on pointer X being greater than pointer Y, or on the location of specific characters). The following are examples of conditional processing.

Procedure Looping

Within FSE, you can create a procedure that repeats itself as long as certain conditions are met. This is called procedure looping.

The following are two versions of an identical procedure, both of which create loops, but only one of which functions correctly.

<table>
<thead>
<tr>
<th>Version A</th>
<th>Version B</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1</td>
<td>PROC1</td>
</tr>
<tr>
<td>R/abc/xyz;/-PROC1</td>
<td>R/abc/xyz/</td>
</tr>
<tr>
<td>QP</td>
<td>-PROC1</td>
</tr>
<tr>
<td></td>
<td>QP</td>
</tr>
</tbody>
</table>

In both versions of this procedure, abc is replaced with xyz (R/abc/xyz/), and the recursive procedure call (a procedure call to itself) causes the same procedure to be executed again (-PROC1).

The versions differ in that version A of the procedure provides for an eventual exit from the procedure, while version B causes an infinite loop. The reason lies in the way FSE executes directives that occur on the same line of a procedure. If it is unable to execute a directive, it ignores all the following directives on that line, and immediately proceeds to the next line. This allows the conditional repetition of the procedure: the procedure call is executed only if all the directives to its left on the same line are executed first.

In version A, if it cannot execute either the position directive or the replace directive (that is, if there are no more occurrences of abc to replace), it skips the call to PROC1 (-PROC1) and executes the QUIT PROC (QP) directive. (Note that directives on the same line must be separated by semicolons.)

In version B, if it is unable to execute a directive, it proceeds to the next line (eventually to -PROC1) and never reaches the QP directive.

The general rule is: If you have a recursive call to a procedure, place the exit condition on the same line as the recursive call.
In the following example, procedure FNNDEL deletes all lines containing the phrase *go away*, beginning with the current one. (Both LOCATE and DELETE are required, because the DELETE directive alone cannot select lines with a specified string.)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNNDEL</td>
<td>Procedure name.</td>
</tr>
<tr>
<td>L/go away;/D;PN;/-FNNDEL</td>
<td>Locate the first occurrence of <em>go away</em>, starting with the current line. Delete the line on which it is found (DELETE). If possible, position the cursor on the next line (PRINT NEXT). Execute procedure FNNDEL again. When another occurrence of <em>go away</em> cannot be found, or when the last line of the file has been reached, ignore the rest of this line.</td>
</tr>
<tr>
<td>PF</td>
<td>Move the cursor to the first line of the file.</td>
</tr>
<tr>
<td>QP</td>
<td></td>
</tr>
</tbody>
</table>

When FSE is unable to execute one of several directives on the same line of a procedure, it ignores any following directives on that line and goes to the next line. Procedure FNNDEL executes a second and third time, etc., only if another instance of *go away* is found and if the cursor can be moved to the next line (that is, is not at end-of-file).

In the next example, procedure DELALT deletes every other line in the file. The recursive calls to the procedure depend on PRINT NEXT being executed twice.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELALT</td>
<td>Procedure name.</td>
</tr>
<tr>
<td>D;PN;PN;/-DELALT</td>
<td>Delete the current line and, if possible, advance one line. Advance a second line, if possible. If both line advances have occurred, repeat the procedure.</td>
</tr>
<tr>
<td>QP</td>
<td></td>
</tr>
</tbody>
</table>
Using the QUIT Directive

You can use the QUIT directive to explicitly terminate a procedure. To do so, you must specify the PROC parameter. The range parameter is optional: QUIT PROC range. (For the complete format of the QUIT directive, refer to QUIT in section 4.) In the previous examples, the procedures simply terminated when the last line of the procedure was reached (QP).

Without the Range Parameter

When QP is used without the range parameter, QP terminates the procedure only when all directives to its left on the same line can be executed.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELCUR</td>
<td>Procedure name.</td>
</tr>
<tr>
<td>LCC/don't shoot;/QP</td>
<td>Search for the phrase don't shoot on the current line (LOCATE CURRENT CURRENT). If it is found, quit the procedure (QUIT PROC). If it is not found, exit this line of the procedure, delete this line of the file (DELETE), and terminate the procedure.</td>
</tr>
</tbody>
</table>

The execution of QP in the line

LCC/don't shoot;/QP

depends on the execution of the LOCATE directive on the same line, just as, in a previous example, the execution of -FNNDEL depends on the successful execution of LOCATE and PRINT NEXT. Thus, when used at the end of a line of directives (without the range parameter), QP is only executed when the other directives on the same line can be executed.
With the Range Parameter

When QP is used with the range parameter, QP executes only when its range parameter is exceeded.

In the following procedure, the range parameter consists of one pointer (C+10). When the condition expressed by a single pointer is false (that is, when the range it specifies is exceeded), the procedure terminates. As long as the range is not exceeded, the procedure does not terminate.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELTEN</td>
<td>Procedure name.</td>
</tr>
<tr>
<td>QP C+10</td>
<td>If there are 10 or more lines after the current line (CURRENT + 10), go to the next line of the procedure and delete the current line of the file. If there are not at least 10 lines after the current line (if the range parameter fails), terminate the procedure.</td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>QP</td>
<td></td>
</tr>
</tbody>
</table>

In the following procedure DELLIN, which is a variation of the previous example, two values define the range parameter: C and Y. C and Y are line pointers establishing a range in the file in which procedure DELLIN deletes a line. The procedure executes only if C does not exceed Y. (For more information on line pointers, refer to the line parameter under *Common Parameters* at the beginning of section 4.)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELLIN</td>
<td>Procedure name.</td>
</tr>
<tr>
<td>QP CY</td>
<td>If the current line is less than or equal to Y (if the line specified by Y is not exceeded), do not terminate the procedure. Go to the next line of the procedure and delete the current line of the file. If the current line is greater than Y, terminate the procedure.</td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>QP</td>
<td></td>
</tr>
</tbody>
</table>

Summary

The QUIT directive with the PROC parameter may be used in conditional processing in two ways:

- As one of several directives on a single procedure line, to be executed only if the directives to its left on the same line are all executed.

- As a directive with one or two range values to its right, to be executed only if the specified range is exceeded.
Recovering from Errors in FSE Procedures

If you run a procedure containing an error, FSE accesses the file containing the procedure (FSEPROC or any other file) and positions you at the error. For example, assume FSEPROC contains the following procedure.

```
LOCPRE
LP*V
QP
```

The * is not a valid directive separator and causes an error in the LOCPRE procedure. Suppose that, while editing file MYFILE, you want to locate the previous occurrence of a string and center it on the screen. You enter:

```
-LOCPRE
```

FSE reads procedure LOCPRE and determines that it contains an error. FSE then displays file FSEPROC on the lower half of a split screen and positions the cursor at the error (the *).
You can then correct the error (by replacing the * with ;) and execute the procedure again.

If you already have a split screen, the file on the lower half of the screen is replaced with the file containing the procedure error. To return to your previous edit file, either press:

(EDIT)

or enter the EDIT directive.
Redefining Programmable Function Keys

You can redefine the programmable function keys (the default functions are described in section 2) to execute any FSE directive. The redefined functions remain in effect for the duration of the current editing session (including a session that you resume by entering the FSE command without a file name).

To redefine a key, use the SET directive with the KEY parameter. For example, to redefine the F6 QUIT key as the QUIT REPLACE function, enter:

S K 6/ QR/

FSE then displays the new function key prompts.

<table>
<thead>
<tr>
<th>F1</th>
<th>MRKCHR</th>
<th>F2</th>
<th>ONECOPY</th>
<th>F3</th>
<th>DELB</th>
<th>F4</th>
<th>LAST</th>
<th>F5</th>
<th>UNMARK</th>
<th>F6</th>
<th>QR</th>
<th>F7</th>
<th>LOCNXT</th>
<th>F8</th>
<th>132COL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MARK</td>
<td></td>
<td>MOVE</td>
<td></td>
<td>INSB</td>
<td></td>
<td>FIRST</td>
<td></td>
<td>UNDO</td>
<td></td>
<td>GB</td>
<td></td>
<td>LOCATE</td>
<td></td>
<td>132COL</td>
</tr>
</tbody>
</table>

NOTE

Function key definitions must be 244 or fewer characters (only the first six characters appear on the function key prompt).

To define or redefine the shifted function keys, include the SHIFT parameter. For example, to define the shifted F6 key as the LOCATE PREVIOUS function, enter:

SKS6/LP/

FSE then displays the new function key prompts.

<table>
<thead>
<tr>
<th>F1</th>
<th>MRKCHR</th>
<th>F2</th>
<th>ONECOPY</th>
<th>F3</th>
<th>DELB</th>
<th>F4</th>
<th>LAST</th>
<th>F5</th>
<th>UNMARK</th>
<th>F6</th>
<th>LP</th>
<th>F7</th>
<th>LOCNXT</th>
<th>F8</th>
<th>132COL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MARK</td>
<td></td>
<td>MOVE</td>
<td></td>
<td>INSB</td>
<td></td>
<td>FIRST</td>
<td></td>
<td>UNDO</td>
<td></td>
<td>GB</td>
<td></td>
<td>LOCATE</td>
<td></td>
<td>132COL</td>
</tr>
</tbody>
</table>

If you want the redefined function keys to remain in effect from one editing session to the next, include a SET KEY directive in the STARTUP procedure on your FSEPROC file. (Refer to Creating and Using FSE Procedures, earlier in this section).
Redefining Keys to Call Procedures

Using FSE procedures, it is possible to redefine keys to call procedures. For example, you may want to redefine several keys on the first row of function key prompts to perform word processing functions. A simple way to do this is to create a procedure that redefines the keys you want to use. The following procedure illustrates this. (Spaces are included in the directive strings to make the function key prompts easier to read.)

```
WORD
SK  1/  .FILL/
SK  3/  I W/
SKS 3/  D W/
SKS 6/  -DEF/
SK  8/  .JOIN/
SKS 8/  .SPLIT/
QP
```

You then add to your STARTUP procedure the following line, defining the shifted F6 key as -WORD.

```
SKS6/-WORD/
```

From then on, every time you press:

```
F6 -WORD
```

the function keys are redefined to the specified word processing functions.
Defining Layers of Function Keys

No limits are placed on the number of times you can branch from a default setting for a key: one key calls a procedure that redefines that key (or another key) to call another procedure, which in turn redefines the same key (or another key), and so forth. For example, procedure WORD (the example just created) redefines the shifted F6 key to call another procedure, procedure DEF. Procedure DEF can be written to again redefine the shifted F6 key, or any other function keys, and any of these redefined keys can call another key-defining procedure.

To return to the original settings for the keys, create a procedure on FSEPROC that sets the function keys to their original settings. In the example procedure WORD, this is the function of procedure DEF.
If the number of procedure branches you create is large, you might find it difficult to keep track of which procedure defines the keys in which way. A worksheet is provided on the next page to help you remember how your procedures redefine keys. The following example shows how you would use the worksheet if you created the sample procedure WORD.

**Programmable Function Key Definition Worksheet**

<table>
<thead>
<tr>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRKCHR</td>
<td>ONECPY</td>
<td>DELB</td>
<td>LAST</td>
<td>UNMARK</td>
<td>-WORD</td>
<td>LOCNNT</td>
<td>80COL</td>
</tr>
<tr>
<td>MARK</td>
<td>MOVE</td>
<td>INSB</td>
<td>FIRST</td>
<td>UNDO</td>
<td>QUIT</td>
<td>LOCATE</td>
<td>132COL</td>
</tr>
</tbody>
</table>

**ORIGINAL**

<table>
<thead>
<tr>
<th>F9</th>
<th>F10</th>
<th>F11</th>
<th>F12</th>
<th>F13</th>
<th>F14</th>
<th>F15</th>
<th>F16</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDDLE</td>
<td>ENDLIN</td>
<td>SPLIT</td>
<td>JOIN</td>
<td>PARA</td>
<td>COPY</td>
<td>CENTER</td>
<td></td>
</tr>
</tbody>
</table>

**WORD**

<table>
<thead>
<tr>
<th>F9</th>
<th>F10</th>
<th>F11</th>
<th>F12</th>
<th>F13</th>
<th>F14</th>
<th>F15</th>
<th>F16</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIDDLE</td>
<td>ENDLIN</td>
<td>SPLIT</td>
<td>JOIN</td>
<td>PARA</td>
<td>COPY</td>
<td>CENTER</td>
<td></td>
</tr>
</tbody>
</table>
Labeling Programmable Function Key Prompts

If you do not indicate otherwise, the prompt FSE displays for a programmable function key is the same as the directive string you enter when redefining the key. If, for example, you define the shifted F6 key as:

```
SKS6/LP;V/
```

the F6 function key prompt is:

```
F6 LP;V QUIT
```

You can, however, label the key prompt differently by using the LABEL parameter with the SET KEY directive. You can, for example, redefine a key to execute two directives, as just described, but only include one function on the key prompt. In the preceding example, you could label the key prompt LOCPRE, without affecting the two directives it executes, by entering:

```
SKS 6/ LP;V/L/LOCPRE/
```

The F6 prompt is:

```
F6 LOCPRE QUIT
```

but both the LOCATE PREVIOUS and VIEW directives are executed when you press the shifted F6 key.

**NOTE**

Function key labels must be six or fewer characters to fit in the prompt area at the bottom of the screen.

Labeling keys with descriptive phrases rather than the actual directive strings helps you understand each key’s function and presents a cleaner looking screen.

If you want to change the label of a key but leave the directive string associated with the key unchanged, include only the LABEL parameter and the new label. For example, to change the label of the shifted F6 key from LOCPRE to LCTPRV, enter:

```
SKS 6 L/LCTPRV
```

The shifted F6 key is now labeled LCTPRV while the directive string associated with it (LP;V) remains the same.
Changing Your Screen Format

The type of screen format you use depends on the operation you perform. To change the format of your screen, use the SET VIEW directive and various keyword parameters. With the SET VIEW directive you can:

- Specify the number of lines displayed each time the screen is rewritten.
- Specify the number of columns displayed each time the screen is rewritten.
- Specify the number of lines available for the lower half of a split-screen edit.
- Define the number of columns that can be edited.
- Change the line length limit.
- Change the first column displayed at the left edge of the screen.

Specifying the Number of Lines Displayed

If you do not want the complete screen (the default value) printed each time the screen is rewritten, use the SET VIEW LINE directive. For example, to have only 15 lines displayed (including the directive and message lines and the function key prompts), enter:

```
S V L 15
```

During subsequent file editing, only 15 lines are displayed each time the screen is rewritten. These 15 lines include the file header, the directive and message lines, and programmable function key prompts. The minimum value is 10.
Specifying the Number of Columns Displayed

To specify the number of columns you want displayed each time the screen is rewritten, use the SET VIEW COLUMN directive. For example, to print only columns 1 through 60 (the default is 80), enter:

```
S V C 60
```

Only characters in columns 1 through 60 are displayed when the screen is rewritten. The minimum value is 10. Only text lines are shortened. The FSE header lines and function key prompts are unaffected. A value exceeding 80 changes the screen display to 132-column format (if your terminal has this capability).

The SET VIEW COLUMN directive can also be used in line mode to prevent lines from wrapping on the terminal.

The terminal configuration is not changed. Each line of output is restricted to the number of characters specified on the SET VIEW COLUMN directive.

Specifying the Number of Lines for Split-Screen Editing

When split-screen editing, you can reduce or increase the number of lines reserved for the lower half of the screen. To do so, use the SET VIEW SPLIT directive as shown in the following example.

```
S V S 7
```

Subsequent split-screen editing uses only seven lines for the bottom half of the screen.

Specifying the Number of Columns for Editing

To limit the number of columns that can be edited, use the SET VIEW EDIT directive. For example, if you want to edit only the first seven columns of a file, enter:

```
S V E 7
```

Subsequent editing affects only columns 1 through 7. The left margin is always column 1.
Changing the Line Length Limit

To change the line length limit, enter the SET VIEW WARN directive. For example, to change the line length to 70 from a previous setting, enter:

\[ S \, V \, W \, 70 \]

When a line is encountered that exceeds 70 characters, FSE stops directive processing and issues a warning message.

Changing the First Column Displayed

To view lines that run off the edge of your screen, use the SET VIEW OFFSET directive to specify the leftmost column to be displayed. For example, to view a line beginning at column 30, enter:

\[ S \, V \, O \, 30 \]

Column 30 then becomes the leftmost column displayed on your screen. To return to the default setting (1), enter:

\[ S \, V \, O \, 1 \]

Column 1 is once more the leftmost column displayed.
Line Editing

Getting Started .................................................. 7-1
  Setting Line Mode ........................................... 7-1
  Starting FSE .................................................. 7-2
  Creating a File ............................................... 7-2

Editing ............................................................ 7-3
  Displaying Lines .............................................. 7-3
  Searching ...................................................... 7-5
  Inserting Lines ............................................... 7-6
  Deleting Lines ............................................... 7-7
  Getting Online Help ........................................ 7-7
  Changing Lines ............................................... 7-8
  Copying Lines ............................................... 7-9
  Replacing Text ................................................ 7-9
  Undoing Changes ............................................. 7-9
  Stopping FSE and Returning to NOS ....................... 7-10
  Restarting FSE .............................................. 7-10
  Stopping FSE and Making Changes Permanent ............. 7-10
  Editing Sequenced Files ................................. 7-10
FSE is not exclusively a screen editor. It also functions as a line editor, which can be used on any terminal. Almost all of the directives available for screen editing are applicable to line editing. When line editing, enter directives after the ?? prompt and then always press:

NOTE

For information on directives, refer to section 4, *FSE Directives*.

For each task, examples show you how a hypothetical file looks before and after editing. The sample files are not released with the system. You must create your own files if you want to perform the tasks in the examples.

**Getting Started**

**Setting Line Mode**

To use FSE as a line editor, you must be logged in to NOS. For information on NOS login procedures, refer to the *NOS Version 2 Reference Set, Volume 2, Guide to System Usage*.

Once logged in to NOS, enter the NOS LINE command.

```
LINE
```

This sets your terminal in line mode or cancels a SCREEN command if you have been screen editing. If you have not been screen editing during your current terminal session, you do not need to enter the LINE command; FSE is a line editor by default.
Starting FSE

To start FSE, enter the following command, including the name of the file you want to edit (MYFILE is the sample file).

FSE MYFILE

The following prompt appears.

NOS FULL SCREEN EDITOR
EDIT: MYFILE
??

Creating a File

To create a file, enter the directive:

?? INSERT

to access the insert function (INSERT can be abbreviated to I). Line numbers are automatically generated as you enter text and press (NEXT).

?? I
1 ? PROGRAM INDEX

Each use of (NEXT) advances you one line. Pressing (NEXT) twice returns you to the ?? prompt so you can enter new directives.

1 ? PROGRAM INDEX
2 ? C
3 ? INDEX ALPHABETIZES AND SortS A FILE CONTAINING A CORRECTLY
4 ?
??

Typing INSERT once again returns you to the line you last called with a directive.
Editing

Displaying Lines

To display all the lines in a file, enter the PRINT ALL directive:

?? PA

To display lines 1 through 30 of the file, enter the following PRINT directive:

?? P1 30

The first 30 lines of the file are displayed.

1 PROGRAM INDEX
2 C
3 C INDEX ALPHABETIZES AND SORTS A FILE CONTAINING A CORRECTLY
4 C FORMATTED MANUAL INDEX. THE PROGRAM RECOGNIZES PRIMARY,
5 C SECONDARY, AND TERTIARY ENTRIES AS WELL AS THEIR RESPECTIVE
6 C CONTINUATION LINES.
7 C
8 IMPLICIT INTEGER (A-Z)
9 PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
10 PARAMETER (MSC=50)
11 PARAMETER (MAXLEN=160,MAXSLEN=310,MAXXXEN=-60)).../
12 CHARACTER*40 COND
13 CHARACTER*1 CO,CN
14 CHARACTER*10 SLANTS
15 CHARACTER*12 FMTST
16 CHARACTER*(MAXLEN) INPLIN
17 CHARACTER*7 PVAL,PNAME
18 CHARACTER*7 INPFILE,OUTFILE
19 CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
20 LOGICAL PARAMERR
21 DIMENSION TAB(3)
22 C
23 DATA PENTRY/ ,SENTRY/ ,TENTRY/ ,BLANK/
24 DATA OUTFILE/OUTPUT/,INPFILE/INPUT/
25 DATA TAB(1)/1/,TAB(2)/5/,TAB(3)/9/
26 DATA FMTCNT/0/,SEPCNT/3/
27 DATA SLANTS/"\"\"\"\"\"/
28 C
29 C
30 5 ERR=0
A directive that attempts to display more lines than exist in a file results in the message:

**OUT OF BOUNDS**

Refer to the SET VIEW COLUMN directive for information about how to specify the number of columns to be displayed.

**NOTE**

The line numbers are added by FSE so you can see where you are in the file. They are not part of the file text. Also, the file shown here contains a few intentional errors that will be corrected to illustrate various editing functions.
Searching

Suppose you want to move the first line in the file containing the string:

   LOGICAL PARMERR

to the line between present lines 16 and 17.

To locate the line, you must position the cursor at the first line of the file by entering the following PRINT directive.

   ?? P1

The first line is printed.

   1      PROGRAM INDEX

Then, enter:

   ?? L/LOGICAL PARMERR

The first line containing the string is displayed.

   20      LOGICAL PARMERR

To see a few lines before and after line 20, enter the following VIEW directive.

   ?? V

The four preceding lines, line 20, and the four following lines are displayed.

   16      CHARACTER*(MAXILEN) INPLIN
   17      CHARACTER*7 PVAL,PNAME
   18      CHARACTER*7 INPF,OUTFILE
   19      CHARACTER*50 PENTRY,SENTRY,TENTRY,BLANK
   20      LOGICAL PARMERR
   21      DIMENSION TAB(3)
   22 C
   23      DATA PENTRY/' '/, SENTRY/' '/, TENTRY/' '/, BLANK/' '/
   24      DATA OUTFILE/'OUTPUT'/'INPF,'/INPUT'/'
Inserting Lines

To insert:

LOGICAL PARMERR

between lines 16 and 17, enter the following INSERT directive.

?? I16

FSE prompts you with:

17 ?

You then enter the line to be inserted.

17 ?\LOGICAL PARMERR
18 ?

NOTE

The \ is the default tab character. Because the default tabs are set at 7 and 72, the inserted text starts at column 7.

You can enter as many lines as you want, ending the insertion either by entering a tab character at the end of an inserted line or by pressing:

(NEXT)

on an empty line.

You then display the surrounding lines with the VIEW directive.

?? V

13 CHARACTER*1 CO,CN
14 CHARACTER*10 SLANTS
15 CHARACTER*12 FMTST
16 CHARACTER*(MAXILEN) INPLIN
17 LOGICAL PARMERR
18 CHARACTER*7 PVAL,PNAME
19 CHARACTER*7 INFILE,OUTFILE
20 CHARACTER*50 PENTRY,ENTRY,ENTRY,BLANK
21 LOGICAL PARMERR

Notice that the line numbers following 17 have all increased by one to accommodate the new line.

NOTE

To insert characters while line editing, use the ALTER directive, described in section 4.
Deleting Lines

To delete LOGICAL PARMERR on line 21, enter:

?? D21

The deleted line is displayed at your terminal.

21    LOGICAL PARMERR

You can delete more than one line at a time. To delete lines 25 through 27, for example, enter the following DELETE directive.

?? D25 27

The deleted lines are displayed, and line numbers on the remaining text shift accordingly.

25    DATA TAB(1)/1/,TAB(2)/5/,TAB(3)/9/
26    DATA FMTCNT/G/,SEPCNT/3/
27    DATA SLANTS/YYYYYYYY/

To avoid displaying these lines, include the QUIET parameter.

D 25 27 Q

(If you want these lines returned, use the UNDO directive.)

Getting Online Help

Suppose you need to change line 11, but cannot quite recall how the ALTER directive works. To get help, enter the following directive.

?? H ALTER

This directive accesses the FSEHELP file and positions the cursor at the area of text describing the ALTER directive. To continue reading the help file text, enter PRINT directives as needed. For example, to read the next 20 lines, enter PN20. When you have read the information, the following directive returns you to file MYFILE.

?? BACK

NOTE

To delete characters while line editing, use the ALTER directive, described in section 4.
Changing Lines

You then enter the following PRINT directive to position the cursor to line 11.

?? P11

The line is displayed.

11 PARAMETER (MAXILEN=160,MAXSLEN=310,MAX%EN=-60)).../

You enter the following ALTER directive.

?? A

FSE responds with the following prompt.

11 PARAMETER (MAXILEN=160,MAXSLEN=310,MAX%EN=-60)).../
A??

You then space over to where the change is to be made and enter the correction underneath the error.

11 PARAMETER (MAXILEN=160,MAXSLEN=310,MAX%EN=-60)).../
A?? OL 1 !

The entries in this example perform the following functions.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>No effect on the line.</td>
</tr>
<tr>
<td>0</td>
<td>Replaces first %.</td>
</tr>
<tr>
<td>L</td>
<td>Replaces second %.</td>
</tr>
<tr>
<td>1</td>
<td>Replaces -.</td>
</tr>
<tr>
<td>!</td>
<td>Truncates the line at the current character.</td>
</tr>
</tbody>
</table>

When you press (NEXT), the corrected line is displayed.

11 PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
Copying Lines

To copy lines 8 through 12 immediately after line 15, enter the following COPY directive:

?? C 8 12 TO 15

The copied lines and their new line numbers are displayed.

16 IMPLICIT INTEGER (A-Z)
17 PARAMETER (PRM=1,PRMC=2,SEC=3,SECC=4,TER=5,TERC=6)
18 PARAMETER (MSC=5D)
19 PARAMETER (MAXILEN=160,MAXSLEN=310,MAXOLEN=160)
20 CHARACTER*40 COND

Replacing Text

To replace all occurrences of INTEGER with INT, enter the following REPLACE directive.

?? RA/INTEGER/INT

The lines affected by the change are displayed.

8 IMPLICIT INT (A-Z)
71 INT(A1)
90 INT(B23)

When the replacement is complete, the cursor is positioned at the last line affected. In this example, the cursor would rest at line 90.

Undoing Changes

To undo a change to your file, enter the UNDO directive. For example, to undo the last REPLACE directive, enter:

?? UNDO

All the INTEGERs that were replaced with INT are now changed back to INTEGER. To undo other changes made to your file during your current editing session, enter an UNDO directive for each item you want restored. The changes are undone in the reverse order of their occurrence. UNDO does not display the reinstated line; however, you can enter the PRINT directive to verify that the changes are undone.
Stopping FSE and Returning to NOS

To stop FSE and return to NOS, enter:

?? QUIT

The following message appears.

FILE: MYFILE

This message tells you that you have made changes to file MYFILE but they are not permanent.

Restarting FSE

To return to FSE at the point you left, enter the FSE command without parameters.

FSE

In this example, you are positioned at line 90, the point at which you stopped FSE with the QUIT directive.

Stopping FSE and Making Changes Permanent

To stop FSE and make the changes to your file permanent, enter the QUIT REPLACE directive.

QR

The following message appears, confirming that the changes are permanent.

FILE: MYFILE (PERMANENT)

Editing Sequenced Files

When editing or creating files in the BASIC or FORTRAN subsystem, FSE assumes the file is a numbered sequenced file. In directives, you can then refer to the sequence numbers rather than to the internal line numbers FSE provides. Refer to the SET NUMBER directive for more information on manipulating sequence numbers.
Using Other Terminals

This section consists of worksheets for recording the keys on your terminal that correspond to the Viking 721 terminal keys and the default settings of programmable function keys F1 through F16. For example, the \text{NEXT} key description appears on the worksheet as:

\begin{center}
\begin{tabular}{ll}
\textbf{Viking} & \\
\textbf{721 Key} & \textbf{Your Terminal Key} & \textbf{Function} \\
\text{NEXT} & & Terminates the input line. \\
\end{tabular}
\end{center}

If you are using the worksheet on a CDC 722 terminal, you fill it in as follows:

\begin{center}
\begin{tabular}{ll}
\textbf{Viking} & \\
\textbf{721 Key} & \textbf{Your Terminal Key} & \textbf{Function} \\
\text{NEXT} & \text{NEW LINE or CR} & Terminates the input line. \\
\end{tabular}
\end{center}

Refer to appendix D for information on corresponding keys for the CDC 722 and 722-30; DEC VT100; Zenith Z19/Z29; Heathkit H19; IBM 3270; Lear Siegler ADM3A and ADM5; Tektronix 4115; and TeleVideo TV924, TV950, and TV955 terminals.
### Terminal

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Your Terminal Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td></td>
<td>Advances to the last screen of the file.</td>
</tr>
<tr>
<td>FWD</td>
<td></td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td></td>
<td>Moves backward to the first screen of the file.</td>
</tr>
<tr>
<td>BKW</td>
<td></td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td></td>
<td>Moves the line the cursor is on to the top of the screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td></td>
<td>Moves the line the cursor is on to the bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td></td>
<td>Displays the FSE help file in the lower half of a split screen.</td>
</tr>
<tr>
<td>EDIT</td>
<td></td>
<td>Terminates split-screen mode, returning the top half of the screen to full screen.</td>
</tr>
<tr>
<td>BACK</td>
<td></td>
<td>Returns you to the section of a file that you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td></td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>INSRT</td>
<td></td>
<td>Inserts a blank line, allowing you to type in a new line of text.</td>
</tr>
<tr>
<td>INSRT</td>
<td></td>
<td>Inserts a blank character into which you type a new character.</td>
</tr>
<tr>
<td>DLETE</td>
<td></td>
<td>Deletes the line the cursor is on.</td>
</tr>
<tr>
<td>DLETE</td>
<td></td>
<td>Deletes the character the cursor is on.</td>
</tr>
<tr>
<td>CLEAR</td>
<td></td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td></td>
<td>Moves the cursor to the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>NEXT</td>
<td></td>
<td>Terminates an input line.</td>
</tr>
</tbody>
</table>
Default Programmable Function Key Settings

MARK
MRKCHR
MOVE
ONECPY
INSB
DELB
FIRST
LAST
UNDO
UNMARK
QUIT
LOCATE
LOCNXT
132COL
80COL
MIDDLE
ENLIN
SPLIT
JOIN
PARA
COPY
CENTER

NOTES:
# Terminal

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Your Terminal Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td></td>
<td>Advances to the last screen of the file.</td>
</tr>
<tr>
<td>FWD</td>
<td></td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td></td>
<td>Moves backward to the first screen of the file.</td>
</tr>
<tr>
<td>BKW</td>
<td></td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td></td>
<td>Moves the line the cursor is on to the top of the screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td></td>
<td>Moves the line the cursor is on to the bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td></td>
<td>Displays the FSE help file in the lower half of a split screen.</td>
</tr>
<tr>
<td>EDIT</td>
<td></td>
<td>Terminates split-screen mode, returning the top half of the screen to full screen.</td>
</tr>
<tr>
<td>BACK</td>
<td></td>
<td>Returns you to the section of a file that you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td></td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>INSRT</td>
<td></td>
<td>Inserts a blank line, allowing you to type in a new line of text.</td>
</tr>
<tr>
<td>INSRT</td>
<td></td>
<td>Inserts a blank character into which you type a new character.</td>
</tr>
<tr>
<td>DLETÉ</td>
<td></td>
<td>Deletes the line the cursor is on.</td>
</tr>
<tr>
<td>DLETÉ</td>
<td></td>
<td>Deletes the character the cursor is on.</td>
</tr>
<tr>
<td>CLEAR</td>
<td></td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td></td>
<td>Moves the cursor to the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>NEXT</td>
<td></td>
<td>Terminates an input line.</td>
</tr>
</tbody>
</table>
Default Programmable Function Key Settings

MARK
MARKCHR
MOVE
ONECPY
INSB
DELB
FIRST
LAST
UNDO
UNMARK
QUIT
LOCATE
LOCNXT
132COL
80COL
MIDDLE
ENDLIN
SPLIT
JOIN
PARA
COPY
CENTER

NOTES:
Appendixes

Code Set Conversion .............................................. A-1
Error Recovery and Diagnostic Messages .................. B-1
Glossary ................................................................ C-1
Terminal Support Information ................................. D-1
Function Key Directive Strings .............................. E-1
Viking 721 Terminal Settings ................................. F-1
The code conversion charts in this appendix interpret information coded in 6/12-bit display code or 7-bit ASCII code when it is displayed in 6-bit display code form. (7-bit ASCII characters occupy the rightmost 7 bits of a 12-bit field. The leftmost 5 bits are unused.)

The left side of table A-1 lists the 128-character ASCII character set with the corresponding 6-bit display code values. The right side of the table shows the 6/12-bit display code and 7-bit ASCII code characters as they appear when displayed in 6-bit display code format.

### Table A-1. Code Conversion Chart

<table>
<thead>
<tr>
<th>ASCII (128-Character)</th>
<th>6-Bit Display Code</th>
<th>6/12-Bit Display Code</th>
<th>7-Bit ASCII Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUL</td>
<td>000</td>
<td>00</td>
<td>&quot;5&quot;</td>
</tr>
<tr>
<td>SOH</td>
<td>001</td>
<td>01</td>
<td>&quot;6&quot;</td>
</tr>
<tr>
<td>STX</td>
<td>002</td>
<td>02</td>
<td>&quot;7&quot;</td>
</tr>
<tr>
<td>ETX</td>
<td>003</td>
<td>03</td>
<td>&quot;8&quot;</td>
</tr>
<tr>
<td>EOT</td>
<td>004</td>
<td>04</td>
<td>&quot;9&quot;</td>
</tr>
<tr>
<td>ENQ</td>
<td>005</td>
<td>05</td>
<td>&quot;+&quot;</td>
</tr>
<tr>
<td>ACK</td>
<td>006</td>
<td>06</td>
<td>&quot;-&quot;</td>
</tr>
<tr>
<td>BEL</td>
<td>007</td>
<td>07</td>
<td>&quot;$&quot;</td>
</tr>
<tr>
<td>BS</td>
<td>010</td>
<td>08</td>
<td>&quot;/&quot;</td>
</tr>
<tr>
<td>HT</td>
<td>011</td>
<td>09</td>
<td>&quot;{&quot;</td>
</tr>
<tr>
<td>LF</td>
<td>012</td>
<td>0A</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>VT</td>
<td>013</td>
<td>0B</td>
<td>&quot;$&quot;</td>
</tr>
<tr>
<td>FF</td>
<td>014</td>
<td>0C</td>
<td>&quot;=&quot;</td>
</tr>
<tr>
<td>CR</td>
<td>015</td>
<td>0D</td>
<td>&quot;#&quot;</td>
</tr>
<tr>
<td>SO</td>
<td>016</td>
<td>0E</td>
<td>&quot;;&quot;</td>
</tr>
<tr>
<td>SI</td>
<td>017</td>
<td>0F</td>
<td>&quot;;&quot;</td>
</tr>
<tr>
<td>DLE</td>
<td>020</td>
<td>10</td>
<td>&quot;#&quot;</td>
</tr>
<tr>
<td>DC1</td>
<td>021</td>
<td>11</td>
<td>&quot;;[&quot;</td>
</tr>
<tr>
<td>DC2</td>
<td>022</td>
<td>12</td>
<td>&quot;;]&quot;</td>
</tr>
<tr>
<td>DC3</td>
<td>023</td>
<td>13</td>
<td>&quot;%;&quot;</td>
</tr>
<tr>
<td>DC4</td>
<td>024</td>
<td>14</td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td>NAK</td>
<td>025</td>
<td>15</td>
<td>&quot;-&quot;</td>
</tr>
<tr>
<td>SYN</td>
<td>026</td>
<td>16</td>
<td>&quot;!&quot;</td>
</tr>
<tr>
<td>ETB</td>
<td>027</td>
<td>17</td>
<td>&quot;&amp;&quot;</td>
</tr>
</tbody>
</table>

*Continued on next page*
<table>
<thead>
<tr>
<th>Character</th>
<th>ASCII (128-Character)</th>
<th>6-Bit Display Code</th>
<th>8/12-Bit Display Code</th>
<th>7-Bit ASCII Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
<td>030 18</td>
<td>'</td>
<td>7670 :X</td>
<td></td>
</tr>
<tr>
<td>EM</td>
<td>031 19</td>
<td>?</td>
<td>7671 :Y</td>
<td></td>
</tr>
<tr>
<td>SUB</td>
<td>032 1A</td>
<td>&lt;</td>
<td>7672 :Z</td>
<td></td>
</tr>
<tr>
<td>ESC</td>
<td>033 1B</td>
<td>&gt;</td>
<td>7673 :0</td>
<td></td>
</tr>
<tr>
<td>FS</td>
<td>034 1C</td>
<td>@</td>
<td>7674 :1</td>
<td></td>
</tr>
<tr>
<td>GS</td>
<td>035 1D</td>
<td>\</td>
<td>7675 :2</td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>036 1E</td>
<td>^</td>
<td>7676 :3</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>037 1F</td>
<td>;</td>
<td>7677 :4</td>
<td></td>
</tr>
<tr>
<td>sp</td>
<td>040 20 sp</td>
<td>55 sp</td>
<td>55 :5</td>
<td></td>
</tr>
<tr>
<td>! Exclamation Point</td>
<td>041 21 !</td>
<td>66 !</td>
<td>66 :6</td>
<td></td>
</tr>
<tr>
<td>&quot; Quotation Marks</td>
<td>042 22 &quot;</td>
<td>64 &quot;</td>
<td>64 :7</td>
<td></td>
</tr>
<tr>
<td># Number Sign</td>
<td>043 23 #</td>
<td>60 #</td>
<td>60 :8</td>
<td></td>
</tr>
<tr>
<td>$ Dollar Sign</td>
<td>044 24 $</td>
<td>53 $</td>
<td>53 :9</td>
<td></td>
</tr>
<tr>
<td>% Percent Sign</td>
<td>045 25 %</td>
<td>63 %</td>
<td>63 :10</td>
<td></td>
</tr>
<tr>
<td>&amp; Ampersand</td>
<td>046 26 &amp;</td>
<td>67 &amp;</td>
<td>67 :11</td>
<td></td>
</tr>
<tr>
<td>' Apostrophe</td>
<td>047 27 '</td>
<td>70 '</td>
<td>70 :12</td>
<td></td>
</tr>
</tbody>
</table>

( Opening Parenthesis 050 28 ( | 51 ( | 51 :13 | |
) Closing Parenthesis 051 29 ) | 52 ) | 52 :14 | |
* Asterisk 052 2A * | 47 * | 47 :15 | |
+ Plus 053 2B + | 45 + | 45 :16 | |
, Commata 054 2C , | 56 , | 56 :17 | |
. Dash 055 2D . | 46 . | 46 :18 | |
. Period 056 2E . | 57 . | 57 :19 | |
/ Slant 057 2F / | 50 / | 50 :20 | |

0 060 30 0 | 33 0 | 33 :21 | |
1 061 31 1 | 34 1 | 34 :22 | |
2 062 32 2 | 35 2 | 35 :23 | |
3 063 33 3 | 36 3 | 36 :24 | |
4 064 34 4 | 37 4 | 37 :25 | |
5 065 35 5 | 40 5 | 40 :26 | |
6 066 36 6 | 41 6 | 41 :27 | |
7 067 37 7 | 42 7 | 42 :28 | |
8 070 38 8 | 43 8 | 43 :29 | |
9 071 39 9 | 44 9 | 44 :30 | |
: Colon 072 3A : | 00 @D | 7404 :31 | |
; Semicolon 073 3B ; | 77 ; | 77 :32 | |
< Less than 074 3C < | 72 < | 72 :33 | |
= Equals 075 3D = | 54 = | 54 :34 | |
> Greater than 076 3E > | 73 > | 73 :35 | |
? Question Mark 077 3F ? | 71 ? | 71 :36 | |

Continued on next page
### Table A-1. Code Conversion Chart (Continued)

<table>
<thead>
<tr>
<th>ASCII (128-Character)</th>
<th>6-Bit Display Code</th>
<th>6/12-Bit Display Code</th>
<th>7-Bit ASCII Code Char.</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ Commercial At</td>
<td>100</td>
<td>40   @</td>
<td>74</td>
</tr>
<tr>
<td>A</td>
<td>101</td>
<td>41   A</td>
<td>01</td>
</tr>
<tr>
<td>B</td>
<td>102</td>
<td>42   B</td>
<td>02</td>
</tr>
<tr>
<td>C</td>
<td>103</td>
<td>43   C</td>
<td>03</td>
</tr>
<tr>
<td>D</td>
<td>104</td>
<td>44   D</td>
<td>04</td>
</tr>
<tr>
<td>E</td>
<td>105</td>
<td>45   E</td>
<td>05</td>
</tr>
<tr>
<td>F</td>
<td>106</td>
<td>46   F</td>
<td>06</td>
</tr>
<tr>
<td>G</td>
<td>107</td>
<td>47   G</td>
<td>07</td>
</tr>
<tr>
<td>H</td>
<td>110</td>
<td>48   H</td>
<td>10</td>
</tr>
<tr>
<td>I</td>
<td>111</td>
<td>49   I</td>
<td>11</td>
</tr>
<tr>
<td>J</td>
<td>112</td>
<td>4A   J</td>
<td>12</td>
</tr>
<tr>
<td>K</td>
<td>113</td>
<td>4B   K</td>
<td>13</td>
</tr>
<tr>
<td>L</td>
<td>114</td>
<td>4C   L</td>
<td>14</td>
</tr>
<tr>
<td>M</td>
<td>115</td>
<td>4D   M</td>
<td>15</td>
</tr>
<tr>
<td>N</td>
<td>116</td>
<td>4E   N</td>
<td>16</td>
</tr>
<tr>
<td>O</td>
<td>117</td>
<td>4F   O</td>
<td>17</td>
</tr>
<tr>
<td>P</td>
<td>120</td>
<td>50   P</td>
<td>20</td>
</tr>
<tr>
<td>Q</td>
<td>121</td>
<td>51   Q</td>
<td>21</td>
</tr>
<tr>
<td>R</td>
<td>122</td>
<td>52   R</td>
<td>22</td>
</tr>
<tr>
<td>S</td>
<td>123</td>
<td>53   S</td>
<td>23</td>
</tr>
<tr>
<td>T</td>
<td>124</td>
<td>54   T</td>
<td>24</td>
</tr>
<tr>
<td>U</td>
<td>125</td>
<td>55   U</td>
<td>25</td>
</tr>
<tr>
<td>V</td>
<td>126</td>
<td>56   V</td>
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</tr>
<tr>
<td>W</td>
<td>127</td>
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</tr>
<tr>
<td>X</td>
<td>130</td>
<td>58   X</td>
<td>30</td>
</tr>
<tr>
<td>Y</td>
<td>131</td>
<td>59   Y</td>
<td>31</td>
</tr>
<tr>
<td>Z</td>
<td>132</td>
<td>5A   Z</td>
<td>32</td>
</tr>
<tr>
<td>[ Opening Bracket</td>
<td>133</td>
<td>5B   [</td>
<td>61</td>
</tr>
<tr>
<td>\ Reverse Slant</td>
<td>134</td>
<td>5C   \</td>
<td>75</td>
</tr>
<tr>
<td>^ Circumflex</td>
<td>136</td>
<td>5E   ^</td>
<td>76</td>
</tr>
<tr>
<td>_ Underline</td>
<td>137</td>
<td>5F   _</td>
<td>65</td>
</tr>
<tr>
<td>` Grave Accent</td>
<td>140</td>
<td>60   @</td>
<td>74</td>
</tr>
<tr>
<td>a</td>
<td>141</td>
<td>61   a</td>
<td>&quot;A</td>
</tr>
<tr>
<td>b</td>
<td>142</td>
<td>62   b</td>
<td>&quot;B</td>
</tr>
<tr>
<td>c</td>
<td>143</td>
<td>63   c</td>
<td>&quot;C</td>
</tr>
<tr>
<td>d</td>
<td>144</td>
<td>64   d</td>
<td>&quot;D</td>
</tr>
<tr>
<td>e</td>
<td>145</td>
<td>65   e</td>
<td>&quot;E</td>
</tr>
<tr>
<td>f</td>
<td>146</td>
<td>66   f</td>
<td>&quot;F</td>
</tr>
<tr>
<td>g</td>
<td>147</td>
<td>67   g</td>
<td>&quot;G</td>
</tr>
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Continued on next page.
Table A-1. Code Conversion Chart (Continued)

<table>
<thead>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>h</td>
<td>150</td>
<td>68</td>
<td>&quot;H&quot;</td>
<td>7610</td>
<td>A/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>151</td>
<td>69</td>
<td>&quot;I&quot;</td>
<td>7611</td>
<td>A(</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j</td>
<td>152</td>
<td>6A</td>
<td>&quot;J&quot;</td>
<td>7612</td>
<td>A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k</td>
<td>153</td>
<td>6B</td>
<td>&quot;K&quot;</td>
<td>7613</td>
<td>A$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l</td>
<td>154</td>
<td>6C</td>
<td>&quot;L&quot;</td>
<td>7614</td>
<td>A=</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m</td>
<td>155</td>
<td>6D</td>
<td>&quot;M&quot;</td>
<td>7615</td>
<td>Asp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>156</td>
<td>6E</td>
<td>&quot;N&quot;</td>
<td>7616</td>
<td>A,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o</td>
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<td>&quot;O&quot;</td>
<td>7617</td>
<td>A.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>p</td>
<td>160</td>
<td>70</td>
<td>&quot;P&quot;</td>
<td>7620</td>
<td>A#</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>161</td>
<td>71</td>
<td>&quot;Q&quot;</td>
<td>7621</td>
<td>A[</td>
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<td>r</td>
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<td>72</td>
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<td>7622</td>
<td>A]</td>
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<td>73</td>
<td>&quot;S&quot;</td>
<td>7623</td>
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<td>t</td>
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<td>y</td>
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<td>79</td>
<td>&quot;Y&quot;</td>
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<td>A?</td>
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<td></td>
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<td>172</td>
<td>7A</td>
<td>&quot;Z&quot;</td>
<td>7632</td>
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<td></td>
</tr>
<tr>
<td>{ Opening Brace</td>
<td>173</td>
<td>7B</td>
<td>61</td>
<td>&quot;O&quot;</td>
<td>7633</td>
<td>A&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>{ Vertical Line</td>
<td>174</td>
<td>7C</td>
<td>\</td>
<td>75</td>
<td>&quot;1&quot;</td>
<td>7634</td>
<td>A@</td>
<td></td>
</tr>
<tr>
<td>} Closing Brace</td>
<td>175</td>
<td>7D</td>
<td>}</td>
<td>62</td>
<td>&quot;2&quot;</td>
<td>7635</td>
<td>A\</td>
<td></td>
</tr>
<tr>
<td>~ Tilde</td>
<td>176</td>
<td>7E</td>
<td>~</td>
<td>76</td>
<td>&quot;3&quot;</td>
<td>7636</td>
<td>A~</td>
<td></td>
</tr>
<tr>
<td>DEL</td>
<td>177</td>
<td>7F</td>
<td>~4</td>
<td>7637</td>
<td>A;</td>
<td></td>
<td></td>
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</table>

NOTE: sp represents a space.
This appendix describes procedures for recovering from errors that either cause you to lose the connection to NOS or, when screen editing, cause your screen to become garbled. This appendix also provides alphabetical lists of FSE diagnostic messages.

Error Recovery

This section describes how to recover your FSE session if one of the following errors occurs.

1. The screen is garbled due to communication errors.
2. The connection to NOS is lost.
3. You enter the wrong terminal model on the NOS SCREEN command.

Recovery from Communication Errors

If communication errors cause your screen to become garbled, you can rewrite the current screen as follows:

1. If you are on a Viking 721 terminal, press:
   
   ![CLEAR](image) ![NEXT](image)

2. If you are on a CDC 722 terminal, press:
   
   ![EOP](image) ![NEW_LINE](image)

3. On any terminal, press:
   
   ![HOME](image)

(or the equivalent key) to position the cursor on the FSE directive line. Then enter:

S S
Recovery from Losing the NOS Connection

The following procedure restores your FSE session if you lose the NOS connection.

1. Log in to NOS.

   WELCOME TO THE NOS SOFTWARE SYSTEM.
   COPYRIGHT CONTROL DATA 1978, 198x.

   yy/mm/dd   13.20.42   L3FT1
   CDC NETWORK OPERATING SYSTEM NOS 2
   FAMILY:   familyname,username,password
   JSN: ABVJ, NAMIAF

2. When the following appears, enter the job sequence name (JSN) of the job to recover. In this example, only job ABVJ can be recovered.

   RECOVERABLE JOB(S)

   JSN  UJN  STATUS      TIMEOUT

   ABVJ  AKVA  SUSPENDED  29 MIN.

   ENTER GO TO CONTINUE CURRENT JOB,
   RELIST TO LIST RECOVERABLE JOBS,
   OR DESIRED JSN: abv

3. Do not enter GO when the following message appears.

   JSN: ABVJ SYSTEM: BATCH  SRU:  2.679
   STATUS: FSE,MYFILE,A,G.
   CHARACTER SET: ASCII  MODES: PROMPT ON
   INPUT REQUESTED. ENTER GO TO CONTINUE.

   Instead, press:

   (NEXT)

   The following FSE prompt appears.

   ??

4. Respond to the prompt with:

   S S

   This returns you to where you left off in your FSE session.

Refer to the NOS Version 2 Reference Set, Volume 2, Guide to System Usage, for detailed information on NOS login and job recovery procedures.
Recovery from Typing the Wrong Terminal Model

If you accidently enter the NOS command:

```
SCREEN,721
```

and your terminal is, for instance, a 722, entering:

```
FSE, filename
```

results in a meaningless screen display. To exit this malfunctioning FSE session, press:

```
STOP
```

on the Viking 721, or enter:

```
CTRL T
```

on any terminal.

(You may have to press (STOP) or (CTRL) (T) several times in succession.)

This switches you to the FSE line editor, which displays the directive prompt:

```
??
```

To exit the line editor, enter:

```
QUIT (or Q)
```

and press:

```
RETURN
```

Re-enter the SCREEN command with the correct model name for your terminal. In this example, enter:

```
SCREEN,722
```

You can now edit your file in screen mode.
Diagnostic Messages

FSE diagnostic messages are grouped in two categories: user messages and internal messages. User messages appear when you make a mistake while using FSE. Internal messages appear when FSE makes a mistake. Internal messages are always preceded by FSE INTERNAL ERROR, and followed by CONTACT SOFTWARE SUPPORT.

This section lists user messages first followed by internal messages. If you receive a message not listed, either refer to the NOS Version 2 Reference Set, Volume 3, System Commands, or contact Central Software Support.

User Messages

BATCH JOBS MUST BE ERROR FREE.

A syntax error occurred on a noninteractive FSE session. Correct the job and try again.

CANNOT CHANGE READ-ONLY FILE.

You tried to change a file you are not allowed to change.

CHANGES OUTSIDE OF TEXT AREA DISCARDED.

You tried to input data or insert or delete lines outside of the text area of the screen. (For example, by typing over the function key labels.) Use the appropriate key or directive to position the cursor in the area where you want the file changed.

CHARACTER SEQUENCE NOT RECOGNIZED.

Your input is not recognized by FSE. Check the spelling and try again.

CURSOR RESET FROM BEYOND EDGE OF SCREEN.

A directive or string of directives resulted in positioning the cursor past the right edge of the screen. Use the appropriate key or directive to increase the number of columns (if possible) on the screen, or use the SET VIEW OFFSET key or directive to view the affected area of text.

DIRECTIVE CANCELLED BY FUNCTION KEY.

You pressed a function key before a directive had finished executing. The function key cancels the directive and executes the function. No action is required.
EMPTY FILE.

You have specified a file that contains no lines. Try again with the correct file name.

END OF LINE BEYOND EDGE OF SCREEN.

You tried to position the cursor to the end of a line that extends beyond the edge of the screen. Use the appropriate key or directive to view the wide line.

ERROR IN THIS PROCEDURE LINE.

The procedure line displayed contains an error. Correct the error and try again.

FILE MUST BE ON DISK.

The file you specified is not on a mass storage device, so could not be located. Try again with a valid file name.

FILE MUST NOT CONTAIN SEQUENCE NUMBERS.

The directive you specified can be performed only on files without sequence numbers. Try another directive or file.

FILE NAME IN USE.

The file name you specified is already in use in the work file. Select a different file name and try again.

FSEEKEYS IN TDU DEFINITION TOO LONG.

One or more of the FSEEKEYS strings in your Terminal Definition Utility (TADU) file is longer than 250 characters. Split the string into multiple FSEEKEYS strings so none exceeds 250 characters.

INTERNAL ERROR.

Refer to the Internal Messages section that follows this list.

INVALID FILE NAME.

You specified an invalid file name. Check the spelling of the file name and try again.
KEYWORD MUST FOLLOW SET.

You entered an invalid keyword parameter following the SET directive. Check the syntax of the SET directive and try again.

LINE INCREMENT VALUE TOO LARGE.

The value you specified on the SET INCREMENT directive is too large for the specified file. Try again with a smaller increment.

MARKS CANCELLED.

You cancelled the previously set marks by either pressing UNMARK or entering the UNMARK directive.

MISSING REPLACEMENT STRING.

You entered a REPLACE directive that did not contain a replacement string. Try again with a specified string.

MUST SPECIFY FILE NAME.

The FSE directive you entered did not contain a valid file name. Try again with a valid file name.

MUST SPECIFY YES OR NO.

You specified a keyword parameter other than YES or NO. Try again with YES or NO specified.

NO FILE DATA STORED WITH "DATA".

You entered the BACK directive (or pressed the BACK key) without first marking an area of the file with the DATA directive. Once you enter DATA to mark the area to which you wish to return, the BACK directive becomes operational.

NO FILE NAME ON FSE COMMAND

You entered an FSE command without specifying the file name. Reenter the FSE command with a valid file name.

NO MARK(S) ACTIVE.

You specified UNMARK (UM) to cancel marks on text, but no marks were currently set.
NOT ENOUGH ROOM FOR INSERTION.

There is not enough room for you to insert lines. Resequence the line numbers and try again.

NOT FOUND.

The string you specified on a LOCATE or REPLACE directive is not in the file. Check the spelling of the string and try again.

ONLY ONE RANGE ALLOWED.

You specified more than one range. Check the syntax of the desired directive and try again.

OUT OF BOUNDS.

The range you specified is out of bounds. Specify a smaller range and try again.

PARAMETER NOT VALID FOR THIS DIRECTIVE.

You specified a keyword parameter that FSE does not recognize. Check the command syntax and try again.

PFN BUSY OR NOT FOUND, USING LOCAL FILE.

FSE cannot access the permanent file specified on the FSE command because it is busy or the file does not exist. FSE uses the local copy of the file, if any. Check the file name and try again.

PLEASE RE-ENTER INPUT.

You must wait until one directive or function is complete before you can enter another. Try again.

PROCEDURE NOT FOUND.

FSE cannot not find the procedure specified. Check the file on which the procedure resides, check the spelling, and try again.

QUIT IS REQUIRED FOR BATCH JOBS.

You did not include a QUIT directive in a noninteractive FSE session. Add a QUIT directive and try again.

RANGE MUST BE IN SAME FILE.

The range you specified spanned more than one file. Try again with the range limited to one file.
RESERVED FILE.

You tried to edit a file that is protected from editing. Start FSE again with a valid file name.

RETURN MUST FOLLOW FUNCTION KEY.

You must enter a carriage return after pressing the specified function key. Try again, pressing (RETURN) after the function key.

SCREEN MODE REQUIRED.

You tried an editing function that works only in screen editing mode. Either try another function or set screen mode and try again.

SET UNDO YES - TO ENABLE UNDO.

You tried to enter the UNDO directive while it is not enabled. Enable UNDO (using the SET UNDO YES directive) and try again.

STRING GREATER THAN 80 CHARACTERS.

You entered a string containing a line longer than the allowable limit (80 characters).

STRING NOT ALLOWED.

You entered a string when none is required. Try again without the string.

SYSTEM INTERRUPT, PROCEED NOW.

A forced transaction from multi-user FSE to single-user FSE has occurred. This is not a result of anything you did. Resume editing. The effects of the previous directive may be cancelled.

TAB FIELD ORDINAL OUT OF BOUNDS.

You specified a tab field that is out of range. Try again with a valid tab field.

TAB STOP OUT OF BOUNDS.

You specified a tab field that is out of range. Try again with a valid tab field entry.

*TO* REQUIRED BEFORE DESTINATION FILE.

You entered a COPY or MOVE directive with a source and destination file specified but did not include the required TO parameter.

TOO MANY FSE COMMAND PARAMETERS.

You entered too many parameters on your FSE command. Check for the correct parameters and try again.
TOO MANY PARAMETERS.

You specified too many parameters on one directive. Take off a few parameters and try again.

UNKNOWN CONTROL KEY, CHECK SCREEN.

You entered a sequence that FSE does not recognize. Determine whether the screen has been garbled by entering either:

CLEAR + NEXT

or

SET SCREEN

to rewrite it, and try again.

UNKNOWN DIRECTIVE.

You entered a directive that FSE did not recognize. Check the spelling and syntax and try again.

UNKNOWN FSE OPTION: OP

You specified an option on the FSE command that FSE does not recognize. Check the FSE command format and try again.

UNRECOGNIZED FSE COMMAND SYNTAX.

The string you entered is not a valid FSE command. Check the FSE command format and try again.

UNSUPPORTED FUNCTION KEY.

FSE does not support the key you pressed. Check the key you want and try again.

USE "EDIT" TO UNSPLIT SCREEN

When FSE help is displayed in the lower half of the screen, this message tells you how to exit the help file, returning the upper half of the screen to full-screen length.

VALUE MUST BE NUMERIC.

You entered a nonnumeric value for a keyword parameter that must be numeric. Enter a numeric value and try again.
WARNING: ONE OR MORE OF YOUR ASCII FILES
CONTAINED COLONS ENCODED IN THE DISPLAY
CODE FORMAT OF OCTAL 00 (:) RATHER THAN
THE ASCII FORMAT OF OCTAL 7404 (_D).

ENTER ...  
YES      COLONS LEFT IN DISPLAY CODE (:)  
NO       COLONS CHANGED TO ASCII (_D)  
??

Decide whether to keep the colons in display code format (enter YES) or to
change them to ASCII format (enter NO).

WARNING: ONE OR MORE OF YOUR FILES COULD
NOT BE SAVED BECAUSE OF YOUR VALIDATION
LIMITS (THE FILE IS NOW TOO LONG OR YOU
HAVE EXCEEDED YOUR LIMITS FOR NUMBER OF
FILES) AND HAS BEEN LEFT LOCAL BY FSE.

Check your validation limits by entering the LIMITS command from
command mode. If the number of permanent files allowed in your catalog
has not been exceeded, the file you are editing may be too long. Break the
file down into two or more shorter files.

WIDE LINE.

You specified a range of lines containing a line longer than the limit. To
complete the processing of the line range, increase the line width limit.

XYZ POINTER NOT SET IN FILEfile.

You specified an X, Y, or Z pointer as the range in the source file for a
COPY or MOVE directive without previously setting the pointer in that
file. Set the appropriate pointers before executing the COPY or MOVE
directive.

Internal Messages

The following messages are always preceded by the line
FSE INTERNAL ERROR.

NOTE

When an FSE internal error message occurs, you should repeat the procedure
that produced the message. If the message reappears, contact Central
Software Support.

ALL WORKFILE BUFFERS ARE FULL.

FSE encountered a full working buffer while trying to store data.
ALTED PRU WAS NOT REWRITTEN.

FSE failed to rewrite an altered PRU before reusing the buffer. Contact Central Software Support.

BAK BEFORE START OF FILE.

FSE attempted to access a line located before the first line of the file. Contact Central Software Support.

DIRECTORY BLOCK POINTER TOO LARGE.

The directory block pointer is greater than the value allowed. Contact Central Software Support.

DIRECTORY BLOCK POINTER TOO SMALL.

The directory block pointer is less than the value allowed. Contact Central Software Support.

FILE MUST BE ON DISK.

The file specified on the FSE command is not on a mass storage device. Try again with a valid file name.

FILE POSITION STACK OVERFLOWED.

The stack that monitors the file position overflowed. Contact Central Software Support.

FILE POSITION STACK UNDERFLOWED.

The stack that monitors the file position underflowed. Contact Central Software Support.

FILE SIZE INCORRECT.

The file size (EOI sector) reported by CIO conflicts with FSE. Contact Central Software Support.

FILE TOO LARGE.

The file you are attempting to edit is too large for FSE to handle. Contact Central Software Support.

FWD BEYOND END OF FILE.

FSE attempted to access a line located after the last line of the file. Contact Central Software Support.
LENGTH TOO LONG.

The length of a line FSE tried to manipulate exceeded the maximum length of 250 characters. Contact Central Software Support.

LINE NOT FOUND IN FILE.

FSE attempted to access a line that does not exist in the file. Contact Central Software Support.

OLD SECTOR MUST BE WRITTEN.

FSE attempted to allocate a new sector without first flushing the old sector to disk. Contact Central Software Support.

OUT-OF-BOUNDS PRU ADDRESS ON READ.

FSE attempted to read a sector address that is out of bounds. Contact Central Software Support.

PREVIOUS VERSION OF WORKFILE.

FSE and the workfile versions do not match. Contact Central Software Support.

PRU CONTENT INCORRECT.

The content of the PRU does not match the expected value. Contact Central Software Support.

RANDOM ADDRESS INCORRECT.

The random address returned by CIO after a random rewrite conflicts with FSE. Contact Central Software Support.

RANDOM READ LIST INCORRECT.

The read list did not contain the sector FSE was trying to access. Contact Central Software Support.

REENTRANT DATA STACK OVERFLOWED.

The general purpose data stack for reentrant code overflowed. Contact Central Software Support.

REENTRANT DATA STACK UNDERFLOWED.

The general purpose data stack for reentrant code underflowed.

RPHRLS LIST BUFFER IS FULL.

The list buffer for the RPHRLS macro is full. Contact Central Software Support.
SECTOR CANNOT BE DEALLOCATED.

FSE attempted to deallocate a block that was still valid. Contact Central Software Support.

STATUS FLAGS SHOULD HAVE BEEN CLEARED.

The content of the PRU includes status flags that should have been cleared. Contact Central Software Support.

TRANSFER TO THE BUFFER IS INCOMPLETE.

The buffer transfer on a COPY or MOVE is incomplete. Contact Central Software Support.

UNABLE TO WRITE FROM BUFFER.

FSE was unable to write and empty the circular buffer. Contact Central Software Support.

UNKNOWN TERMINAL MODEL NUMBER.

The terminal model number specified is not defined.

WORKFILE BUFFER ALLOCATED TWICE.

FSE encountered a sector written in two areas of the work file. Contact Central Software Support.

WORKFILE BUFFER CONTAINS WRONG TEXT.

FSE encountered a working buffer with incorrect text. Inform Central Software Support.

WORKFILE BUFFER EMPTY ON READ.

FSE encountered an empty circular buffer while reading the workfile. Contact Central Software Support.

WORKFILE BUFFER FULL ON READ.

FSE encountered a full circular buffer while reading the workfile. Contact Central Software Support.

WORKFILE BUFFER FULL ON WRITE.

FSE encountered a full circular buffer while writing the workfile. Contact Central Software Support.

WORKFILE IS NOT IN A RESUMABLE STATE.

FSE could not recognize the contents of the workfile. Contact Central Software Support.
Glossary

A

ASCII

American National Standard Code for Information Interchange. A 7-bit code representing a prescribed set of 128 characters including both uppercase and lowercase letters.

ASCII Mode

Use of the American National Standard Code for Information Interchange 128-character set. It includes both uppercase and lowercase letters.

Attach

The process of retrieving a direct access permanent file to use at your terminal by specifying the proper permanent file identification and, if required, passwords.

B

BACK

The FSE directive that returns you to the section of a file you marked with the DATA directive, or to the position at which you last entered BACK.

BASIC

1. Beginner's All-Purpose Symbolic Instruction Code, an elementary programming language.

2. The subsystem that uses the BASIC compiler.

Batch Job

Instructions and data submitted as a complete unit without further intervention on your part.

Batch Mode

Mode in which instructions and data are submitted as complete units without further intervention on your part.

Break

An interruption in the data stream. A user break (a break normally entered by you at your interactive terminal) stops delivery of a message or output from the host.
C

CDC Standard Keys
Keys that perform functions on nearly all applications and on all supported terminals.

Character
Any alphabetic, numeric, or special symbol that can be encoded. This term applies to the graphic characters for an input or output device, and to uniquely encoded control characters used by a terminal.

Character Set
A prescribed set of characters, specified at the time the operating system is installed. FSE supports the ASCII 128-character set, and subsets such as the ASCII 64-character set.

Command
An instruction you give to NOS that causes it to perform an operation.

Current Character
The character on which the cursor is positioned.

Current Editing Session
The editing session started with the latest entry of the FSE command that includes parameters.

Current Line
The line on which the cursor is positioned.

Current Screen
The text appearing on your screen.

Current Terminal Session
The terminal session started with the latest physical connection to the system.
DATA
The FSE directive that marks a section of your file to which you can return by entering the BACK directive.

Default
A system-supplied value used when you do not supply a value.

Direct Access File
A NOS permanent mass storage file that can be attached to your terminal session. All changes to this file are made on the file itself, rather than on a temporary copy of the file (compare with Indirect Access File).

Directive
An instruction to FSE.

Display Code
A 6-bit character code set used to represent alphanumeric and special characters. Display code includes only uppercase letters.
EDIT

The FSE directive that restores the top half of a split-screen display to full-screen length.

Editing Keys

Keys, such as (INSRT), (DELETE), (ERASE) and others, whose functions are predetermined and usually performed by software at your terminal. Contrast with Programmable Function Keys.

Editing Session

The time elapsing from when you start FSE (by entering the FSE command with parameters) to when you stop FSE (by either logging off NOS or entering another FSE command with parameters). You can restart your previous editing session by entering the FSE command without parameters.

Ellipsis String

A parameter delimited by strings enabling you to specify longer strings. The first string delimiter must be on the same line as the last string delimiter.

EOF (End-of-File)

A boundary within a sequential file. EOF is not necessarily the end of a file that can be referenced by name. The actual end of a named file is defined by EOI. In the product set manuals (FORTRAN, for example), end-of-file is also called end-of-partition (EOP).

EOI (End-of-Information)

The end of data on a file. Information appearing after this point is not considered file data. CDC CYBER Record Manager defines EOI in terms of file residency and organization.

EOR (End-of-Record)

An indicator that marks the end of a logical record. In product set manuals (FORTRAN, for example), end-of-record is also called end-of-section (EOS).
F

File
A collection of data referred to by a file name (seven or fewer alphanumeric characters). You can create a file at your terminal or retrieve a file from permanent file storage for use during a terminal session.

File Header
In FSE screen mode, the file header is the line containing the following information.
- File name and type.
- Range of lines currently displayed.
- Total number of lines in the file.

File Name
Name assigned to a file. It contains one through seven letters and digits, the first of which must be alphabetic.

FORTRAN
1. Formula Translation, a high-level language consisting of symbols and statements used to create a program closely resembling mathematical notation.
2. The subsystem that uses the FORTRAN Version 5 compiler.

FSE
The NOS command that starts the Full Screen Editor.

FSE Procedures
Groups of directives that perform the FSE functions and can be grouped under one name.

FSEPROC
The library file in which most FSE procedures reside.

Full Screen Editor
An editing utility that enables you to edit files either screen-by-screen or line-by-line.
**Help File**

An online reference aid that lists the FSE directives and their parameters.

**Indirect Access File**

A NOS permanent file that you access by making a temporary copy of it (GET or OLD command). You create or alter it by saving or substituting the contents of an existing temporary file (QUIT REPLACE directive).

**Input**

Information flowing from your terminal to the host mainframe.

**Keyword**

A type of parameter used in an FSE directive, usually followed by a value.

**Line Mode**

The FSE editing mode in which a line of the file is the basic unit of operation.

**Local File**

Any file assigned to your terminal session. This includes all temporary (indirect access permanent) files, all direct access permanent files, and all files that are not permanent.

**Login**

The procedure used at an interactive terminal to gain access to the system.

**Logoff**

The procedure used to end a terminal session.
**M**

**Micros**
Symbolic variables within procedures or directive strings that allow you to specify the current character, word, line, or file as a parameter.

**Modification Character**
A special character (#, &, !, or *) used with the ALTER directive to change text.

**N**

**NOS**
Network Operating System.

**O**

**Output**
Information flowing from the host mainframe to your terminal.
P

Pad Shifted
Terminal characteristic that enables shifted keypad functions.

Paragraph
A group of lines not containing a blank line.

Parameter
A value following a command name or directive name that alters the behavior of the command or directive.

Permanent File
A file that does not disappear when you log off the system. There are two types of permanent files on NOS: indirect access and direct access.
You access indirect access permanent files indirectly (hence, the name). That is, NOS makes a copy of your permanent file, which you can then use without affecting the permanent copy.
Direct access files are accessed directly and any changes you make are made to the actual permanent file.
Usually, indirect access files are used for smaller files and direct access files are used for very large files.

Procedure
A user-defined set of instructions that is referenced by name. Within FSE you can use procedures that consist of FSE directives.

Programmable Function Keys
Keys defined either by FSE or by you to perform FSE functions.
QUIT

The FSE directive used to exit the editor, exit the TEACH file, or end a procedure.

Record

Divisions within a file. Within FSE, the FSEPROM file contains procedures. Each of these procedures is a record terminated by an EOR marker or a QP directive.

Restart

Reentering FSE at the point you exited. To restart FSE, enter the FSE command without parameters.

Screen Mode

The FSE editing mode in which a file is edited with a page of text as the basic unit of operation.

Soft Tab Character

A software character that instructs FSE to move text to the next tab setting.

String

Any combination of alphanumeric characters bounded by delimiters.
TEACH File
A tutorial to help the user become familiar with the Viking 721 terminal and the basics of screen editing.

Temporary File
A file that is assigned to your terminal session and vanishes when you either release it or end your terminal session. Local copies of indirect access permanent files are temporary files. Direct access permanent files assigned to your terminal session are not temporary files.

Terminal Definition Utility (TDU)
The utility that allows you to define your terminal's characteristics to NOS.

Terminal Session
The period between the time you physically connect the terminal to the system and the time you log out.

Typematic
A terminal characteristic that causes keys to automatically repeat their functions when held down.

UNDO
The FSE directive that allows you to delete changes in the reverse order that they were made. UNDO should be turned off for batch processing (SET UNDO NO).

UNMARK
The FSE directive that cancels marks you have set on characters or lines of text.

Word
A string of text delimited by nonalphanumeric characters or spaces.
This appendix describes how to use the following terminals to run FSE.

- CDC 722.
- CDC 722-30.†
- DEC VT100.†
- Zenith Z19/Z29 or Heathkit H19.†
- IBM 3270.
- Lear Siegler ADM3A and ADM5.†
- Tektronix 4115.†
- TeleVideo 924/950/955

Information on these terminals includes:

- The keys equivalent to the Viking 721 editing and CDC standard keys.
- The default settings for the programmable function keys.

† The network control character (CT) for this terminal should be something other than ESC. The terminal uses ESC sequences for function key definitions. To change the network control character, enter:

\[
\text{TRMDEF,CT=\text{value}}
\]

For details, refer to the *NOS Version 2 Reference Set, Volume 3, System Commands*. 
## Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on CDC 722</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>(FWD)</td>
<td>(F1) + (NEW LINE)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>(BKW)</td>
<td>(SHIFT) (F1) + (NEW LINE)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>(UP)</td>
<td>(F2) + (NEW LINE)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>(DOWN)</td>
<td>(SHIFT) (F2) + (NEW LINE)</td>
<td>Moves current line to bottom of screen.</td>
</tr>
<tr>
<td>(HELP)</td>
<td>(F7) + (NEW LINE)</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td>(EDIT)</td>
<td>EDIT directive</td>
<td>Terminates split-screen mode, returning the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>(BACK)</td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>(DATA)</td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(F4) + (NEW LINE)</td>
<td>Inserts a blank line space in which you type in a new line of text.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(F3) + (NEW LINE)</td>
<td>Inserts a blank character space in which you type a new character.</td>
</tr>
<tr>
<td>(DELETE)</td>
<td>(SHIFT) (F4) + (NEW LINE)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td>(DELETE)</td>
<td>(SHIFT) (F3) + (NEW LINE)</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on CDC 722</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>CLEAR</td>
<td>EOL</td>
<td>Deletes all characters from the cursor to the end of the line.</td>
</tr>
<tr>
<td>← CLEAR</td>
<td>SHIFT EOL</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td>SHIFT HOME</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>NEXT</td>
<td>NEW LINE or CR</td>
<td>Terminates an input line.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Moves cursor around on screen.</td>
</tr>
<tr>
<td>4</td>
<td>SHIF 4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>SHIF 6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SHIF 2</td>
<td></td>
</tr>
</tbody>
</table>
# Default Programmable Function Keys for the CDC 722

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F1</strong></td>
<td><strong>FWD</strong> moves forward one page in the file. Shifted, <strong>BKW</strong> moves backward one page in the file.</td>
</tr>
<tr>
<td><strong>F2</strong></td>
<td><strong>LINEUP</strong> moves the current line to the top of the screen. Shifted, <strong>F2</strong> <strong>LINEDN</strong> positions the current line to the bottom of the screen.</td>
</tr>
<tr>
<td><strong>F3</strong></td>
<td><strong>INS</strong> inserts a blank at the current character (you can type a new character over the blank). Shifted, the <strong>F3</strong> <strong>DEL</strong> key deletes the current character. You can press the <strong>F3</strong> key several times before pressing <strong>NEW LINE</strong> to delete or insert more than one character. It is not until you press <strong>NEW LINE</strong> that the results are shown.</td>
</tr>
<tr>
<td><strong>F4</strong></td>
<td><strong>INSL</strong> inserts a blank line over which you can type new text. Shifted, <strong>F4</strong> <strong>DELL</strong> deletes the current line. You can press the <strong>F4</strong> key several times before pressing <strong>NEW LINE</strong> to insert or delete more than one line. It is not until you press <strong>NEW LINE</strong> that the results are shown.</td>
</tr>
<tr>
<td><strong>F5</strong></td>
<td><strong>MARK</strong> marks a line or lines for later use with another directive. These marked lines are not in inverse video display as on the Viking 721. Shifted, <strong>F5</strong> <strong>UNDO</strong> the previous change to your file.</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>COPY</td>
<td>F6 MOVE moves any marked lines or characters before the current line or character. Shifted, F6 COPY copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F6 MOVE</td>
<td></td>
</tr>
<tr>
<td>HELP</td>
<td>F7 LEFT moves your view of the file to the left.</td>
</tr>
<tr>
<td>F7 HELP</td>
<td>F7 HELP displays the FSE help file.</td>
</tr>
<tr>
<td>LEFT</td>
<td></td>
</tr>
<tr>
<td>RIGHT</td>
<td>F8 QUIT stops FSE without making any changes permanent. Shifted, F8 RIGHT moves your view of the file to the right.</td>
</tr>
<tr>
<td>F8 QUIT</td>
<td></td>
</tr>
<tr>
<td>QUIT</td>
<td></td>
</tr>
<tr>
<td>F9 ENDLIN</td>
<td>F9 ENDLIN moves the cursor to the end of the current line. Shifted, F9 UNMARK cancels marks you have set on characters or lines.</td>
</tr>
<tr>
<td>UNMARK</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

- You must press (NEW LINE) or (CR) after pressing a programmable function key.

- Do not use the (TAB) key to insert tabs. Instead, use the soft tab character (the default character is \).
# Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on CDC 722-30</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FWD</strong></td>
<td><strong>F1</strong></td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td><strong>BKW</strong></td>
<td><strong>F2</strong></td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td><strong>UP</strong></td>
<td><strong>SHIFT</strong> <strong>F1</strong></td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td><strong>DOWN</strong></td>
<td><strong>SHIFT</strong> <strong>F2</strong></td>
<td>Moves current line to bottom of screen.</td>
</tr>
<tr>
<td><strong>HELP</strong></td>
<td>HELP directive</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td><strong>EDIT</strong></td>
<td>EDIT directive</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td><strong>BACK</strong></td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td><strong>DATA</strong></td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td><strong>INSRT</strong></td>
<td><strong>7</strong> (Numeric keypad)</td>
<td>Inserts a blank line space in which you type in a new line of text. When you insert lines, the function key prompts move down according to the number of lines inserted. To align the prompts properly, press <strong>RETURN</strong>.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on CDC 722-30</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>INSRT</td>
<td>1 (Numeric keypad)</td>
<td>When you press 1, it puts the terminal into insert mode. While insert mode is on, pressing any character moves the existing text to the right and inserts the new character. Insert mode is cancelled when you either press 1 a second time or press RETURN.</td>
</tr>
<tr>
<td>DELETE</td>
<td>9 (Numeric keypad)</td>
<td>Deletes the current line. When you delete lines, the function key prompts move up according to the number of lines deleted. To align the prompts properly, press RETURN.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>EOL</td>
<td>Deletes the current character. Deletes all characters from the cursor to the end of the line.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>CLEAR</td>
<td>Clears the entire screen. Press RETURN to rewrite it.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on CDC 722-30</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>HOME</strong></td>
<td><strong>HOME</strong></td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td><strong>NEXT</strong></td>
<td><strong>RETURN</strong></td>
<td>Terminates an input line, rewrites the screen after <strong>CLEAR</strong> , realigns the function key prompts after <strong>7</strong> (insert blank line) and <strong>9</strong> (delete line), and cancels insert mode after <strong>1</strong>.</td>
</tr>
</tbody>
</table>

Moves cursor around on screen.
## Default Programmable Function Keys for the CDC 722-30

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td><strong>MARK</strong> marks a line or lines to be used with another function or directive. Shifted, <strong>UNMARK</strong> cancels any marks on lines or characters you have set.</td>
</tr>
<tr>
<td>F2</td>
<td><strong>MRKCHR</strong> marks a character or characters for use with another function or directive. Shifted, <strong>ONECPY</strong> copies marked text before the current line or character and automatically cancels the marks.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>FWD</strong> moves forward one page in the file. Shifted, <strong>LINEUP</strong> moves the current line to the top of the page.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>BKW</strong> moves backward one page in the file. Shifted, <strong>LINEDN</strong> moves the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>UNDO</strong> cancels the previous change to your file.</td>
</tr>
<tr>
<td>F6</td>
<td><strong>QUIT</strong> stops FSE without making any changes permanent.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>LOCATE</strong> locates a character string that you specify. Shifted, <strong>LOCNXT</strong> locates the next occurrence, following the present cursor position, of the string you specify.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>COPY</strong> copies any marked lines or characters before the current line or character. Shifted, <strong>MOVE</strong> moves any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>F9</td>
<td><strong>FIRST</strong> moves the cursor to the first line of the file. Shifting, <strong>LAST</strong> moves the cursor to the last line of the file.</td>
</tr>
<tr>
<td>F10</td>
<td><strong>MIDDLE</strong> moves the current line to the middle of the screen. Shifting, F10 <strong>ENDLIN</strong> moves the cursor to the end of the current line.</td>
</tr>
<tr>
<td>F11</td>
<td><strong>SPLIT</strong> splits the current line into two lines. If the cursor is at the beginning of the line, it inserts a blank line above it. Otherwise, it splits the line at the cursor position.</td>
</tr>
<tr>
<td>F12</td>
<td><strong>JOIN</strong> joins the current line with the next line.</td>
</tr>
</tbody>
</table>

**NOTE**

Do not use the **TAB** key to insert tabs. Instead, use the soft tab character (the default character is `/`).
## Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on DEC VT100</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FWD</strong></td>
<td>1 + (RETURN)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td><strong>BKW</strong></td>
<td>PF1 + (RETURN)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td><strong>DOWN</strong></td>
<td>PF2 + (RETURN)</td>
<td>Moves current line to bottom of screen.</td>
</tr>
<tr>
<td><strong>UP</strong></td>
<td>2 + (RETURN)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td><strong>HELP</strong></td>
<td>7 + (RETURN)</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td><strong>EDIT</strong></td>
<td>EDIT directive</td>
<td>Terminates split-screen mode, returning the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td><strong>BACK</strong></td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td><strong>DATA</strong></td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td><strong>INSRT</strong></td>
<td>4 + (RETURN)</td>
<td>Inserts a blank line space in which you type a new character.</td>
</tr>
<tr>
<td><strong>INSRT</strong></td>
<td>3 + (RETURN)</td>
<td>Inserts a blank character space in which you type a new character.</td>
</tr>
<tr>
<td><strong>DELETE</strong></td>
<td>PF4 + (RETURN)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td><strong>DELETE</strong></td>
<td>PF3 + (RETURN)</td>
<td>Deletes the current character.</td>
</tr>
</tbody>
</table>

### NOTE

DEC VT100 function key (except **RETURN**) are on the numeric keypad.
<table>
<thead>
<tr>
<th><strong>Viking 721 Key</strong></th>
<th><strong>Equivalent on DEC VT100</strong></th>
<th><strong>Function</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>📡 CLEAR</td>
<td>⬛ + RETURN</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td>ENTER + RETURN</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>NEXT</td>
<td>RETURN</td>
<td>Terminates an input line.</td>
</tr>
</tbody>
</table>

**NOTE**

DEC VT100 function key (except RETURN) are on the numeric keypad.
### Default Programmable Function Keys for the DEC VT100

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKW</td>
<td>F1 <strong>FWD</strong> moves forward one page in the file. Shifted, F1 <strong>BKW</strong> moves backward one page in the file.</td>
</tr>
<tr>
<td>F1</td>
<td><strong>FWD</strong></td>
</tr>
<tr>
<td></td>
<td><strong>BKW</strong></td>
</tr>
<tr>
<td>F2</td>
<td><strong>LINEUP</strong> moves the current line to the top of the screen. Shifted, F2 <strong>LINEDN</strong> positions the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>INSC</strong> inserts a blank at the current character (you can type a new character over the blank). Shifted, F3 <strong>DELC</strong> deletes the current character. You can press the F3 key several times before pressing (RETURN) to perform delete or insert more than one character. It is not until you press (RETURN) that the results are shown.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>INSL</strong> inserts a blank line over which you can type new text. Shifted, F4 <strong>DELL</strong> deletes the current line. You can press the F4 key several times before pressing (RETURN) to insert or delete more than one line. It is not until you press (RETURN) that the results are shown.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>MARK</strong> marks a line or lines for later use with another directive. These marked lines are in inverse video display as on the Viking 721. Shifted, F5 <strong>UNDO</strong> cancels the previous change to your file.</td>
</tr>
<tr>
<td></td>
<td><strong>UNDO</strong></td>
</tr>
</tbody>
</table>
### Key Description

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F6</td>
<td><strong>MOVE</strong> moves any marked lines or characters before the current line or character. Shifted, F6 <strong>COPY</strong> copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>HOME</strong> displays the FSE help file. Shifted, F7 <strong>HELP</strong> positions the cursor on the FSE directive line.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>CLEAR</strong> <strong>QUIT</strong> stops FSE without making any changes permanent. Shifted, F8 <strong>QUIT</strong> clears your screen.</td>
</tr>
<tr>
<td>F9</td>
<td><strong>UNMARK</strong> <strong>ENDLIN</strong> moves the cursor to the end of the current line. Shifted, F9 <strong>UNMARK</strong> cancels marks you have set on characters or lines.</td>
</tr>
</tbody>
</table>

### NOTES

- You must press **RETURN** after pressing a programmable function key.
- The unshifted function keys F1 through F9 are the keypad keys 1 through 9. (Within FSE, the keypad cannot be used for numeric values).
- The shifted function keys are the following keypad keys.

<table>
<thead>
<tr>
<th>Function Key</th>
<th>Keypad Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shifted F1</td>
<td>PF1</td>
</tr>
<tr>
<td>Shifted F2</td>
<td>PF2</td>
</tr>
<tr>
<td>Shifted F3</td>
<td>PF3</td>
</tr>
<tr>
<td>Shifted F4</td>
<td>PF4</td>
</tr>
<tr>
<td>Shifted F5</td>
<td>←</td>
</tr>
<tr>
<td>Shifted F6</td>
<td>→</td>
</tr>
<tr>
<td>Shifted F7</td>
<td>ENTER</td>
</tr>
<tr>
<td>Shifted F8</td>
<td>0</td>
</tr>
<tr>
<td>Shifted F9</td>
<td>0</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on Zenith Z19/Z29, or Heathkit H19</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>(FWD)</td>
<td>f1 + (RETURN)</td>
</tr>
<tr>
<td>(BKW)</td>
<td>f2 + (RETURN)</td>
</tr>
<tr>
<td>(UP)</td>
<td>f3 + (RETURN)</td>
</tr>
<tr>
<td>(DOWN)</td>
<td>f4 + (RETURN)</td>
</tr>
<tr>
<td>(HELP)</td>
<td>HELP directive</td>
</tr>
<tr>
<td>(EDIT)</td>
<td>EDIT directive</td>
</tr>
<tr>
<td>(BACK)</td>
<td>BACK directive</td>
</tr>
<tr>
<td>(DATA)</td>
<td>DATA directive</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(IL) (Numeric keypad)</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on Zenith Z19/Z29, or Heathkit H19</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(IC) (Numeric keypad)</td>
</tr>
<tr>
<td>(DDELETE)</td>
<td>(DL) (Numeric keypad)</td>
</tr>
<tr>
<td>(DELETE)</td>
<td>(DC) (Numeric keypad)</td>
</tr>
<tr>
<td>(CLEAR)</td>
<td>(SHIFT) (ERASE) + (RETURN)</td>
</tr>
<tr>
<td>(HOME)</td>
<td>(HOME) (Numeric keypad)</td>
</tr>
<tr>
<td>(NEXT)</td>
<td>(RETURN)</td>
</tr>
</tbody>
</table>
### Default Programmable Function Keys for the Zenith Z19/Z29 or Heathkit H19

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td><strong>FWD</strong> moves forward one page in the file. Shifted, <strong>MARK</strong> marks a line or lines to be used with another function or directive.</td>
</tr>
<tr>
<td>F2</td>
<td><strong>BKW</strong> moves backward one page in the file. Shifted, <strong>MRKCHR</strong> marks a character or characters for use with another function or directive.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>LINEUP</strong> moves the current line to the top of the screen.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>LINEDN</strong> positions the current line to the bottom of the screen. Shifted, <strong>COPY</strong> copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>ENDLIN</strong> moves the cursor to the end of the current line. Shifted, <strong>MOVE</strong> moves any marked lines or characters to the current line or character.</td>
</tr>
<tr>
<td>F6</td>
<td><strong>UNDO</strong> cancels the previous change to your file. Shifted, <strong>UNMARK</strong> cancels marks you have set on characters or lines.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>QUIT</strong> exits FSE without making changes to your file permanent. Shifted, <strong>LEFT</strong> moves your view of the file to the left.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>HELP</strong> accesses the FSE help file. Shifted, <strong>RIGHT</strong> moves your view of the file to the right.</td>
</tr>
</tbody>
</table>
• You must enter \texttt{RETURN} after pressing a programmable function key.
• Unshifted function keys F1 through F5 are keyboard keys \texttt{(F1)} through \texttt{(F5)}.

  Unshifted function keys F6 through F8 are the following keyboard keys.

<table>
<thead>
<tr>
<th>Function Key</th>
<th>Keyboard Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>F6</td>
<td>□ (blue square)</td>
</tr>
<tr>
<td>F7</td>
<td>□ (red square)</td>
</tr>
<tr>
<td>F8</td>
<td>□ (white square)</td>
</tr>
</tbody>
</table>

• Shifted function keys F1 through F8 are the shifted numbers on the keypad to the right of the main keyboard. For example, to enter a shifted F3, press:

\begin{verbatim}
\texttt{(SHIFT) 3 + (RETURN)}
\end{verbatim}

When not shifted, keypad keys \texttt{[1]} through \texttt{[9]} allow you to move the cursor, insert, and delete. (The keypad cannot be used for numerals.)

• The shifted keypad keys \texttt{[0]}, \texttt{[.]}, and \texttt{(ENTER)} are the shifted function keys F10, F11, and F12.

• The Z19 hardware has tabs set every eighth column beginning with 1. These tabs are set at columns:

\begin{verbatim}
1 9 17 25 33 41 49 57 65 73
\end{verbatim}

To specify tabs other than these, use the tab character (default is \texttt{	extbackslash }).
photograph of 3270

IBM 3270
## Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on IBM 3270</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>(FWD)</td>
<td>(PF1)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>(BKW)</td>
<td>(PF2)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>(UP)</td>
<td>(ALT) + (PF13)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>(DOWN)</td>
<td>(ALT) + (PF14)</td>
<td>Moves current line to bottom of screen.</td>
</tr>
<tr>
<td>(HELP)</td>
<td>(ALT) + (PF18)</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td>(EDIT)</td>
<td>EDIT directive</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full screen length.</td>
</tr>
<tr>
<td>(BACK)</td>
<td>BACK directive</td>
<td>Returns you to the section of a file that you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>(DATA)</td>
<td>DATA directive</td>
<td>Marks a section of your file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(PF4)</td>
<td>Inserts a blank line space in which you type in a new line of text.</td>
</tr>
<tr>
<td>(DELETE)</td>
<td>(ALT) + (PF15)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td>(CLEAR)</td>
<td>(ALT) + (PF19)</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>(HOME)</td>
<td>(PF7)</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>(NEXT)</td>
<td>(NEW LINE) or (CR)</td>
<td>Terminates an input line.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moves cursor around on screen.</td>
</tr>
</tbody>
</table>
# Default Programmable Function Keys for the IBM 3270

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 FWD</td>
<td>moves forward one page in the file. Shifted, F1 LINEUP moves the current line to the top of the screen.</td>
</tr>
<tr>
<td>F2 BKW</td>
<td>moves backward one page in the file. Shifted, F2 LINEDN moves the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F3 UNMARK</td>
<td>cancels marks that you have set on lines or characters.</td>
</tr>
<tr>
<td>F4 INS</td>
<td>inserts a blank line in which you can type new text. Shifted, F4 DELL deletes the current line. You can press the (F4) key several times before pressing (NEW LINE) to insert or delete more than one line. It is not until you press (NEW LINE) that the results are shown.</td>
</tr>
<tr>
<td>F5 MARK</td>
<td>marks a line or lines for later use with another directive. These marked lines are not in inverse video display as on the Viking 721. Shifted, F5 UNDO cancels the previous change to your file.</td>
</tr>
<tr>
<td>F6 MOVE</td>
<td>moves any marked lines or characters before the current line or character. Shifted, F6 COPY copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F7 HOME</td>
<td>moves the cursor to the FSE directive line, allowing you to enter FSE directives. F7 HELP displays the FSE help file.</td>
</tr>
<tr>
<td>F8 QUIT</td>
<td>stops FSE without making any changes permanent. Shifted, F8 CLEAR clears your screen.</td>
</tr>
<tr>
<td>F9 ENDLIN</td>
<td>moves the cursor to the end of the current line.</td>
</tr>
</tbody>
</table>
NOTES

- Function keys F1 through F12 are keys **(PF1)** through **(PF12)**. Shifted keys F1 through F12 are obtained by pressing **(ALT)** before function keys **(PF13)** through **(PF24)**. For example, to enter a shifted F1, press:

  **(ALT)** **(PF13)**

- Do not use the **(TAB)** key to insert tabs. Instead, use the soft tab character (the default character is \").
## Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on Lear Siegler ADM3A</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td>(ESC) + (1) + (RETURN)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td>(ESC) + (SHIFT) + (1) + (RETURN)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td>(ESC) + (2) + (RETURN)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td>(ESC) + (SHIFT) + (2) + (RETURN)</td>
<td>Moves current line to bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td>(ESC) + (7) + (RETURN)</td>
<td>Displays FSE help file.</td>
</tr>
<tr>
<td>EDIT</td>
<td>EDIT directive</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>BACK</td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>INSRT</td>
<td>(ESC) + (4) + (RETURN)</td>
<td>Inserts a blank line space in which you type a new line of text.</td>
</tr>
<tr>
<td>INSRT</td>
<td>(ESC) + (3) + (RETURN)</td>
<td>Inserts a blank character space in which you type a new character.</td>
</tr>
<tr>
<td>DELETE</td>
<td>(ESC) + (SHIFT) + (4) + (RETURN)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td>DELETE</td>
<td>(ESC) + (SHIFT) + (3) + (RETURN)</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on Lear Siegler ADM3A</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>CLEAR</td>
<td>ESC + 0 + RETURN</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td>CTRL HOME</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>NEXT</td>
<td>RETURN</td>
<td>Terminates an input line.</td>
</tr>
<tr>
<td>4</td>
<td>CTRL H</td>
<td>Moves cursor left.</td>
</tr>
<tr>
<td>2</td>
<td>CTRL J</td>
<td>Moves cursor down.</td>
</tr>
<tr>
<td>8</td>
<td>CTRL K</td>
<td>Moves cursor up.</td>
</tr>
<tr>
<td>6</td>
<td>CTRL L</td>
<td>Moves cursor right.</td>
</tr>
</tbody>
</table>
# Default Programmable Function Keys for Lear Siegler ADM3A

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKW</td>
<td><strong>F1 FWD</strong> moves forward one page in the file. Shifted, <strong>F1 BKW</strong> moves backward one page in the file.</td>
</tr>
<tr>
<td>F2</td>
<td><strong>LINEUP</strong> moves the current line to the top of the screen. Shifted, <strong>F2 LINEDN</strong> moves the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>INS</strong> inserts a blank at the current character (you can type a new character over the blank). Shifted, <strong>DEL</strong> deletes the current character. You can press F3 several times before pressing <strong>RETURN</strong> to delete or insert more than one character. It is not until you press <strong>RETURN</strong> that the results are shown.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>INS</strong> inserts a blank line over which you can type new text. Shifted, <strong>DEL</strong> deletes the current line. You can press the F4 key several times to insert or delete more than one line. It is not until you press <strong>RETURN</strong> that the results are shown.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>MARK</strong> marks a line or lines for later use with another function. Shifted, <strong>UNDO</strong> cancels previous changes to your file.</td>
</tr>
<tr>
<td>F6</td>
<td><strong>MOVE</strong> moves any marked lines or characters before the current line or character. Shifted, <strong>COPY</strong> copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>HELP</strong> accesses the FSE help file. Shifted, <strong>LEFT</strong> moves your view of the file to the left.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>QUIT</strong> exits FSE without making changes to your file permanent. Shifted, <strong>RIGHT</strong> moves your view of the file to the right.</td>
</tr>
<tr>
<td>F9</td>
<td><strong>ENDLIN</strong> moves the cursor to the end of the current line. Shifted, <strong>MRKCHR</strong> marks a character or characters to be used with another function key.</td>
</tr>
<tr>
<td>F10</td>
<td><strong>CLEAR</strong> clears your screen. Shifted, <strong>UNMARK</strong> cancels marks you have set on characters or lines.</td>
</tr>
<tr>
<td>F11</td>
<td><strong>FIRST</strong> moves the cursor to the first line of the file. Shifted, <strong>LAST</strong> moves the cursor to the last line of the file.</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F12</td>
<td><strong>INSB</strong>: inserts blank lines at the current cursor position. Shifted, F12 <strong>DELB</strong> deletes blank lines, starting with the line the cursor is at, until a nonblank line is encountered.</td>
</tr>
<tr>
<td>F13</td>
<td><strong>LOCATE</strong>: locates a character string that you specify. Shifted, F13 <strong>LOCNXT</strong> locates the next occurrence, following the present cursor position, of the string you specify.</td>
</tr>
<tr>
<td>F14</td>
<td><strong>SPLIT</strong>: splits the current line into two lines. If the cursor is at the beginning of the line, it inserts a blank line above it. Otherwise, it splits the line at the cursor position. Shifted, F14 <strong>JOIN</strong> joins the current line with the next line.</td>
</tr>
<tr>
<td>F15</td>
<td><strong>PARA</strong>: reformats lines you marked to conform to margins set with the SET WORD FILL directive. If you have set no marks, F15 <strong>PARA</strong> reformats the current paragraph. Paragraphs are delimited by blank lines. Refer to the description of the SET WORD FILL directive in chapter 4 for more information.</td>
</tr>
</tbody>
</table>

**NOTES**

- You must press **RETURN** after pressing a programmable function key.
- Function keys F1 through F15 are the top row of keyboard keys **1** through **A**. Each must be preceded by **ESC**. For example, to enter an F3, press:
  
  **ESC** + **3** + **RETURN**

  To use the shifted functions of these keys, include the **SHIFT** key:

  **ESC** + **SHIFT** **3** + **RETURN**

- **0** and **SHIFT** **0** perform the same function, so in effect there is no shifted F10 function.
- To specify tabs, use the soft tab character (the default character is \).
## Lear Siegler ADM5

### Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on Lear Siegler ADM5</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td>(ESC) + (1) + (RETURN)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td>(ESC) + (SHIFT)(1) + (RETURN)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td>(ESC) + (2) + (RETURN)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td>(ESC) + (SHIFT)(2) + (RETURN)</td>
<td>Moves current line to bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td>(ESC) + (7) + (RETURN)</td>
<td>Displays FSE help file.</td>
</tr>
<tr>
<td>EDIT</td>
<td>EDIT directive</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>BACK</td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(ESC) + (4) + (RETURN)</td>
<td>Inserts a blank line space in which you type a new line of text.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on Lear Siegler ADM5</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>(ESC) + (3) + (RETURN)</td>
<td>Inserts a blank character space in which you type a new character.</td>
</tr>
<tr>
<td>(DELETE)</td>
<td>(ESC) + (SHIFT) + 4 + (RETURN)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td>DELETE</td>
<td>(ESC) + (SHIFT) + 3 + (RETURN)</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>(CLEAR)</td>
<td>(PAGE) + (RETURN)</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>(LINE)</td>
<td>Clears a line from the current character to the end of the line.</td>
</tr>
<tr>
<td>(HOME)</td>
<td>(HOME)</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>(NEXT)</td>
<td>(RETURN)</td>
<td>Terminates an input line.</td>
</tr>
</tbody>
</table>
# Default Programmable Function Keys for the Lear Siegler ADM5

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKW</td>
<td>F1 FWD moves forward one page in the file. Shifted, F1 BKW moves backward one page in the file.</td>
</tr>
<tr>
<td>F1</td>
<td>LINEUP moves the current line to the top of the screen. Shifted, F2 LINEDN moves the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F2</td>
<td>DELC inserts a blank at the current character (you can type a new character over the blank). Shifted, F3 DELC deletes the current character. You can press F3 several times before pressing RETURN to delete or insert more than one character. It is not until you press RETURN that the results are shown.</td>
</tr>
<tr>
<td>F3</td>
<td>INS inserts a blank line over which you can type new text. Shifted, F4 DELL deletes the current line. You can press the F4 key several times to insert or delete more than one line. It is not until you press RETURN that the results are shown.</td>
</tr>
<tr>
<td>F4</td>
<td>UNDO MARK marks a line or lines for later use with another function. Shifted, F5 UNDO cancels previous changes to your file.</td>
</tr>
<tr>
<td>F5</td>
<td>COPY MOVE moves any marked lines or characters before the current line or character. Shifted, F6 COPY copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F6</td>
<td>LEFT HELP accesses the FSE help file. Shifted, F7 LEFT moves your view of the file to the left.</td>
</tr>
<tr>
<td>F7</td>
<td>RIGHT QUIT exits FSE without making changes to your file permanent. Shifted, F8 RIGHT moves your view of the file to the right.</td>
</tr>
<tr>
<td>F8</td>
<td>MRKCHR ENLIN moves the cursor to the end of the current line. Shifted, F9 MRKCHR marks a character or characters to be used with another function key.</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UNMARK</td>
<td>F10 CLEAR clears your screen. Shifted, F10 UNMARK cancels marks you have set on characters or lines.</td>
</tr>
<tr>
<td>F10</td>
<td>CLEAR</td>
</tr>
<tr>
<td>F11</td>
<td>LAST, FIRST moves the cursor to the first line of the file. Shifted, F11 LAST moves the cursor to the last line of the file.</td>
</tr>
<tr>
<td>F12</td>
<td>DELB, INSB inserts blank lines at the current cursor position. F12 DELB deletes blank lines, starting with the line the cursor is at, until a nonblank line is encountered.</td>
</tr>
<tr>
<td>F13</td>
<td>LOCNXT, LOCATE locates a character string that you specify. Shifted, F13 LOCNXT locates the next occurrence, following the present cursor position, of the string you specify.</td>
</tr>
</tbody>
</table>

**NOTES**

- You must press (RETURN) after pressing a programmable function key.
- Function keys F1 through F14 are the top row of keyboard keys (1) through (14). Each must be preceded by (ESC). For example, to enter an F3, press:

  ESC + 3 + (RETURN)

  To use the shifted functions of these keys, include the (SHIFT) key.

  ESC + (SHIFT) 3 + (RETURN)

- (0) and (SHIFT) (0) perform the same function, so in effect there is no shifted F10 function.
- To specify tabs, use the soft tab character (the default character is \). Do not use the (TAB) key.
Tektronix 4115
### Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on Tektronix 4115</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td>F1</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td>(SHIFT) F1</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td>F2</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td>(SHIFT) F2</td>
<td>Moves current line to bottom of the screen.</td>
</tr>
<tr>
<td>HELP</td>
<td>(SHIFT) F8</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td>EDIT</td>
<td>EDIT directive</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>BACK</td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>CTRL (X)</td>
<td>Places the terminal in a mode in which pressing any character key moves existing text to the right and inserts the new character. This mode is cancelled by pressing (RTN).</td>
</tr>
<tr>
<td>INSRT</td>
<td>CTRL (2)</td>
<td>Inserts a blank line space in which you type a new line of text.</td>
</tr>
<tr>
<td>DDELETE</td>
<td>CTRL (V)</td>
<td>Deletes the current line.</td>
</tr>
<tr>
<td>DDELETE</td>
<td>CTRL (C)</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>(SHIFT) F7</td>
<td>Rewrites the entire screen.</td>
</tr>
<tr>
<td>HOME</td>
<td>F8</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on Tektronix 4115</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>NEXT</td>
<td>RTN</td>
<td>Terminates an input line.</td>
</tr>
<tr>
<td>←</td>
<td>CTRL H</td>
<td>Moves cursor left.</td>
</tr>
<tr>
<td>↓ 2</td>
<td>CTRL J</td>
<td>Moves cursor down.</td>
</tr>
<tr>
<td>↑ 8</td>
<td>CTRL K</td>
<td>Moves cursor up.</td>
</tr>
<tr>
<td>← 6</td>
<td>CTRL L</td>
<td>Moves cursor right.</td>
</tr>
</tbody>
</table>
# Default Programmable Function Keys for the Tektronix 4115

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKW</td>
<td>F1 <strong>FWD</strong> moves forward one page in the file. Shifted, F1 <strong>BKW</strong> moves backward one page in the file.</td>
</tr>
<tr>
<td>F1</td>
<td><strong>FWD</strong> moves the current line to the top of the screen. Shifted, F2 <strong>LINEDN</strong> moves the current line to the bottom of the screen.</td>
</tr>
<tr>
<td>F2</td>
<td><strong>LINEUP</strong> moves the cursor to the first line in the file. Shifted, F3 <strong>LAST</strong> moves the cursor to the last line in the file.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>FIRST</strong> cancels the most recent change to your file. Shifted, F4 <strong>UNMARK</strong> cancels marks you have set on characters or lines.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>UNDO</strong> marks a line for later use with another function. Shifted, F5 <strong>MRKCHR</strong> marks a character or characters for use with another function.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>MARK</strong> moves any marked lines or characters before the current line or character. Shifted, F6 <strong>COPY</strong> copies any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F6</td>
<td><strong>MOVE</strong> exits FSE without making changes to your file permanent. Shifted, F7 <strong>CLEAR</strong> clears your screen.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>QUIT</strong> positions the cursor on the FSE directive line. Shifted, F8 <strong>HOME</strong> displays the FSE help file on the lower half of your screen.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>HOME</strong> sets the terminal to 160-column mode. When shifted, F9 <strong>80COL</strong> sets the terminal to 80-column mode (default).</td>
</tr>
</tbody>
</table>

**Bold** indicates key combinations.
**Key** | **Description**
---|---
F10 **LOCATE** | F10 **LOCATE** locates a character string that you specify. Shifted, F10 **LOCNXT** locates the next occurrence, following the present cursor position, of the string you specify.

F11 **ENLIN** | F11 **ENLIN** moves the cursor to the end of the current line. Shifted, F11 **PARA** reformats lines you marked to conform to margins set with the SET WORD FILL directive. If you set no marks, F11 **PARA** reformats the paragraph the cursor is at. Paragraphs are delimited by blank lines. Refer to the description of the SET WORD FILL directive in chapter 4 for more information.

F12 **SPLIT** | F12 **SPLIT** splits the current line into two lines. If the cursor is at the beginning of the line, it inserts a blank line above it. Otherwise, it splits the line at the cursor position. Shifted, F12 **JOIN** joins the current line with the next line.

**NOTES**

- Unshifted function keys F9 through F12 are the following keyboard keys.

<table>
<thead>
<tr>
<th>Function Key</th>
<th>Keyboard Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>F9</td>
<td>(CTRL) (A)</td>
</tr>
<tr>
<td>F10</td>
<td>(CTRL) (S)</td>
</tr>
<tr>
<td>F11</td>
<td>(CTRL) (D)</td>
</tr>
<tr>
<td>F12</td>
<td>(CTRL) (F)</td>
</tr>
</tbody>
</table>

- The shifted function keys F9 through F12 are the following keyboard keys.

<table>
<thead>
<tr>
<th>Function Key</th>
<th>Keyboard Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shifted F9</td>
<td>(CTRL) (Q)</td>
</tr>
<tr>
<td>Shifted F10</td>
<td>(CTRL) (W)</td>
</tr>
<tr>
<td>Shifted F11</td>
<td>(CTRL) (E)</td>
</tr>
<tr>
<td>Shifted F12</td>
<td>(CTRL) (R)</td>
</tr>
</tbody>
</table>
# Equivalent Keys

<table>
<thead>
<tr>
<th>Viking 721 Key</th>
<th>Equivalent on TeleVideo 924/950/955</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWD</td>
<td>(f1)</td>
<td>Advances screen one page.</td>
</tr>
<tr>
<td>BKW</td>
<td>(f2)</td>
<td>Moves screen backward one page.</td>
</tr>
<tr>
<td>UP</td>
<td>(f3)</td>
<td>Moves current line to top of screen.</td>
</tr>
<tr>
<td>DOWN</td>
<td>(f4)</td>
<td>Moves current line to bottom of screen.</td>
</tr>
<tr>
<td>HELP</td>
<td>SHIFT (f4)</td>
<td>Displays the FSE help file.</td>
</tr>
<tr>
<td>EDIT</td>
<td>SHIFT (F3)</td>
<td>In split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>BACK</td>
<td>BACK directive</td>
<td>Returns you to the section of a file you marked with the DATA directive or with your last BACK directive.</td>
</tr>
<tr>
<td>DATA</td>
<td>DATA directive</td>
<td>Marks a section of the file to which you can return with the BACK directive.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>LINE INSERT</td>
<td>Inserts a blank line space in which you type a new line of text. When you insert lines, the function key prompts move down according to the number of lines inserted. To align the prompts properly, press RETURN.</td>
</tr>
<tr>
<td>(INSRT)</td>
<td>CHAR INSERT</td>
<td>Puts the terminal into insert mode. While insert is on, pressing any character moves the existing text to the right and inserts the new character. Insert mode is cancelled when you either press CHAR INSERT a second time or press RETURN.</td>
</tr>
<tr>
<td>Viking 721 Key</td>
<td>Equivalent on TeleVideo 924/950/955</td>
<td>Function</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>← DELETE</td>
<td>LINE DELETE</td>
<td>Deletes the current line. When you delete lines, the function key prompts move up according to the number of lines deleted. To align the prompts properly, press RETURN.</td>
</tr>
<tr>
<td>DELETE</td>
<td>CHAR DELETE</td>
<td>Deletes the current character.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>LINE ERASE</td>
<td>Deletes all characters from the cursor to the end of the line.</td>
</tr>
<tr>
<td>← CLEAR HOME</td>
<td>CLEAR HOME</td>
<td>Clears the entire screen.</td>
</tr>
<tr>
<td>NEXT</td>
<td>RETURN</td>
<td>Positions the cursor at the FSE directive line, allowing you to enter FSE directives. Terminates an input line.</td>
</tr>
<tr>
<td>6</td>
<td>← ↑ ↓ ←</td>
<td>Moves cursor around on screen.</td>
</tr>
</tbody>
</table>
### Default Programmable Function Keys for the TeleVideo 924/950/955

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAST F1</td>
<td>F1 <strong>FWD</strong> moves forward one page in the file. Shifted, F1 <strong>LAST</strong> moves the cursor to the last line of the file.</td>
</tr>
<tr>
<td>F2</td>
<td><strong>BKW</strong> moves backward one page in the file. Shifted, F2 <strong>FIRST</strong> moves the cursor to the first line of the file.</td>
</tr>
<tr>
<td>F3</td>
<td><strong>LINEUP</strong> moves the current line to the top of the screen. Shifted, F3 <strong>EDIT</strong> in split-screen mode, returns the file in the upper half of the screen to full-screen length.</td>
</tr>
<tr>
<td>F4</td>
<td><strong>LINEDN</strong> moves the current line to the bottom of the screen. Shifted, F4 <strong>HELP</strong> splits the screen and displays the FSE help file.</td>
</tr>
<tr>
<td>F5</td>
<td><strong>UNMARK</strong> cancels the previous change to your file. Shifted, F5 <strong>UNMARK</strong> cancels any marks you have set on lines or characters.</td>
</tr>
<tr>
<td>F6</td>
<td><strong>QUIT</strong> stops FSE without making any changes to your file permanent.</td>
</tr>
<tr>
<td>F7</td>
<td><strong>COPY</strong> copies any marked lines or characters before the current line or character. Shifted, F7 <strong>MOVE</strong> moves any marked lines or characters before the current line or character.</td>
</tr>
<tr>
<td>F8</td>
<td><strong>MARK</strong> marks a line or lines for use with another function or directive. Shifted, F8 <strong>MRKCHR</strong> marks a character or characters for use with another function or directive.</td>
</tr>
<tr>
<td>F9</td>
<td><strong>LOCATE</strong> locates, from your current position forward, the character string entered. Shifted, <strong>LOCAL</strong> locates all line occurrences of the character string entered.</td>
</tr>
<tr>
<td>Key</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>F10</td>
<td><strong>CENTER</strong> centers the line the cursor is on according to the boundaries set by the SET WORD FILL directive. (Refer to section 4 for more information.) Shifted, <strong>PARA</strong> reformates lines you marked to conform to margins set with the SET WORD FILL directive. If you have set no marks, shifted F10 <strong>PARA</strong> reformats the current paragraph. Paragraphs are delimited by blank lines. Refer to the SET directive in section 4 for more information.</td>
</tr>
<tr>
<td>F11</td>
<td><strong>BREAK</strong> divides the current line into two lines. The line is split at the cursor position. Shifted, <strong>JOIN</strong> joins the current line with the next line.</td>
</tr>
<tr>
<td>F12</td>
<td><strong>SKPEOL</strong> moves the current line to the middle of the screen. Shifted, <strong>MIDDLE</strong> moves the cursor to the end of the current line.</td>
</tr>
</tbody>
</table>
This appendix lists the directive strings associated with the default settings of the programmable function keys.

Following are the directive strings used by FSE. Where n is used, it indicates any number from 1 through 16.

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKn/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SKn/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SKn/VN/LABEL/UP/</td>
<td>UP</td>
</tr>
<tr>
<td>SKn/VP/LABEL/DOWN/</td>
<td>DOWN</td>
</tr>
<tr>
<td>SKn./I/LABEL/INSC/</td>
<td>INSC</td>
</tr>
<tr>
<td>SKn./D/LABEL/DELC/</td>
<td>DELC</td>
</tr>
<tr>
<td>SKn/IBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SKn/D/PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKn./END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SKn/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SKn/VH/LABEL/HOME/</td>
<td>HOME</td>
</tr>
<tr>
<td>SKn/SS/LABEL/CLEAR/</td>
<td>CLEAR</td>
</tr>
<tr>
<td>SKn/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKn/CMTP;UM;SA' '/'LABEL/ONECPY/</td>
<td>ONECPY</td>
</tr>
<tr>
<td>SKn/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SKn/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKn/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKn/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SKn/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SKn/ /LABEL/</td>
<td></td>
</tr>
<tr>
<td>SKn/SVO0/LABEL/LEFT/</td>
<td>LEFT</td>
</tr>
<tr>
<td>SKn/SVO&amp;;&amp;C;P+20/LABEL/RIGHT</td>
<td>RIGHT</td>
</tr>
<tr>
<td>SKn/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SKn/VL/LABEL/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SKn/IBP/LABEL/INSB/</td>
<td>INSB</td>
</tr>
<tr>
<td>SKn/DB/LABEL/DELB/</td>
<td>DELB</td>
</tr>
<tr>
<td>SKn/SVC80/LABEL/80COL/</td>
<td>80COL</td>
</tr>
<tr>
<td>SKn/SVC132/LABEL/132COL/</td>
<td>132COL</td>
</tr>
<tr>
<td>SKn&quot;L/&amp;?&quot;/&quot;LABEL&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
</tbody>
</table>
### Viking 721 Function Key Settings

The directive strings associated with the default settings for the Viking 721 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKn/LN/LABEL/LOCNXT/</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>SKn/V/LABEL/ MIDDLE/</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>SKn/SMW/ LABEL/MRKCHR/</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SKn/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
<tr>
<td>SKn/.J/LABEL/JOIN/</td>
<td>JOIN</td>
</tr>
<tr>
<td>SKn/.F/LABEL/PARA/</td>
<td>PARA</td>
</tr>
<tr>
<td>SKn/.C/LABEL/CENTER/</td>
<td>CENTER</td>
</tr>
<tr>
<td>SKn/SVC80;SVL34/LABEL/80COL/</td>
<td>80COL</td>
</tr>
<tr>
<td>SKn/SVC160;SVL64/LABEL/160COL/</td>
<td>160COL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SKS1/SMW/LABEL/MRKCHR</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SK2/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SKS2/CMTP;UM;SA’’/LABEL/ONECPY/</td>
<td>ONECPY</td>
</tr>
<tr>
<td>SK3/IBP/LABEL/INSB/</td>
<td>INSB</td>
</tr>
<tr>
<td>SKS3/DB/LABEL/DLDB/</td>
<td>DELB</td>
</tr>
<tr>
<td>SK4/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SKS4/VL/LABEL/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SK5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SK6/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SK6/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK7”L/&amp;&amp;?”/LABEL”LOCATE”</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SKS7/LN/LABEL/LOCNXT/</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>SK8/SVC132/LABEL/132COL/</td>
<td>132COL</td>
</tr>
<tr>
<td>SKS8/SVC80/LABEL/80COL/</td>
<td>80COL</td>
</tr>
<tr>
<td>SK9/V/LABEL/ MIDDLE/</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>SK10/END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SK11/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
<tr>
<td>SK12/.J/LABEL/JOIN/</td>
<td>JOIN</td>
</tr>
<tr>
<td>SK13/.F/LABEL/PARA/</td>
<td>PARA</td>
</tr>
<tr>
<td>SK14/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SK15/.C/LABEL/CENTER/</td>
<td>CENTER</td>
</tr>
</tbody>
</table>
## CDC 722 Function Key Settings

The directive strings associated with the default settings for the CDC 722 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK3/.I/LABEL/INSC/</td>
<td>INSC</td>
</tr>
<tr>
<td>SK4/IBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SK8/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK9/.E/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SKS1/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SKS2/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS3/.D/LABEL/DELC/</td>
<td>DELC</td>
</tr>
<tr>
<td>SKS4/D;PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKS5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKS6/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS7/SVO0/LABEL/LEFT/</td>
<td>LEFT</td>
</tr>
<tr>
<td>SKS8/SVO0&amp;&amp;C;P+20/LABEL/RIGHT/</td>
<td>RIGHT</td>
</tr>
<tr>
<td>SKS9/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
</tbody>
</table>
# CDC 722-30 Function Key Settings

The directive strings associated with the default settings for the CDC 722-30 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK2/SMW/LABEL/MRKCHR/</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SK3/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK4/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SK5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SK6/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK7&quot;L/&amp;?&quot;/LABEL&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SK8/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SK9/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SK10/V/LABEL/MIDDLE/</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>SK11/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
<tr>
<td>SK12/.J/LABEL/JOIN/</td>
<td>JOIN</td>
</tr>
<tr>
<td>SKS1/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKS2/CMTP;UM;SA’/LABEL/ONECPY</td>
<td>ONECPY</td>
</tr>
<tr>
<td>SKS3/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SKS4/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS7/LN/LABEL/LOCNXT/</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>SKS8/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK9/VL/LABEL/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SKS10/.E/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
</tbody>
</table>
### DEC VT100 Function Key Settings

The directive strings associated with the default settings for the DEC VT100 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK3/I/LABEL/INSC/</td>
<td>INSC</td>
</tr>
<tr>
<td>SK4/TBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SK8/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK9/.END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SKS1/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SKS2/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS3/.D/LABEL/DELC/</td>
<td>DELC</td>
</tr>
<tr>
<td>SKS4/D;PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKS5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKS6/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS7/VH/LABEL/HOME/</td>
<td>HOME</td>
</tr>
<tr>
<td>SKS8/SS/LABEL/CLEAR/</td>
<td>CLEAR</td>
</tr>
<tr>
<td>SKS9/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
</tbody>
</table>
Zenith Z19/Z29 and Heathkit H19
Function Key Settings

The directive strings associated with the default settings for the Zenith Z19/Z29 and Heathkit H19 terminals are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SK3/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK4/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SK5/.END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SK6/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SK7/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK8/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SKS1/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SKS2/SMW/LABEL/MRKCHR/</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SKS4/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS5/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SKS6/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKS7/SVO0/LABEL/LEFT/</td>
<td>LEFT</td>
</tr>
<tr>
<td>SKS8/SVO&amp;&amp;C;,P+20/LABEL/RIGHT/</td>
<td>RIGHT</td>
</tr>
</tbody>
</table>
# IBM 3270 Function Key Settings

The directive strings associated with the default settings for the IBM 3270 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SK3/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SK4/IBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/VH/LABEL/HOME/</td>
<td>HOME</td>
</tr>
<tr>
<td>SK8/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK9/.E/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SKS1/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SKS2/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS4/D;PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKS5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKS6/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS7/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SKS8/SS/LABEL/CLEAR/</td>
<td>CLEAR</td>
</tr>
</tbody>
</table>
# Lear Siegler ADM3A Function Key Settings

The directive strings associated with the default settings for the Lear Siegler ADM3A terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK3/.I/LABEL/INSC/</td>
<td>INSC</td>
</tr>
<tr>
<td>SK4/TBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SK8/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK9/.END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SK10/SS/LABEL/CLEAR/</td>
<td>CLEAR</td>
</tr>
<tr>
<td>SK11/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SK12/IBP/LABEL/INSB/</td>
<td>INSB</td>
</tr>
<tr>
<td>SK13&quot;L/&amp;?;&quot;LABEL&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SK14/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
<tr>
<td>SK15/.F/LABEL/para/</td>
<td>PARA</td>
</tr>
<tr>
<td>SKS1/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SKS2/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS3/.D/LABEL/DELc/</td>
<td>DELC</td>
</tr>
<tr>
<td>SKS4/D;PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKS5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKS6/CMTP/LABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS7/SVO0/LABEL/LEFT/</td>
<td>LEFT</td>
</tr>
<tr>
<td>SKS8/SVO&amp;;&amp;C;P+20/LABEL/RIGHT/</td>
<td>RIGHT</td>
</tr>
<tr>
<td>SKS9/SMW/LABEL/MRKCHR/</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SKS10/UM/LABEL/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKS11/VL/LABEL/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SKS12/DB/LABEL/DELB/</td>
<td>DELB</td>
</tr>
<tr>
<td>SKS13/LN/LABEL/LOCNXT/</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>SKS14/.J/LABEL/JOIN/</td>
<td>JOIN</td>
</tr>
</tbody>
</table>
## Lear Siegler ADM5 Function Key Settings

The directive strings associated with the default settings for the Lear Siegler ADM5 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK3/.I/LABEL/INSC/</td>
<td>INSC</td>
</tr>
<tr>
<td>SK4/IBP1/LABEL/INSL/</td>
<td>INSL</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/HELP/LABEL/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SK8/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK9/.END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SK10/SS/LABEL/CLEAR/</td>
<td>CLEAR</td>
</tr>
<tr>
<td>SK11/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SK12/IBP/LABEL/INSB/</td>
<td>INSB</td>
</tr>
<tr>
<td>SK13&quot;L/&amp;&amp;?/&quot;LABEL&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SK14/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
<tr>
<td>SKS1/VPS/LABEL/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SKS2/VP/LABEL/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SKS3/.D/LABEL/DELC/</td>
<td>DELC</td>
</tr>
<tr>
<td>SKS4/.PN/LABEL/DELL/</td>
<td>DELL</td>
</tr>
<tr>
<td>SKS5/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SKS6/CMTPLABEL/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SKS7/SVO0/LABEL/LEFT/</td>
<td>LEFT</td>
</tr>
<tr>
<td>SKS8/SVO&amp;&amp;C;;P+20/LABEL/RIGHT/</td>
<td>RIGHT</td>
</tr>
<tr>
<td>SKS9/SMW/LABEL/MRKCHR/</td>
<td>MRKCHR</td>
</tr>
<tr>
<td>SKS10/UM/LABEL/UNMARK</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKS11/VI/LABEL/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SKS12/DB/LABEL/DELB/</td>
<td>DELB</td>
</tr>
<tr>
<td>SKS13/LN/LABEL/LOCNXT/</td>
<td>LOCNXT</td>
</tr>
<tr>
<td>SKS14/.J/LABEL/JOIN/</td>
<td>JOIN</td>
</tr>
</tbody>
</table>
# Tektronix 4115 Function Key Settings

The directive strings associated with the default settings for the Tektronix 4115 terminal are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/LABEL/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VN/LABEL/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK3/PF/LABEL/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SK4/UNDO/LABEL/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SK5/SM/LABEL/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK6/MMTP/LABEL/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SK7/QUIT/LABEL/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK8/VH/LABEL/HOME/</td>
<td>HOME</td>
</tr>
<tr>
<td>SK9/SVC160;SVL64/LABEL/160COL/</td>
<td>160COL</td>
</tr>
<tr>
<td>SK10&quot;/&amp;&amp;?/&quot;LABEL&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SK11/.END/LABEL/ENDLIN/</td>
<td>ENDLIN</td>
</tr>
<tr>
<td>SK12/.S/LABEL/SPLIT/</td>
<td>SPLIT</td>
</tr>
</tbody>
</table>

| SKS1/VPS/LABEL/BKW/ | BKW |
| SKS2/VF/LABEL/LINEDN/ | LINEDN |
| SKS3/VI/LABEL/LAST/ | LAST |
| SKS4/UM/LABEL/UNMARK/ | UNMARK |
| SKS5/SMW/LABEL/MRKCHR/ | MKCHR |
| SKS6/CMTPL/LABEL/COPY/ | COPY |
| SKS7/SS/LABEL/CLEAR/ | CLEAR |
| SKS8/HELP/LABEL/HELP/ | HELP |
| SKS9/SVC80;SVL34/LABEL/80COL/ | 80COL |
| SKS10/LN/LABEL/LOCNXT/ | LOCNXT |
| SKS11./F/LABEL/PARA/ | PARA |
| SKS12./J/LABEL/JOIN/ | JOIN |
**TeleVideo 924/950/955 Function Key Settings**

The directive strings associated with the default settings for the TeleVideo 924/950/955 terminals are:

<table>
<thead>
<tr>
<th>String</th>
<th>Key Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK1/VNS/L/FWD/</td>
<td>FWD</td>
</tr>
<tr>
<td>SK2/VPS/L/BKW/</td>
<td>BKW</td>
</tr>
<tr>
<td>SK3/VN/L/LINEUP/</td>
<td>LINEUP</td>
</tr>
<tr>
<td>SK4/VP/L/LINEDN/</td>
<td>LINEDN</td>
</tr>
<tr>
<td>SK5/UNDO/L/UNDO/</td>
<td>UNDO</td>
</tr>
<tr>
<td>SK6/Q/L/QUIT/</td>
<td>QUIT</td>
</tr>
<tr>
<td>SK7/CMTP/L/COPY/</td>
<td>COPY</td>
</tr>
<tr>
<td>SK8/SM/L/MARK/</td>
<td>MARK</td>
</tr>
<tr>
<td>SK9&quot;L/&amp;&amp;?/&quot;L&quot;LOCATE&quot;</td>
<td>LOCATE</td>
</tr>
<tr>
<td>SK10/.C/L/CENTER/</td>
<td>CENTER</td>
</tr>
<tr>
<td>SK11/.S/L/BREAK/</td>
<td>BREAK</td>
</tr>
<tr>
<td>SK12/V/L/MIDDLE/</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>SKS1/VL/L/LAST/</td>
<td>LAST</td>
</tr>
<tr>
<td>SKS2/PF/L/FIRST/</td>
<td>FIRST</td>
</tr>
<tr>
<td>SKS3/E/L/EDIT/</td>
<td>EDIT</td>
</tr>
<tr>
<td>SKS4/H/L/HELP/</td>
<td>HELP</td>
</tr>
<tr>
<td>SKS5/UM/L/UNMARK/</td>
<td>UNMARK</td>
</tr>
<tr>
<td>SKS7/MMTP/L/MOVE/</td>
<td>MOVE</td>
</tr>
<tr>
<td>SKS8/SMW/L/MRKCHR/</td>
<td>MKCHR</td>
</tr>
<tr>
<td>SKS9/LLA/L/LOCALL/</td>
<td>LOCALL</td>
</tr>
<tr>
<td>SKS10/.F/L/PARA/</td>
<td>PARA</td>
</tr>
<tr>
<td>SKS11/.J/L/JOIN/</td>
<td>JOIN</td>
</tr>
<tr>
<td>SKS12/.E/L/SKPEOL/</td>
<td>SKPEOL</td>
</tr>
</tbody>
</table>
The Viking 721 terminal contains software setup switches. These are to be set as shown here to ensure correct operation under FSE. The switches are software toggle switches, which have a limited number of options (usually two) from which to choose. To change a switch setting, press the corresponding programmable function key. The first set of switches appears when you turn on your terminal. Set them as follows:

Once you have set these as shown, press:

\[
\begin{align*}
\text{F} & \quad \text{MODE 1} \\
1 & \quad \text{CYBER}
\end{align*}
\]

to select CYBER mode. At this point, the screen becomes blank except for the cursor.

Press:

\[
\begin{align*}
\text{SETUP}
\end{align*}
\]
to display the next set of switches and change them, if necessary, to the following settings.

Then, press:

\[
\begin{align*}
\text{F} & \quad \text{MORE} \\
10 & \quad \text{SELECT}
\end{align*}
\]
to set the next set of switches to the following.

When you have set all the switches, press:

\[
\begin{align*}
\text{F} & \quad \text{ATTR}
\end{align*}
\]
to remove the switch prompts from the screen. You are now ready to log in to NOS.

Refer to the 721-10/20/30 Hardware Reference Manual for further information on these settings.
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We would like your comments on this manual. While writing it, we made some assumptions about who would use it and how it would be used. Your comments will help us improve this manual. Please take a few minutes to reply.

**Who Are You?**

<table>
<thead>
<tr>
<th>Option</th>
<th>How Do You Use This Manual?</th>
<th>Do You Also Have?</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
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<td>Operator</td>
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</tr>
<tr>
<td>Other</td>
<td></td>
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</tr>
</tbody>
</table>

What programming languages do you use?  

Which are helpful to you?  

- Directive Index
- Common Parameter Index
- Diagnostics (App B)
- Character Set
- Other:  

---

**How Do You Like This Manual?** Check those that apply.

<table>
<thead>
<tr>
<th>Option</th>
<th>Yes</th>
<th>Somewhat</th>
<th>No</th>
</tr>
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- Is the manual easy to read (print size, page layout, and so on)?
- Is it easy to understand?
- Is the order of topics logical?
- Are there enough examples?
- Are the examples helpful? (☐ Too simple ☐ Too complex)
- Is the technical information accurate?
- Can you easily find what you want?
- Do the illustrations help you?
- Does the manual tell you what you need to know about the topic?

---

Comments? If applicable, note page number and paragraph.

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Address ____________________________ Date ____________________________

Phone No. ____________________________

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Please send program listing and output if applicable to your comment.
## Directive Index

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<th>Page</th>
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<td>range (file 1) TO line (file 2) QUIET</td>
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<td>None</td>
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<td>DELETE</td>
<td>range BLANK WORD IN tab QUIET</td>
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</tr>
<tr>
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<td>None</td>
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<tr>
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<tr>
<td>PRINT</td>
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<tr>
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<tr>
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</table>

## Common Parameter Index

The following parameters are common to more than one of the FSE directives. Detailed descriptions of these parameters begin on page 4-4.

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<tr>
<th>Parameter</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>direction</td>
<td>NEXT num, PREVIOUS num, REPEAT num</td>
</tr>
<tr>
<td>(file)</td>
<td>NOS file name of seven or fewer characters.</td>
</tr>
<tr>
<td>line</td>
<td>line number, CURRENT, FIRST, LAST, ALL, PREVIOUS num, REPEAT num, NEXT num, line + num, line - num, X, Y, Z, line (file).</td>
</tr>
<tr>
<td>range</td>
<td>line number, CURRENT, FIRST, LAST, ALL, PREVIOUS num, REPEAT num, NEXT num, MARK, SCREEN, line + num, line - num, X, Y, Z, line (file), or any two of the preceding parameters.</td>
</tr>
<tr>
<td>string</td>
<td>/text/, &quot;text&quot;, 'text', \	ext, /text1/..//text2/</td>
</tr>
</tbody>
</table>