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Text Processing

Using the CYBER Full Screen Editor (FSE)

Susan Hail

This article introduces ACSS's users to Control Data Corporation's (CDC) Full Screen Editor (FSE) on the CYBERs, explains the process of starting an editing session, summarizes the editing and programmable function keys, and describes the use of FSE's help functions.

To use CDC's FSE in its full screen mode, you must have a terminal with a numeric keypad as well as a keyboard. The terminals that CDC has defined for FSE are listed in the GETTING STARTED section of this article.

If you do not find your terminal listed, or your site has not yet defined your terminal for FSE, you may be able to define it yourself. See the *NOS Screen Formatting Reference Manual* for further information. Both this and the *NOS Full Screen Editor User's Guide* are available in the ACSS Reference Room, 128A Lind Hall.

This article describes how to use FSE on the VT100, Z19, and Z29 terminals. Equivalents for other terminals can be found in Appendix D, "Terminal Support," of the *NOS Full Screen Editor User's Guide*. Those interested in line editing should see Chapter 4 of the *NOS Full Screen Editor User's Guide*.

Getting Started

FSE is only available through CDC's CDCNET, which is currently on the ME and MD CYBER mainframes (and soon to be on the CA). To log on to ME or MD through CDCNET, you simply respond with the machine code for the CYBER you want to log on to in response to the ACSS Network prompt.

Below is a sample log-on session.

```
ACSS-net (NOS,ME,MD,VX) ?        {Respond ME or MD. In this example we'll assume you
                                  respond with MD.}

WELCOME TO THE NOS SOFTWARE SYSTEM.
COPYRIGHT CONTROL DATA 1978, 1985.

86/05/17. 11.43.39. T070602
MERITSS/MD (05/14-AR).                    NOS 2.4.3-647/642.
```

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```
FAMILY:
USER NAME:    {Enter your user name}
PASSWORD:     {Enter your user password}

JSN: AADN, NAMIAF
```

Establish the screen mode appropriate for your terminal using the NOS SCREEN command:

```
/screen,VT100
```

or

```
/screen,Z19
```

Without this command, FSE will be in line-mode editing by default. NOS will verify (as shown below) that the screen mode is now set for a DEC VT100 or Zenith terminal.

```
SCREEN,VT100.
```

or

```
SCREEN, Z19.
```

To specify type-ahead mode, enter the model name followed by a **T**. Type-ahead allows you to enter consecutive inputs (i.e., *command*<CR> *command*<CR>) without waiting for a response from the system. Even without type-ahead, however, you can enter multiple commands before the return is entered (i.e., *command command*<CR>.)

The following table gives the predefined screen mode codes for FSE:

Terminal	Model	Model with Type-Ahead
CDC Viking 721	721	721T
CDC Viking 721 Version 3	721V3	721V3T
CDC 722	722	722T
CDC 722-30	72230	72230T
DEC VT100	VT100	VT100T
Zenith Z19/Z29 and Heathkit H19	Z19	Z19T
IBM 3270	3270	3270T
Lear Siegler ADM3A	ADM3A	ADM3AT
Lear Siegler ADM5	ADM5	ADM5T
Tektronix 4115	T4115	T4115T

To run FSE, enter:

```
/fse,myfile
```

If **myfile** is not local to your session, FSE will create it. If **myfile** is a permanent file but not local, you must tell FSE to get the file as follows:

```
/fse,myfile,g
```

If you do not specify a file name, FSE will prompt you for a file name and create the file. You can also use the **a** parameter to the FSE command to enter full ascii mode (for upper- and lower case characters), like this:

```
fse,myfile,a
```

or

```
fse,myfile,ga
```

Note that in the second example, the two parameters g and a are not separated by commas.

When FSE opens the file, it will redraw your screen so that it resembles Figures 1 and 2. In reading the following sections, you may sometimes need to refer to these figures; note particularly the Directive Line.

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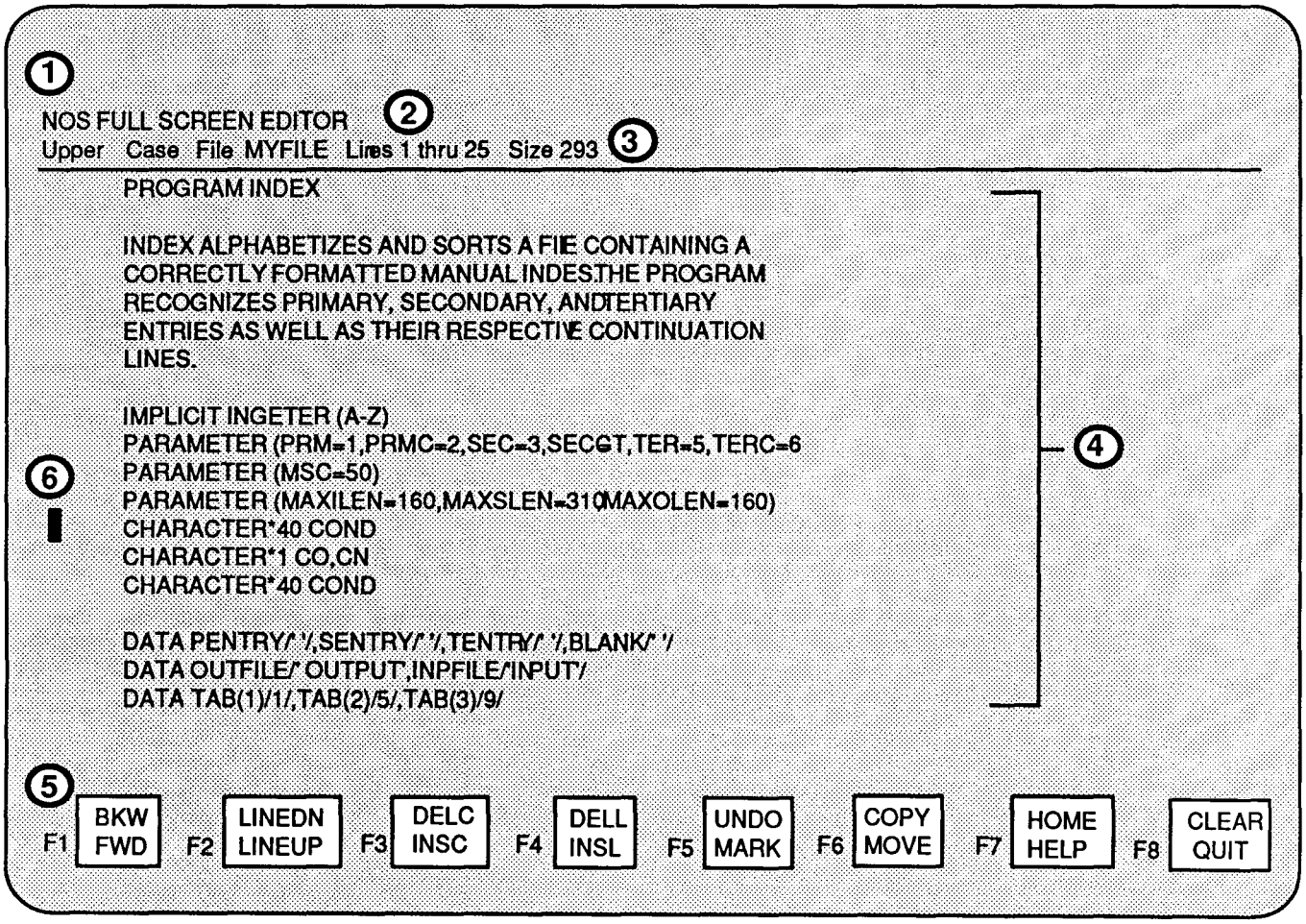

Figure 1: The FSE Screen - VT100

1. This is the Directive Line, on which FSE directives are to be entered. To position the cursor at this line, press the ENTER key, then RETURN.

2. This is the Message Line for FSE messages and prompts.

3. This is the File Header, which gives the current file information. If the file is upper- and lowercase, no prefix to the file name appears.

4. The contents of the file.

5. These represent the Programmable Function Key prompts. More is said about these elsewhere in this article.

6. This is the cursor, showing your current position in the file.

The above screen is adapted from CDC's *NOS Full Screen Editor User's Guide.*

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Editing Keys

The directions that follow are for the VT100 and Z19/29 terminals and those terminals and micros that emulate VT100s. Remember, these keys will vary depending upon the terminal you are using. See Appendix D in the *NOS Full Screen Editor User's Guide* for the equivalent keys for your terminal.

Every text editor has its own logic and requires some practice before you can use it efficiently. Be forewarned that, when you strike some editing keys in FSE, it causes characters to appear on your screen where your cursor was. These characters are not written to your file and disappear when you complete the command sequence by pressing RETURN.

VT100

Positioning the cursor - Use the arrow keys located above the main keyboard to move your cursor around the screen. The arrow keys automatically repeat when held down on the VT100.

Correcting text - Most minor text corrections can be made by positioning the cursor at the start of the text to be corrected and typing over the existing text.

Inserting characters - Position the cursor at the point where you wish to insert text, press the number 3 key once for every character to be inserted, then RETURN, and add the text.

Inserting lines - Position the cursor anywhere in the line before which you want to insert the line(s) and press the number 4 key of the keypad as many times as needed and then RETURN.

Deleting characters - Position the cursor on the first character you wish to delete and press the PF3 key once for every character to be deleted and then RETURN.

Deleting lines - Position the cursor anywhere on the first line you wish to delete and press the PF4 key as many times as needed and then RETURN.

Paging forward - Press the number 1 key of the keypad as many times as needed and then RETURN.

Paging backward - Press the PF1 key as many times as needed plus RETURN.

Z19/29

Positioning the cursor - Use the arrow keys located to the right of the main keyboard to move your cursor around the screen. The arrow keys will repeat when the REPEAT key is held down.

Correcting text - Most minor text corrections can be made by positioning the cursor at the start of the text to be corrected and typing over the existing text.

Inserting characters - Position the cursor at the point where you wish to insert text, press the "IC" key of the keypad *only once,* and add the text. You can then move around the screen using the arrow keys and insert characters wherever you like. To exit insert mode, press "IC" again or RETURN.

Inserting lines - Position the cursor anywhere in the line before which you want to insert the line and press the "IL" key of the keypad.

Deleting characters - Position the cursor on the character you wish to delete and press the "DC" key.

Deleting lines - Position the cursor anywhere on the line you wish to delete and press the "DL" key.

Paging forward - Press the "f1" key above the keyboard and then RETURN. For multiple paging, press "f1" as many times as necessary, then RETURN.

Paging backward - Press the "f2" key plus RETURN. For multiple paging, press "f2" as many times as desired, then RETURN.

Clearing the screen - Hold down the SHIFT key while pressing the ERASE key and then RETURN to rewrite the entire screen.

Home - The HOME key on the keypad will position the cursor at the FSE Directive Line, allowing you to enter FSE directives.

Programmable Function Keys

FSE requires you to use "programmable function keys." The VT100 has no such keys, but provides keypad keys instead. The list below gives the keypad equivalents of function keys. Keys F9 through F16 are not generally available on any of the other predefined terminals. If you have a CDC Viking 721, see the Screen Editing chapter of the *NOS Full Screen Editor User's Guide*.

VT100

In the following summary, the commands are organized according to the command squares that appear along the bottom of the FSE screen.

Function	Description
FWD	Keypad key 1 plus RETURN moves your cursor forward one page in the file. Press key 1 as often as needed, then press RETURN, to page forward by two or more pages.
BKW	Keypad key PF1 plus RETURN moves back one page in the file. Press key PF1 as often as needed, then press RETURN, to page backward by two or more pages.
LINEUP	Keypad key 2 plus RETURN moves the current line to the top of the screen.
LINEDN	Keypad key PF2 plus RETURN positions the current line to the bottom of the screen.
INSC	Keypad key 3, pressed as often as needed, plus RETURN inserts the desired number of characters at the position marked by the cursor.
DELC	Keypad key PF3 plus RETURN deletes the current character marked by the cursor. The PF3 key can be pressed several times before the RETURN key to delete more than one line, but you will not see the results until you press the RETURN key.
INSL	Keypad key 4, pressed as often as needed, plus RETURN, inserts the desired number of blank lines over which new text can be typed.
DELL	Keypad key PF4 plus RETURN deletes the current line. Press the PF4 key several times for more than one delete; you will not see the results until you press the RETURN key.
UNDO	Keypad key "-" plus RETURN undoes the most recent change. You can press UNDO repeatedly until all changes made during the current editing session are canceled.
MOVE	Keypad key 6 plus RETURN moves any previously marked text to before the current line or character.

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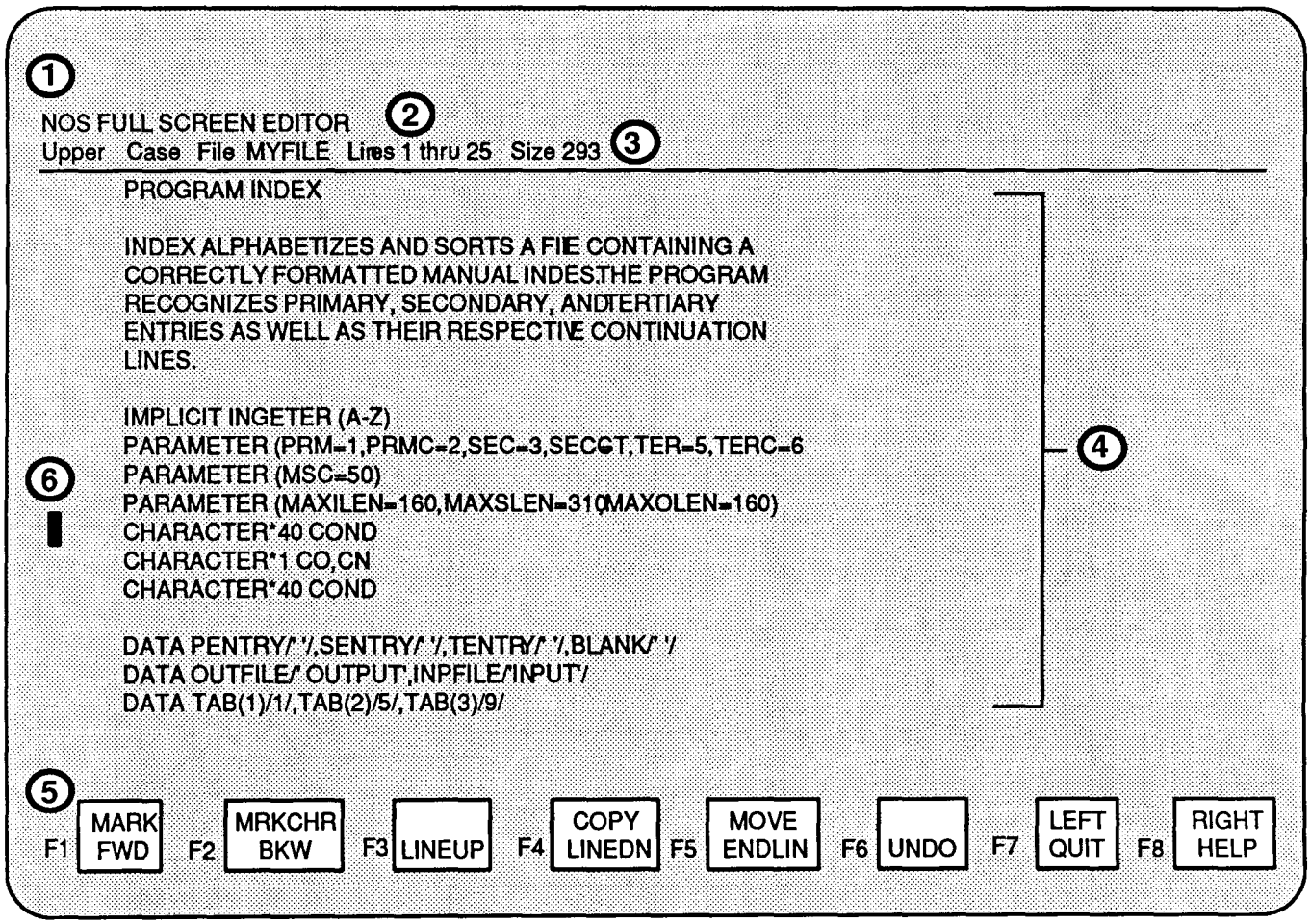

Figure 2: The FSE Screen - Z19/29

1. This is the Directive Line, on which FSE directives are to be entered. To position the cursor at this line, press the ENTER key, then RETURN.

2. This is the Message Line for FSE messages and prompts.

3. This is the File Header, which gives the current file information. If the file is upper- and lowercase, no prefix to the file name appears.

4. The contents of the file.

5. These represent the Programmable Function Key prompts. More is said about these elsewhere in this article.

6. This is the cursor, showing your current position in the file.

The above screen is adapted from CDC's *NOS Full Screen Editor User's Guide.*

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COPY	Keypad key "," plus RETURN copies any marked text to before the current line or character. If there is no marked text, the current line is copied. Press more than once to create multiple copies.
HELP	Keypad key 7 plus RETURN displays the FSE help file.
HOME	Keypad key ENTER plus RETURN positions the cursor on the directive line.
QUIT	Keypad key 8 plus RETURN stops the current editing session. If your file is an indirect access file, the changes you've made will not become permanent when you end the terminal session. If your file is direct access, the changes will become permanent.
CLEAR	Keypad key "." plus RETURN clears your screen.
ENDLIN	Keypad key 9 plus RETURN moves the cursor to the end of the current line.
UNMARK	Not implemented on a VT100. See the SET KEY directive in the *NOS Full Screen Editor User's Guide.*

Z19/29

The following summary is for the Z19/Z29 function keys and keypad keys. The commands are organized according to the command squares that appear along the bottom of the FSE screen. (Note that, on the Z19 and Z29 terminals, shifted keypad commands require you to hold down the SHIFT key while you press the indicated keypad key.)

Key		Description
f1	FWD	Lowercase f1 plus RETURN moves your cursor forward one page in the file.
	MARK	Shifted keypad 1 key plus RETURN the first time marks a line or the beginning of a range of lines for later use with another directive. Use the cursor to locate the end of a range of lines you wish to select and press the shifted keypad 1 key plus RETURN to close the range of lines selected.
f2	BKW	Lowercase f2 plus RETURN moves back one page in the file.
	MRKCHR	Shifted keypad 2 key plus RETURN the first times mark a character or the beginning of a range of characters for later use with another directive. Use the cursor to locate the end of a range of characters you wish to select and press the shifted Keypad 2 key plus RETURN to close the range of characters selected.
f3	LINEUP	Lowercase f3 plus RETURN moves the text beginning with the current line to the top of the screen.
f4	LINEDN	Lowercase f4 plus RETURN positions the text previous to the current line to the bottom of the screen.
	COPY	Shifted keypad 4 key plus RETURN copies any marked text to before the current line or character. If there is no marked text, the current line is copied. Press more than once to create multiple copies.
f5	ENDLIN	Lowercase f5 plus RETURN moves the cursor to the end of the current line.

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	MOVE	Shifted keypad 5 key plus RETURN moves any marked text to before the current line.
f6	UNDO	Lowercase f6, the blue square key, undoes the most recent change. You can press UNDO repeatedly until all changes made during the current editing session are cancelled.
f7	QUIT	Lowercase f7, the red square key, plus RETURN stops the current editing session. If your file is an indirect access file, the changes you've made will not become permanent when you end the terminal session. If your file is direct access, the changes will become permanent.
	LEFT	Shifted keypad 7 key plus RETURN shifts your view of the file to the left.
f8	HELP	Lowercase f8, the white square key, plus RETURN displays the FSE help file.
	RIGHT	Shifted keypad 8 key plus RETURN shifts your view of your file to the right.

FSE Directives

The following is a list of the directives to be used with FSE. For directive syntax, common parameters, specific parameters for each directive, and advanced FSE functions (specifying micros, redefining Programmable Function Keys, and changing screen format), see the directive chapter in the NOS *Full Screen Editor User's Guide,* or use the FSE HELP function.

ALTER	DELETE	HELP	PRINT	TEACH	. "DOT"
BACK	EDIT	INSERT	QUIT	UNDO	- "DASH"
COPY	FSE	LOCATE	REPLACE	UNMARK	-- "COMMENT"
DATA	GET	MOVE	SET	VIEW	/ "SLASH"

To access the help file on a VT100, press ENTER, then RETURN, to move the cursor to the directive line, then type in the directive HELP and press RETURN. The number 7 keypad key plus RETURN will also access the help file on a VT100. On the Zenith terminals, press the f8 key plus RETURN.

FSE will display the first window of the help file. To page through the file, press the number 1 on the keypad for a VT100, or the f1 key on a Zenith terminal, and press RETURN. The help file can be searched for a directive by keying in HELP followed by a space and the directive name on the directive line. To leave HELP, move the cursor to the directive line as described above, type EDIT, and press RETURN. The help screen will disappear and the cursor will return to the edit screen.

To leave FSE, move the cursor to the directive line as described above and type QUIT.

Remember, if you are editing an indiect access file, you must RETAIN your file after leaving FSE, or key in QUIT REPLACE (QR) on the directive line to exit FSE and write your changes to your permanent file.

Documentation

See the *Full Screen Editor User's Guide* (a CDC publication), which you can order at the Electronics Desk at the Minnesota Book Center in Williamson Hall. We also have reference copies in the ACSS Reference Room, 128A Lind Hall. This article is also available in the Reference Room as the *Full Screen Editor (FSE) Brief.* For multiple copies of this (or any other) *Brief,* call Paula Goblirsch at 376-1491. Most of this article is also available on-line as WRITEUP,FSE.

SPSSX Available on VX

Bruce Center

SPSSX is now available on VX, as well as on the CYBERs. The primary advantages to using SPSSX on VX is that:

- SPSSX/TABLES is available on VX. TABLES allows the user to produce customized tabulations suitable for presentation or publication, using the Xerox 8700. See the *SPSSX/Tables Manual* (McGraw Hill, 1985) for more information.
- A multidimensional scaling procedure, ALSCAL, is available.
- The VX version permits full ASCII upper- and lowercase characters. This is especially useful in writing reports and labeling output.
- VALUE LABELS of up to 120 characters are permitted.
- RECODE permits numerous new transformations of alphabetic variables.

Running SPSSX

The command to run SPSSX under VMS is:

```
$ SPSSX/OUTPUT=outfile  infile
```

This SPSSX run command can include optional SPSSX qualifiers to designate control and output files. The following command illustrates the use of all the available qualifiers and parameters:

```
$ SPSSX/OUTPUT=outfile/EDIT/Pn=value/[NO]BANNER infile
```

where:

outfile	specifies the name of a file to receive the printed output of the SPSSX run. If the **OUTPUT** parameter is omitted, SYS$OUTPUT is assumed and the output will be printed at the terminal (or in the log file if in batch mode). ***Outfile*** can be any valid VMS file specification. The default extension for the outfile, if omitted, is LIS.
infile	specifies the name of the file that contains the SPSSX commands and, possibly, inline data. If you are running SPSSX and omit the infile name, SPSSX assumes SYS$INPUT and expects to find the SPSSX control file within the job if submitted via batch, or waits for the commands at the terminal if in timesharing mode. There is no prompt, and this option is not usually used in timesharing mode. ***infile*** can be any valid VMS file specification. The default extension for infile, if omitted, is .SPS.
EDIT	inserts an EDIT command in the SPSSX command file for this run only. This is very useful to correct syntax and spelling errors before actually running the data.
value	is a file specification or password to be used on the **FILE HANDLE** command when the value **Pn** is encountered. This permits parameter passing from VMS procedure files.

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[NO]BANNER suppresses the SPSSX banner and release notes when **NOBANNER** is used and prints them when **BANNER** is used. (The default is **BANNER**). The **NOBANNER** qualifier can be most beneficial when displaying listings at terminals with low baud rates.

All qualifiers are optional and **OUTPUT** and **EDIT** can be truncated up to the first three characters. Each qualifier must be preceded by a slash (/) and separated from its value by an equals sign (=). The name of the control file must be preceded by at least one space. For example:

```
$ SPSSX YEAR80.TST
$ SPSSX/OUT=YEAR80 YEAR80.TST
$ SPSSX YEAR80.TST/OUTPUT=YEAR80.LIS
```

All of these run commands result in SPSSX executing the commands in YEAR80.TST. If SPSSX is run in batch mode, you should include a **SET VERIFY=NOIMAGE** command in your VMS command file prior to the SPSSX invocation command line. Without this command VMS, as well as SPSSX, will echo your SPSSX command lines, resulting in two of every command being printed in the output listing.

FILE HANDLE

The **FILE HANDLE** command assigns a logical handle to a file specification to allow the file to be easily referenced on SPSSX commands. This command is *required* in SPSSX to read or write data. This command is of the form:

FILE HANDLE *handle*/NAME=*filename*

where:

handle is the SPSSX file name of up to 8 characters and

filename is the VMS file name. .DAT is the default file name extention.

For example:

```
FILE HANDLE              DATA/NAME=SPSSXDATA.DAT
DATA LIST                FREE FILE=DATA/VAR1 TO VAR10
```

will allow SPSSX to read variables 1 to 10 from the raw data file SPSSXDATA.DAT in free format.

SPSSX on VX can read and write data files or system files directly from or to tape regardless of format. To read a file TEST1.DAT from a mounted, VAX-ANSI labelled tape, no special tape reading subcommands are necessary. All that is needed is to have the tape mounted and then use the following **FILE HANDLE** command within your SPSSX command file:

```
FILE HANDLE              TESTDAT/NAME='MUAn:TEST1.DAT'
```

where **MUA*n*** is the name of the tape drive where the tape is mounted. However seven subcommands on the **FILE HANDLE** command: **MT_BLOCK_SIZE, MT_CURRENT_POSITION, MT_CLOSE_REWIND, MT_OPEN_REWIND, MT_SKIP_FILE, SIZE** and **CHARACTERSET** give you excellent flexibility when dealing with tapes, either foreign or labelled. Use **INFO LOCAL** for examples and instructions on how to use them.

Documentation

SPSSX 2.1 is documented in the *SPSSX Users Guide* (McGraw Hill, 1986), available at the Williamson

Book Store. Documentation on how to use SPSSX on the VAX can be obtained from the SPSSX Info file and printed on the Xerox 8700 by typing:

```
$ SPSSX/OUTPUT=DOCUMENT                    {Runs SPSSX, with output on
                                            DOCUMENT.LIS.}
  INFO ALL                                 {Generates 50 pages of a VAX information file.}

  FINISH
$ ENQUEUE X9700/PORTRAIT/NAME=site*bin DOCUMENT.LIS
                                           {Prints the information and returns it to your
                                            site and bin number.}
```

And Coming Soon

We have received SPSSX/Graphics and hope to test and install this package soon. SPSSX/Graphics generates high quality charts, maps, and text on a variety of graphics plotters. It provides an easy link between the data management, tabulation, and statistical analysis features of SPSSX and a wide range of graphical procedures.

SPICE 2G.6 Circuit Analysis Package

Michael Frisch

On June 16, we are installing SPICE 2G.6 on the Cyber CA, ME, and MD machines. This replaces version 2G.5. WRITEUP,SPICE2 has also been updated for version 2G.6.

The only information we have on differences between the versions is that an ALTER card has been added and there are some additional parameters for the OPTIONS card.

Except for these, we believe that any other differences are relatively small and that the new version is upwardly compatible with the old one. It is likely that some bugs have been corrected between versions. We have added our own usage accounting information so we can know who is using SPICE 2G.6. Questions about SPICE 2G.6 can be directed to Mike Frisch, 40B Wulling Hall, (612) 625-5830.

New Version of WRITEUP,LIBNDEX

Michael Frisch

A new version of WRITEUP,LIBNDEX is now available on the CYBER (CA). WRITEUP, LIBNDEX contains the text of the new version of the *Guide to Subprogram Libraries.*

Bargain Hunting and a Macintosh Upgrade

Lawrence Liddiard

With a month lead time for publication and another month for comments to come back to me, there are delayed echoes in these columns. Since several Computer Science Colloquia in May were to cover massively parallel computing systems, I have postponed my article on that subject until next month. This allows me to renew my well-known bias in favor of bit-mapped graphic workstations with windowing.

A local chain of electronics stores, Schaak's, went out of business in early 1986. Its computer software was sold by an organization called "T.H.E. Liquidators" starting in March in two outlet stores. This was followed by a huge three-day liquidation sale at the end of April, held in the Education Building on the State Fairgrounds.

How does one prepare for a goodies sale like this? Obviously, with two offspring in college, I had to minimize my capital expenditure and maximum quality and quantity. I have praised *MacWorld* magazine in these pages, but, with bargain hunting, I switched my allegiance to *MacUser*, which had over 250 product reviews in its March 1986 issue. Armed with this issue, which rates on a 1- to 5-mice basis and has several software ads giving the *going* rather than the *suggested retail* price, I was ready to become a bargain hunter. I also recommend to other bargain hunters that they read reviews in our *Microcomputer Newsletter* and become current with the last 6 to 10 issues of their favorite Macintosh magazine, so that they are prepared to sample the best available bargains.

After my four separate trips to the liquidation sale I had purchased the software and extras listed in Exhibit 1 for a total of $196.

Exhibit 1

Item	MacUser Rating	Retail	Ads	Sale	Comments
GATO	*****	$40	$24	$25	WW II submarine simulation
Hitchhiker's Guide to the Galaxy			$21	$20	If your 12-year-old liked the book
I Know It's Here Some	****	$60	$34	$20	Simple filing information system
MusicWorks	***	$80	$44	$20	Play, enter and print music scores
pfs:file&report	**	$175	$99	$30	Simple text data base with reports
Sargon III	****	$50	$28	$20	A good chess program
VideoWorks	*****	$100	$54	$30	Frame-by-frame and real-time animation
Xyphus	****	$40	$22	$5	Role-player's fantasy game
Stand				$14	Raises, tilts, and swivels the Macintosh
2 1000 sheet paper packs				$12	The Imagewriter eats this stuff

Upgrading the Mac

With all of this new software, it was time to upgrade the 128K byte memory of my 1984 Macintosh. There are two possible routes: 1) $765 upgrades my old 128K to 1024K bytes of memory, the 64K ROM to 128K ROM, the 400K single to 800K double-density disk drive, and the Mac Plus connectors including a SCSI interface; and 2) $1365 during IT week at the bookstore obtains a new, enhanced (128K ROM and 800K disk) 512K byte Mac with an Imagewriter I.

Athough my son at Carleton College would like the 128K Mac, a March 15th payment for his education means that I choose the $765 upgrade. On May 8th, ACSS's Engineering Services did the carry-in

upgrade. Included in the upgrade is a 9-pin to 8-pin round connector that allows the Imagewriter I to be attached to the upgraded connectors, a Mac Plus manual, and a system disk to update my current software disks.

I would like to report that every old Mac diskette ran on the upgraded Mac, but I cannot. One of the features of the new Version 5 Finder is the Hierarchical File Structure (HFS), a tree-structured file system, that works well with the new 128K ROM to reduce the anarchy that reigns when an **OPEN** is requested on the current Macintosh File System (MFS). MFS is a "flat" file system where every file of selected type is seen on an **OPEN**. Version 4 and above Finders are needed to handle the 800K byte disks.

When I examined the 45 disks that I currently own, I found 6 different Finders and 4 Imagewriter drivers. The rational solution in my mind was to put the latest Finder (5.2) with corresponding System and Imagewriter (2.2) drivers on new double density disks and transfer non-protected and master-driven software to those disks. After doing this, Multiplan (1.1), when requested to open previous spreadsheets, would state "Insufficient Memory, Try again without Clipboard." Doing that produced an "Out of Memory" message. Using the latest system for Videoworks resulted in the loss of the sound track. Of course, the Apple products MacWrite (4.5), MacPaint (1.5), and MacPascal (2.0) work well on the latest version.

The other way, of course, is to run the software on its original single-density disk. In this mode, free software had the most failures as the MacForth 0.9 Workout disk always came up with system error ID = 28 and my son's favorite Megaroids would no longer run on the Banana Jr. system. Musicworks failed to print anything when PRINT STAFF was selected. The Macintosh has the same check-it-out-before-you-use-it characteristics as our large systems when they are moved to the latest and best versions of the operating systems. Thus all you need to have an upgrade to an easy-to-use workstation is some extra hours in the day and I have signed up to use a TARDIS (courtesy of Dr. Who) for some of these activities. Compared to other microcomputer vendor's system upgrades, the Macintosh upgrade went fairly smoothly due to Apple's consistent system design.

Finally to end on an upbeat note, I recommend the new Imagewriter (2.2) version that I found on my MacPascal (2.0) update. You will know that version by its BEST, FASTER, and DRAFT rather than HIGH, STANDARD, and DRAFT options. The time to print a Pascal program was 102 seconds for BEST or identical HIGH mode and 30 in DRAFT mode. The FASTER version with much better density required 68 seconds vs. STANDARD's 51 seconds.

Microcosm

PBS: Bibliographic Data Base Management for Micros

Tom Rindflesch

We have recently acquired a program for managing bibliographic data bases called the Professional Bibliographic System (PBS). It will run on an IBM-PC/XT/AT or on a Macintosh and requires a minimum of 128K of memory. (We have the Macintosh version.) The program has the capacity for managing 32,767 bibliographic citations, but this number, in practice, is reduced by the memory size and disk space on the machine running PBS.

PBS stores bibliographic entries in the data base on "forms" provided by the program. There is a separate form for each type of reference cited, such as book, journal article, letter, computer program, and so on. Each form has space on it for the information relevant to a particular reference, such as author, title, and date of publication. In order to create bibliographies you extract references from the data base. You can either format the references in the bibliographies you create by using the specifications provided by the program, or you can create your own formats.

The cost of PBS is $395 for the IBM version and $295 for the Macintosh version. We can get a 30 percent discount on five orders or a 50 percent discount on ten orders. If you are interested in buying PBS or if you would like more information about it, contact

Tom Rindflesch
124 Shepherd Laboratories
625-8332

Short Courses on Graphics Packages

Jill McAllister

Those of you who have registered for our short courses on various graphics packages during the past year know that we have had a hard time filling the classes. Because of this, we are starting a new policy.

We will maintain a list of people interested in taking specific short courses on graphics. (You can put your name on the list by calling Jerry Stearns at 625-1543.) When eight people indicate that they are interested in taking a particular class, we will schedule the class to run approximately four weeks later.

Currently, the list of potential offerings includes:

Graphics Packages at ACSS
PicSure
DI-3000, including Grafmaker and the Contouring System

CYBER Graphics Packages Removed

Michele Lewis

Because they are no longer in demand, the following CALLPRG graphics programs will be removed from the CYBER CA machine on June 27, 1986:

ARTDOTS, ARTPLOT, ARTPNF, ARTPNP, ARTPRIN, ARTSURF, CGS, CLOSEB, COLOR
COLPOST, FAMTREE, MEXPLOR, PLOTEXT, PLTSIGN, WEAVE

If you have any questions or if removing these packages causes you any problems, call Michele Lewis at 638-0542.

Telenet Access

Roger L. Gulbranson

We are now reviewing our Telenet access service. One of the possibilities is that we may discontinue this service because of declining use. If discontinuing Telenet would cause you problems, please contact me at (612) 638-0532.

I/O Station and Shuttle Service Hours to be Reduced

Jerry Larson

As of July 1, 1986 we are planning to close the I/O Station at Lind Hall 128B at 7:00 p.m. (instead of 10:00 p.m.) on weekdays and Sunday hours will be from 4:00 p.m. to 8:00 p.m. (instead of 6:00 p.m. to midnight). Shuttle Service hours will be reduced or changed accordingly. We are making these changes to reduce costs; we have eliminated these service hours because they will inconvenience the fewest users. Any questions regarding these changes should be directed to Jerry Larson, ACSS Labs Manager, 14 Folwell Hall, 625-7850.

Reduction in Card Processing Services

Jerry Larson

As of June 1, 1986 half of the remaining keypunches (i.e., 4 of the remaining 8) will be retired from service. Also, shortly after that date the card reader on the West Bank, a user-operated RJE (site code R1), will be removed. During the course of the coming fiscal year (July 1986 to June 1987), we expect to virtually eliminate the remaining keypunches and card readers (with the possible exception of the central site). We will warn you months in advance, however, before we end this service.

If you still use punch cards, we *strongly encourage* you to begin transferring your programs and data to other forms of storage immediately. A future *Newsletter* article will explain how to do this. In addition, a two-hour class session will be offered Wednesday, June 11, 10:00 a.m. to noon, in 229 Lind Hall for card users who would like to learn more about transferring card data to other types of storage. Contact Jerry Larson, ACSS Labs Manager, 14 Folwell Hall, 625-7850 if you have questions.

New Version of CLEAN77

Tingli Pan

On June 16, we will replace CLEAN77 (version 1.28) with a new version (2.20) on the CYBER CA, ME, and MD machines. WRITEUP,CLEAN77 is also being updated on that date. The new version corrects some errors, adds some features, adds five command options, and processes some IBM extensions. The new CLEAN77 is about twice as fast as the previous version.

The new version of CLEAN77

- does not add a **CONTINUE** statement to DO-loops that contain a jump to the terminal statement of the loop.
- requires lines with multiple equal signs that terminate a DO-loop to have each resulting line contain the statement label definition. This forces a compiler error rather than having CLEAN77 generating possibly bad code.
- does not remove consecutive blank lines.
- allows comments to appear between continuation cards.
- adds a warning if a command is misspelled in the command file.
- causes **C-LABELI** and **C+LABELI=0** to mean no label processing.
- allows (but issues a warning) for bad block structure.
- indents the **RETURN** statement if it is within a block.

The five new command options are these:

LISTIDS lists source card identifiers if requested.

OLDLEN=*n* defines input line length for the old file (40≤n≤125).

RETPRFX converts the prefix character on non-standard return labels in CALL statement argument lists.

UNCOND controls the issuing of a special line (e.g., a blank line) after any unconditional change in program flow (e.g., RETURN, unconditional GO TO).

VARUECS allows you to use an extended character set in variable names (after the first character). The characters $ and the underscore/equivalent sign are added to the normal letters and numbers.

The IBM extensions to FORTRAN 77 that are processed are:

Variables starting with a dollar sign (if **C+VARUECS** is used).

Q-exponents (quad-precision).

DELETE, **INCLUDE**, **REWRITE**, and **WAIT** statements.

DUPKEY=*label* and **NOTFOUND=*label*** in I/O statements.

Questions about CLEAN77 can be directed to Tingli Pan, 30 Wulling Hall, (612) 376-5262.

File Protection Parameter Support Will End

Steven Siirila

After June 25, 1986, ACSS will no longer support the **FP** parameter on NOS permanent file commands like **RETAIN** and **SAVE**.

The parameter was particularly used by users of multiple-user accounts. With the **FP** parameter, a user could turn file protection on and off. When protection is on, users or a multiple-user account had to provide a password to access a protected file.

Users who need to keep files secure should contact ACSS Accounting about opening a private account.

Documentation News

New *Computing Facilities Map*

Steven Brehe

The updated version of Information Systems' *Computing Facilities Map* is now available. The map shows the location of Information Systems' computing labs on the Twin Cities campuses and lists the terminals, microcomputers, and printers available in each lab.

The *Computing Facilities Map* is available free in the ACSS Reference Room, 128A Lind Hall. For multiple copies, call Paula Goblirsch at 376-1491.

Holiday Hours

July 4 Hours

For the July 4 holiday, ACSS systems will not be available after 4 a.m. Friday, July 4, and will resume operation 7 a.m. Saturday, July 5.

ACADEMIC COMPUTING SYSTEMS & SERVICES
Summer Session Short Courses
1986

INTRODUCTORY COURSES

Introduction to Computers	McAllister	June 24-July 10	(TTh)	2:15-4 pm	$15,$25,$35
Introduction to VAX/VMS	Stearns	June 23-July 2	(MWF)	2:15-4 pm	$15,$25,$35

ELECTIVE COURSES

Beginning FORTRAN Programming	McAllister /Kovarik	July 14-25	(MWF)	2:15-4 pm	$35,$45,$75
Beginning Pascal Programming	Brodie	July 21-August 1	(MWF)	2:15-4 pm	$35,$45,$75
EDT (VMS Editor)	McAllister	July 22-31	(TTh)	2:15-4 pm	$25,$35,$60
SPSSX (Statistics Package)	Center	July 28-August 1	(MWF)	2:15-4 pm	$25,$35,$60

MICROCOMPUTER APPLICATIONS COURSES
(Limited to 10 per class, unless otherwise specified.)

Introduction to Micros: MS-DOS	June 30-July 2	(MW)	1:30-4 pm	$25,$35,$60
(*Introduction to Micros* or equivalent knowledge is required for courses listed below.)				
Beginning Lotus 1-2-3, Section 1	July 9	(W)	1:30-4 pm	$25,$35,$60
Introduction to Word Perfect, Section 1	July 10	(Th)	1:30-4 pm	$25,$35,$60
Introduction to dBase II & III, Section 1	July 15-17	(TTh)	9:30-noon	$40,$50,$80
Advanced Lotus 1-2-3	July 22	(Tu)	9:30-noon	$25,$35,$60
Intermediate Word Perfect for Authors	July 23	(W)	1:30-4 pm	$25,$35,$60
(The courses listed below are overviews only for the Apple Macintosh. Limited to 20.)				
Microsoft Word for the Macintosh	July 16	(W)	1:30-4 pm	$15,$25,$40
Preparing Dissertations Using a Macintosh	July 24	(Th)	9:30-noon	$15,$25,$40
Microsoft Excel (Spreadsheet)	July 25	(F)	9:30-noon	$15,$25,$40

GRAPHICS SHORT COURSES: During the past year enrollment has been insufficient to hold these classes. Starting this summer ACSS will maintain a list of people interested in specific graphics short courses. To have your name included on the list, call the Short Course Coordinator at 625-1543. When a list for an individual class has eight people on it, the class will be scheduled to run approximately four weeks later. The list of potential graphics course offerings includes: Graphics Packages at ACSS, PicSure, DI-3000 (including Grafmaker & Contouring System).

Registration Information

REGISTRATION: Registration is located at the ACSS Reference Room, 128A Lind Hall (hours: 8:00 a.m. to 4:30 p.m., Monday through Friday). Mail registrations will be accepted. Deadline for registering is 4:15 p.m. on the last working day *before* the class begins. If you need more information on short courses, call Jerry Stearns at 625-1543.

FEES: Fees are listed in order for the following groups: 1) University students, 2) faculty and staff, and 3) non-University persons. Course fees may be paid by cash or check or with a signed University journal voucher. Short courses can no longer be charged to ACSS user accounts. **No** refunds will be made after the class has begun.

NOTE: Friday, July 4, is a University holiday. No classes will be held.

PHONE NUMBERS

Access:	
CYBER(CA)—10, 30 cps	376-5730
—120 cps	376-5706
MERITSS(ME)—10, 30 cps	376-7730
—120 cps	376-7120
VAX/VMS(VX)—(autobaud)	376-9070
Accounts:	
MERITSS	625-1511
User Names	625-1511
Computer-Aided Instruction	376-2975
Computer Hours (recorded message)	373-4927
Consulting:	
HELP-Line	376-5592
8 a.m.–5 p.m., Monday-Friday	
Artificial Intelligence	625-8332
3-4 p.m., Monday-Friday	
Data Bases	376-1761
10–11 a.m., Monday-Friday	
Microcomputers	626-4276
9:30 a.m.–noon and 1:30–4 p.m., Monday, Tuesday, Friday	
9:30 a.m.–4 p.m., Wednesday, Thursday	
Statistics Packages	376-1761
1–2 p.m., Monday-Friday	
Text Analysis	625-8332
3-4 p.m., Monday-Friday	
Text Processing	625-1391
9–11 a.m., Monday, Tuesday	
1–3 p.m., Wednesday, Friday	
Contract Programming	625-2303
Data Base Applications	625-2303
Engineering Services	376-1023, 376-8153
Equipment Maintenance/Information	376-8153
Lind Hall I/O	626-5082
Graphics Software	376-5592
HELP-Line	376-5592
8 a.m.–5 p.m., Monday-Friday	
HOURS-line (recorded message)	373-4927
Information, Wulling Hall	625-6665
Information, Lauderdale	373-4912
Instructional Labs	625-7850
Instructional Services	373-7745
Lauderdale Computer Room	373-4940
Lauderdale Services	638-0523
Newsletter Subscription	376-1491
Permanent File Restoration	376-5605
Professional Services Division	625-2303
Project Assistance	625-2303
Reference Room	625-7397
Remote Batch (RJE) Services	625-7850
Short Courses	625-1543
Shuttle Bus Service	625-9525
System Status (recorded message)	373-4927
Tape Librarian: see Lauderdale Services	

OPERATING HOURS

	CYBER (CA)	Low Rate	MERITSS (ME)	MERITSS (MD)	VAX (VX)
M-F	7 a.m. - 4 a.m.	8 p.m - 4 a.m.	7:45 a.m. - 3:30 a.m.	8:00 a.m. - 1:30 a.m.	7 a.m. - 4 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	7:45 a.m. - 3:30 a.m.	8:00 a.m. - 1:30 a.m.	4 a.m. - 5:15 p.m.
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - 3:30 a.m.	4:00 p.m. - midnight	4 p.m. - 1 a.m.

PUBLIC LABS-TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro
East Bank			
Arch 160			X
CentH		X	
ComH		X	
DiehlH 207		X	
EltH 121, 124		X	
EltH N640	X		
FolH 14, 14a	X[1]	X*	X
FronH		X	
LindH 26		X	
LindH 128B	X	*	
LindH 306B			X
MechE 308		X	
Physics 69		*	
PlH		X	
SafH		X	
TerrH		X	
VincH 4		X	
Walib 9		X	X
West Bank			
AndH 170			X
BlegH 25		*	
BlegH 90	X		
BlegH 140		X	
MdbH		X	
OMWL 2	X[1]	X	
St. Paul			
BaH		X	
CentLib B50			X
ClaOff 125	X	X	

* Research cluster; access to CYBER CA and VAX/VMS
X in interactive column indicates access to MERITSS
[1] Printer only.
For more information see WRITEUP(LABS)

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***The* ACSS**
Newsletter

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