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COMPUTER SYSTEMS

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PUBLICATIONS REVISION

System 80

SPERRY UNIVAC System 80 Local Workstation Operator's Guide

UP-8910 Rev. 1

This library memo announces the release and availability of "SPERRY UNIVAC® System 80 Local Workstation Operator's Guide," UP-8910 Rev. 1. It is a Standard Library Item (SLI).

The System 80 local workstation is a general-purpose display terminal that transmits data to and is controlled by the system controller. Data can be entered, edited, updated, and stored from the workstation keyboard. The data is displayed on a 24-row, 80-column video display. Printed copies of the data can be obtained with an optional peripheral printer.

This manual contains instructions for operating the System 80 local workstation, describes the controls and indicators, and provides other information required for operation and maintenance.

This revision includes information on the magnetic stripe reader, new control page parameters, and switchblock settings on the rear of the terminal.

Additional copies of this manual can be ordered from your local Sperry Univac representative.

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		RELEASE DATE: **January 1982**

SPERRY UNIVAC
System 80
Local Workstation

Operator's Guide

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SPERRY UNIVAC

UP-8910 Rev. 1

SPERRY UNIVAC System 80 Local Workstation

Operator's Guide

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Preface

This operator's guide is designed for your initial training on the SPERRY UNIVAC System 80 Local Workstation and for later use as a reference manual when you need a reminder or when you are going to use a procedure you haven't tried before.

The basic concepts and terminology introduced in Section 1 will primarily aid operators with only limited experience with computer systems and terminals. Much information in this section can be applied to computer processing as a whole; however, many of the concepts presented will help the operator to better understand how the workstation itself operates.

Section 2 contains general descriptions of the keyboard, controls, and indicators of the workstation. The control page, a critical component of workstation functions, is covered in Section 3.

Specific instructions for operating the terminal are presented in Section 4. Section 5 covers the operating instructions for the printer. Since many instructions are interrelated, the instructions are cross-referenced when applicable. Keep in mind, however, that all possible combinations of operations cannot be covered in this manual. As you become more familiar with the workstation, you will probably discover your own unique operating procedures and even some shortcuts in their performance.

Within the text of the manual, some special data-processing-related terms are italicized in their first usage. These and other commonly used terms are defined when they are first used or in the glossary at the back of the book.

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1. Introduction to the Workstation

The SPERRY UNIVAC System 80 Local Workstation (Figure 1-1) is a general-purpose display terminal that is connected directly to the System 80 processing complex. The workstation, which receives its operating instructions from the processor, can be used to communicate interactively with the processor or can be used to transfer data to a peripheral printer.

Through a typewriter-like keyboard attached to the workstation, you may enter, edit, update, or store data, and then request printed copies of it.

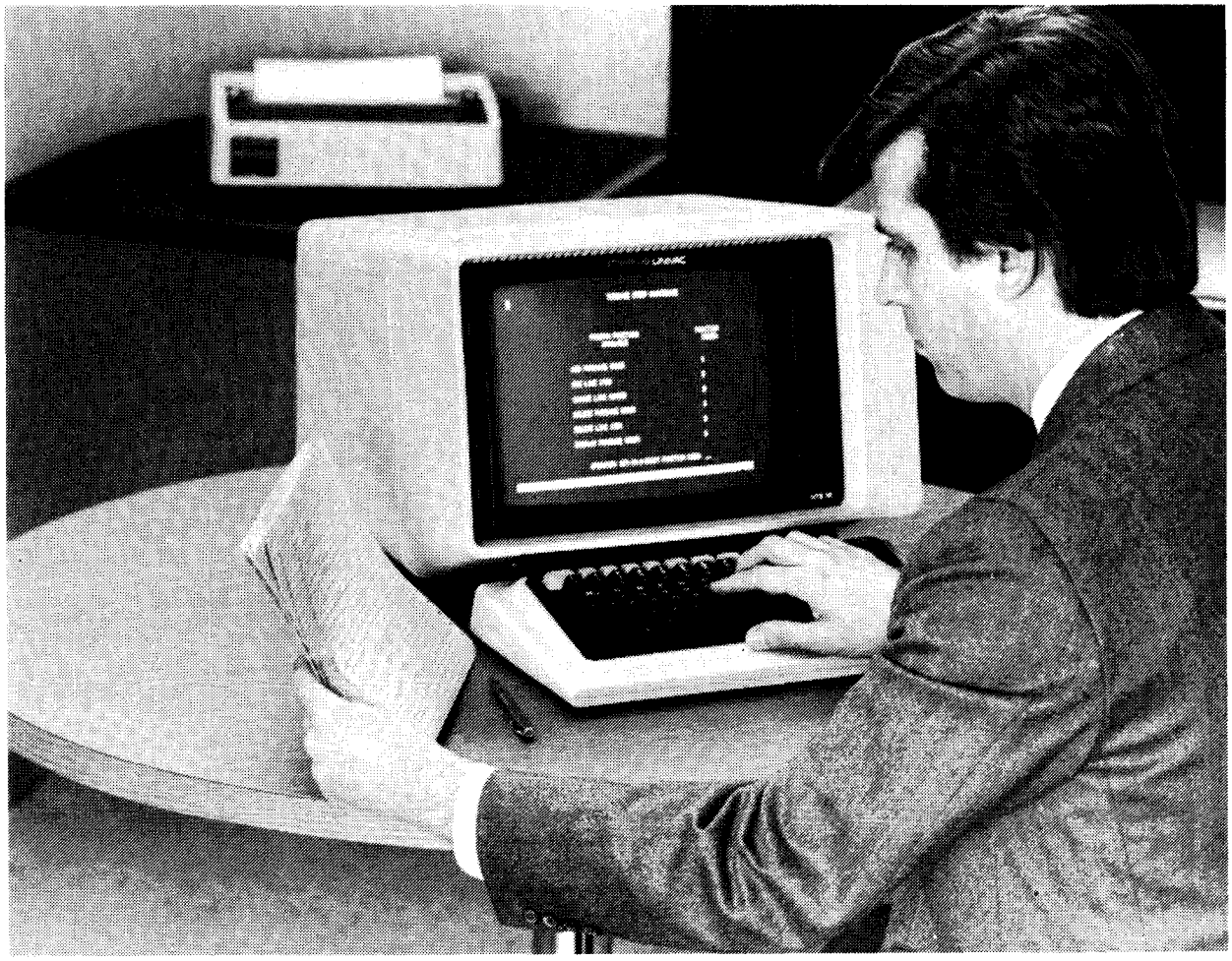

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Figure 1-1. Operator Using the Workstation

Learning to operate the workstation takes just a little time and practice. Once you know the location and functions of the various keys, using them will become nearly a reflex action. And, once you have mastered the workstation, your work will become easier and more accurate.

If you have used terminal equipment before, you probably know how data processing systems work. But, if terminals are new to you, you will understand the workstation better if you first understand the structure within which it has to work.

HOW DATA PROCESSING SYSTEMS WORK

The applications for data processing systems, or computers, can be as diverse as the businesses and organizations that use them. Although these systems are capable of running increasingly complex operations at incredible speeds, the machines themselves are getting smaller and simpler to operate.

Basically, all data processing systems have three elements: an *input* location, where an operator enters data; a *processor,* which handles and stores the data as requested; and an *output* location, where the processed data is received.

The workstation functions as both the input and the output location, allowing you, the operator, to enter data and operating commands and to obtain the output or the processed results of the data entered.

The processor is the heart of the data processing system. The data you enter is stored in the processor memory for immediate or future operations to be performed on it. The processor can also use the information you send and can combine or compare it with other stored information to produce a desired result.

Some data processing networks involve more than one processor handling data from numerous input sources. To avoid confusion, the main processor in this type of network is called the *host,* or *host processor.*

Essential to making the processor perform its expected tasks is *programming.* Programs are sets of detailed instructions that define every processor action. These programmed instructions are referred to as *software.*

As a workstation operator, your link into the system is critical. You control the workstation, which is both the input and the output location of the data being entered into the system. You are the one who must ensure that the information and instructions you enter are appropriate as well as the data sent back to the terminal or peripheral device by the host processor.

Although a data processing system can perform complicated operations, it can only respond to instructions someone originally put into the processor through an input device. A computer can do only what its instructions dictate. It cannot modify those instructions in any way nor can it improve on them if the instructions are inadequate.

THE SYSTEM 80 LOCAL WORKSTATION

Keyboard

The workstation looks much like a television set with a typewriter keyboard. The keyboard is the primary means of accessing the system. Through the keyboard, data can be entered and codes can be sent that the host interprets into meaningful commands.

Cursor

As you press the keyboard keys, data is simultaneously displayed on the screen, or cathode ray tube (CRT). A rectangular figure, called a *cursor,* moves along the screen as you press the keys. The cursor, like a pointer, shows you where the next character entered will be displayed. After an alphabetic or numeric character is entered, the cursor moves automatically to the next sequential location on the screen.

By positioning the cursor in the appropriate location on the page, you can add a character, a word, or several lines of data without destroying material you wish to keep and without retyping large amounts of information. Much of this manual is devoted to explaining how to properly position the cursor to manipulate data on the screen.

Screen

The screen contains 1,920 possible character locations — a maximum of 80 columns across 24 rows. The characters are "painted" on the screen by a series of electronic impulses within a dot matrix that causes the screen to light in the selected pattern. You can adjust the display brightness and select the number of columns and rows to use. You can also generate *reverse video,* in which the cursor appears dark against a green background (Figure 1-2).

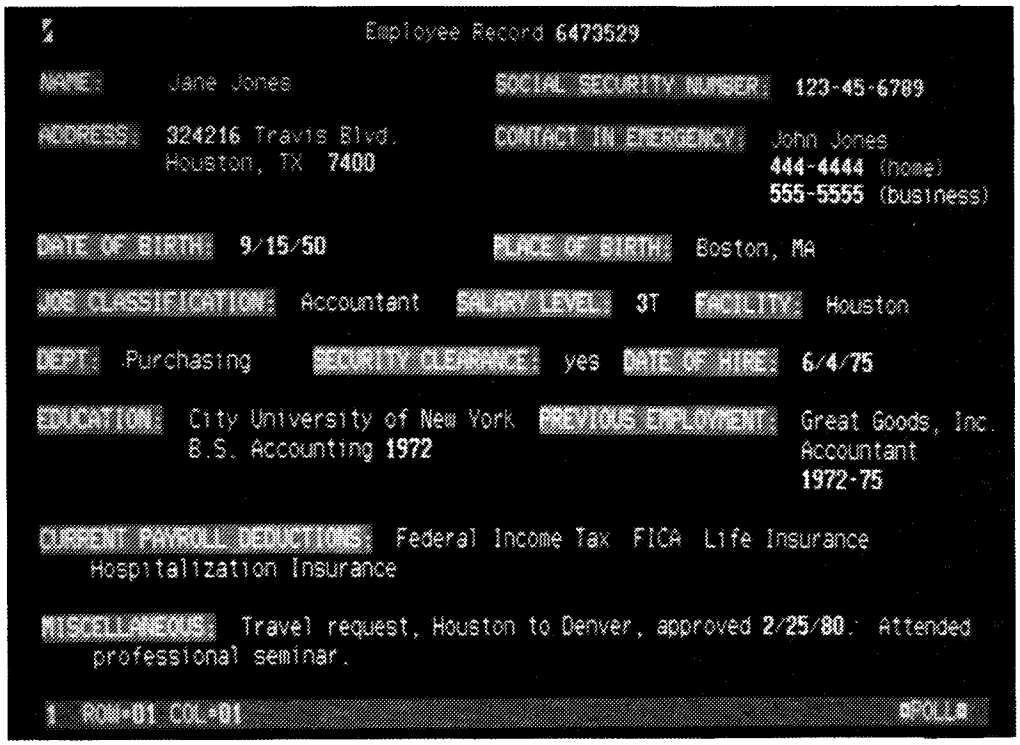


Figure 1-2. Screen Showing Reverse Video

Field Setup

One of the most important structures you will be working with is the *field.* The screen may consist of one or more fields, as shown in the examples in Figure 1-3.

Any portion of the screen, from one character to the entire screen, may be defined as a field. A field is usually considered the location of one particular category of information. For instance, the space or location for a name may be a field, the location for a serial number may be another field, and several lines of descriptive information may be another field.

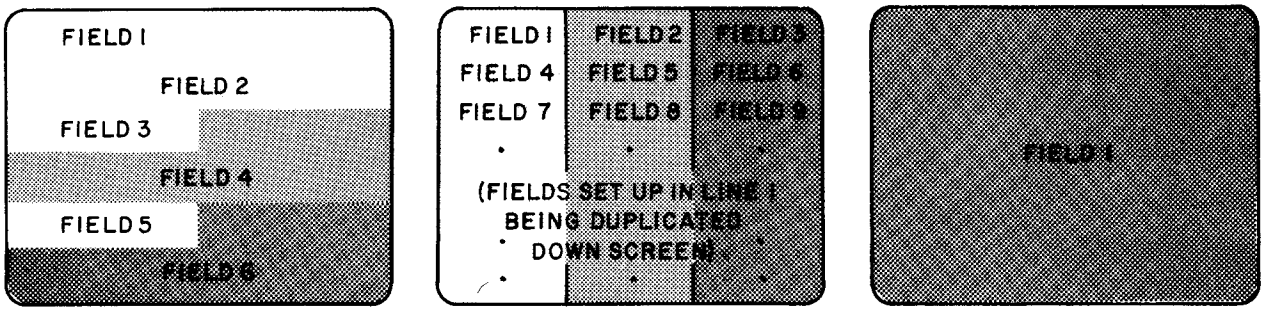


Figure 1-3. Sample of How Fields Are Used in Formatting the Screen

The start and end of a field are assigned by the way the screen is formatted with *field control characters.* Field control characters, or FCCs, are 5-character codes entered to distinguish one field from another and to define a field with certain characteristics. Inasmuch as FCCs are an important capability of the workstation, detailed information on how to use them is given in Section 4.

Field Control Characters (FCCs)

FCCs help you to set up various fields with identifiable characteristics or allow input of only specific types of data. The characteristics you can define by generating FCCs are:

- Display Intensity

  A field in which characters appear in normal intensity, blinking, or in reverse video.

- Tab Stop

  A tab stop may be used to mark the beginning of an FCC-defined field.

- Type of Accepted Entry

  A field in which only numeric characters are allowed, in which only alphabetic characters are allowed, in which no additional entries are allowed *(protected),* or in which any type of entry is accepted (unrestricted).

- Right Justification

  A field in which all entries occur from the right end of that field.

Modes of Operation

The workstation can operate in two different modes, which you can enter through the keyboard or which can be controlled by the host:

- WORKSTATION mode — the normal mode for entering and transmitting data.

- SYSTEM mode — allows you to send messages to or receive messages from the host without destroying existing displayed data.

Control Page

The control page is actually a 2-line protected display that you may call up on the screen by pressing a key. The control page display contains several fields into which specific codes can be entered to define an operation or a function (Figure 1-4).

Some instructions control the types of data to be transmitted or sent to the printer. Several additional parameters can be entered that can alter the display appearance and the function of the workstation.

```
(**PRINT*)STA-      (**XFER**)PRNT(PRNT)XFER(VAR )XMIT(VAR )MM (PARAM)
( /  / )ADR-        ( /  / )SEARCH(                      ) 1( /  )
```

Figure 1-4. Control Page Display 9135-4

Once codes have been entered into the control page, they remain in effect as long as power to the terminal remains on. If the power is turned off or if the terminal is reset, the controlling codes default to a set of standard operating conditions, which may or may not be the ones you previously entered.

Power-On Confidence (POC) Test

Each time you turn on the workstation POWER switch, a test display appears on the screen, showing the results of the power-on confidence or POC test. The POC test is a series of internal diagnostic procedures automatically performed by the workstation to ensure that critical portions of its functions are operational (Figure 1-5). For more information on the POC test, see Appendix A.

PERIPHERAL DEVICES

The workstation can be connected directly to either of two peripheral printers, allowing you to obtain a printed version of information keyed into the workstation or transferred through the workstation from the host.

Both printers, the SPERRY UNIVAC 0797 Printer Subsystem and the SPERRY UNIVAC 0798 Printer Subsystem, are controlled through the workstation by entries in the control page and by keyboard command.

The 0797 printer is a small desktop printer that prints up to 80 characters per second on continuously fed or individually fed sheets or forms.

The 0798 printer prints up to 200 characters per second on continuously fed sheets.

Magnetic Stripe Reader

You can rapidly enter blocks of data by running a specially encoded plastic card through a channel in the SPERRY UNIVAC Magnetic Stripe Reader. The magnetic stripe reader is a peripheral device in that it is a supplemental attachment to the workstation; however, because its data is recognized as originating within the terminal and does not require a device identifier for communication, it is generally not included in a discussion of other peripheral devices (Figure 1-7).

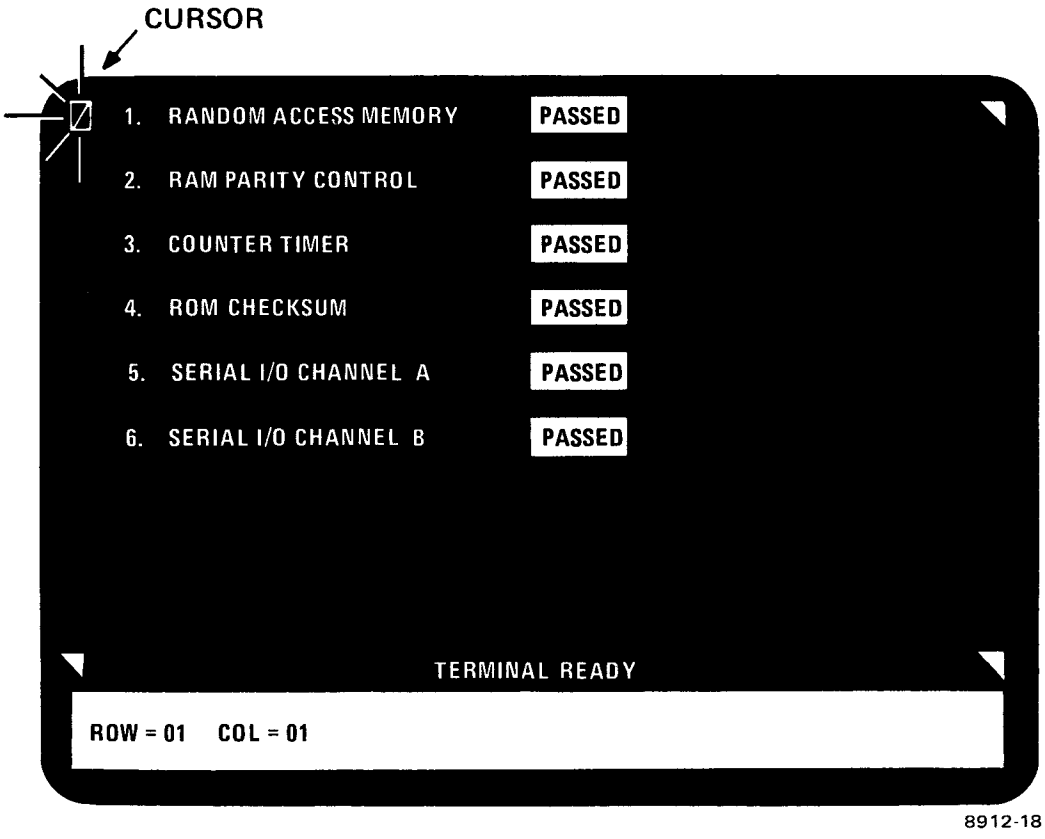
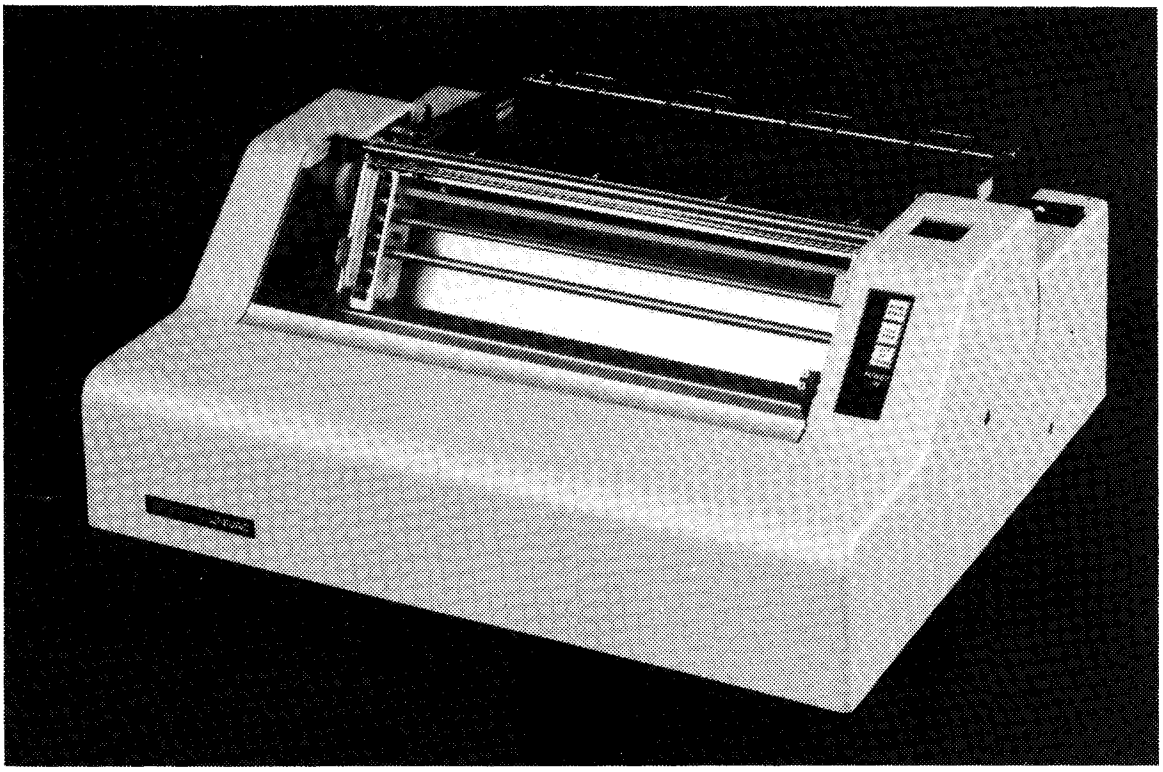


Figure 1-5. Sample of POC Test Display



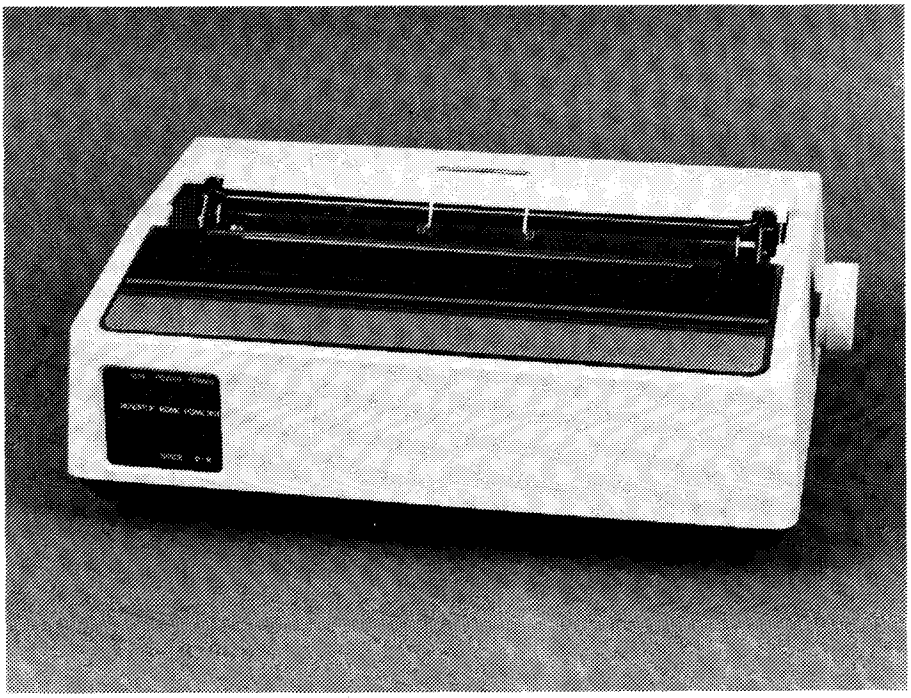


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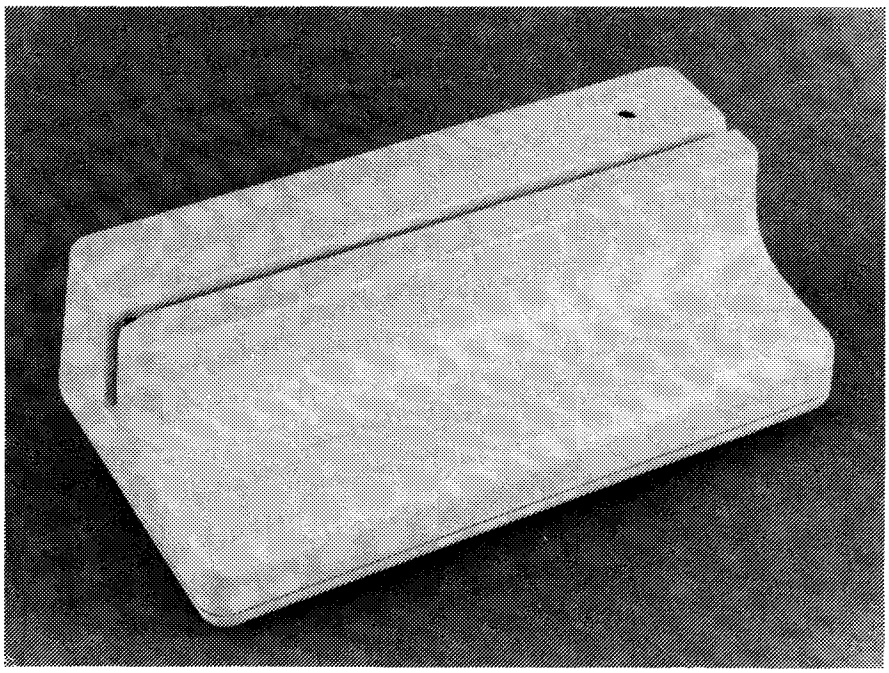
Figure 1-6. 0798 (Top) and 0797 Printers



9135-6

Figure 1-7. Magnetic Stripe Reader

2. The Keyboard, Controls, and Indicators

The keyboard and controls allow you to enter data and operating instructions into the SPERRY UNIVAC System 80 Local Workstation. The indicators inform you of status conditions, operating modes, and messages.

2.1. THE KEYBOARD MODELS

Data is entered into the terminal through the keyboard (Figures 2-1 and 2-2). Two different keyboard models are available with the workstation:

- Typewriter — Smaller of the two keyboards, with 70 keys; looks much like a normal typewriter keyboard except for an additional row of keys.
- Expanded Typewriter — An expanded version of the typewriter keyboard, having additional editing and function control capabilities and a separate adding-machine-style keypad.

Although the labels on some of the keycaps vary slightly between the models, the key functions shared by the models are identical.

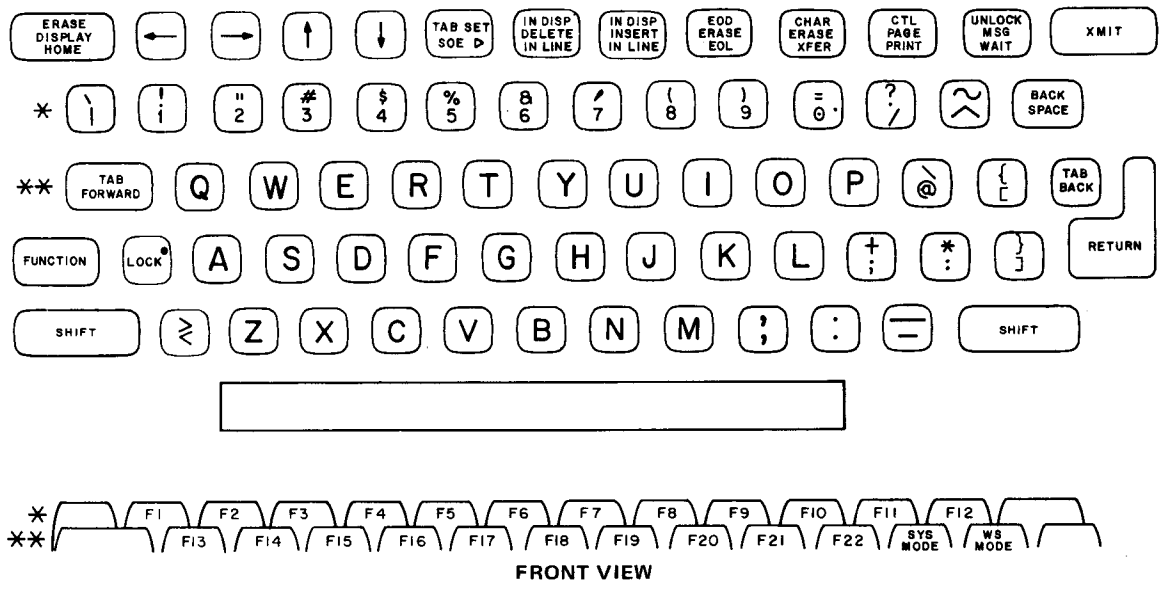


Figure 2-1. Typewriter Keyboard

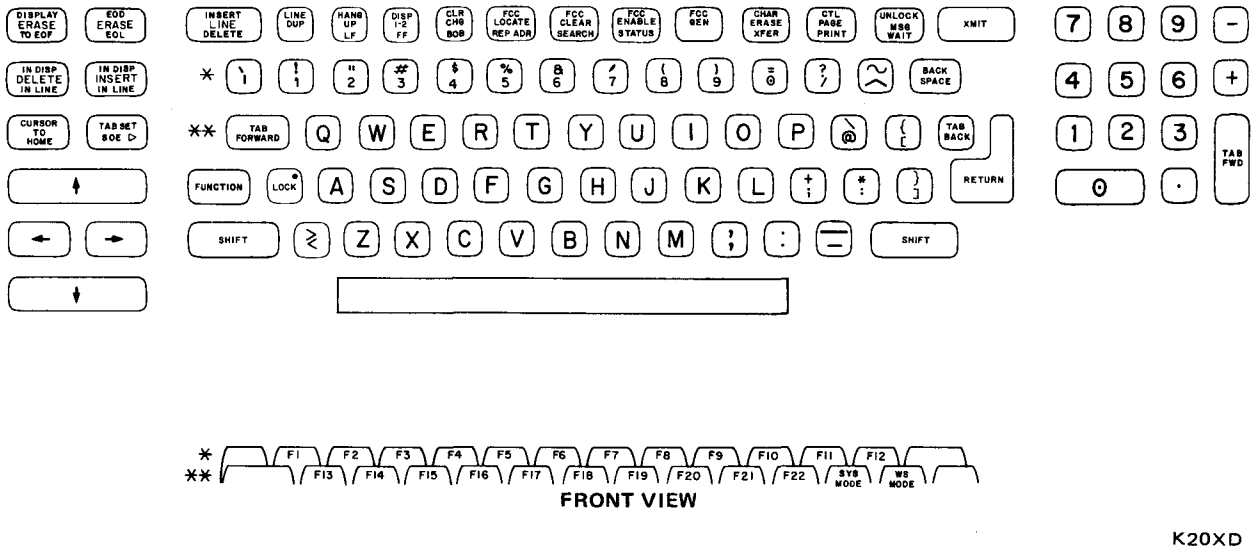


Figure 2-2. Expanded Typewriter Keyboard

2.1.1. Physical Differences Between the Models

Because the typewriter keyboard does not contain all of the control keys that the expanded typewriter keyboard has, the functions of the workstation vary accordingly. The most important difference is that the typewriter keyboard cannot accommodate keyboard-entered FCCs. The following keys are not on the typewriter keyboard but do appear on the expanded typewriter keyboard and are discussed in this section.

- LINE DUP
- DELETE LINE
- INSERT LINE
- ERASE TO EOF
- LF (line feed)
- FF (form feed)
- CLR CHG
- FCC GEN
- FCC LOCATE
- FCC ENABLE
- FCC CLEAR
- STATUS

The expanded typewriter keyboard contains keys that have no function on the workstation and are not discussed in this guide. These keys are:

- REP ADR
- SEARCH

- BOB
- HANG UP
- DISP 1-2

2.1.2. Keyboard Characteristics

The keyboard is composed of *data* keys and *control* keys. Data keys are the alphabetic and numeric keys found on a typewriter. Control keys control keyboard operation and can be divided into five groups: cursor control, editing, function control, program attention, and peripheral device keys.

2.1.2.1. Automatic Cycling

Cycling is the rapid, automatic repetition of a single keystroke accomplished by pressing a key down and holding it for 0.5 second or more. Most keys on the keyboards have cycling capability, providing a fast and easy means to repeat a data keystroke or to perform editing operations on a full screen of data. The keys that do not cycle are F1 through F22, XMIT, PRINT, XFER, UNLOCK, MSG WAIT, CTL PAGE, FCC GEN, FCC ENABLE, FCC CLEAR, FCC LOCATE, CLR CHG, STATUS, SEARCH, SYS MODE, and WS MODE.

2.1.2.2. Using the FUNCTION Key

Many control keys have two control functions. To activate the uppermost key function, you must first press the FUNCTION key and hold it down and then press the desired control key. For example, in Figure 2-3, the first key has both DELETE IN DISP and DELETE IN LINE on it. If you press the control key alone, the DELETE IN LINE function will be activated; if you press the FUNCTION key and the control key together, the DELETE IN DISP function will be activated.

Similarly, the second key in Figure 2-3 is a data key with the left brace and bracket symbols as its uppercase and lowercase characters, respectively. On the front face of the key, however, is the WS MODE function. Pressing the FUNCTION key and the WS MODE key activates the WS MODE function.

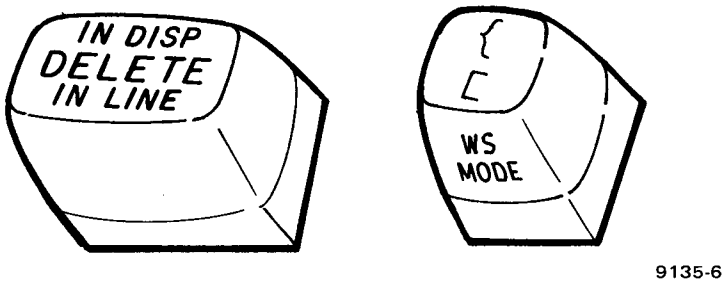


Figure 2-3. Example of Keys Used With the FUNCTION Key

Do not confuse the FUNCTION key with the SHIFT key. The FUNCTION key selects the upper function of a control key or the front face function of a data key (such as the F1 through F22 keys on the typewriter and expanded typewriter keyboards). The SHIFT key selects only the uppercase of a data key.

The keys requiring use of the FUNCTION key are shown in Figures 2-4 and 2-5.

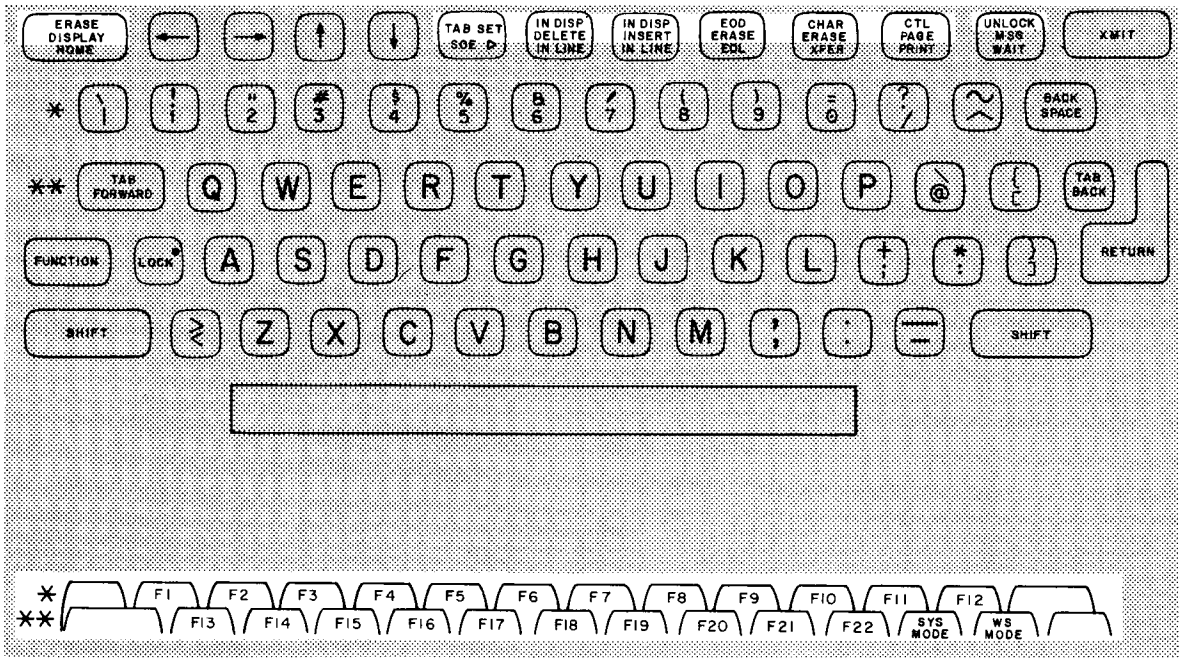


Figure 2-4. Keys Requiring Use of the FUNCTION Key on the Typewriter Keyboard

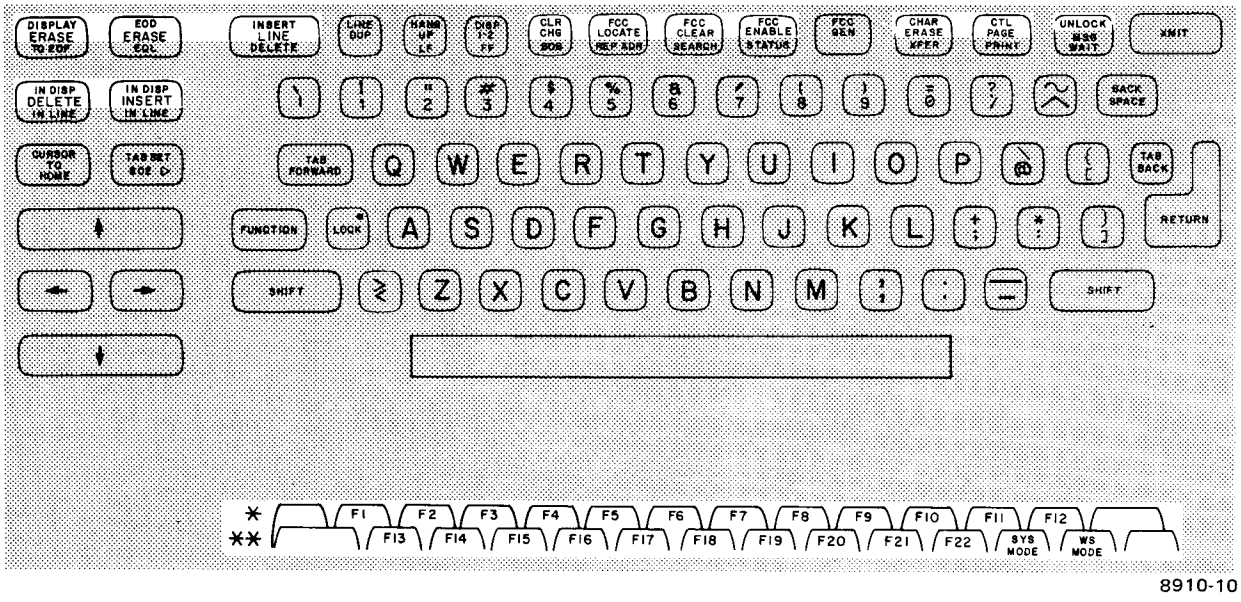


Figure 2-5. Keys Requiring Use of the FUNCTION Key on the Expanded Typewriter Keyboard

NOTE:

If you press the FUNCTION key simultaneously with a data key on which there is no front face function, the alarm will sound once.

2.1.2.3. Cursor Control Keys

Figures 2-6 and 2-7 highlight the keys that allow you to position the cursor on the screen:

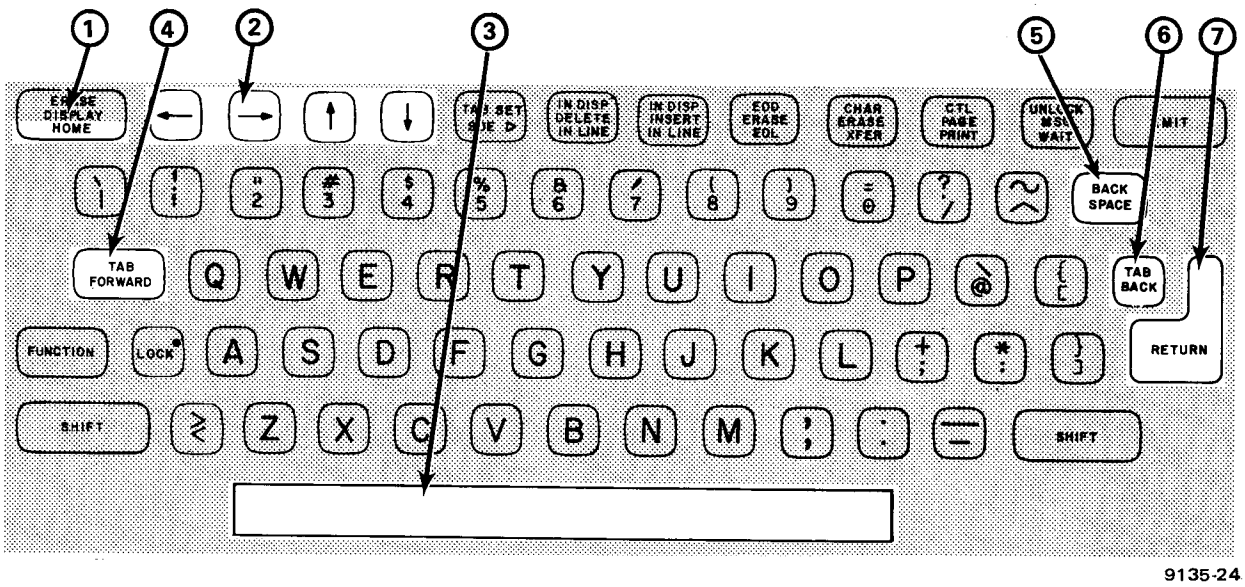


Figure 2-6. Cursor Control Keys on the Typewriter Keyboard

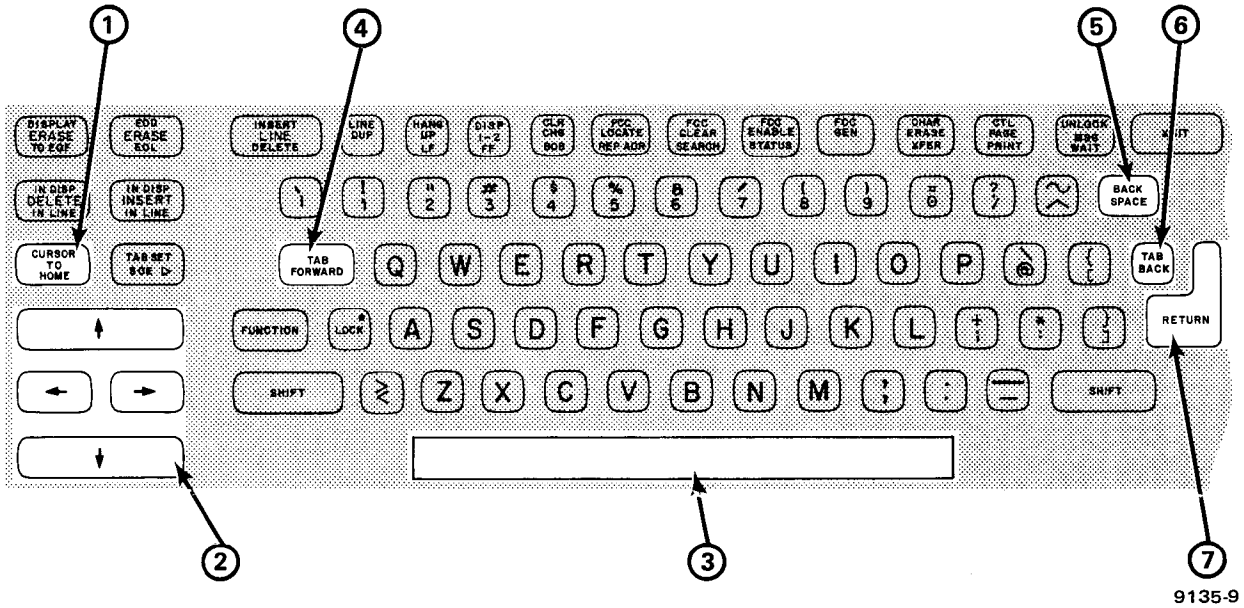


Figure 2-7. Cursor Control Keys on the Expanded Typewriter Keyboard

CURSOR TO HOME (1)

This key moves the cursor from anywhere on the screen back to *home,* which is the first position at the upper left corner of the screen. If the home position is protected, the cursor moves to the first unprotected position after the home position.

Scan Keys (2)

The scan keys move the cursor one or more spaces in the direction indicated by the keycap arrow. If the cursor is in the last position in a line when the forward scan key (→) is pressed, the cursor wraps around to the first position of the next line. Cycling the forward scan key causes the cursor to continue moving in this way until it reaches the last position of the last display line, from where it jumps back to home position and to the right.

The backward scan key functions in the reverse direction, moving the cursor to the left one space at a time. When the cursor reaches home position and the backward scan key is pressed again, the cursor wraps to the last position of the last display line and continues to move to the left as long as the backward scan key is pressed.

The vertical scan keys cause the cursor to move either up or down within the same column. The cursor wraps around to the opposite end of the display but always stays within the same vertical column.

The scan keys are useful for moving the cursor rapidly in any direction. The forward scan key is used in place of the space bar when the space bar is defined as destructive (3.2). If cycling a scan key moves the cursor into a protected field, the cursor will jump to the first unprotected position to the right as soon as the scan key is released.

The scan key can also be used to position the cursor within a right-justified field.

Space Bar (3)

The space bar has the same function as it does on a typewriter, moving the cursor one position to the right each time it is pressed. One important difference is that a control page parameter can be set that causes the space bar to erase the characters it moves the cursor over. This use of the space bar is called *destructive*. Otherwise, you can leave the space bar function *nondestructive,* so that the space bar moves the cursor past characters without erasing them.

TAB FORWARD (4)

If the TAB SET key was used to set a tab, the TAB FORWARD key moves the cursor to the first unprotected position to the right of nearest tab stop. If no tab stops are set from the cursor to the end of the screen, the TAB FORWARD key returns the cursor to home position.

If FCC tab stops have been defined, the TAB FORWARD key positions the cursor on the tab stop itself, instead of one position to the right. If the FCC field is protected, the cursor moves to the first unprotected position.

BACK SPACE (5)

Like the backspace key on a typewriter, this key moves the cursor backward one position each time the key is pressed, as long as that position is not protected. If the position to the left is protected, the cursor remains stationary when the BACK SPACE key is pressed.

TAB BACK (6)

If the TAB SET key was used to set a tab, the TAB BACK key moves the cursor backward to the first unprotected position to the right of the last tab stop. If the cursor is already located on a tab stop, the TAB BACK key moves the cursor to the next previous tab stop. If the entire screen is protected or if there are no tab stops between the cursor and home position, the TAB BACK key moves the cursor to the home position.

If FCC tab stops have been defined, the TAB BACK key positions the cursor on the tab stop itself, instead of one position to the right.

RETURN (7)

This function is identical to that of a typewriter. Pressing the RETURN key moves the cursor to the first position of the next line. If that space is protected, the cursor moves to the first unprotected position.

2.1.2.4. Editing Keys

Editing keys allow you to change data on the screen as you are entering it or to modify existing data recalled from the host before retransmitting it (Figures 2-8 and 2-9).

The first seven keys discussed allow you to erase data.

ERASE DISPLAY (1)

The ERASE DISPLAY key erases all data, protected and unprotected, as well as any existing FCCs, from the cursor position through the end of the screen.

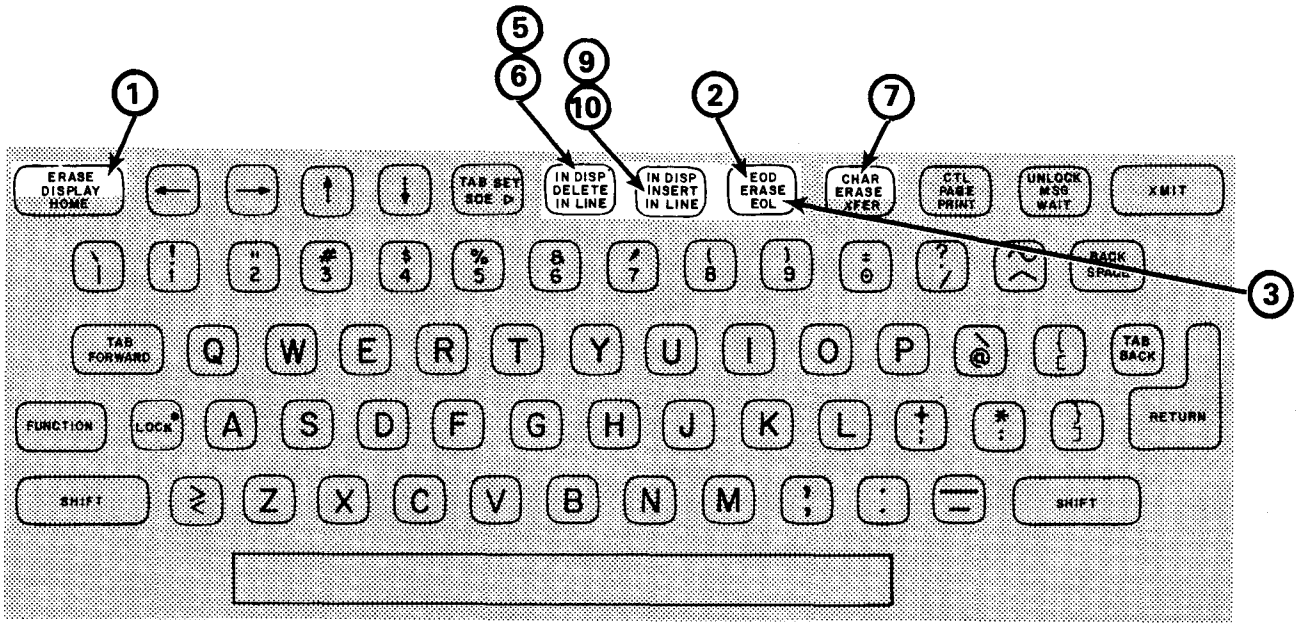


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Figure 2-8. Editing Keys on the Typewriter Keyboard

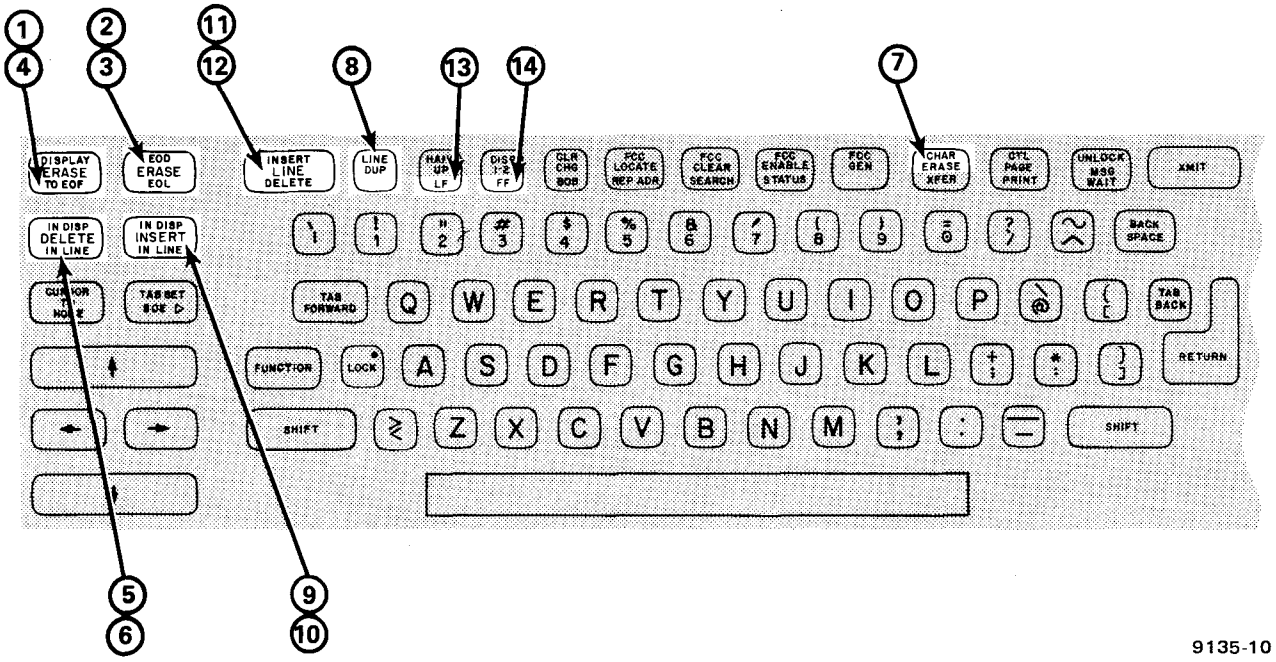


Figure 2-9. Editing Keys on the Expanded Typewriter Keyboard

ERASE EOD (Erase to End of Display) (2)

This function deletes all unprotected data from the cursor position to the end of the screen. Protected fields remain intact, including FCCs entered on the screen.

ERASE EOL (Erase to End of Line) (3)

This key erases all unprotected characters from the cursor to the end of the line or the end of the field, whichever occurs first. If protected data falls within the defined area, only the unprotected data up to that point will be erased.

ERASE TO EOF (Erase to End of Field) (4)

This function deletes all unprotected characters within the field from the cursor to the end of the field or the end of the display, whichever comes first. If protected data occurs within the defined area, only the unprotected data up to that point will be erased.

DELETE IN DISP (Delete in Display) (5)

This key repositions all data between the cursor and the end of the screen. The character beneath the cursor is deleted and the entire display to the right of the cursor shifts one position to the left each time the key is pressed. Characters formerly in the first position of a line shift to the last position of the preceding line. A space is inserted in the last position of the last line of the screen.

If the end of a field occurs before the end of the screen, shifting action is limited to that field. If a protected character occurs within the field or before the end of the screen, shifting action stops one space to the left of the protected character. Deletions are not reversible. That is, once a character has been deleted, a space must be inserted and the character retyped.

DELETE IN LINE (6)

Pressing this key repositions all data from the cursor to the end of a line. If the end of a field occurs before the end of the line, the shifting action is limited to the end of that field. The character beneath the cursor is deleted and all characters to the right of the cursor shift one position to the left each time the key is pressed. A space is inserted at the end of the line or the end of the field, whichever occurs first.

If a protected character falls within the line or field affected, the shifting action stops one position to the left of the protected character.

CHAR ERASE (Character Erase) (7)

This key erases the character beneath the cursor (creating a space) and moves the cursor to the next unprotected position. Cycling this key rapidly erases one character at a time for as long as you hold the key down. Protected characters and FCCs are not erased with this key.

If the CHAR ERASE key is used in the first position of a right-justified field, a space is inserted each time the key is pressed, with any preceding characters moving to the left one position. Within the right-justified field, the CHAR ERASE key erases the character.

LINE DUP (Duplicate Line) (8)

This key causes the line in which the cursor is located to be duplicated on the line below it, whether the line overwrites an existing line or fills a previously blank line. The cursor moves to the same column position in the duplicated line each time the key is pressed, until the last line of the screen.

Cycling the LINE DUP key is especially useful when you are setting up duplications of FCCs or tab stops for repetitive text or tabular material. The column position of the cursor is irrelevant in duplicating the line.

INSERT IN DISP (Insert in Display) (9)

This key allows you to insert spaces or data in existing material. When this key is pressed, the cursor remains stationary, a space is inserted between it and the character that was beneath it, and the remainder of the characters in the display move one position to the right. Characters that formerly occupied the last position of each line wrap around to the first position of the following line. The character occupying the last position on the screen is moved off the screen.

If the end of a field occurs before the end of the display, the shifting action is limited to that field.

If a protected character falls within the screen portion affected, the shifting action stops one position to the left of the protected character.

INSERT IN LINE (10)

This key inserts a space between the stationary cursor and the character formerly beneath it, thus moving all other characters within the line one position to the right. The character occupying the last position of the line is removed from the screen.

If the end of a field occurs before the end of the line, the shifting action is limited to the field.

If a protected character falls within the line or field affected, the insertion action stops one space to the left of the protected character.

INSERT LINE (11)

When you press the INSERT LINE key, a blank line is inserted in place of the line in which the cursor is located, and that line and all lines below it are moved down one line position on the screen. The line at the bottom of the screen is discarded. The cursor may be located in any position within the line for the INSERT LINE key to function.

FCCs that fall within the affected lines are moved down the screen within the lines.

DELETE LINE (12)

This key removes the line in which the cursor is located. All lines that were below it are moved up to fill the void and a blank line is inserted at the bottom of the screen. The cursor may be in any position within the line when the key is pressed and will remain in the same position.

LF (Line Feed) (13)

The LF key is used when you are entering data to be printed later on specially formatted paper or forms. When you press the LF key, the workstation internally flags that location with an instruction to the printer to perform a carriage return and to roll the paper up one line when printing. Entering an LF, like entering a data character, causes the cursor to advance to the next position on the screen.

FF (Form Feed) (14)

The FF key is another printer format control key that is used when you are entering data to be printed in a special format or on preprinted forms. Pressing this key generates an internal form feed code that instructs the printer to perform a carriage return at that location and advance the paper to the beginning of the next form.

2.1.2.5. Function Control Keys

These keys, shown in Figures 2-10 and 2-11, allow you to control the way in which the data you enter will be manipulated by the workstation and its host.

SHIFT (1)

LOCK (2)

These key functions are the same as they are on a typewriter. Pressing the SHIFT key produces the uppercase character of a data key. Pressing the LOCK key locks the keyboard into the uppercase state until the SHIFT key is pressed again to release the lock. The red indicator light on the LOCK key remains lit for as long as the shift state is in effect.

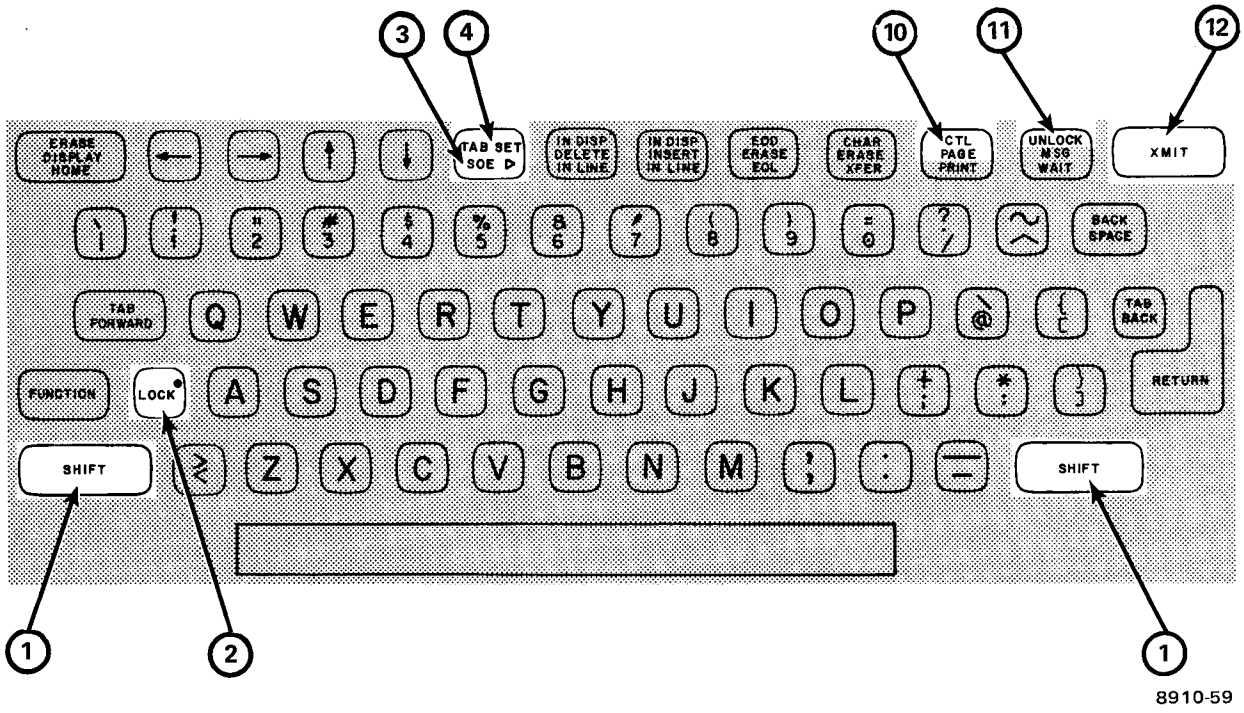


Figure 2-10. Function Control Keys on the Typewriter Keyboard

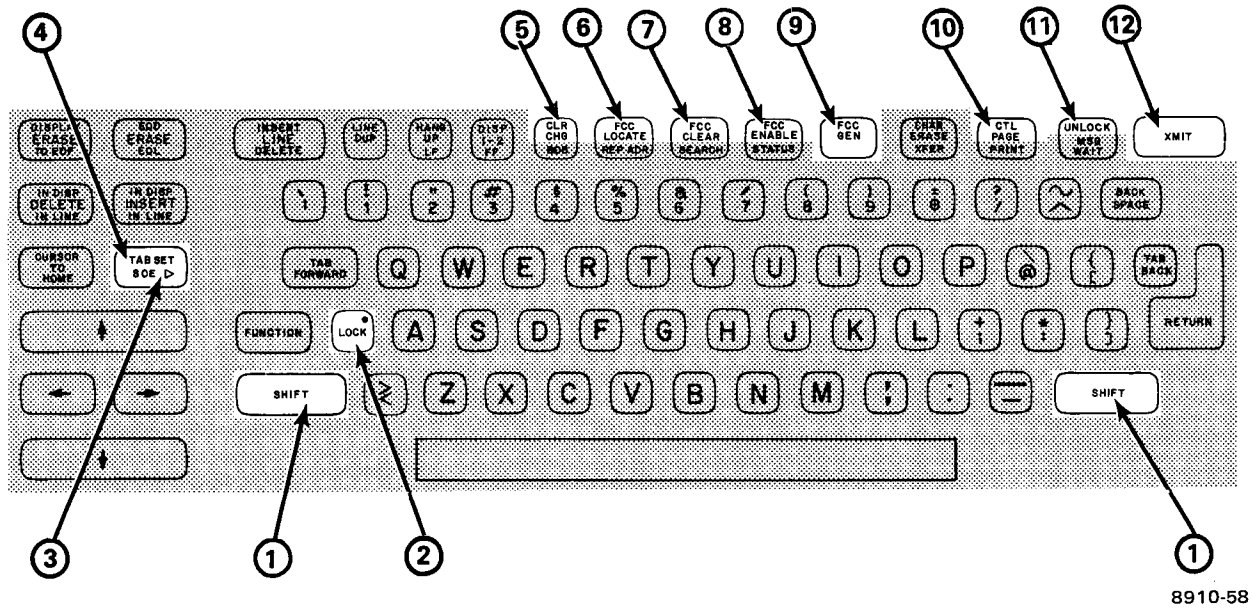


Figure 2-11. Function Control Keys on the Expanded Typewriter Keyboard

SOE (Start of Entry) (3)

To identify the starting point of the information you are sending, you must enter an SOE character where the message begins if that message begins in any position other than home position. The data between the SOE character and the cursor will be transmitted. If more than one SOE character appears on the screen, the one on the left nearest the cursor will be recognized as the starting point.

TAB SET (4)

This key function is the same as it is on a typewriter. The TAB SET key allows you to establish cursor stops within data even though you have not defined any fields with FCCs. Pressing the TAB SET key generates an undisplayed tab stop code at that position. The cursor will move one position to the right of that code when you later press the TAB BACK or TAB FORWARD key. The tab set code itself takes up one character position on the screen. That is, wherever you have used the TAB SET key to establish a tab stop, that position is not available for data entry. Remember to allow for this space when you set the tab and remember that the TAB FORWARD and TAB BACK keys automatically position the cursor at the first position to the right of the tab set location for data entry. If that position is protected, the cursor moves to the first unprotected position to the right.

Entering data over the tab set location erases the tab set code.

CLR CHG (Clear Changed Field Indicators) (5)

Changed field indicators are codes set internally by the workstation each time data is entered or changed in a field. The CLR CHG key clears these indicators from the screen memory. This function is useful in transmitting only data that has been changed.

NOTE:

The ERASE EOD, ERASE TO EOF, and ERASE EOL keys also clear the changed field indicators from the unprotected data that is erased.

FCC LOCATE (Locate Field Control Characters) (6)

The FCC LOCATE key moves the cursor to the first position of the next FCC-defined field in the display. If no FCCs have been defined to the right of the cursor, the FCC LOCATE key moves the cursor to home position.

The FCC LOCATE key locates all FCC-defined fields, regardless of whether a tab set was designated within the FCC characteristics. On the other hand, the TAB FORWARD key locates only those fields in which the TAB SET has been specifically defined, either through generation of the FCC tab characteristic or by use of the TAB SET key.

Pressing the FCC LOCATE key automatically disables the alphabetic-only, numeric- only, protected, and right-justified characteristics, allowing data to be entered in those fields without first clearing the FCC. (You must press the FCC ENABLE key to reenable all FCCs.)

FCC CLEAR (Clear Field Control Characters) (7)

This key clears the FCC at the cursor position or, if the cursor is not on an FCC, the first FCC to the left of the cursor. (The cursor may be located in any position of the field to be cleared.) If you do not generate a new FCC in that location, that field automatically becomes part of the field to the left of the cleared FCC.

FCC ENABLE (Enable Field Control Characters) (8)

This key must be pressed to put the selected FCC characteristics into effect. Once the FCC ENABLE key has been pressed, all FCCs set up on the displayed page become enabled. Therefore, all FCCs for the page should be generated before you press this key. If you are setting up a protected field, you can enter data only before the field is enabled. Once the FCC ENABLE key has been pressed, additional data cannot be entered into a protected field without first disabling the FCCs. You must press the FCC ENABLE key to enable all FCCs on that display if a new FCC was generated or the FCC LOCATE key was used.

FCC GEN (Generate Field Control Characters) (9)

This key initiates the beginning of the FCC code sequence, thereby establishing the start of a new field. Once the FCC GEN key is pressed, the cursor remains stationary for the next five character entries which define the characteristics of the field you are setting up — the display intensity, FCC tab stop, type of entry accepted, and right or normal justification of the field.

If you enter an unacceptable character in the FCC generation sequence, the alarm will sound once and the workstation will no longer be in the generate mode. If you wish to continue generating the FCC at that point, you must press the FCC GEN key again and reenter all the codes for that field.

As soon as the FCC GEN key is pressed and a correct sequence of codes has been entered, all existing FCCs on the screen become temporarily disabled until you press the FCC ENABLE key.

Once you have successfully entered an FCC, all data positions from that location to the next field or the end of the screen become part of that field. Generating another FCC marks the beginning of the next field.

Although the FCC LOCATE key positions the cursor where the FCC was generated, the generation of an FCC does not take up a physical screen location as does the TAB SET key. Theoretically, you could generate 1,920 FCCs, one for each screen location, and still be able to enter a full screen of data.

CTL PAGE (Control Page) (10)

Pressing the CTL PAGE key once displays the 2-line control page on the screen; pressing it again removes the control page from the screen.

Pressing the CTL PAGE key also enables FCCs.

NOTE:

Entries and changes to the control page can be made only when the control page is displayed on the screen. However, the workstation cannot act on the instructions until the control page is returned to storage. (Instructions for using the control page are given in Section 3.)

UNLOCK (11)

The UNLOCK key cancels the transmission of data, clears an error condition and silences the alarm, and opens the keyboard to additional keyboard entries.

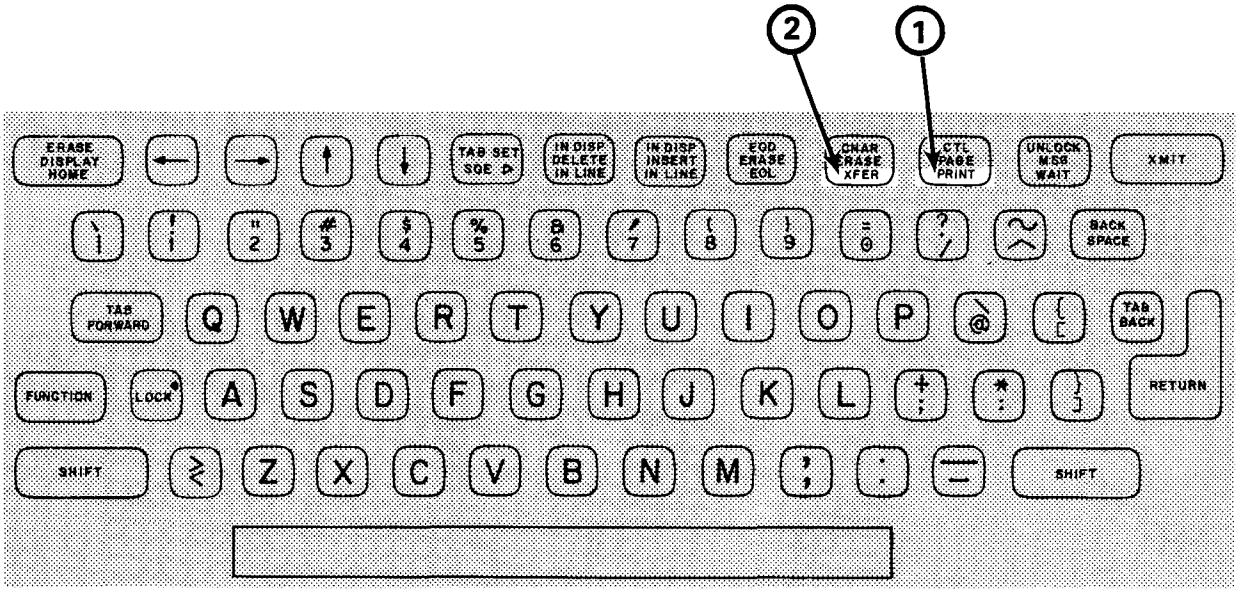
XMIT (Transmit) (12)

The XMIT key sends the data you have specified on your screen to the host. The type of transmission — whether it will include all data on the screen or only the changed information — is something you specify in the control page.

Once you press the XMIT key, the cursor temporarily disappears from the screen and the keyboard becomes locked or disabled. (Program attention keys still function.) The keyboard becomes operational again after the host responds to the workstation with another message.

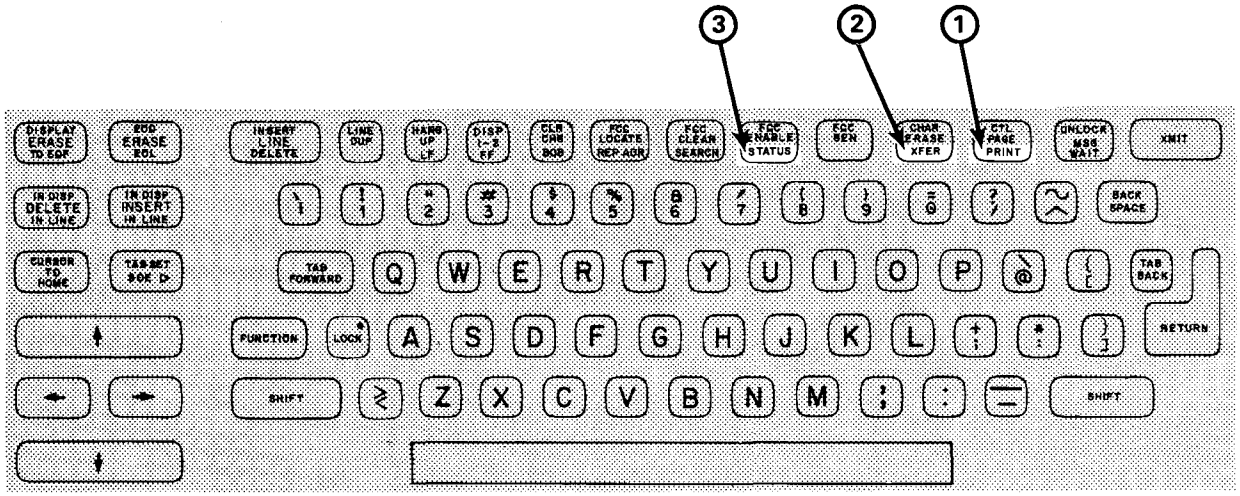
2.1.2.6. Peripheral Device Keys

Certain function keys are used with control page commands to select and control peripheral devices or to transfer data to or from these devices. For the workstation, the only peripheral device used is the printer selected for your terminal. Therefore, you will use only the keys which have to do with printer operation. (See Figures 2-12 and 2-13.)



9135-2

Figure 2-12. Peripheral Device Keys on the Typewriter Keyboard



9135-12

Figure 2-13. Peripheral Device Keys on the Expanded Typewriter Keyboard

PRINT (1)

The PRINT key operates with the control page instructions entered in the (**PRINT*) and PRNT( ) fields. Pressing the PRINT key sends up to one screen of data to the printer as specified by these control page instructions and by SOE character and cursor placement on the screen. (See 3.2 for control page instructions; Section 5, for specific printing operations.)

XFER (Transfer) (2)

The XFER key operates in conjunction with the control page instructions entered in the (**XFER**) and XFER( ) fields. Pressing the XFER key sends up to one screen of data to the printer, as specified by these control page instructions and by SOE character and cursor placement on the screen. (See Section 3 for control page instructions; Section 5, for specific transfer operations.)

STATUS (3)

When you press this key, a 3-character code is displayed in the control page field describing the operational status of the printer (3.7).

2.1.2.7. Program Attention Keys

The program attention keys are used to access routines or functions designated by specially designed programs unique to your own company needs.

The symbols "f1" through "f22" that appear on the front face of the top two rows of data keys are program attention keys (Figures 2-14 and 2-15). You activate the program attention functions by pressing the FUNCTION key and the appropriate "F" key. All "F" keys may or may not have functions associated with them. As these functions are determined by the user, you will need to ask your supervisor which keys to use, if any.

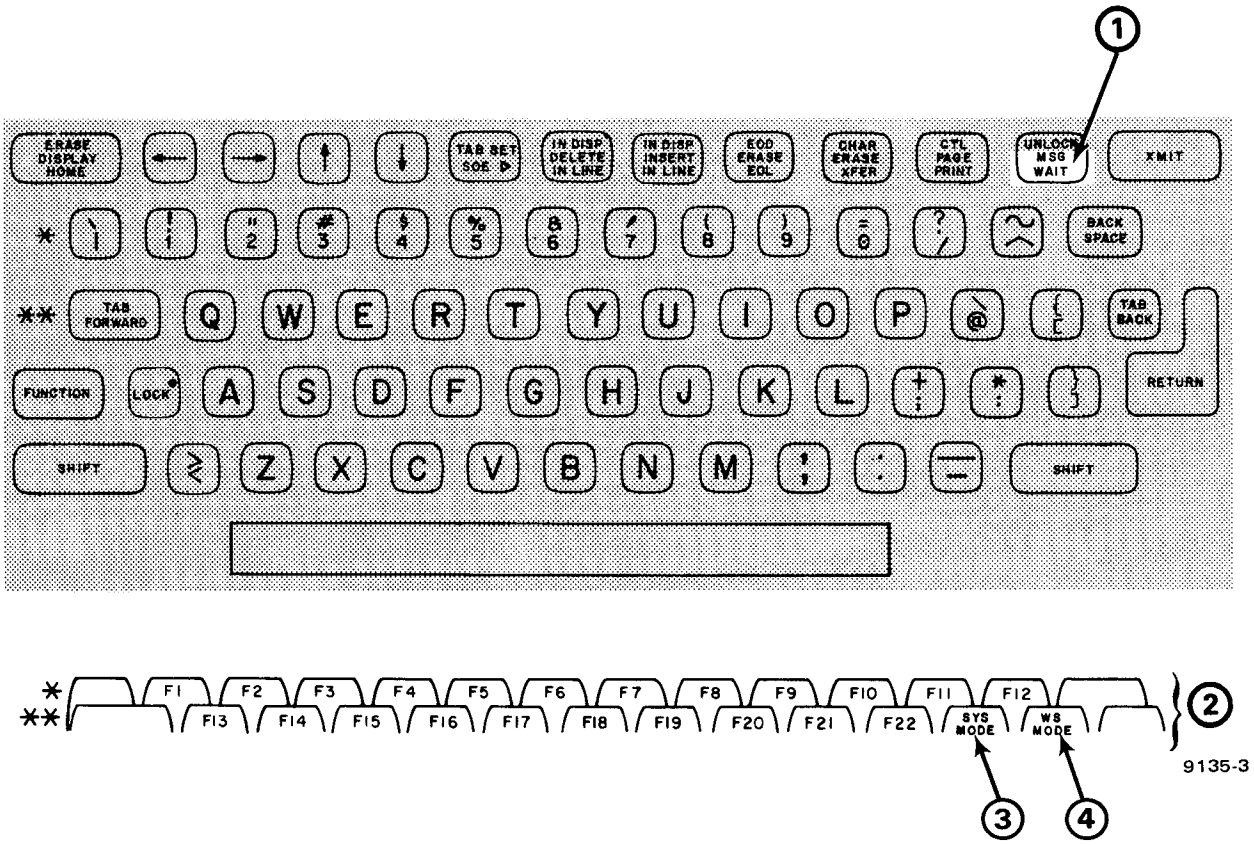


Figure 2-14. Program Attention and Mode Selection Keys on the Typewriter Keyboard

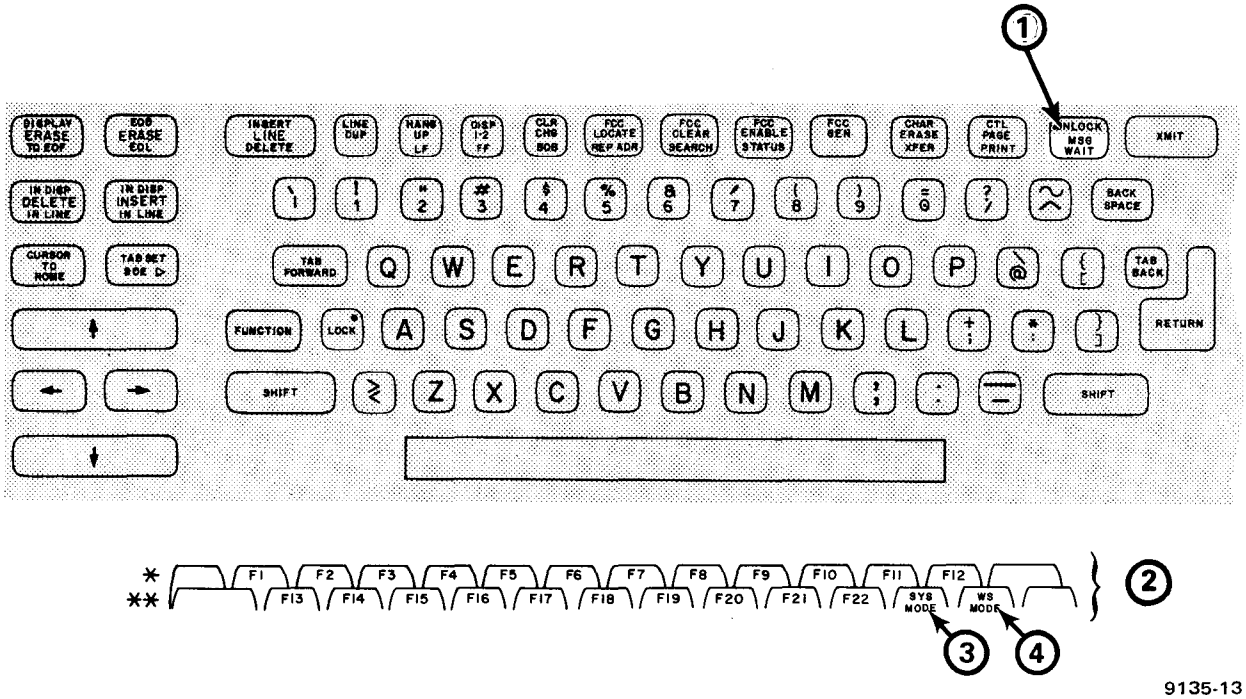


Figure 2-15. Program Attention and Mode Selection Keys on the Expanded Typewriter Keyboard

MSG WAIT (Message Wait) (1)

The MSG WAIT key is usually used to display an incoming message sent to your workstation by the processor, as signaled by the MSGW indicator on the indicator line of the screen. This function could be reassigned, however, so confirm its use with your supervisor.

F1 through F22 (2)

These keys, used to access routines or functions designated by specially designed programs unique for your company's needs, may not have programs assigned to them. You must check with your supervisor for the ones assigned for use with your workstation.

2.1.2.8. Mode Selection Keys

The system 80 workstation mode selection keys, shown in (2) of Figures 2-14 and 2-15, allow you to change from one operation mode to another.

SYS MODE (System Mode) (3)

This key allows you to request a change to the system mode of operation. This may be in response to a message from the host when SYS MSG is displayed on the indicator line or you may initiate the request to send a message to the host. When the SYS MODE function is activated, the remainder of the screen, except for the top line (the operator input line), is protected from operator access (4.14).

WS MODE (Workstation Mode) (4)

Pressing this key sends a request to the host to return the workstation to its normal mode of operation for entering and transmitting data. If you pressed the SYS MODE key to respond to a message from the host or to send a message to the host, you must press the WS MODE key to get back to your original data entry condition. (The top two lines taken up by the system mode will be replaced with the data you originally entered (4.14)).

2.2. FRONT PANEL CONTROLS AND INDICATORS

Besides the keyboard controls, there are other indicators and controls located on the workstation front panel (a recessed area on the main cabinet beneath the screen). These front panel indicators and controls are shown in Figure 2-16.

KEYLOCKS

These keylocks ensure the security of the workstation by requiring special keys to use the keyboard or to change certain types of operating parameters in the control page.

The SET UP keylock must be unlocked to enable changes to the parameter section of the control page. (If this keylock is not featured on your workstation, you have unlimited access to changing control page parameters.)

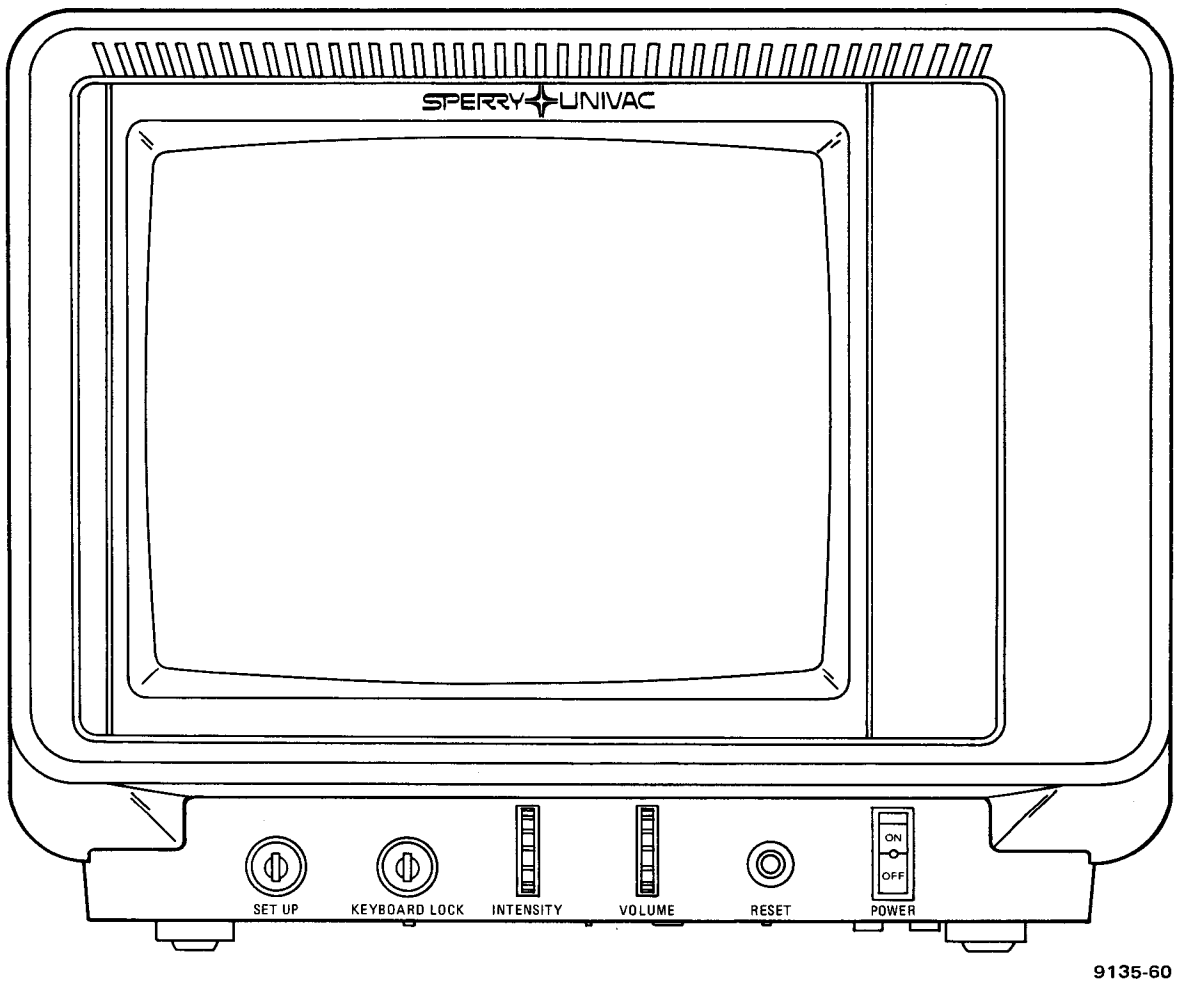


Figure 2-16. Front Panel (With Keyboard Pulled Aside)

Next to the SET UP keylock is the KEYBOARD LOCK, which controls data entry from the keyboard. Although the workstation can receive and display incoming messages with this keylock locked, the keyboard cannot be used to enter data.

INTENSITY

This control adjusts the brightness of the display. Rotating it upward brightens the display; downward rotation dims the display.

VOLUME

This control adjusts the volume of the sound heard when a key is pressed (keyboard click) and the audible alarm. The alarm, a beep sound, occurs once with the following conditions:

- The cursor moves into the eighth position from the end of the line.
- The cursor enters any position in the last line.
- The power-on confidence test is sucessfully completed.
- You try to enter data that does not conform to the FCC criteria for that field.
- You enter an unacceptable code while generating an FCC.
- You attempt to store the control page with an invalid entry on it.
- You attempt to enter a code in the (PARAM) field of the control page while the SET UP keylock is locked.
- A keyboard parity error has occurred.
- You press a data key when the cursor is within the unchanged portion of a right-justified field.
- The FUNCTION key is pressed with a data key that does not have an upper function.
- A system message is received from the host.
- The magnetic stripe reader has successfully completed a read function.

The alarm sounds repeatedly in the following conditions:

- Your workstation has an incoming message (MSGW) to be displayed.
- The printer is unable to successfully implement the desired printing function and must be checked or restarted.
- You press the PRINT or XFER key without having defined a peripheral device in the control page.
- A random access memory (RAM) parity error occurs.

RESET

Pressing the RESET button has the same effect on the workstation as turning the POWER switch ON and OFF. The RESET function erases all previous control page instructions and requires the workstation to be reloaded from the host.

The RESET indicator light is an overtemperature warning indicator. If it is lit, power to the rest of the workstation will have been automatically turned off.

POWER

This control allows you to turn on the workstation, automatically initiating the POC test. An indicator light on the switch comes on when power is being supplied to the workstation.

2.3. INDICATOR LINE DISPLAY

The indicator line appears on line 25 (the bottom line) of the screen display whenever the workstation is turned on. It shows you the current status of the workstation, together with any operating peripheral devices. The indicator line contrasts in appearance with the rest of the display so that it is always readily visible. If all indicators on the line were to be displayed at once (which would not happen in actual use), it would appear as shown in Figure 2-17.

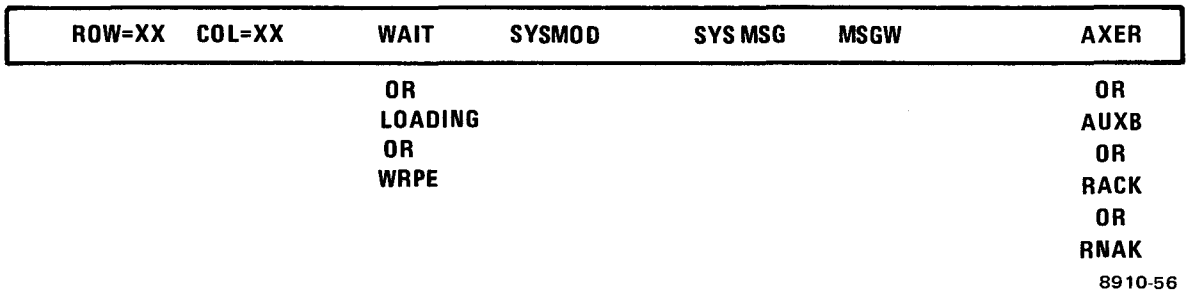


Figure 2-17. Indicator Line

ROW=XX COL=XX

This indicator tells you exactly the row and column occupied by the cursor. For example, ROW=01 indicates row 1 (top line); ROW=24 indicates row 24 (bottom line). COL=01 indicates column 1 (extreme left); COL=80 indicates column 80 (far right).

WAIT, WRPE, or LOADING

The blink characters on either side of the WAIT message flash whenever the keyboard is locked and the workstation cannot accept additional entries.

The WRPE (write RAM parity error) indicator appears in this location whenever a parity error occurs. The host automatically reloads the workstation, causing the control page entries to revert to their initial values. Screen data is saved, but FCCs on the screen are lost.

The LOADING indicator appears after the POC tests have been successfully completed and the host is loading programs into the workstation.

SYSMOD (System Mode)

When this indicator appears, the workstation is currently operating in system mode. Only messages to the host entered in the operator input line can be transmitted.

SYS MSG (System Message)

This indicator appears, accompanied by a single alarm tone, when the workstation receives a system message from the host. The XMIT and program attention keys are locked until you enter the system mode by pressing the FUNCTION and SYS MODE keys.

MSGW (Message Waiting)

The blink characters on either side of the MSGW indicator flash whenever an unsolicited message from another station is on your line. An alarm tone sounds repeatedly and the indicator remains on until you press the MSG WAIT key to display the message.

AUXB, AXER, RACK, RNAK

The AUXB (auxiliary busy) indicator appears whenever the printer is involved in a transfer of data.

The AXER (auxiliary error) indicator appears and the alarm sounds repeatedly whenever an unrecoverable error occurs during data transfer to the printer. The UNLOCK key clears the condition.

The RACK and RNAK indicators appear only when a magnetic stripe reader is being used for data entry. If a card has been read successfully, the RACK indicator appears briefly and is accompanied by a single alarm tone.

If the card has not been read successfully, the RNAK indicator blinks and the alarm tone does not sound. The RNAK message remains on the indicator line until the card is read successfully or until you press the UNLOCK key.

2.4. SWITCHBLOCK SELECTIONS

The switch settings on the switchblock located on the back of the workstation (Figure 2–18) must be appropriate for your site. Typically, the switch selections are made during installation. However, as the operator, you should be aware of the location of the switches and their functions (Table 2–1).

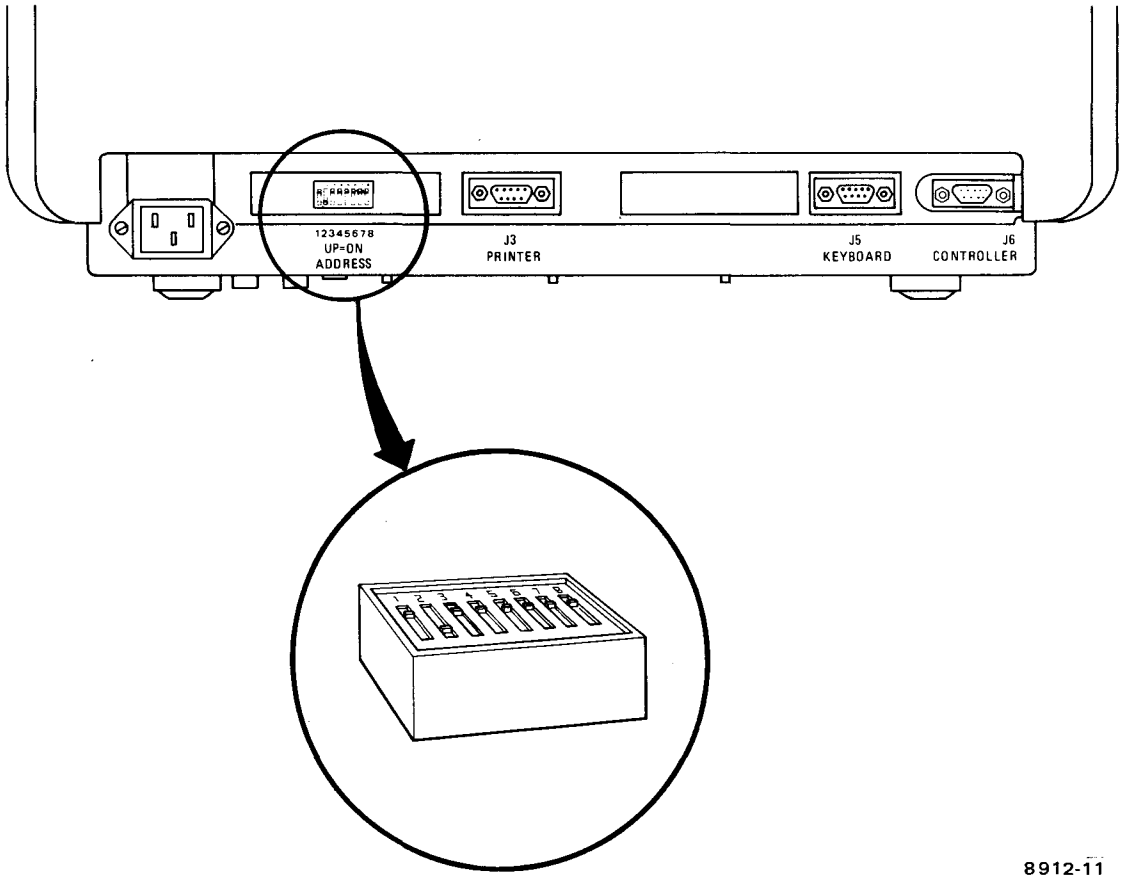


Figure 2–18. Switchblock on Back of Workstation

Table 2–1. Switchblock Switch Functions

Switch Number	Switch Position (Up = On)	Function Selected	Remarks
1	On Off	All character sets except Katakana Katakana character set	Normally on
2	On Off	50-Hz screen refresh rate 60-Hz screen refresh rate	Normally set at 60 Hz to eliminate flicker
3	On Off	Not used Not used	(Set to ON position)
4	On Off	Not used	(Set to ON position)
5	On Off	Normal (no maintenance function) Activates loading from cartridge	Normally on
6	On Off	Workstation Console	Must be on for workstation
7	On Off	Normal power-on confidence test (POC) Bypasses POC failures and activates load (maintenance only)	Normally on
8	On Off	Runs POC once Cycles POC	Normally on

3. The Control Page

Another control, the control page, consists of codes keyed into preestablished fields and stored in a portion of the memory of the SPERRY UNIVAC System 80 Local Workstation (workstation). These codes control or modify the function of some keys or the operating characteristics of the workstation itself.

The control page consists of a 2-line group of fields (Figure 3-1). These consist of both protected areas that you cannot change and unprotected areas in which you may enter codes.

Several control page fields are set up to control different types of peripheral devices. Since the workstation is linked only to a printer, many fields will not be used. You will use fields that control the type of transmissions and operating parameters desired for a specific job. Wherever you do not enter a code in a control page field, the workstation is programmed to default to a standard operating condition. The default conditions of the different control page fields are given in 3.2.

3.1. DISPLAYING AND REMOVING THE CONTROL PAGE

You can display the control page by pressing the FUNCTION key and the CTL PAGE key. (The cursor can be in any screen position.) Any data occupying these two lines shifts to temporary storage while the control page is on the screen.

To remove the control page from the screen, press the FUNCTION key and CTL PAGE key again. The original data will be returned to the screen exactly as it appeared before.

If you enter an unacceptable code in a parameter field and then store the control page, an alarm will sound once. When you call up the control page again, the incorrect entry will still be displayed.

As long as the workstation power remains on and the RESET pushbutton has not been pressed, the codes last entered in the control page remain in effect until you recall the control page and change the codes.

When you turn the workstation power off, or press the RESET button, all control page entries revert to the default condition. When you return to the workstation after power has been turned off, be sure to call up the control page to check or reenter the desired control page codes.

```
(**PRINT*)STA-      (**XFER**)PRNT(PRNT)XFER(VAR )XMIT(VAR )MM (PARAM)
(  /   /  )ADR-     (  /   /  )SEARCH(                    ) 1(  /   )
```

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Figure 3-1. Control Page Display

3.2. (PARAM) FIELD

The parameter (PARAM) fields of the control page allow you to adjust the screen display and certain other operating characteristics of the workstation.

The (PARAM) field is divided into two subfields: the first identifies the parameter type (pt); the second, the characteristic or parameter option (po) desired for that parameter type.

Example: (PARAM)
(sp/ns)

In the example, "sp" is the parameter type, referring to the space bar, and "ns," meaning nondestructive, is the parameter option with which you are defining the space bar.

If you enter an unacceptable code in a parameter subfield and then attempt to remove the control page, the alarm sounds once. The next time you display the control page, the incorrect entry will appear in the same location. The workstation will not store an incorrect parameter entry. If you do not display the control page to correct the erroneous entry, the workstation will refer to the previously entered parameter of that type or will default to the standard condition.

Table 3-1 lists the parameter types and their options. As in the other control page fields, the codes can be entered either in uppercase or lowercase characters.

Table 3-1. Control Page Parameter Types and Options (Part 1 of 2)

Parameter	pt Codes	po Codes	Defaults To:	Parameter Function
Alternate brightness	AB	NI (normal intensity) LI (low intensity) RV (reverse video)	NI	Determines brightness of display
Number of lines and columns	LN CL	02-24 01-80	24 80	Sets number of lines and columns in screen display
Printer speed	PS	03 (300 baud) 06 (600) 12 (1200) 24 (2400) 48 (4800) 96 (9600)	96	Sets data transfer rate from UTS 20 to printer
Placement of control page	CP	(01-23)	01	Selects line on which 2-line control page begins.
Space bar	SP	DS (destructive) NS (nondestructive)	NS	Defines space bar function.
Device code	DV	(Any 2-character entry)	PR	Names printer for control page identification

Table 3-1. Control Page Parameter Types and Options (Part 2 of 2)

Parameter	pt Codes	po Codes	Defaults to:	Parameter Function
Video-off time	VO	01 (min) 04 16 64	04	Blanks screen display after specified lapse of keyboard activity.
Keyboard click	KK	ON OF (off)	ON	Turns keyboard click on or off.
Automatic transmit (Magnetic stripe reader)	AT	YS (yes) NO	NO	Selects manual or automatic transmission of card data.
Uppercase characters	UC	YS (yes) NO	NO	Causes all alphabetic keys to be entered in uppercase. Does not affect numeric or symbol keys.
Uppercase range	UR	Any lowercase character in column (1) of Table 3-2.	a-z	Determines the characters to be displayed when the uppercase characters parameter is set to YS.

3.2.1. Entering or Changing Parameter Codes

1. Unlock the SET UP keylock on the cabinet front panel.
2. Display the control page.
3. Enter a parameter type and its option by typing in the appropriate codes in the pt/po subfields.

NOTE:

You may also enter other field codes at this time, but only one pt/po parameter code may be entered at a time.

4. Press the CTL PAGE key again to put away the control page.
5. If you have additional pt/po codes to enter, display the control page again.
6. Continue in this manner until all parameter codes have been entered.
7. If the audible alarm sounds once as the control page is removed, redisplay the control page and correct the last parameter entry.

3.2.1.1. Alternate Brightness

The code entered in this subfield determines the effect of the FCC intensity characteristic on a given field. "LI" (low intensity) is the default condition of this parameter.

Reverse video (RV), a dark display against a green background, or normal intensity (NI) become the prevailing intensity characteristic if it is entered into the control page. The FCC intensity selections (normal (N), low (L), and blink (B)) have the following effects on the appearance of the display:

Parameter Code	FCC Selection	Field Appearance
LI	L	Low
	N	Normal
	B	Low to normal
NI	L	Normal
	N	Normal
	B	Normal
RV	L	Reverse video
	N	Normal
	B	Normal to reverse

3.2.1.2. Screen Size

By entering a 2-digit number (02 through 24 for rows or 01 through 80 for columns), you can structure the display format to suit a particular need. For example, you can specify a 4-line by 2-column format, a 10-line by 10-column format, or any other. The control page itself always takes up 2 lines across 80 columns, regardless of the screen size setting. (The indicator line always appears in the 25th line of the screen across all columns.) If no line or column option is entered, the UTS 20 defaults to a 24-line by 80-column format.

NOTE:

Existing data on the screen will be erased if you display the control page and change either the line or column parameter.

3.2.1.3. Printer Speed

This parameter specifies the speed at which the workstation passes characters to the printer. This parameter defaults to 9600 baud.

3.2.1.4. Placement of Control Page

You may dictate the placement of the control page on the screen through this parameter. The 2-digit code you enter will be the screen line in which the first line of the control page will appear. (The code entry should be at least one less than the total number of lines selected for the display.)

3.2.1.5. Space Bar

You may define the space bar as either destructive or nondestructive through this parameter. Defining the space bar as destructive simplifies the erasure of single characters, but requires that you use the forward scan key instead of the space bar to space over characters.

3.2.1.6. Device Code

This parameter contains the code name of your printer. Whenever you enter a PRINT or XFER function in the control page, the identification of the device that appears in those subfields must match the code you have entered in this parameter. You may designate any two characters as the identifier, with the workstation defaulting to a "PR" code if no other code is entered.

3.2.1.7. Video Off

These codes provide internal instructions to the workstation to blank the screen display after a specified time has elapsed with no activity from your station. (Although the screen is blanked, power to the terminal is still on.)

If the screen has been blanked, press any key to redisplay the data.

NOTE:

The normal function of the keycap you press will be implemented simultaneously with the redisplay of screen data.

3.2.1.8. Keyboard Click

The default condition of a workstation keyboard is a clicking sound when any key is pressed. If you wish to silence that click, however, enter an OF (off) in this parameter option.

3.2.1.9. Automatic Transmit (When Magnetic Stripe Reader Is Used)

Setting this parameter to NO (the default condition) means that any card data read by the magnetic stripe reader will not be automatically transmitted to the host. Instead, the data will be read and displayed on the screen, allowing you to change it, if necessary, through the keyboard before manually transmitting it by pressing the XMIT key. The YS (yes) option selects the automatic transmit mode, in which card data is automatically sent to the host without being displayed on the screen.

3.2.1.10. Uppercase Characters

When YS is entered in this parameter type, all alphabetic characters entered in the display appear in uppercase, regardless of the use of the SHIFT or LOCK keys. Numeric or symbol keys are not affected.

3.2.1.11. Uppercase Range

This parameter is designed primarily for operators using non-English keyboards, in which all required uppercase characters do not fall within the UC (uppercase) parameter default range of a–z.

To use this parameter, YS must first be entered as the UC parameter option. Uppercase range is then specified in the UR parameter by entering in lowercase the first and last characters to be included in the range. Uppercase characters or any symbols other than those shown in Table 3–2 that are entered in the parameter option subfield are invalid entries.

NOTE:

This is the only parameter in which the parameter option must be entered in lowercase.

As an example, if an operator of a German-language keyboard wants to automatically display the symbols "Ä", "Ö", and "Ü" without having to press the SHIFT key, the following entries must be made in the (PARAM) field:

(UC/YS)
(UR/aü)

All characters from "a" through "ü" will then appear as uppercase characters when typed.

Table 3–2. Characters Included in Uppercase Range Parameter Selection

USA		Spain		Denmark/ Norway		France		Germany		Sweden/ Finland		U.K.		Italy	
(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
`	@	`	§	`	@	`	@	`	§	é	E	`	@	U	§
a	A	a	A	a	A	a	A	a	A	a	A	a	A	a	A
b	B	b	B	b	B	b	B	b	B	b	B	b	B	b	B
c	C	c	C	c	C	c	C	c	C	c	C	c	C	c	C
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
y	Y	y	Y	y	Y	y	Y	y	Y	y	Y	y	Y	y	Y
z	Z	z	Z	z	Z	z	Z	z	Z	z	Z	z	Z	z	Z
{	[	°	i	æ	Æ	é	°	ä	Ä	ä	Ä	{	[	á	°
|	\	ñ	Ñ	ø	Ø	u	ç	ö	Ö	ö	Ö	|	\	o	#
}	]		¿	å	Å	è	§	ü	Ü	å	Å	}	]	è	é
~	^	~	^	—	^	¨	^	β	^	ü	Ü	~	^	í	^

(1) Character entered

(2) Character displayed

3.3. (**PRINT*) AND (**XFER**) FIELDS

The functions of the (**PRINT*) and (**XFER**) fields are similar as they specify the peripheral device to which the data will be output when either the PRINT or the XFER key is pressed. Because the System 80 workstation is connected only to a printer, the middle subfield is the only area in which codes must be entered.

The PRINT function prints the data in the same format in which it appears on the screen, stripping out any existing FCC characters. The XFER function prints the data in a continuous stream unless you have used the LF (line feed) and FF (form feed) keys to format the screen. Any FCCs included in the data will also be transferred to the printout. For most normal printing operations, the PRINT function and PRINT key will be the most useful.

The top line of both fields is protected, so you can neither enter nor erase characters. Because the workstation may work only with a printer peripheral, the only codes you must enter in the "to" subfield are the printer's 2-character identifiers. That code must be the same 2-digit code already entered as the DV option in the (PARAM) subfield.

```
(**PRINT*)          (**XFER**)
(  /to/  )          (  /to/  )
```

3.4. PRNT( ) FIELD

The 4-character code you enter between the parentheses defines the type of data you wish to move to the printer when you press the PRINT key. All data from the home position or SOE character through the cursor position is moved, under the constraints of the following allowable entries:

- PRNT

  This is the default condition of the PRNT( ) field if no other entry is made. The printer prints all data from the SOE character through the cursor position. The ends of the lines on the screen are carried over in the same format in the printout.

NOTE:

The "PRNT" function does not transfer the internal FCC codes to the printout.

- XPAR

  This selection removes the internal end-of-line codes of the screen formatting, resulting in a continuous stream of printed data. This function is useful when used with the line feed (LF) or form feed (FF) key in formatting a printout without retaining the cursor returns or internal end-of-line codes made during data entry.

- FORM

  This selection replaces protected display characters with space in the printout. Thus, a screen form can be generated with the permanent information, such as preprinted column headers, entered as protected data. The protected data will be replaced by spaces in the printout and the unprotected data will be printed.

3.5. XFER( ) FIELD

The code you enter between the parentheses defines the type of data you wish to move to the printer when you press the XFER key. All data from the home position or SOE character through the cursor position is moved according to the following allowable entries:

- ALL

  The entire block of data from SOE to cursor position, including FCC characters, is printed.

- VAR (default condition)

  Only unprotected data and the associated FCCs are printed.

- CHAN

  Only data that has been changed, as indicated by the internal changed-field indicators, and their associated FCCs are printed.

3.6. XMIT( ) FIELD

The code you enter between the parentheses defines the type of data that will be transmitted to the host when you press the XMIT key. Allowable entries are:

- ALL

  All data and FCCs between home position or the SOE character up to the cursor position are transmitted.

- VAR (default condition)

  Only unprotected fields and their associated FCCs are transmitted.

- CHAN

  Only fields that have been changed and their associated FCCs (indicated by the internal changed-field indicators) are transmitted.

3.7. STA- FIELD

A 3-character status code for the printer is displayed in this field when you press the STATUS key. The status is called up by positioning the cursor over the second character of the "DV" code in the (**PRINT*) or (**XFER**) subfield or anywhere in the display itself, and pressing the STATUS key. The status code you receive will be one of the following:

XX 100 Printer not ready

XX 000 Printer ready

The XX in the code is replaced by the DV code you are using to identify the printer.

NOTE:

Printer condition is also signaled by the AXER indicator, although an indication of this type will probably refer to a communications failure in transferring the data from the workstation to the printer.

3.8. ADR- AND SEARCH FIELDS

These fields are not used in the workstation.

3.9. MM FIELD

This field is not used in the workstation.

4. Workstation Operating Instructions

Operating the SPERRY UNIVAC System 80 Local Workstation (workstation) requires little more than knowing the keys to press to effect the appropriate actions — either positioning data on the screen or performing the desired transmission or peripheral function.

The information in Section 2 generally defines the function of each key, control, and indicator; Section 3 describes the coding you must enter in the various control page fields. This section tells you how to combine the information from the previous two sections to perform specific operations.

4.1. TURNING THE WORKSTATION ON AND PREPARING FOR DATA ENTRY

1. Expose the front control panel by moving the keyboard away from the workstation cabinet.
2. Unlock the KEYBOARD keylock (if provided).
3. Press the POWER switch to ON. The POWER switch indicator lights immediately. The POC test display and the indicator line appear on the screen.
4. Observe the POC test display and the general appearance of the screen. (See Appendix A for description of proper display.) If you note any discrepancies, turn the power off and repeat step 3. ←

After the POC test has been run, the workstation will automatically be loaded from the host processor. While the workstation is being loaded, the "LOADING" indication will flash on the indicator line. When loading is complete, the message "TERMINAL READY--xx" appears beneath the POC test results. The keyboard and all terminal functions are suspended until the "TERMINAL READY" indication appears. ←

5. Press the CURSOR TO HOME key to place the cursor in home position and to clear the screen.
6. Display the control page on the screen (3.1) to verify or enter the codes you want for your operation.

4.2. ADJUSTING DISPLAY INTENSITY

To brighten the display, rotate the INTENSITY control on the front panel up. To dim the display, rotate the control down.

NOTE:

The intensity should be bright enough to read comfortably but not so bright that the characters begin to blur and thicken. The screen may be blanked according to the "video off" parameter entered in the control page or by reducing the display intensity by turning the INTENSITY knob completely down.

4.3. USING THE CURSOR

The cursor serves as a pointer to show you where the next character will appear on the screen. You can position the cursor anywhere by pressing one of the cursor positioning keys: space bar, scan keys, BACK SPACE key, TAB FORWARD key, TAB BACK key, HOME key, or RETURN key.

NOTES:

If you tab either forward or backward and there are no tab stops between the cursor and home position, the cursor returns to home position.

The cursor will not stop on a protected data position. Remember, if the space bar has been defined in the control page as destructive, it will erase characters as it moves the cursor over them.

4.3.1. Entering Data

1. Move the cursor to where you wish to begin entering information.

2. Using the appropriate data keys, enter the information that you want on the screen. The data appears, one character at a time, in the cursor location and the cursor moves to the right one position with each character entered. (If the next character position is protected, the cursor moves to the next unprotected position to the right.) A single alarm tone sounds when the cursor moves into the eighth character position from the right side of the screen.

3. If you press another data key when the cursor is in the last position of the line, the character will be entered and the cursor will move automatically to the beginning of the next line. If you are near the end of a line and do not wish to run a word from that line to the beginning of the next line, press the RETURN key. The cursor will move to the first unprotected position of the next line.

4. Continue typing in this fashion until you have finished or until the screen is full. The alarm sounds once as the cursor moves into the last line of the screen.

5. To enter the uppercase character of any data key, press and hold the SHIFT key simultaneously with the desired data key. To enter a series of uppercase characters, press the LOCK key once. The indicator on the LOCK key will light as long as the shift state is in effect. To return to lowercase characters, press the SHIFT key once.

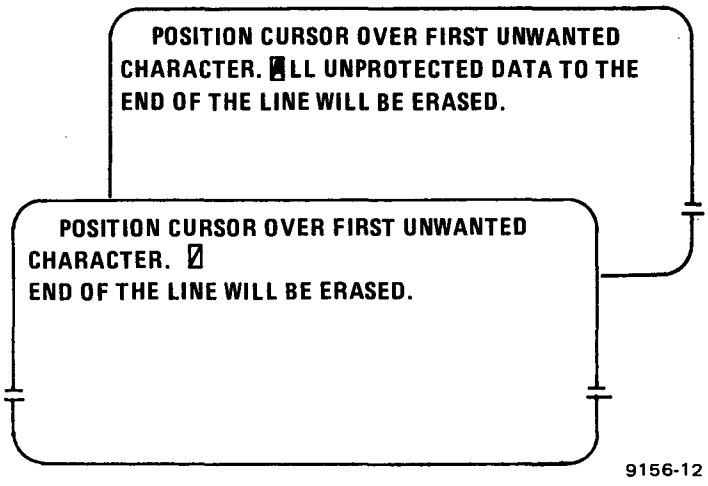
4.3.2. Overwriting the Character To Replace Unwanted Information

1. Position the cursor over the unwanted character.
2. Press the desired data key. The old character will be replaced by the new character and the cursor will move to the right one position.
3. Repeat this process as often as required to replace the unwanted characters.

4.3.3. Erasing the Character To Replace Unwanted Information

1. Position the cursor over the unwanted character.
2. Press the FUNCTION key and the CHAR ERASE key, or press the space bar if it has been defined in the control page as being destructive. The cursor will move to the next unprotected position to the right. ←
3. Repeat this procedure as often as required to remove the unwanted characters.

4.3.4. Erasing One Line at a Time

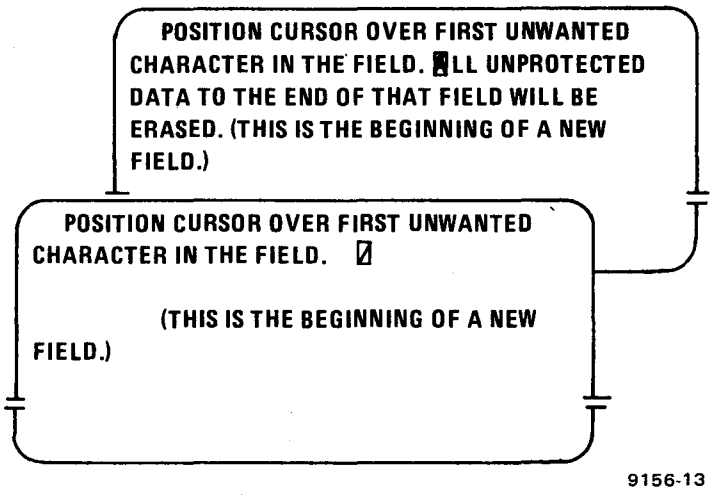


1. Position the cursor over the first unwanted character in the line to be erased.
2. Press the ERASE EOL key. All information from the cursor to the end of the line will be erased.

NOTE:

If the end of a field occurs before the end of the line, the ERASE EOL key will remove only the remaining characters within that field. If protected data falls between the cursor and the end of the line or field, erasure stops at the first protected character. ←

4.3.5. Erasing a Field



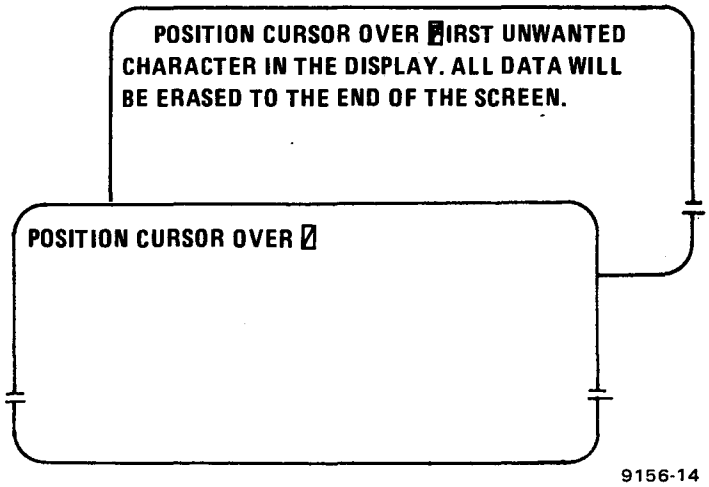
1. Position the cursor over the first unwanted character in the field to be erased.

→ 2. Press the ERASE TO EOF key. All unprotected information from the cursor to the end of the field will be erased, even though that field extends beyond the end of one or more lines.

NOTE:

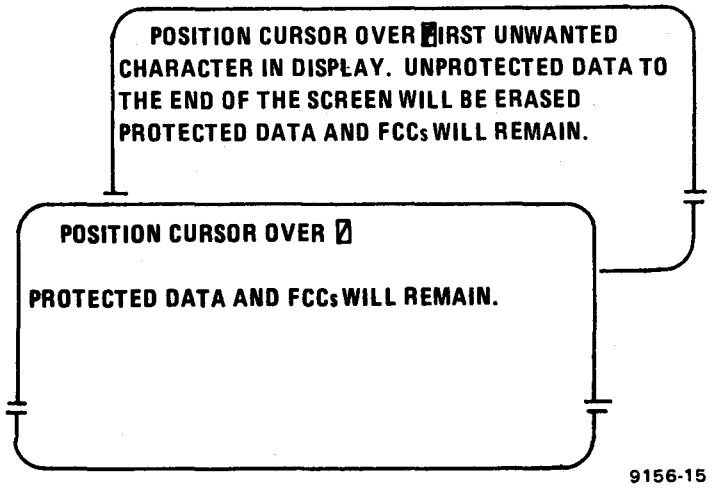
→ *The ERASE TO EOF key does not erase protected fields or FCCs.*

4.3.6. Erasing All Data



1. Position the cursor over the first unwanted character on the display.
2. Press and hold the FUNCTION key.
3. Press the ERASE DISPLAY key. All information, including protected data and FCCs, from the cursor to the end of the display will be erased.

4.3.7. Erasing All Unprotected Data



1. Place the cursor in any position in the line you wish to duplicate.
2. Press and hold the FUNCTION key.
3. Press the ERASE EOD key. All unprotected information from the cursor to the end of the display will be erased. Protected data and FCCs will remain.

4.3.8. Setting Conventional Tab Stops

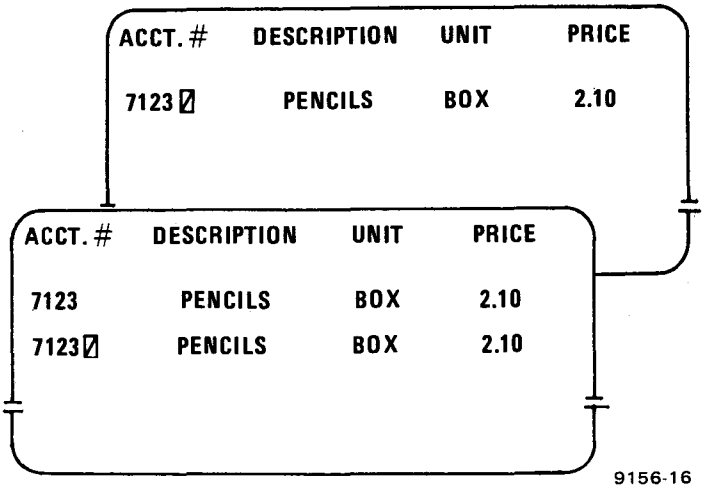
Establish conventional tab stops within your data with the TAB SET key as follows:

1. Place the cursor one position to the left of where you want the tab stop.
2. Press the TAB SET key. The tab stop position will be marked internally and the cursor will move one position to the right.

NOTE:

When you press the TAB FORWARD or TAB BACK key to locate the tab stop, the cursor automatically moves to the first unprotected position right of the tab. If you manually position the cursor over the tab stop position and then enter data in that position, the tab stop will be erased.

4.4. DUPLICATING COMPLETE LINES



1. Position the cursor to any position in the line you wish to duplicate.

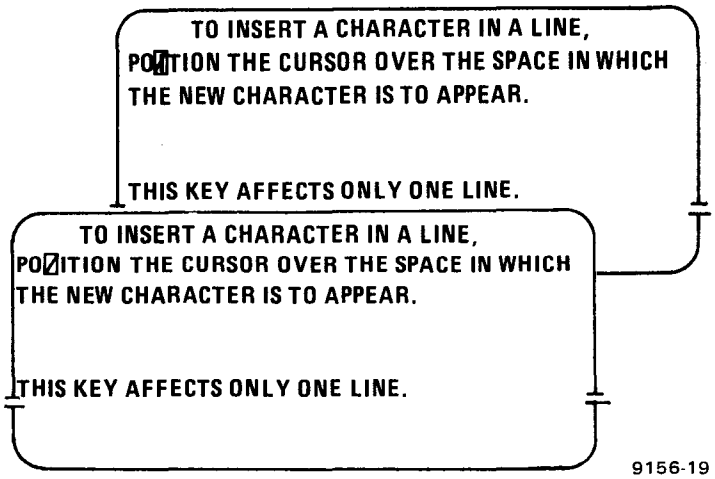
2. Press the LINE DUP key. The line will be duplicated in the next line down on the screen. The cursor will move down into the same column location of the new line.

3. Hold the LINE DUP key down to repeat duplication of the same line. (This function is particularly useful for producing tabular or repetitive forms.)

NOTE:

If the line below the one you wish to duplicate already contains data and you press the LINE DUP key, that line will be replaced with the duplicated line. If you wish to retain the data in the second line, first insert a new blank line (4.7) before duplicating the line above it. Then, when you press the LINE DUP key, the line will be repeated in the new blank line.

4.5. EXPANDING A LINE TO INSERT CHARACTERS



1. Position the cursor where the new character is to appear.

2. Press the INSERT IN LINE key. The cursor remains stationary. The character under the cursor and all characters in the line to the right of the cursor will move one position to the right, creating a space for the insertion.

3. Enter the desired character.

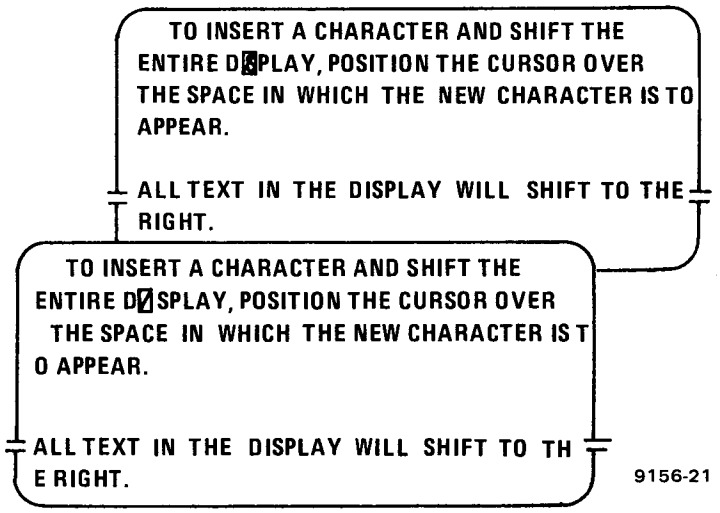
4. Holding down the INSERT IN LINE key will repeatedly insert spaces.

NOTES:

Each time you press the INSERT IN LINE key, the character in the last position of the line will be moved off the screen permanently. (There is no wraparound to the next line.)

If the INSERT IN LINE key is used in a field that ends before the end of the line, characters will be moved only within that field. If the field extends onto another line, the character will be moved only within the original line.

4.6. EXPANDING A DISPLAY TO INSERT CHARACTERS



1. Position the cursor where the new character is to appear.

2. Press and hold the FUNCTION key.

3. Press the INSERT IN DISP key. The cursor will remain stationary. The character under the cursor and all characters to the right of the cursor will be moved one position to the right. A space will be inserted at the cursor position.

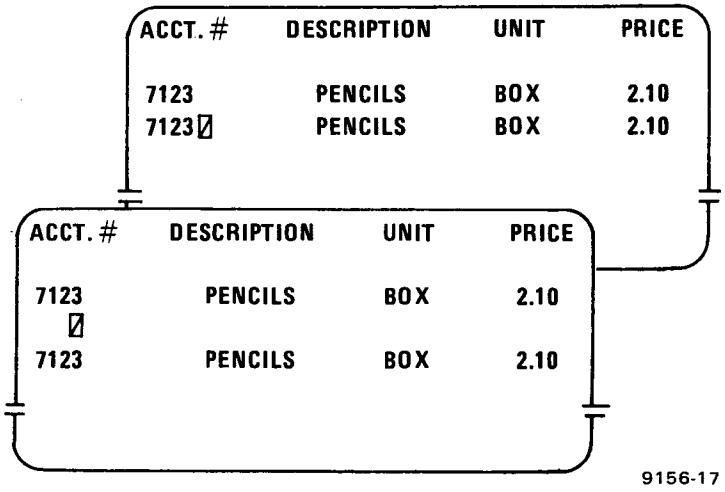
4. Enter the desired character.

5. Cycling the INSERT IN DISP key inserts a succession of spaces. Characters moving out of the last position on any line are moved into the first position of the next line. The character in the last position of the last line will be moved off the screen.

NOTE:

If the INSERT IN DISP key is used in a field that ends before the end of the display, characters will move only within that field.

4.7. INSERTING A BLANK LINE BETWEEN EXISTING LINES



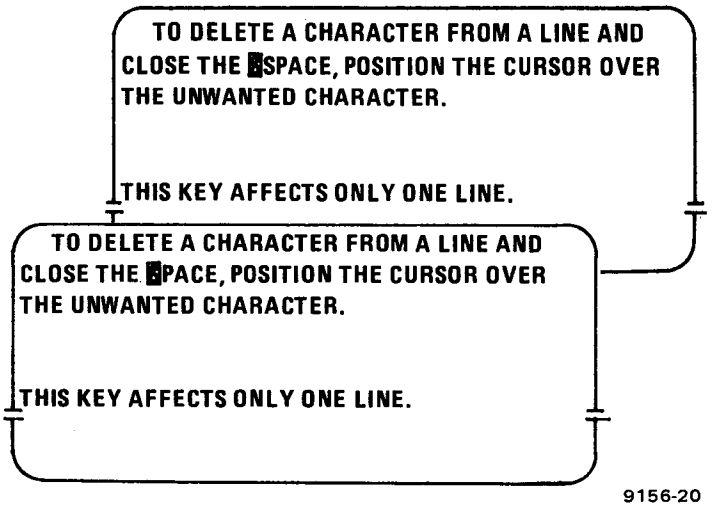
1. Position the cursor anywhere in the line where the blank line is to be inserted.

2. Press and hold the FUNCTION key.

3. Press the INSERT LINE key. The line containing the cursor and all lines following it to the bottom of the screen will be moved down one line. The cursor remains stationary. If you are using FCCs, the blank line will become part of the previous field until you set up new fields and characteristics by generating new FCCs.

4. You may insert up to one full screen of blank lines by cycling the INSERT LINE key. Data contained on the lines moved off the screen will be lost.

4.8. DELETING CHARACTERS WITHIN A LINE

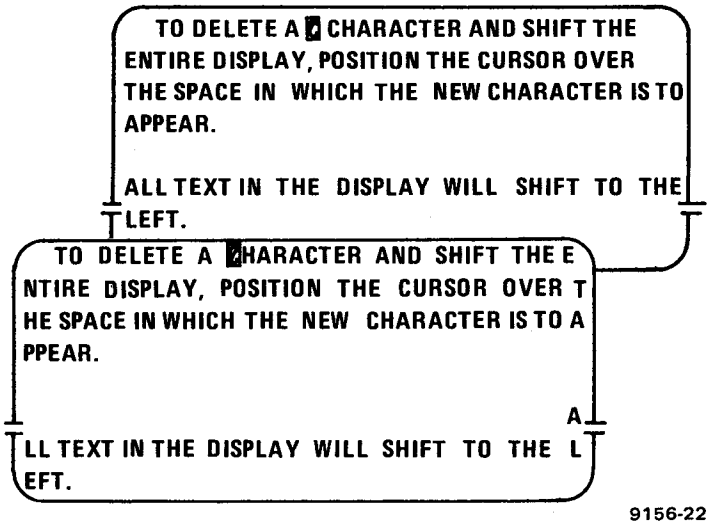


1. Position the cursor over the character to be deleted.
2. Press the DELETE IN LINE key. All characters in the line to the right of the cursor are moved one position to the left with a space inserted at the end of the line. The unwanted character that was beneath the cursor is removed.
3. To quickly remove a succession of characters, cycle the DELETE IN LINE key.

NOTE:

If the DELETE IN LINE key is used in a field that ends before the end of the line, the action will occur only in that field.

4.9. DELETING CHARACTERS WITHIN THE DISPLAY

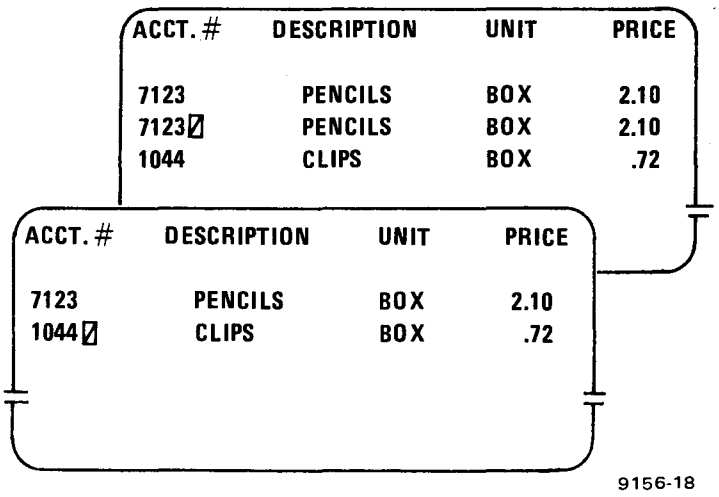


1. Position the cursor over the character to be deleted.
2. Press and hold the FUNCTION key.
3. Press the DELETE IN DISP key. The character under the cursor will be deleted and all characters in the display will be moved one position to the left. The shifting action will wrap around the screen from the last position of the display left to the cursor.
4. To quickly delete a succession of characters, cycle the DELETE IN DISP key.

NOTE:

If the DELETE IN DISP key is used in a field that ends before the end of the display, the action will occur only in that field.

4.10. DELETING AN EXISTING LINE AND FILLING THE SPACE



1. Position the cursor anywhere in the line to be deleted.

2. Press the DELETE LINE key. The line in which the cursor is located will be deleted from the screen, and all lines below this position will move up one line. The cursor will not change its row and column location on the screen. A blank line will appear at the bottom of the screen. If you are using FCCs, the blank line becomes part of the previous field until you set up new fields and characteristics by generating new FCCs. If FCCs were deleted by the use of this key, the characteristics of fields defined by those FCCs were also changed.

3. Cycle the DELETE LINE key to delete a succession of lines.

4.11. CLEARING CHANGED FIELD INDICATORS FROM FCCs

Changed-field indicators are automatically set when you enter or change data in a field. These indicators must be cleared before you set up a display to be transmitted as a "CHAN" (changed field), as determined in the control page (3.5).

1. With the cursor anywhere on the screen, press and hold the FUNCTION key.

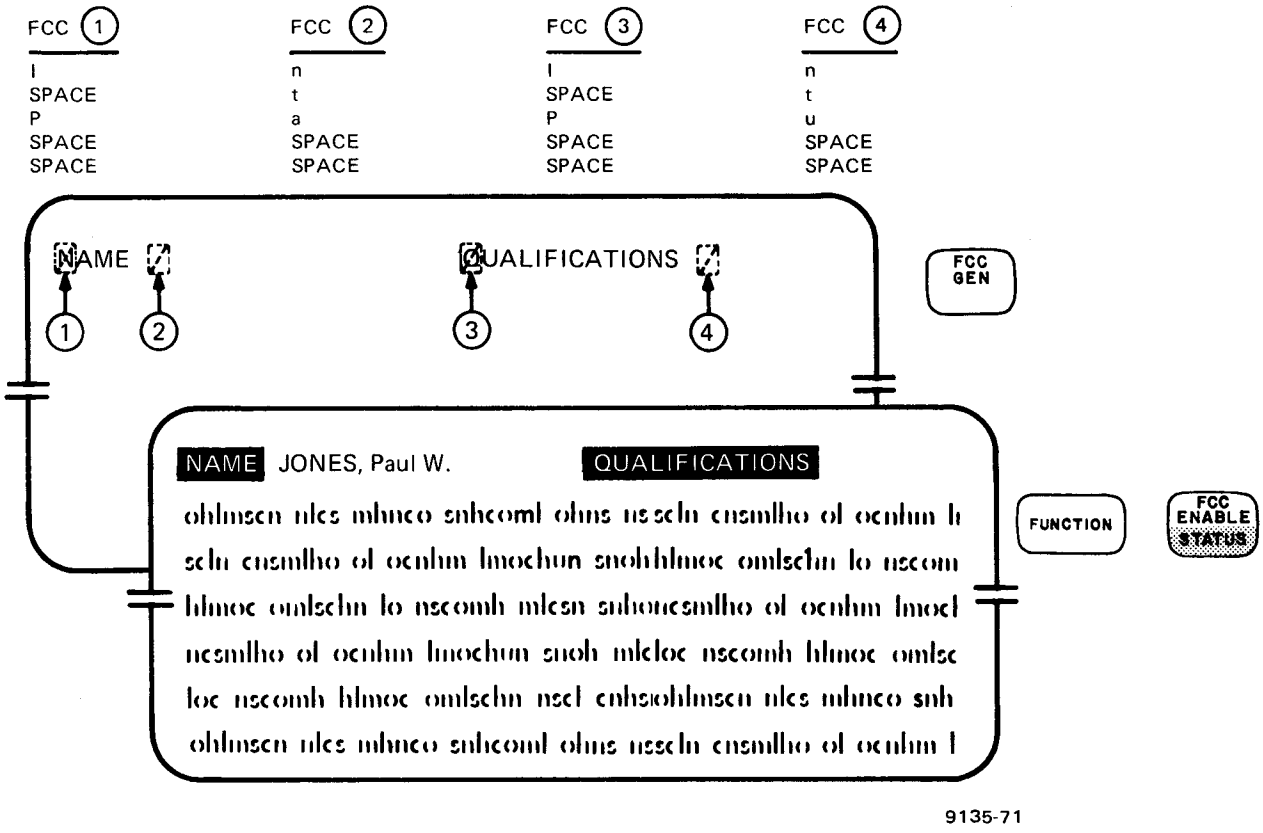
2. Press the CLR CHG key. Although there is no visible change in the display, any change indicators set will be cleared from the FCCs.

NOTE:

Changed field indicators are also removed, together with the applicable unprotected data, when you press the ERASE EOL, ERASE TO EOF, or ERASE EOD key.

4.12. USING FIELD CONTROL CHARACTERS (FCCs)

4.12.1. Generating and Enabling FCCs



1. Place the cursor in the position that marks the beginning of the field to be formatted.

2. Press the FCC GENERATE key.

3. Press the appropriate keys in the selection sequence given in table 4–1.

You must enter the proper codes in order or an alarm will sound once and the workstation will terminate the FCC generate mode. (To place the workstation in the FCC generate mode again, you must press the FCC GENERATE key.)

4. Press and hold the FUNCTION key.

As you enter the FCC codes, the cursor will remain in the same position, blinking alternately with the last-entered character.

Table 4-1. Code Selection Sequence

Step	Data Key	Field Characteristics
1	N (or space) L B	Normal display intensity Low display intensity Blink
2	T S (or space)	Tab stop (in FCC location) No FCC-defined tab stop
3	P A N U (or space)	Protected (no entry accepted) Alphabetic entries only Numeric entries only Unprotected (any entry accepted.)
4	R Space	Right justification of all data entered Normal data positioning
5	Space bar	Ends FCC sequence; activates intensity and tab selections

→ 5. Press the FCC ENABLE key. Protected, right-justified, alphabetic-only, and numeric-only fields will now be enabled.

NOTES:

The workstation does not allow a protect and right-justify FCC code to be selected within the same field.

Successfully generating an FCC disables all existing FCCs in the display. When several FCCs are being generated, do not press the FCC ENABLE key until all of the FCCs have been set up.

Cursor position is not significant when you are enabling FCCs. Normally, the cursor remains stationary when you press the FCC ENABLE key. However, if the cursor is in a protected position at the time the enable key is pressed, the cursor will move forward to the first unprotected position. If the cursor is in a right-justified field when this key is pressed, the cursor will move left to the first location in that field.

→ *Displaying and then removing the control page after an FCC has been generated also enables the FCC.*

4.12.2. Locating an FCC

1. Press and hold the FUNCTION key.
2. Press the FCC LOCATE key. The cursor will move immediately to the first position of the nearest FCC at the right of the cursor.

NOTES:

The FCC LOCATE key locates the first position of all FCCs, whether or not they have been defined with a tab stop or as a protected field. That is, a field defined in the FCC as protected would normally prevent the cursor from resting in any position in that field. The FCC LOCATE key, however, allows you to place the cursor at the location in which the FCC was generated.

The FCC LOCATE key disables any previously enabled protect, right-justify, alphabetic-only and numeric-only FCC selections. Any time you use the FCC LOCATE key, you must press the FCC ENABLE key afterward to reenable those field characteristics. ←

4.12.3. Changing an FCC

1. Locate the existing FCC with the FCC LOCATE key. (All FCCs on the screen will be disabled.)
2. Use the FCC GENERATE key to generate a new FCC.
3. Enter the desired characteristics.
4. Enable the FCCs.(Press the FCC GENERATE key.)

4.12.4. Clearing an FCC

1. Locate the FCC field to be cleared.
2. Position the cursor anywhere within that field.
3. Press and hold the FUNCTION key.
4. Press the FCC CLEAR key. The FCC in or immediately to the left of the cursor location is cleared.

NOTE:

The field defined by the cleared FCC becomes part of the preceding field until a new FCC is generated.

4.12.5. Using an FCC-Formatted Field

The following paragraphs (4.12.6 through 4.12.9) give you additional information on how the various FCC characteristics work. You will need to experiment on your own, however, to determine the best way to format the screen for your own applications.

Remember that, except for the right-justify characteristic, a field extends from the position of the FCC generation to the end of the screen or the beginning of the next FCC field, whichever is first.

4.12.6. Using FCC Intensity Characteristics

The effect of the FCC intensity characteristics — low, normal, and blink — on the display is modified by the alternate brightness parameter entered in the control page and by the INTENSITY control knob on the cabinet front panel.

The effect of the control page parameter on the FCC intensity characteristic is as follows:

Parameter Setting	FCC	Display
LI (low)	L	Low
	N	Normal
	B	Low to normal
*NI	L	Normal
	N	Normal
	B	Normal
RV	L	Reverse video
	N	Normal
	B	Reverse video to normal

The intensity characteristics are useful for setting up screen displayed data. You cannot transfer the intensity characteristics to a printed copy, however.

4.12.7. Using the FCC Tab Set Characteristic

The workstation offers you three different ways to quickly locate a specific field in the display:

FCC LOCATE key	Locates all FCC fields, whether or not they are protected fields.
Conventional tab stop (TAB SET key)	Establishes tab stops so that you can tab forward or tab back to data, whether or not you are using FCCs.
FCC tab stop	FCC selection characteristic that lets you use the TAB FORWARD or TAB BACK key to locate FCC fields in which tab stops are selected.

4.12.8. Defining FCC Accepted Entry Characteristic

- Protected Only

A protected field is one in which data entry is not accepted. A blank portion of the screen may be protected to prevent data entry in that portion, or a block of data may be protected to prevent modification of the data.

When you generate an FCC with the protected field characteristic, you may enter data into that field until you enable the FCCs. After the FCCs have been enabled, data cannot be entered into that field until that field is redefined or the FCC is disabled.

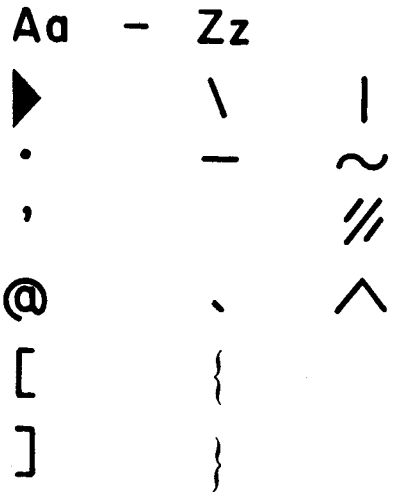
The scan keys can move the cursor through a protected field, but as soon as the scan key is released, the cursor jumps to the first unprotected position.

**Any FCC intensity characteristic selected with the "NI" alternate brightness parameter produces a normal intensity display. Thus, a "blink" FCC characteristic alternates normal intensity with normal intensity and appears to be unblinking.*

The FCC LOCATE key will position the cursor to where a protected FCC was generated, but will simultaneously disable the protected field characteristic, allowing you to change data in the field. If you press the FCC ENABLE key again, the protected field characteristic will again be in effect.

- Alphabetic Only

No entries other than alphabetic are accepted. Alphabetic-only entries are the following.



If a non-alphabetic entry is attempted in an alphabetic-only field, the alarm sounds once, the cursor does not move, and the disallowed keystroke is ignored.

- Numeric Only

No entries other than numeric are accepted. Numeric-only entries are the following.

If a non-numeric entry is attempted in a numeric-only field, the alarm sounds once, the cursor does not move, and the disallowed keystroke is ignored.

- Unprotected (any entry allowed)

Any type of data entry is allowed in this field.

4.12.9. Defining a Field for Right-Justification

In a right-justified field, characters enter from the far right end of the field and move to the left as each key is pressed. The cursor remains stationary at the far left end of the field. Right-justification can only occur within the first line of the field, even if the defined field extends beyond the end of that line.

When a character shifts leftward beneath the cursor, the field is full and the cursor moves automatically to the first unprotected position of the next field. If you reposition the cursor back to the beginning of the full right-justified field, you may enter one more character (from the right) and then the cursor again moves out of the field.

Editing within the field can be accomplished by using the scan keys to move the cursor into the field. Once the cursor is within the field, data entry occurs from left to right and the cursor advances one position to the right with each entry. In this situation, when the cursor reaches the right end of the field, it will not move.

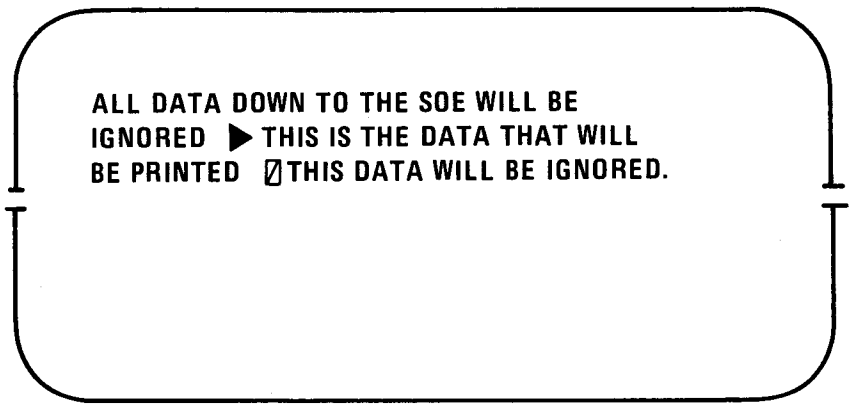
NOTE:

The scan key can place the cursor into the right-justified field between the beginning of the field and the characters that have been entered from the right. However, if you attempt to enter characters from that position, the alarm sounds once, the cursor remains stationary, and no data entry occurs.

Generating a new FCC anywhere on the screen or pressing the FCC LOCATE key disables the right-justify characteristic. You must press the FCC ENABLE key to reenable the characteristic.

4.13. TRANSMITTING AND TRANSFERRING INFORMATION

4.13.1. Defining the Beginning and Ending of a Message



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The workstation can transmit or transfer all or part of the screen display, as designated. Define the text you wish to send as follows:

1. Display the control page to verify the XMIT ( ), PRNT ( ), or XFER ( ) field entry.
2. Place the cursor one space to the left of the text to be sent.

3. Press the SOE key. A start-of-entry character (▷) will be entered at the cursor location and the cursor will move one position to the right.

4. Move the cursor to the last position of the text to be included in the transmission.

5. Perform the desired transmission or print. The information to the right of the SOE character through the cursor position will be included in the transmit or transfer operation. Data outside those parameters is ignored.

NOTES:

If the data to be printed or transmitted begins in home position, an SOE character is not required. The home position is automatically interpreted as the start of entry.

If an FF character for print format is entered at any location in the message, the data following the FF character is printed in the first column and the first data position of the next form. Thus, the format of the following lines may be changed unless you remember this characteristic while you are formatting the data on the screen.

4.13.2. Using the XMIT Key

When your text is ready for transmission to the host, perform the following steps:

1. Verify that the desired transmission type is entered in the control page XMIT( ) field.

2. Press the XMIT key. The WAIT message on the indicator line will appear and the cursor will disappear until the text has been received and acknowledged by the host. The keyboard is locked to additional entries at that point until the host repaints the display on the screen. The cursor then reappears, the WAIT indicator goes out, and the keyboard is unlocked.

NOTE:

While the WAIT indicator is flashing, the keyboard is locked. The workstation will ignore all keystrokes except for the program attention keys or the MSG WAIT key.

3. When the WAIT indicator goes out, you may continue your work.

4.13.3. Using the PRINT Key

When your text is ready to be printed, perform the following steps:

1. Verify that the desired printer code and print function have been entered in the control page (**PRINT*) and PRNT( ) fields.

2. Be sure you have formatted the screen with any necessary LF or FF characters.

3. Press the PRINT key. The WAIT and AUXB indicators on the indicator line will appear and remain until the text has been printed. The cursor will disappear briefly and will return when the transfer is complete. While these indicators are on, the keyboard will be locked to additional entries.

4. When the WAIT indicator goes out, you may continue with your work. (See Section 5 for specific printing functions.)

4.13.4. Using the XFER Key

If you wish to use the transfer function to print a screen display, perform the following steps. (Remember that any FCCs you have formatted in the display will be printed with your data.)

1. Verify that the desired printer code and print function have been entered in the control page (**XFER**) and XFER( ) fields.

2. Press the XFER key. The WAIT and AUXB indicators will appear and remain until the text has been completely transferred from the display. The cursor will disappear briefly and will return when the transfer is complete. During the transfer, the keyboard will be locked to additional entries.

See Section 5 for specific transfer functions.

4.13.5. Unlocking the Keyboard

A locked keyboard indicates that either data transfer or transmission is taking place or that an error condition has occurred. Further data entry is impossible until the transfer or transmission is complete or the error condition is cleared.

Pressing the FUNCTION and UNLOCK keys unlocks the keyboard by aborting whatever operation is in process.

4.13.6. Using the Program Attention Keys

The workstation keyboard has 22 program attention keys, labeled F1 through F22, plus the MSG WAIT key. The functions of these keys are assigned by the user, so consult your supervisor to identify the keys necessary to perform a specific operation or to set up a preestablished screen display.

Typically, the MSG WAIT key is used to display an unsolicited message from another station through the host.

If you are going to use any of these special F1 through F22 program attention keys, perform the following:

1. Press and hold the FUNCTION key.

2. Press the keycap containing the F-numeral designation of the program you wish to call to the screen.

NOTE:

Specific instructions for full implementation of these keys will be supplied by your supervisor.

4.14. USING THE MODE SELECTION KEYS

The System 80 workstation can operate in either of two modes, workstation mode or response mode, to fulfill different functions. The host controls all mode changes although you can request a change from workstation mode to system response mode or vice versa through the keyboard by pressing the FUNCTION key and then either the WS MODE or SYS MODE key.

4.14.1. Workstation Mode

This mode is used for regular data entry, transmission, and transfer. Workstation mode utilizes the entire screen (as defined by the row and column parameters) and all keys described in Section 2.

4.14.2. System Response Mode

The host may either place the workstation directly into system response mode from workstation mode or it may direct you to request a change to system response mode. When the host initiates the change, the SYSMOD indicator appears in the indicator line, the keyboard locks, and the two system response lines replace the two top lines of the display. If the system initiates a request to change to system mode, the alarm sounds once and the SYS MSG appears in the indicator line.

The display itself remains unchanged. You can continue entering data to the end of the screen, but the XMIT and program attention keys are locked until you display the message, respond appropriately, and return to the workstation mode.

To display the system message, you must first request entry to the system response mode by pressing the FUNCTION key and the SYS MODE key. The top two lines of your previous display are temporarily removed from the screen, stored, and then replaced by a 2-line system response mode display consisting of the operator input line (1) and the system message line (2) (Figure 4-1).

The operator input line, the first line on the screen, is where you key in the appropriate response to the system message. All other lines on the screen are protected from operator access or data entry. When the system response mode display appears, the cursor is automatically positioned at home position. If your response exceeds 80 characters, the cursor wraps back to home position and additional entries will overwrite your previous response.

Acceptable responses, depending on the system message, are to press the XMIT key (with or without entering a message), press an F1 through F22 key, or the MSG WAIT key, or press the FUNCTION and WS MODE keys to reenter the workstation mode. The system message may be a request for certain data or it may simply be a notice of impending downtime, or other status condition, thereby suggesting the appropriate response.

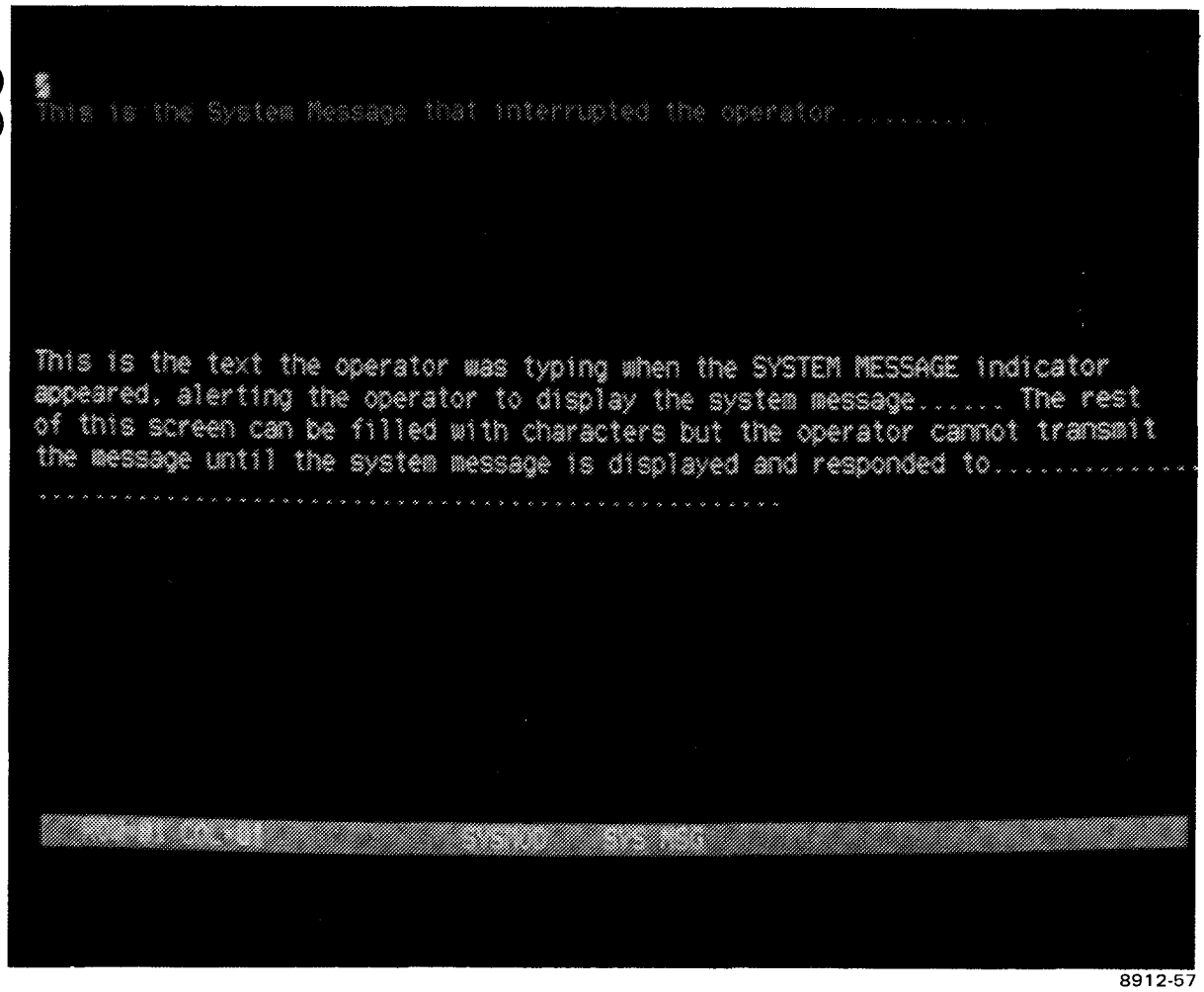


Figure 4-1. Sample Format of System Response Mode Display

5. Operating the Printer

The SPERRY UNIVAC System 80 Local Workstation (workstation) can be linked to the SPERRY UNIVAC 0798 Printer Subsystem or the SPERRY UNIVAC 0797 Printer Subsystem. General descriptions and operating instructions for these printers are contained in the following Sperry Univac documentation: ←

0798 Printer Subsystem General Description (UP-8871)
0798 Printer Subsystem Operator's Guide (UP-8882)
0797 Printer Subsystem General Description (UP-9159)
0797 Printer Subsystem Operator's Guide (UP-9160) ←

The instructions in this section are based upon the assumption that you are already familiar with the contents of these manuals or have the books available for reference.

5.1. GENERAL PREPARATION OF THE PRINTER

1. Make sure the paper and ribbon supplies are adequate for the job you intend to print.
2. If vertical formatting is used, be sure the switch is set properly for the forms to be used and that the forms are properly aligned. ←
3. Make sure that the printer covers are completely closed.
4. Press the POWER switch to ON. (The indicator should light when printer power is on.) The printer should complete its power-on confidence test and the RUN light should remain on. ←
5. Display the control page to verify that the "to" subfield of the (**PRINT*) or (**XFER**) field matches the code specified as the device identifier (DV parameter type).

5.2. EFFECT OF THE LINE FEED (LF) KEY

When you use the LF key in entering data on the screen, the printed format of the data is affected whether you are using the print (**PRINT*) or the transfer (**XFER**) function. Be sure to press the LF key where you want the printer to perform a carriage return and line feed. The next character after the undisplayed line feed code will be printed in the first position of a new line.

5.3. EFFECT OF THE FORM FEED (FF) KEY

When the printer encounters an FF key code in the data you are transferring, the printer rolls the paper up to begin printing on the next page or form. The first displayed character after the form feed code location will be printed in the first position of the new form.

If the vertical forms control (VFC) is properly set, the FF key causes the printer to stop printing on the present form and advance to the first data line of the next form. If the VFC is set to a nonfunctioning position, the FF key causes a line feed function.

5.4. DIFFERENCES IN USE OF THE XFER AND THE PRINT KEYS

Be sure you understand the results of designating a PRINT or an XFER function before you press the corresponding key. The PRINT function allows you to use FCCs to format the display without actually printing them. Also, the PRINT function maintains the same format you used in entering the data on the screen (with the exception of the PRINT function in XPAR mode) by recognizing the end-of-line and cursor return codes at the end of each line in the display.

In XPAR mode, the workstation eliminates the cursor return codes at the ends of the lines before data is transferred to the printer.

The XFER function prints screen data plus any existing FCCs in the display as illegible machine-based characters and eliminates the cursor returns.

Generally, for most printing operations, you will want to use the (**PRINT*) field and the PRINT key (instead of the XFER function) to transfer data to the printer.

5.4.1. Using the PRINT Key

5.4.1.1. Printing the Total Display in PRNT Mode

If the LF key was not used in the display, the exact format of the display is observed, with the printer automatically performing a line feed after the last data character of each line.

1. Display the control page to verify that the device code matches the entry in the "to" subfield of the (**PRINT*) field.
2. Enter "PRNT" in the PRNT( ) field.
3. Remove the control page.
4. Verify that the printer is ready for operation.
5. Be sure the cursor and SOE character (if needed) are properly positioned on the screen, and the LF or FF key is used if necessary.
6. Press the PRINT key. The WAIT and AUXB indicators will light and the unprotected portions of the data will be printed.
7. When the data has been printed, the WAIT and AUXB indicators will go out and the keyboard will be unlocked for additional entries.
8. Repeat steps 5 through 7 for each additional screen of data.

NOTES:

Although the SOE (▷) character occupies a space on the screen, it is stripped out in the printing process and may alter data alignment.

If the LF key was used in the display, the printer performs a line feed each time the undisplayed LF code is encountered in the data as well as after the last data character of each line. Therefore, if you have pressed the LF key at the end of a line, the printer will double space between the end of that line and the beginning of the next line.

5.4.1.2. Printing the Total Display in XPAR Mode

The XPAR mode automatically eliminates all cursor returns that occurred when you entered the data and results in a continuous stream of data being printed on the same line. The LF or FF key must be used to format the data as you want it to appear in the printed version.

1. Display the control page to verify that the device code matches the entry in the "to" subfield of the (**PRINT*) field.
2. Enter "XPAR" in the PRNT( ) field.
3. Remove the control page.
4. Verify that the printer is ready for operation.
5. Be sure the cursor and SOE character (if needed) are properly positioned on the screen, and the LF or FF key is used if necessary.
6. Press the PRINT key. The WAIT and AUXB indicators will light and the unprotected portions of the data will be printed.
7. When the data has been printed, the WAIT and AUXB indicators will go out and the keyboard will be unlocked for additional entries.
8. Repeat steps 5 through 7 for each additional screen of data.

5.4.1.3. Printing in FORM Mode

Unprotected data is printed as it appears on the screen, while spaces are substituted for the protected portion of the display. The printer performs a line feed following the last data character or protected character in each line.

1. Display the control page to verify that the device code matches the entry in the "to" subfield of the (**PRINT*) field.
2. Enter FORM in the PRNT( ) field.
3. Remove the control page.
4. Verify that the printer is ready for operation.
5. Be sure the cursor and SOE character (if needed) are properly positioned on the screen, and the LF or FF key is used if necessary.
6. Press the PRINT key. The WAIT and AUXB indicators will light and the unprotected portions of the data will be printed.

7. When the data has been printed, the WAIT and AUXB indicators will go out and the keyboard will be unlocked for additional entries.

8. Repeat steps 5 through 7 for each additional screen of data.

5.4.1.4. Printing on Preprinted Forms (FORM Mode)

When you want to print data on preprinted forms, you will use FCCs to define protected and unprotected fields and the PRINT function to transfer data to the printer.

1. Prepare a set of FCCs to correspond to the preprinted form. For each term preprinted on the form, set up an FCC that includes the protected-field function.

2. Enter the preprinted terms that appear on the form, allowing for the spacing difference between the screen characters and those on the printed form.

3. For each blank to be filled in on the form, set up an FCC with unprotected format. You may want to set the protected format FCC in low intensity and the unprotected-format FCC in normal intensity (or other combination) to highlight the display of the variable data. (The intensity characteristics do not affect the printout). You may also find it convenient to set each unprotected FCC to act as a tab stop.

NOTE:

Do not press the FCC ENABLE key until the form has been fully set up. You can then enter and modify or correct the protected fields as necessary.

4. Press the FUNCTION and FCC ENABLE keys. The protected field characteristic, together with any right-justified, alphabetic-only, or numeric-only field, is now in effect.

5. Enter some random or typical characters in the unprotected data fields.

6. Make a test printing by setting the PRNT( ) field to FORM and pressing the PRINT key.

7. Make any necessary adjustments to placement of the fields.

8. Repeat steps 4 through 7 as required until the variable fields in the display exactly fit into the preprinted form.

9. When the form has been printed, erase all unprotected data by pressing the CURSOR TO HOME key and then the FUNCTION and ERASE EOD keys, or erase selected fields by pressing the ERASE TO EOF key.

5.4.2. Using the XFER Key

5.4.2.1. Printing All Data

Without an LF character, the displayed data is printed in one continuous stream until the last character has been printed. The printer then performs a line feed.

NOTE:

The printer will attempt to print full-length lines regardless of the form width. Printing off the form is possible if the form is less than the maximum printer capability.

The printer performs a line feed each time an LF occurs.

1. Call the control page to the screen.
2. Enter the printer code in the "to" subfield of the (**XFER**) field.
3. Verify that "ALL" appears in the XFER( ) field.
4. Return the control page to storage.
5. Verify that the printer is ready for operation.
6. Position the SOE character and cursor as desired.
7. Press the XFER key. The WAIT and AUXB indicators will light and the display will be printed.

NOTE:

The printed data may not appear as you intended unless you have formatted the screen data with LF codes and have not used FCCS within the data to be printed. Remember that the "XFER" function prints all FCC machine code characters, so the position of the data will be altered with each FCC printed.

8. When the display has been printed, the WAIT and AUXB indicators will go out.
9. Repeat steps 6 through 8 for each additional screen of data to be printed.

5.4.2.2. Printing in VAR Mode

In VAR mode, all FCCs and unprotected data are printed. Protected data is not printed, and spaces are not inserted at ends of lines and fields.

1. Call the control page to the screen.
2. Enter the printer code in the "to" subfield of the (**XFER**) field.
3. Enter "VAR" in the XFER( ) field.
4. Verify that the printer is ready for operation.
5. Position the cursor within the display as needed. If you want the display to be formatted, use the LF character.
6. Press the XFER key. The WAIT and AUXB indicators will light and the unprotected fields of the display, together with their FCCs, will be printed. Unless you used the LF character in setting up the display, no formatting will occur.
7. When the display has been printed, the WAIT and AUXB indicators will go out.
8. Repeat steps 4 through 7 for each additional screen of data to be printed.

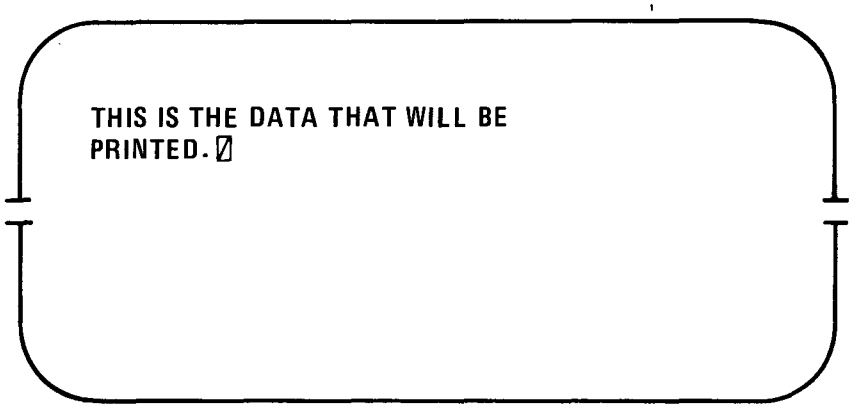
5.4.2.3. Printing Only Changed Data (CHAN Mode)

Only the new or changed data is printed, as indicated by the internal changed-field indicators (3.5). The result is a continuous stream of characters, with the line breaks occurring wherever the automatic printer line feeds occur. The unchanged portions of the screen data are omitted in the printout.

5.5. POSITIONING THE CURSOR FOR THE DESIRED PRINT OUTPUT

The position of the cursor is critical when you are printing data from the screen display. The cursor determines the end of the text you are sending, even if the screen contains more text after the cursor.

5.5.1. Cursor Immediately Following the Last Data Character



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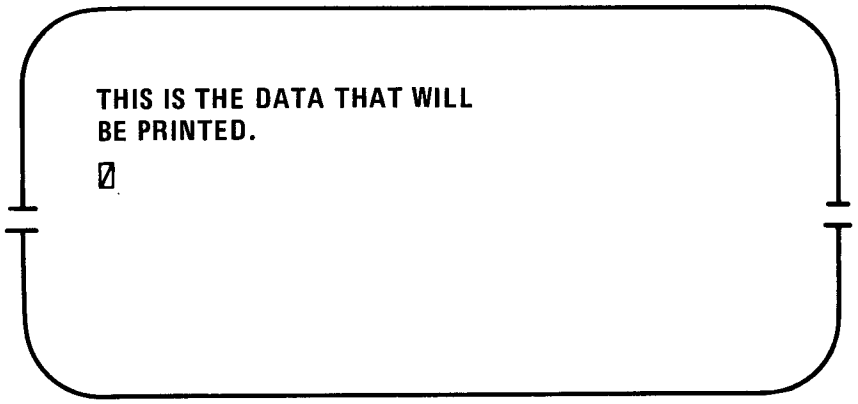
Immediately following the last data character is the normal position for the cursor to mark the end of a print. When printing is completed, the printer performs a line feed.

To insert a single blank line between blocks of text, place an LF code after the last data character. The LF code causes the printer to perform another line feed in addition to the automatic line feed.

To place more than a single blank line between blocks of text, enter an LF code after the last data character for each additional line desired.

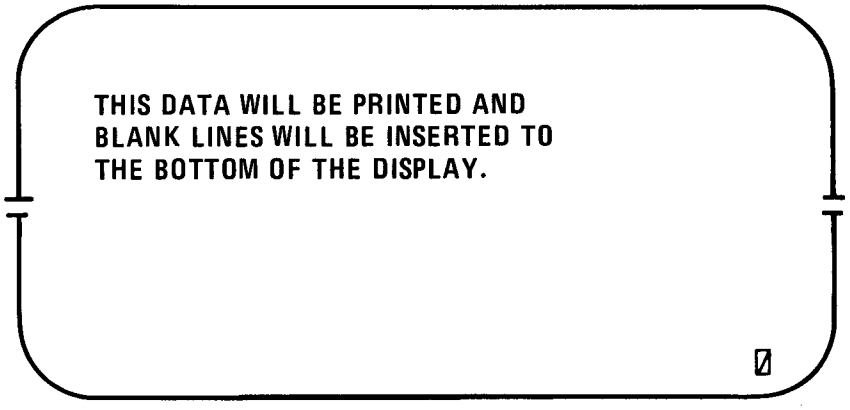
5.5.2. Placing the Cursor in the Line Below the Last Data Line



9135-46

When the cursor is in this position, printer action will be the same as that described in 5.5.1, except that it will perform one more line feed.

5.5.3. Placing the Cursor in the Last Position on the Screen



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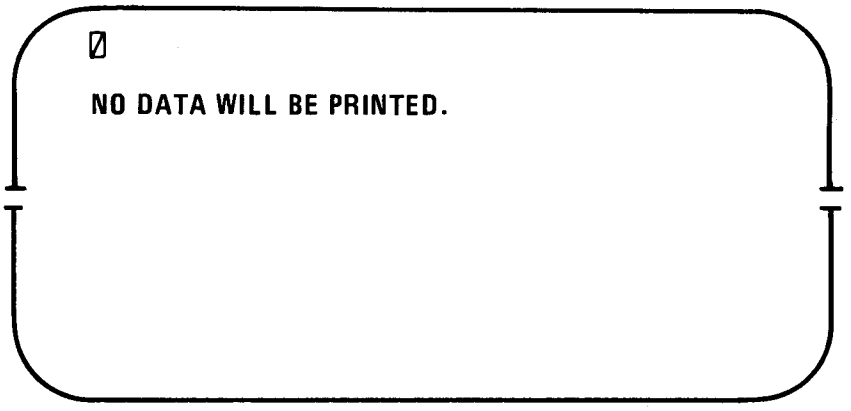
When the cursor is in this position, a line feed occurs for each blank line following the last line of data, to and including the last line on the screen.

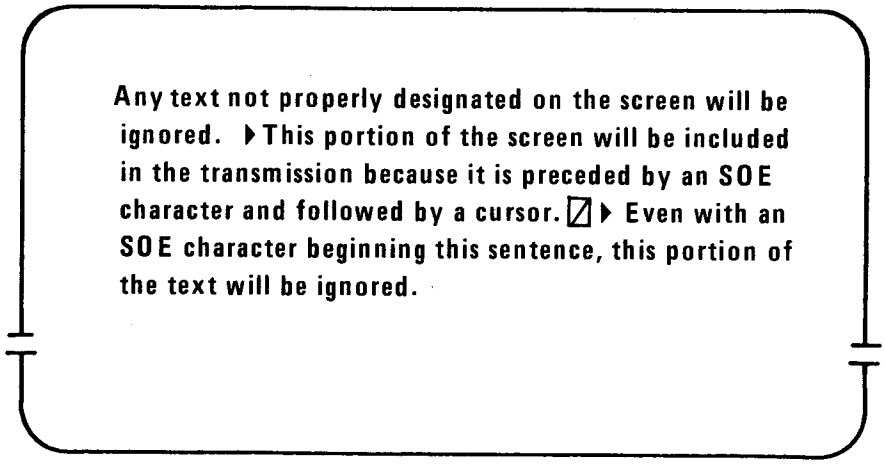
5.5.4. Placing the Cursor in the Home Position



9135-49

The home position designates the start of entry and, with the cursor in that same position, the start of entry and end of entry (cursor position) are identical. No data will be transferred if no character is beneath the cursor, but an automatic line feed will occur.

5.5.5. Placing the Cursor Following SOE-Designated Entry



9135-41

The placement of the cursor terminates the data transfer that started at the first SOE character. The printer performs an automatic line feed when it reaches the cursor. All data following the → cursor as well as all data preceding the first SOE will be ignored.

6. Using the Magnetic Stripe Reader

The SPERRY UNIVAC Magnetic Stripe Reader reads prerecorded data from the magnetic stripe on a plastic card which is manually passed through a channel in the reader (Figure 6–1). The reader enables you to enter blocks of data at a time, instead of entering data through the keyboard a character at a time.

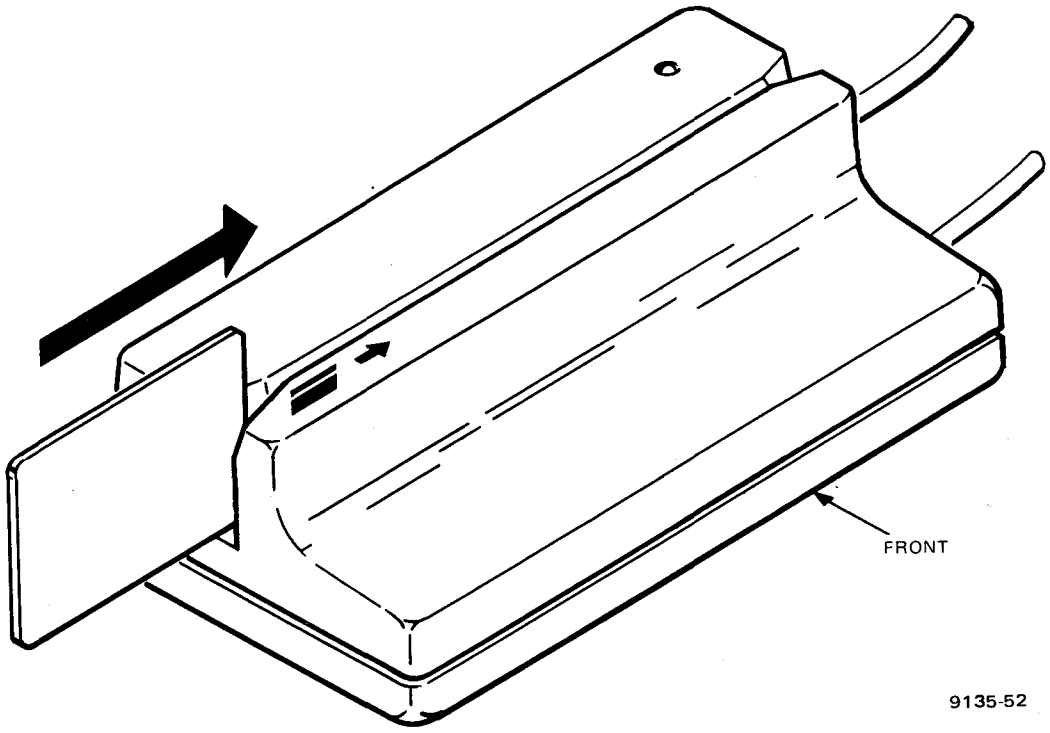


Figure 6–1. Using the Magnetic Stripe Reader

6.1. MAGNETIC STRIPE FORMAT OPTIONS

The information prerecorded on the magnetic stripe of the card is encoded in a certain format. You must set a switch on the bottom of the magnetic stripe reader to read either an International Air Transport Association (IATA) format or an American Banking Association (ABA) format.

6.2. AUTOMATIC TRANSMIT OPTION

An entry in the workstation control page (PARAM) field selects either the automatic or the manual transmit option for the magnetic stripe reader. (The parameter option defaults to manual transmit.)

If the parameter option is set for automatic transmit, the card data is automatically sent to the host as it is read without being displayed on the screen.

If the parameter option is set for manual transmit, the card data is displayed on the screen after the card is passed through the read channel. You may change the data from the keyboard before pressing the XMIT key to send the data to the host.

6.3. PREPARING THE MAGNETIC STRIPE READER FOR OPERATION

For the magnetic stripe reader to function, the workstation power must be turned on and the green indicator on the reader must be lit, the switches must be set for the appropriate card format, and the read channel must be free of dirt and foreign material that could interfere with successful card reading.

6.4. READING THE CARD

1. Position the cursor on the screen where you want the card data to begin. Be sure to allow sufficient room for the card data to be displayed without running into an existing field of data on the screen.

2. Enter the card through the left end of the channel in the reader. The card must be positioned so that the magnetic stripe is toward the rear of the reader. The card should be positioned as shown in Figure 6-1.

CAUTION

Do not pass a card through the magnetic stripe reader backward. The card or the stripe reader could be damaged and could result in data not being read.

3. Push the card through the read channel, pressing the card firmly against the bottom surface of the channel.

NOTE:

If the card will not enter the channel, you could be holding the card the wrong way. Position the card as described in step 2 and enter the card into the channel again.

4. Once the entire card has been passed through the station, you will hear a faint clicking sound, indicating that the card has been read.

The magnetic stripe reader automatically inserts two characters in front of any card data to identify that data as coming from a magnetic stripe reader. At the end of a card data sequence, the magnetic stripe reader adds another character signifying the end of an information block. Therefore, if you are in the manual transmit mode and can observe the screen as you enter card data, a data block may appear as follows:

In IATA format: [%] data data data data data data [/ ? . 3]

In ABA format: [% ;] data data data data data data [? 5]

The read station of the stripe reader is located just beyond the middle of the narrow channel. From the time the leading edge of the card enters the read station area until it exits the other side, the workstation keyboard is locked.

6.5. USING THE AUTO TRANSMIT (AT/YS) OPTION

To transmit card data to the host processor automatically, perform the following steps:

1. Verify that the desired transmission type is entered in the control page XMIT( ) field.
2. Read the data from the card.
3. If the card was read successfully, you will hear one short alarm tone and the RACK indicator will appear briefly on the indicator line. If the card was not read successfully, you will not hear a tone and the RNAK indicator will appear and blink on the indicator line until the card is read successfully, or until you press the UNLOCK key.

6.6. USING THE MANUAL TRANSMIT (AT/NO) OPTION

To display card data on the screen before manually transmitting it to the host, perform the following steps:

1. Verify that the communications connection has been made and the POLL indicator is blinking.
2. Verify that the desired transmission type is entered in the control page.
3. Read the data from the card.
4. If the card was read successfully, you will hear one short alarm tone accompanied by the appearance of the RACK indicator. If the card was not read successfully, the short alarm tone will not sound and the RNAK indicator will appear and blink until the card has been read successfully, or until you press the UNLOCK key.
5. Press the XMIT key. The WAIT indicator will light and remain lit while the message is being sent and the host processor responds with a text message. The cursor will disappear briefly and then return when the message has been sent and acknowledged.

Appendix A. The Power-On Confidence (POC) Test

The display you see first when you turn on the power to the workstation is the power-on confidence test, or the POC test. The display is the result of a series of internal diagnostic procedures designed to test critical machine functions before you even begin to enter data.

A successful POC test appears as shown in Figure A-1 and includes a single beep tone, blinking corner indicators, and the PASSED message following each of the indicated tests. When power is first turned on, the LOADING message appears in the indicator line (Figure A-2) and remains until the operating instructions have been loaded into the workstation by the processor. TERMINAL READY appears above the indicator line when the workstation is ready to operate.

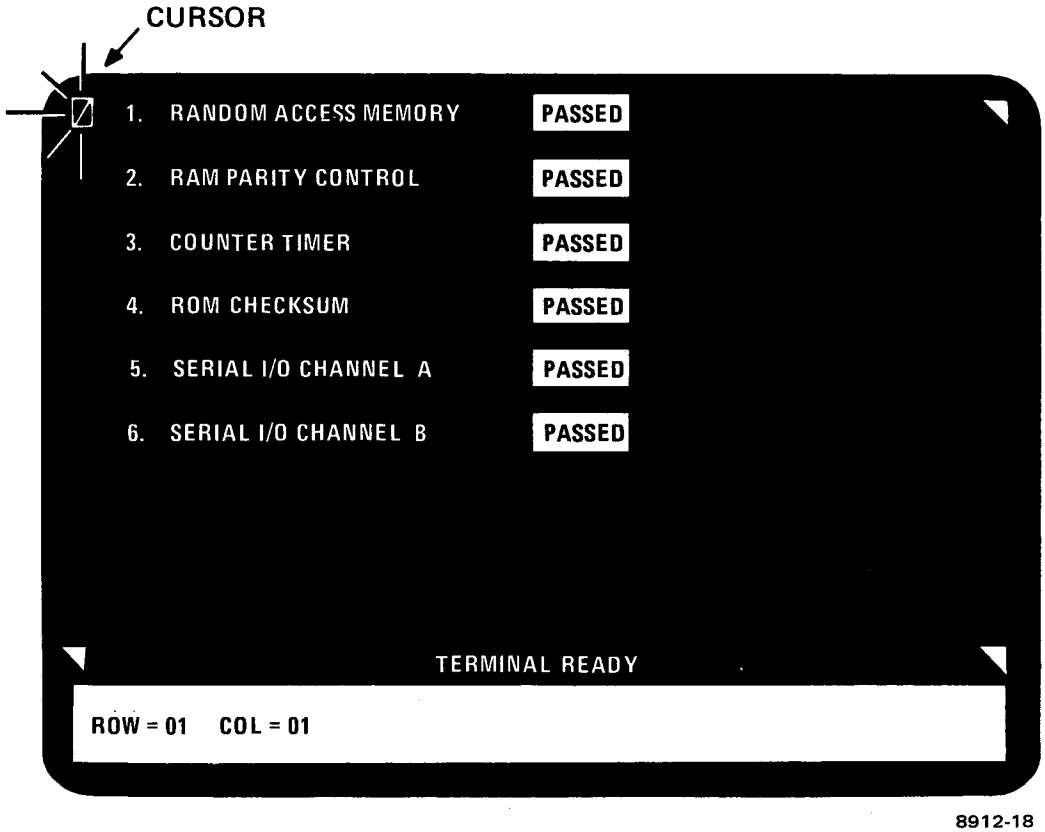


Figure A-1. Successful POC Test Display

If any POC test was not successful, either a "FAILED" or "??????" (indeterminate results) message appears after the given test. Two examples of unsuccessful POC tests are shown in Figures A-3

and A-4. Other indications of failure should be noted at the time the POC display first appears on the screen. As you turn on the power, watch the screen for any of the following indications:

- Corner indicators are not displayed.
- Indicator line at bottom of screen
- Screen is blank and a continuous alarm tone is heard.
- Display flutters or swims.
- Partial POC display automatically cycles.

If any display other than the successful POC test appears, press the POWER switch OFF and ON again or press the RESET pushbutton to redisplay the POC test results. If two or three attempts fail to produce a successful POC test display, contact a Sperry Univac customer services representative.

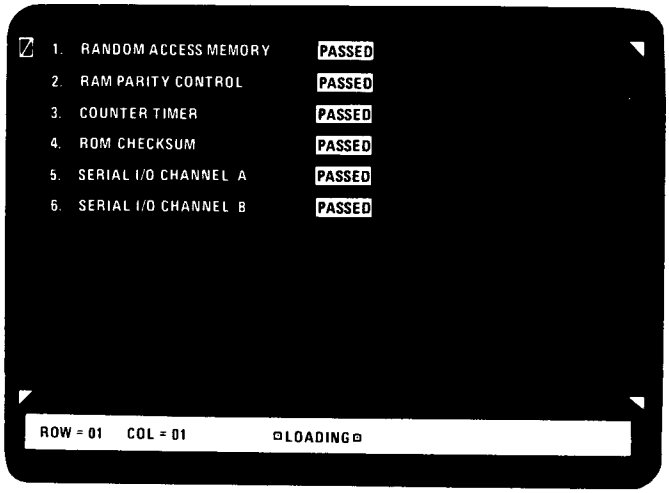


Figure A-2. Successful POC Test Display -Workstation Loading

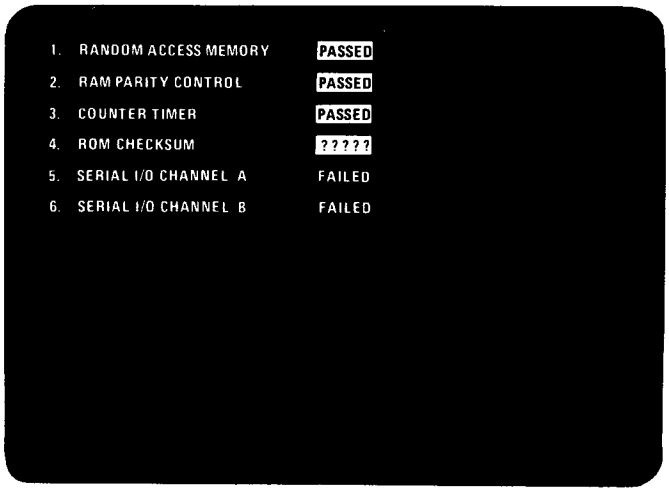


Figure A-3. Sample of Failed Tests

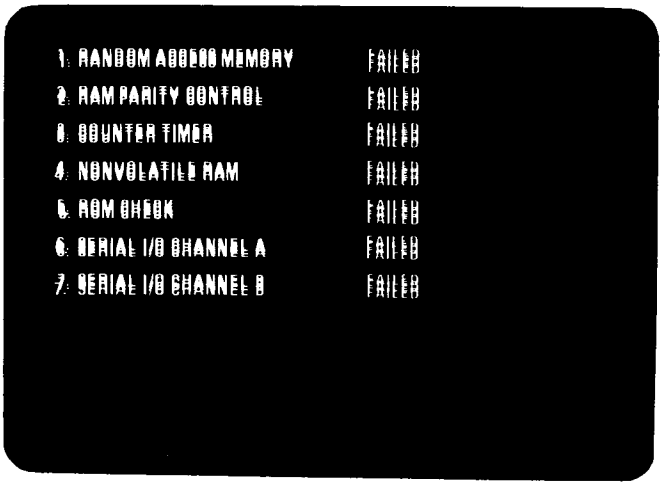


Figure A-4. Distorted Screen Appearance - Test Failures

Glossary

accessing	Entering mass storage files from a terminal system for purposes of reference, change, or any other file function for which the terminal is equipped.
addressing	A communications protocol method of identifying one communications line interface point and a specific terminal system at that location. Also the same method is used to identify a specific peripheral device associated with the addressed terminal system.
ASCII	Acronym for American Standard Code for Information Interchange.
bit	Contraction of binary and digit. The smallest unit of information into which data can be broken for transmission.
buffer	A place or function for temporary holding of data. Also, a device (or software routine) used to compensate for a difference in data flow rates, or in timing of events, when data is being transmitted from one device to another.
CRT	Abbreviation for cathode ray tube, the element used as a display screen in a terminal.
deselection	The sequence by which peripheral devices are removed from active participation on an interface, thus precluding their involvement in data transfer.
display	The visual presentation of data either being prepared for entry into the host storage or being retrieved from host storage.
disable	To prevent a function or device from performing its intended operation.
enable	To make it possible for a device or function to carry out its intended purpose, as in enabling or activating an FCC.
FCC	Abbreviation for field control character, a code for setting apart and defining the display characteristics of a field.
firmware	A program permanently resident in a processor read-only memory and providing basic machine instructions through the use of microprogramming techniques.

host or host processor	Refers to the data processing system controlling the communications environment in which the workstation is operating.
I/O	Abbreviation for input and output.
offline	Refers to the activity between a terminal and a peripheral device without involving communication with the host.
online	Refers to activity performed between the terminal and the host, involving use of the storage, processing, and communications capabilities of the host.
parity	An element added to the basic message or character for the purpose of checking accuracy of the data transmission.
peripheral device	A device linked to a terminal to perform various read/write functions, which may be operated either online or offline.
protected field	A field that is specially defined to prevent entry or change by normal keyboard use. Data in the field is "protected data."
refresh rate	The number of times per second that the screen dot matrix pattern for character generation is repainted to eliminate flicker in the display.
selection	The sequence by which a particular peripheral device is designated as the source or destination of data.
software	The programs and routines that determine the internal types of operations that will take place in a data processing system.
transfer	The moving of data between a terminal system and one of its peripheral devices across a peripheral interface.
transmit	The moving of data or procedural messages between the host and the terminal across a communications line.
transparent	A command specified in the control page for the print function in which the carriage return at the end of each data line is internally removed, resulting in the printing of a continuous stream of data. This command is used when the LF or FF characters are controlling printing format.
unprotected field	A field that is available for entry by normal keyboard usage. Usually, this term is used to distinguish an unprotected or variable field from a protected field. Data in this type of field is "unprotected" or "variable."

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