

SPERRY UNIVAC

UNISCOPE

Display Terminal

Operator Reference

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Contents

PAGE STATUS SUMMARY

CONTENTS

1. INTRODUCTION

1.1.	GENERAL	1-1
1.2.	PROTECTED FORMAT	1-1
1.3.	POLLING	1-2
1.4.	USER DOCUMENTS	1-3

2. CONTROLS AND INDICATORS

2.1.	GENERAL	2-1
2.2.	KEYBOARD	2-1
2.3.	MESSAGE CONTROL KEYS	2-1
2.4.	CURSOR	2-1
2.5.	CURSOR CONTROL KEYS	2-2
2.6.	EDITING KEYS	2-6
2.7.	TERMINAL CONTROLS	2-6
2.8.	INDICATORS	2-7

3. OPERATION

3.1.	OPERATOR RESPONSIBILITIES	3-1
3.2.	TURN-ON PROCEDURE	3-1

3.3.	TURN-OFF PROCEDURE	3-2
3.4.	OPERATING PROCEDURES	3-2
3.4.1.	Composing and Transmitting Messages	3-2
3.4.2.	Receiving Processor Messages	3-4
3.4.3.	Auxiliary Interface Transfers	3-5
3.4.4.	Manual Keyboard Unlock	3-6
3.4.5.	Communications Establishment/Disconnection	3-6
3.5.	FAULT DETECTION AND RECOVERY PROCEDURES	3-6
4.	OPERATOR-PERFORMED MAINTENANCE	
4.1.	GENERAL	4-1
4.2.	REMOVAL AND REINSTALLATION OF FACEPLATE	4-1
4.3.	INDICATOR LAMP REPLACEMENT	4-1
4.3.1.	UNISCOPE 100 Display Terminal	4-1
4.3.1.1.	MESSAGE WAIT or MESSAGE INCOMPL Indicator Lamp	4-1
4.3.1.2.	WAIT Indicator Lamp	4-2
4.3.1.3.	POWER Indicator Lamp	4-2
4.3.2.	UNISCOPE 200 Display Terminal	4-2
4.4.	AIR FILTER REPLACEMENT	4-2

USER COMMENT SHEET

FIGURES

1-1.	UNISCOPE 100 Display Terminal and UNISCOPE 200 Display Terminal	1-1
1-2.	UNISCOPE Terminal Keyboard (Uppercase/Lowercase with Alphanumeric and Numeric Keys) for Unprotected Format and Protected Format Units	1-2
1-3.	UNISCOPE Terminal Keyboard (Uppercase/Lowercase with Alphanumeric and Numeric Keys) for Protected Format with Operator Control	1-2
2-1.	UNISCOPE Terminal Keyboard, Functioning Sections	2-2
3-1.	UNISCOPE Terminal Operating Procedures	3-3

TABLES

2-1.	UNISCOPE Terminal Keys, Controls, and Indicators	2-2
3-1.	Operator Response to Processor Output Messages	3-5
3-2.	UNISCOPE Terminal Fault Check List	3-7

1. Introduction

1.1. GENERAL

The UNISCOPE Display Terminal (Figure 1-1) is used for data communications with a central processor. It has a cathode ray tube (CRT) screen for displaying processor messages or operator-typed messages and a keyboard for typing messages. The operator's functions are to turn on and turn off the equipment, to type messages to the processor, and to respond to certain processor messages and signals. Full-capability keyboard formats are shown in Figures 1-2 and 1-3. Other keyboard formats with subsets of this capability are available.

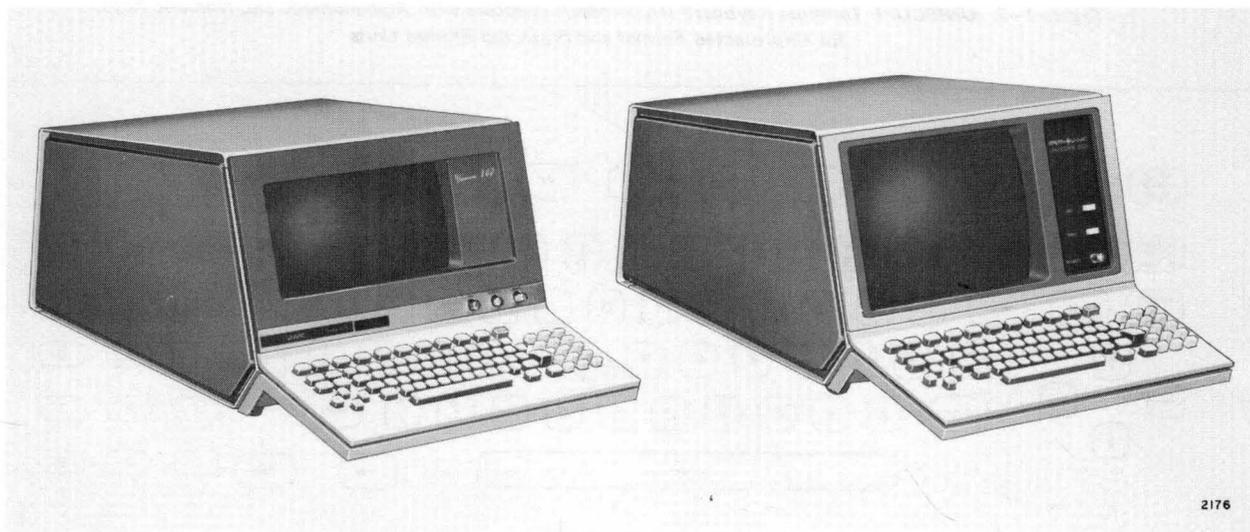


Figure 1-1. UNISCOPE 100 Display Terminal (left) and UNISCOPE 200 Display Terminal (right)

1.2. PROTECTED FORMAT

The UNISCOPE terminal may contain the protected format selection. This selection provides for the protection of processor-specified data fields. The keyboard used with the terminal may or may not provide protected format keys. Those keyboards that do not provide protected format keys (Figure 1-2) allow the operator to alter only unprotected data. Pressing the TRANSMIT key results in only unprotected data being transmitted to the processor (following polling).

Those keyboards that provide protected format keys (Figure 1-3) allow the operator a certain amount of control over protected data as well as the normal control over unprotected data. Pressing the TRANSMIT UNPROT DISPL key will result in only unprotected data being transmitted to the processor (following polling), as with the TRANSMIT key on keyboards without protected format keys. Pressing the TRANSMIT DISPL key results in both protected and unprotected data being transmitted to the processor (following polling).

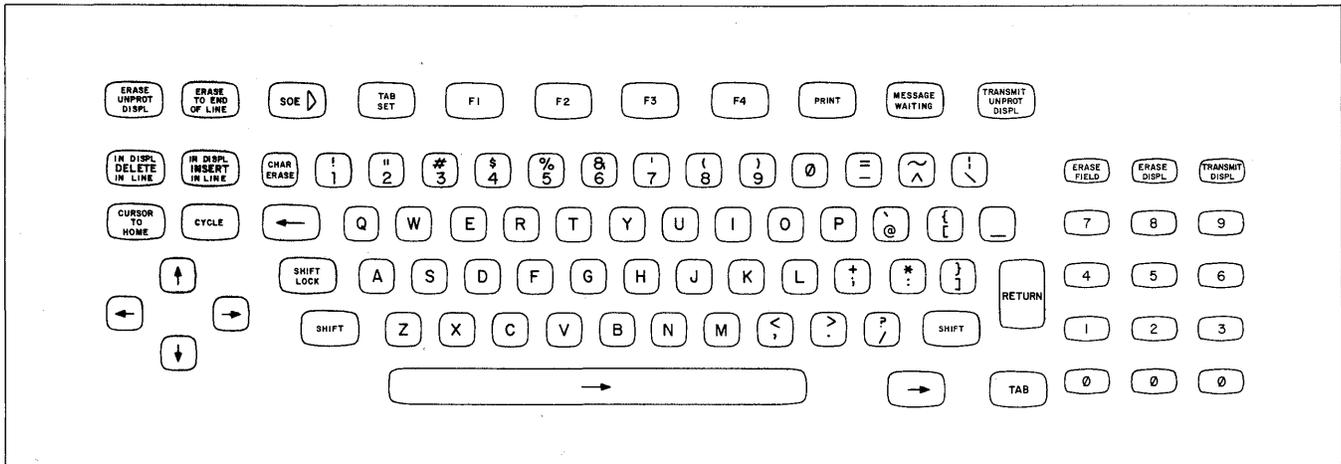


Figure 1-2. UNISCOPE Terminal Keyboard (Uppercase/Lowcase with Alphanumeric and Numeric Keys) for Unprotected Format and Protected Format Units

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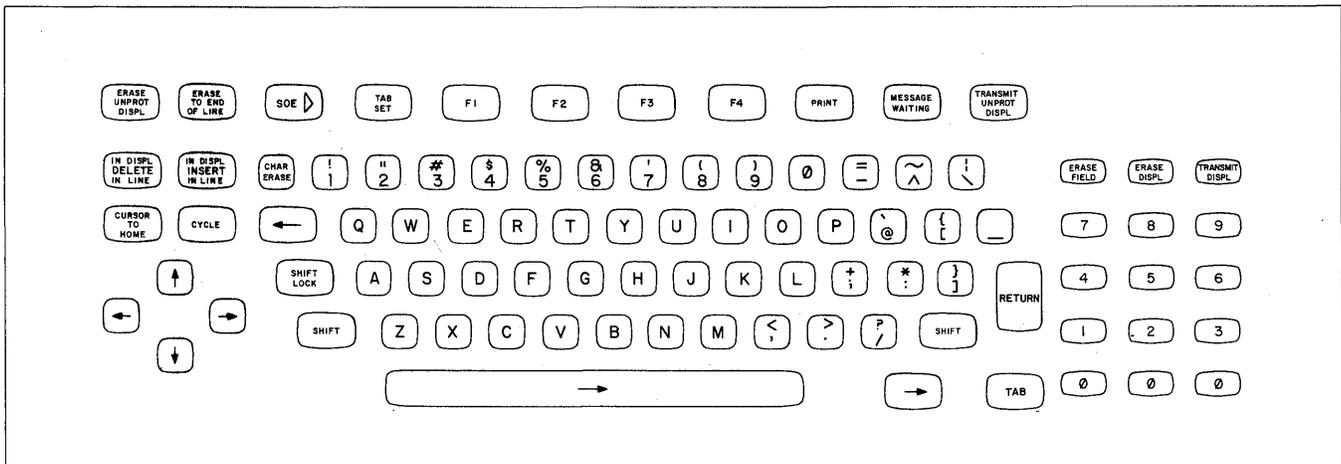


Figure 1-3. UNISCOPE Terminal Keyboard (Uppercase/Lowcase with Alphanumeric and Numeric Keys) for Protected Format with Operator Control

2227

1.3. POLLING

The flow of both input and output traffic within the system is controlled by the processor. The sequence of operation for a typical message transaction is:

1. Operator types in query message, checks contents as displayed on the screen, and corrects (edits) the message if required.
2. Operator presses keyboard TRANSMIT key (or TRANSMIT UNPROT DISPL on protected format units). The message is now ready and waiting for a processor poll message.

3. Processor poll message initiates transmission of the waiting message.
4. Processor acts upon message and prepares a reply message.
5. When the communication line is available, the processor transmits the reply message to the UNISCOPE terminal; the message is displayed on the screen.

To attract the operator's attention and mark fields of the displayed data, blink marker characters (▮ and ▮) can be sent from the processor to form blinking brackets on the display screen. These blinking brackets cannot be generated by the keyboard.

1.4. USER DOCUMENTS

This manual provides an operator-oriented instruction for the UNISCOPE 100 and UNISCOPE 200 Display Terminals. Information pertaining to other aspects of these terminals is contained in *UNISCOPE Display Terminal Concept and Applications, UP-8155* (current version), *UNISCOPE Display Terminal Operator's Guide, UP-8147* (current version), and *UNISCOPE Display Terminal Programmer Reference, UP-7807* (current version). It is not within the scope of this manual to provide information pertaining to programming the UNISCOPE terminal or planning for the data communications system.

Information pertaining to the use of the SPERRY UNIVAC Communications Output Printer as an auxiliary printing device for the UNISCOPE terminal is given in *SPERRY UNIVAC Communications Output Printer Functional Description, UP-7939* (current version).

Information pertaining to the use of the SPERRY UNIVAC Terminal Multiplexer is given in *SPERRY UNIVAC Terminal Multiplexer Functional Description, UP-7916* (current version).

Information pertaining to the use of the SPERRY UNIVAC Direct Connection Module is given in *SPERRY UNIVAC Direct Connection Module Functional Description, UP-7932* (current version).

The user is also expected to have access to the appropriate manuals on the system in which the UNISCOPE terminal is being used.

2. Controls and Indicators

2.1. GENERAL

Since the operator is an extremely important part of a terminal-type data communications system, and since the terminal controls are the means by which the operator interfaces with the system, the UNISCOPE Display Terminal controls are an extremely important part of the system. The full range of operator's controls consist of an alphanumeric typewriter keyboard, controls and indicators, cursor control keys, editing keys, message control keys, and special function keys.

2.2. KEYBOARD

The keyboard is the operator's interface with the UNISCOPE terminal and the processor. From the keyboard, the operator can control the terminal, input data to the terminal storage, and request data from the processor. Each time a key is pressed, a unique code is sent to the keyboard control section, which examines this code to determine if the code represents data or a function. If the code represents data, the data is entered in the position indicated by the cursor and the cursor is advanced one character position.

The keyboard is used to compose messages that will be transmitted to the processor. As the character keys are pressed, the data is supplied to the terminal. The data remains in the terminal storage and is displayed on the screen to allow the operator to edit and verify the data before it is transmitted at the operator's command.

2.3. MESSAGE CONTROL KEYS

These keys (Figure 2-1) are used to control the location, transmission, and reception of messages. The function of these keys is described in Table 2-1.

2.4. CURSOR

The cursor (□ for UNISCOPE 100 terminal, ▣ for UNISCOPE 200 terminal) is an indispensable display indicator. It is used by the operator, the processor, or auxiliary devices to determine the input point, and by the terminal to determine the end of the output. It is a unique character that is displayed on the screen at all times (except briefly during transmission or auxiliary interface transfer) and indicates the location at which the next data character will be entered.

Whenever the cursor is positioned over a displayable character, the character and cursor blink alternately. The cursor also blinks when positioned over nondisplayable characters, e.g., tab stops. It does not blink when positioned over a space. The blinking helps the operator keep track of the cursor when it is positioned over a character. The cursor advances one step for each character that is entered and can be positioned by the cursor control keys. The cursor is nondestructive; that is, it does not affect the information in the terminal storage. In terminals having protected format selection, the operator generally cannot position the cursor over protected data nor affect the protected data in any way. In some applications, however, the processor may leave the cursor positioned over protected data.

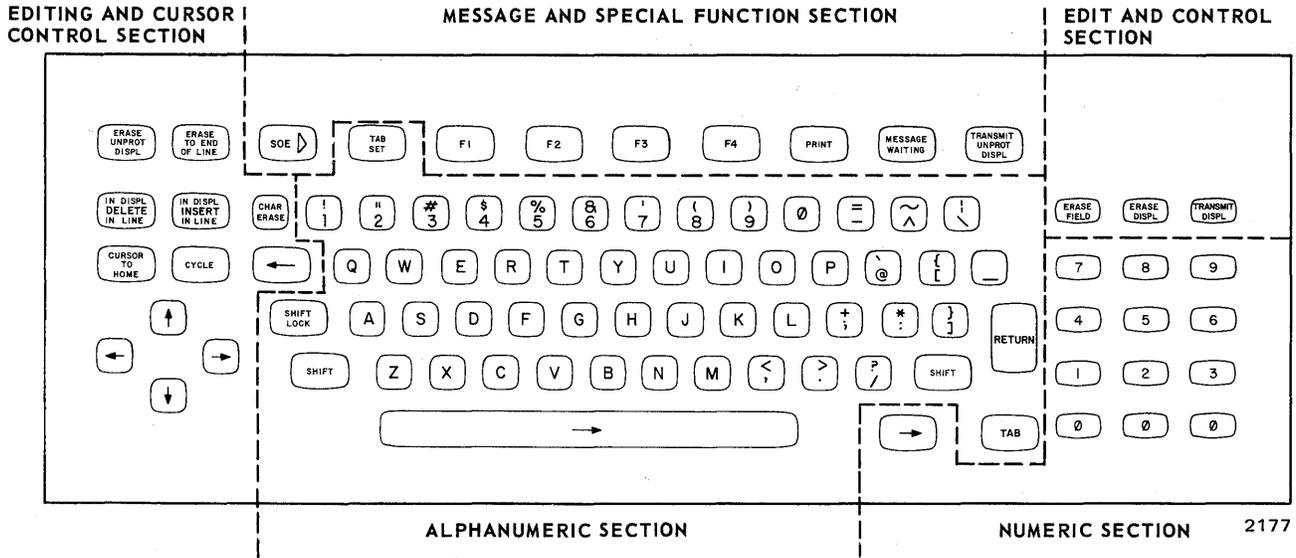


Figure 2-1. UNISCOPE Terminal Keyboard, Functioning Sections

2.5. CURSOR CONTROL KEYS

The operator uses the nine cursor control keys (Figure 2-1) when composing or editing messages on the screen. These keys are described in Table 2-1.

Table 2-1. UNISCOPE Terminals Keys, Controls, and Indicators (Part 1 of 5)

Key, Control, or Indicator	Function
Message Control Keys	
	This key places the start-of-entry symbol (▷) on the screen. It designates the starting point of the message transmitted when it is the SOE nearest to the left side of the cursor (the cursor determines the end of the message).
	When pressed, this key results in the transmission of unprotected data to the processor (following polling). In the case of terminals without the protected format selection, all data is unprotected. On keyboards having protected format keys, this key is labeled TRANSMIT UNPROT DISPL.
	When pressed, this key results in the transfer of the data presented on the display between the ▷ and the □ or ▣ to an output device on the auxiliary interface, or it allows the transfer of data from an input device on the auxiliary interface to the terminal.
	When pressed, this key, on the next poll, causes a special message to be sent to the processor, usually indicating that a waiting unsolicited message may be sent.
Cursor Control Keys	
	This key repositions the cursor to the first character position (home) on the display. For units with protected format, pressing this key causes the cursor to return to the first unprotected character position on the screen; however, if all characters on the screen are protected, the cursor stops at the home position and the keyboard is locked.
	This key is similar to the carriage return on a typewriter and positions the cursor to the first position of the next line. Automatic cursor return is generated following the last character of each line without pressing the RETURN key. For units with protected format, if the first character position on the next line is protected, the cursor moves to the right until it locates the first unprotected character position.

Table 2-1. UNISCOPE Terminal Keys, Controls, and Indicators (Part 2 of 5)

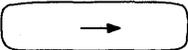
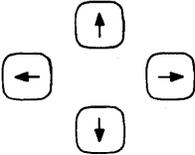
Key, Control, or Indicator	Function
Cursor Control Keys (cont)	
	<p>The space bar is in the position normally occupied by the space bar on a typewriter keyboard and moves the cursor forward one space each time it is pressed. The cursor does not stop over a protected character but stops over the first unprotected character to the right.</p>
	<p>A redundant space bar is provided to the right of the main space bar on numeric keyboards so that the controls normally used with a numeric keyboard (space, tab, return) are available immediately adjacent to the numeric keyboard.</p>
	<p>Each scan key moves the cursor in the direction of the arrow on the key one character position at a time, repeating as long as the key is pressed. When the cursor reaches the end of a line, it moves to the first character position of the next lower line (scan right) or the last character position of the next line up (scan left). When the cursor reaches the top line or bottom line (scan up or down), it moves to the same column position in the top or bottom line, as appropriate.</p> <p>For units with protected format, these scan keys, when pressed, operate normally; however, when any scan key is released with the cursor positioned over a protected character, the cursor moves to the right (forward) to the first unprotected character. If the key is released with the cursor over an unprotected character, the cursor remains over that character. When the key is released and all characters on the screen are protected, the cursor scans to the right (forward) through all positions, returns to the home position, and the keyboard is locked.</p>
	<p>This key is a special cursor positioning key that moves the cursor forward until a special tab-stop character is detected in the display storage. If a tab-stop character is detected, the cursor stops at the first unprotected character position beyond it. If no tab-stop character is found or only protected tab stop characters are found, the cursor returns to the home position.</p>
	<p>This key places tab-stop codes into the terminal storage for use with the TAB key. The cursor indicates the position for setting a tab stop. A tab stop must be set, either manually or by the processor, wherever one is desired; a tab stop in one line does not have any affect in any other line. Tab stops are transmitted with data and must be reset for each new screen format unless program provision is made to retain them.</p>
	<p>This key moves the cursor to the first unprotected character position to the left each time it is pressed; it does not repeat if the key is held. When the cursor reaches the left end of the line, this key moves the cursor to the last character position of the previous line.</p>
Editing Keys	
	<p>This key erases the character in the cursor position and enters a space in that position of the display. The cursor moves to the first unprotected character position to the right.</p>
	<p>This key replaces with spaces all characters from and including the cursor position to the end of the line. The cursor remains in the same position.</p> <p>In protected format use, this key replaces with spaces all characters from the cursor to the end of the unprotected field in which the cursor is positioned or to the end of the line on the screen, whichever comes first. The key is inoperative when the cursor is located in the protected field.</p>
	<p>This key erases all the characters from and including the cursor position to the end of the display. Spaces are inserted in all the erased positions. The cursor does not move.</p> <p>On units having protected format, this key is labeled ERASE UNPROT DISPL, and only the unprotected data is erased.</p>

Table 2-1. UNISCOPE Terminal Keys, Controls, and Indicators (Part 3 of 5)

Key, Control, or Indicator	Function
Editing Keys (cont)	
	<p>When the keyboard is in the uppercase mode (SHIFT key is pressed), the INSERT IN DISPL function is activated. Then, when this key is pressed, that part of the data from the cursor to the end of the screen is moved to the right one space, leaving a space under the cursor. Characters at the end of the lines in the data being moved are shifted to the beginning of the next line; the character in the last position on the screen is lost. In protected format use, only the data within one unprotected field is affected.</p> <p>When the keyboard is in the lowercase mode, the INSERT IN LINE function is activated. That part of the line from the cursor to the end of the line is moved to the right one space each time this key is pressed, leaving a space under the cursor; the character in the last position of the line is lost. In protected format use, only the data within the unprotected field is affected; any character at the right limit of the field is lost.</p>
	<p>This key causes the deletion of the character in the cursor position, and all the characters to the right of the cursor shift one position to the left (the cursor does not move). If the keyboard is in lowercase mode, only the characters in the line containing the cursor move to the left, and a space is inserted at the end of the line. If the keyboard is in uppercase mode (SHIFT key is pressed), all the characters from the cursor to the end of the display shift to the left, and a space is inserted in the last position in the display. (Characters in the first position of each line are moved to the last position of the previous line.)</p> <p>In protected format use, this key limits the code sequence to one unprotected field rather than to the end of the line or of the display. This permits the operator to shift several lines within one unprotected field, but does not allow the shifting of more than one unprotected field at a time.</p>
	<p>This key causes the next character or function chosen by the operator to be repeated as long as both the CYCLE key and the other key are pressed. This key operates with all keys except the ERASE, DELETE, INSERT, SHIFT, SHIFT LOCK, PRINT, RETURN, MESSAGE WAITING, TRANSMIT, CURSOR TO HOME, TAB, TAB SET, SOE, and special function keys.</p>
Terminal Controls	
POWER switch and indicator	This switch controls the power on/off operation of the terminal (push for on, push again for off). The indicator shows that power is on.
WAIT switch and indicator	<p>This indicator lights when a text message is being transmitted to or from the UNISCOPE terminal. At the same time, it is indicating that the keyboard is locked (functionally disabled). This indicator also lights during an auxiliary interface data transfer.</p> <p>The switch unlocks the keyboard manually and provides a master clear for the terminal. It is advisable not to use this switch when in online operation because it interferes with normal activity and can interrupt transmission or print activities, causing loss of data.</p>
INTENSITY control	This control adjusts the brightness of the screen display. It should be adjusted for a clear image and not for maximum brightness which shortens the screen life. It may be used to eliminate the images entirely (rotated fully counterclockwise) while the terminal is not being used, leaving the terminal active online. However, this method leaves the keyboard active at all times without visual indication of keyboard use.
MESSAGE WAIT indicator	This indicator lights when the processor has a conditional unsolicited message for display. The indicator remains on until the MESSAGE WAITING key or a function key is pressed and the processor message waiting request or function key message is sent.
MESSAGE INCOMPLETE indicator	This indicator lights during the time a text message is being received by the terminal. It is extinguished when all checks for the message have been satisfied. If the indicator remains lit, the operator should not depend on the displayed data which may contain an error. Normally, the processor program is aware of the error condition and will automatically resend the data.

Table 2-1. UNISCOPE Terminal Keys, Controls, and Indicators (Part 4 of 5)

Key, Control, or Indicator	Function
Terminal Controls (cont)	
Audible alarm	<p>The audible alarm sounds for any of the following conditions:</p> <ul style="list-style-type: none"> ■ The audible alarm sounds once when the cursor moves into the eighth character position from the right on any line in the display. ■ The audible alarm sounds once when the cursor moves into any character position of the last line and again when it reaches the eighth character position from the end in the last line of the display. ■ The audible alarm sounds intermittently during the time that the MESSAGE WAIT indicator is lit. The alarm is turned off when the MESSAGE WAIT indicator is turned off.
Volume control	This screwdriver control varies the loudness of the audible alarm over a limited range. It is located behind the display screen faceplate.
Focus control	This screwdriver control adjusts the sharpness of the screen display. It is located behind the display screen faceplate.
Interlock switch	This switch is a safety provision that opens when the faceplate is removed, removing primary power from the terminal. Power can be reapplied with the faceplate removed by pressing and holding the plunger of this switch. Such use is necessary only when adjustments to the terminal are made. This switch is present only on UNISCOPE 100 terminals with serial numbers below 14,000.
Enable/disable switch	Located on the right underside of the terminal, just back of the keyboard, this toggle switch removes or applies high voltage to the screen and locks or unlocks the keyboard. The unit is enabled (high voltage applied and keyboard unlocked) when the toggle is pushed toward the rear of the terminal; it is disabled with the toggle in the forward position. This switch does not affect other keyboard lock functions of the UNISCOPE terminal. Use of this switch when a terminal is not in use is the recommended method, instead of power off or use of the INTENSITY control.
Power circuit breaker	The power circuit breaker is located inside the unit, to the right of the screen, and behind the faceplate. It protects the UNISCOPE terminal from power overloads. It should always be in the ON position. If an overload condition occurs, the circuit breaker automatically trips and disconnects power for circuit protection. Reset it by moving the switch to the ON position. Do not use this circuit breaker as a power on/off switch.
Special Function Keys	
F1 F2 F3 F4 (or HANG UP)	<p>The special function keys cause a special message to be transmitted in response to the next suitable poll. The meaning of each special message depends on local programming provisions. Therefore, how and when to use these keys must be determined by each system application.</p> <p>When the key set includes the HANG UP key, this key is used to cause a disconnection from the communication line.</p>

Table 2-1. UNISCOPE Terminal Keys, Controls, and Indicators (Part 5 of 5)

Key, Control, or Indicator	Function
Protected Format Keys	
ERASE UNPROT DISPL	This key, when pressed, replaces with spaces all unprotected data from the cursor to the end of the display. For units without protected format, this key is labeled ERASE TO END OF DISPL.
TRANSMIT UNPROT DISPL	This key permits the transmission of only the data within the unprotected areas on the screen. No protected data except the SOE symbol can be transmitted. The area to be transmitted is defined by the SOE symbol and the cursor. All unprotected data between the cursor and the first SOE symbol to the left of the cursor is transmitted. If no SOE symbol is used, all unprotected data from the beginning of the screen display to the cursor is transmitted. (For units without protected format, this key is labeled TRANSMIT.)
ERASE FIELD	This key replaces with spaces all data from the cursor to the end of the unprotected field (or the end of the display if the end of the display occurs first) within which the cursor is positioned. If, at the end of a transmission, the processor leaves the cursor positioned within a protected field, this key does not cause the cursor to move; and the erase-to-end-of-field does not occur. The cursor must be moved into an unprotected field before this ERASE FIELD key functions.
ERASE DISPL	This key replaces with spaces all the data, protected and unprotected, between the cursor position and the end of the display.
TRANSMIT DISPL	This key, when pressed, permits both protected and unprotected data to be transmitted to the processor.
Character Keys	
Alphanumeric keys	These keys are arranged in typewriter fashion and include numerals and symbols. With options of either all uppercase or uppercase/lowercase characters, these keys are for message composition. As a key is pressed, the character is displayed on the screen at the cursor position.
	The SHIFT key, when pressed, shifts the keyboard from lowercase mode to uppercase mode. In uppercase mode, the symbol characters are generated in place of the numerals. The SHIFT key must be held while the character key is pressed; when it is released, the mode shifts back to lowercase. The SHIFT LOCK key keeps the keyboard in uppercase mode; this key is released when the SHIFT key is pressed momentarily.
Numeric keys	These keys, located to the right of the typewriter keys, are used as a fast means of entering numerals. This group of keys has its own space key for convenience. The numerals are the same with the SHIFT key in either the lowercase or the uppercase position.

2.6. EDITING KEYS

The editing keys (Figure 2-1) are used by the operator to correct or change data that has been input from the keyboard or received from the processor. Processor-stored data is not changed when the display is edited; the changed data must be returned to the processor with instructions to change the file data as indicated in the edited transmission. The function of these keys is described in Table 2-1.

2.7. TERMINAL CONTROLS

Three terminal controls are located on the front of the terminal. They are described in Table 2-1. In addition, the enable/disable switch is located inconspicuously under the right side of the terminal.

2.8. INDICATORS

Two indicators are located on the front of the terminal. An audible alarm is incorporated into the terminal; it can also be considered as an indicator. These indicators are described in Table 2-1.

On the UNISCOPE 200 terminal, an additional indicator, labeled POLL, lights for 1/2 second whenever the terminal recognizes a poll from the processor.

3. Operation

3.1. OPERATOR RESPONSIBILITIES

The operator of the UNISCOPE Display Terminal is required to turn power on and off and perform the regular keyboard-screen message manipulation. Also, if the primary power is interrupted, it is the responsibility of the operator to return the UNISCOPE terminal to an operational status when power is restored.

Since methods of establishing a communication line connection vary from system to system and involve varying types of equipment, it is the responsibility of the operator to determine from local sources specific procedures for establishing the communication connection. The procedures in this manual assume that a satisfactory connection has been established.

Other operating information required from local sources include the availability and type of auxiliary interface devices (such as output or input devices), and operating instructions for these auxiliary interface devices.

3.2. TURN-ON PROCEDURE

Turn on the UNISCOPE terminal for operation as follows:

1. Press the POWER switch and note that the indicator lights. This applies primary power to the terminal and resets the logic circuits.
2. Place the enable/disable switch to the rear position. This applies high voltage to the cathode ray tube (CRT) and unlocks the keyboard.
3. Press the WAIT switch. This provides a master clear to the unit and places it in an initial starting condition.
4. When the cursor appears on the screen, the terminal is ready for operation. If, after a suitable warm-up period (approximately 30 seconds), the cursor does not appear, press the CURSOR TO HOME key and rotate the INTENSITY control in a clockwise direction until the cursor becomes visible.

CAUTION

Extended use of the terminal with the intensity set too high (very bright image) can damage the screen. Use the lowest intensity setting that provides a clear, readable display.

3.3. TURN-OFF PROCEDURE

Primary power is removed by pressing the POWER switch/indicator. When the equipment is not to be operated, primary power may be turned off. Also, the equipment may be left on and the intensity turned all the way down (INTENSITY control rotated fully counterclockwise) when the terminal is not in use; or the enable/disable switch may be used to turn off the screen images, leaving the unit actively responding on the communications line (enable/disable switch placed to the forward position). The method used depends on local conditions. However, it is recommended that the UNISCOPE terminal should never be turned off except when maintenance is being performed. Instead, when the terminal is not in use, place the enable/disable switch to the OFF (forward) position, permitting normal polling activity to continue. When the terminal is turned off, each poll to it requires a lengthy timeout, slowing the overall line activity.

NOTE:

In this manual, references to orientation of the equipment are always from the point of view of the operator in normal operating position.

3.4. OPERATING PROCEDURES

Operating the UNISCOPE terminal requires little more than the ability to operate the keys on a typewriter or adding machine. The basic differences are designed to simplify message composition and to effect communications with the central processor.

The operating procedures are shown in diagram form in Figure 3-1 and consist of:

- Composing and transmitting messages
- Receiving processor messages
- Auxiliary interface transfers
- Manual keyboard unlock
- Communications establishment/disconnection

Detailed procedures for positioning data on the screen, for calling and manipulating file information, and for transmitting specific parts of data displayed on the screen are functions of the specific software provisions of a given system. The operating information applicable without software considerations is explained in the following paragraphs.

3.4.1. Composing and Transmitting Messages

The procedure for composing and transmitting messages follows:

1. Using the keys on the keyboard and observing the results on the screen, compose the data to be sent to the processor. This information is generated by the operator by using the alphanumeric, numeric, or special keys on the UNISCOPE terminal (Figure 2-1). As the keyboard keys are pressed, the alphanumeric or symbolic character generated by the key is simultaneously displayed on the screen and stored in the UNISCOPE terminal storage. The entry is made at the location marked by the cursor, and the cursor advances one position for each character or space entered on the screen.

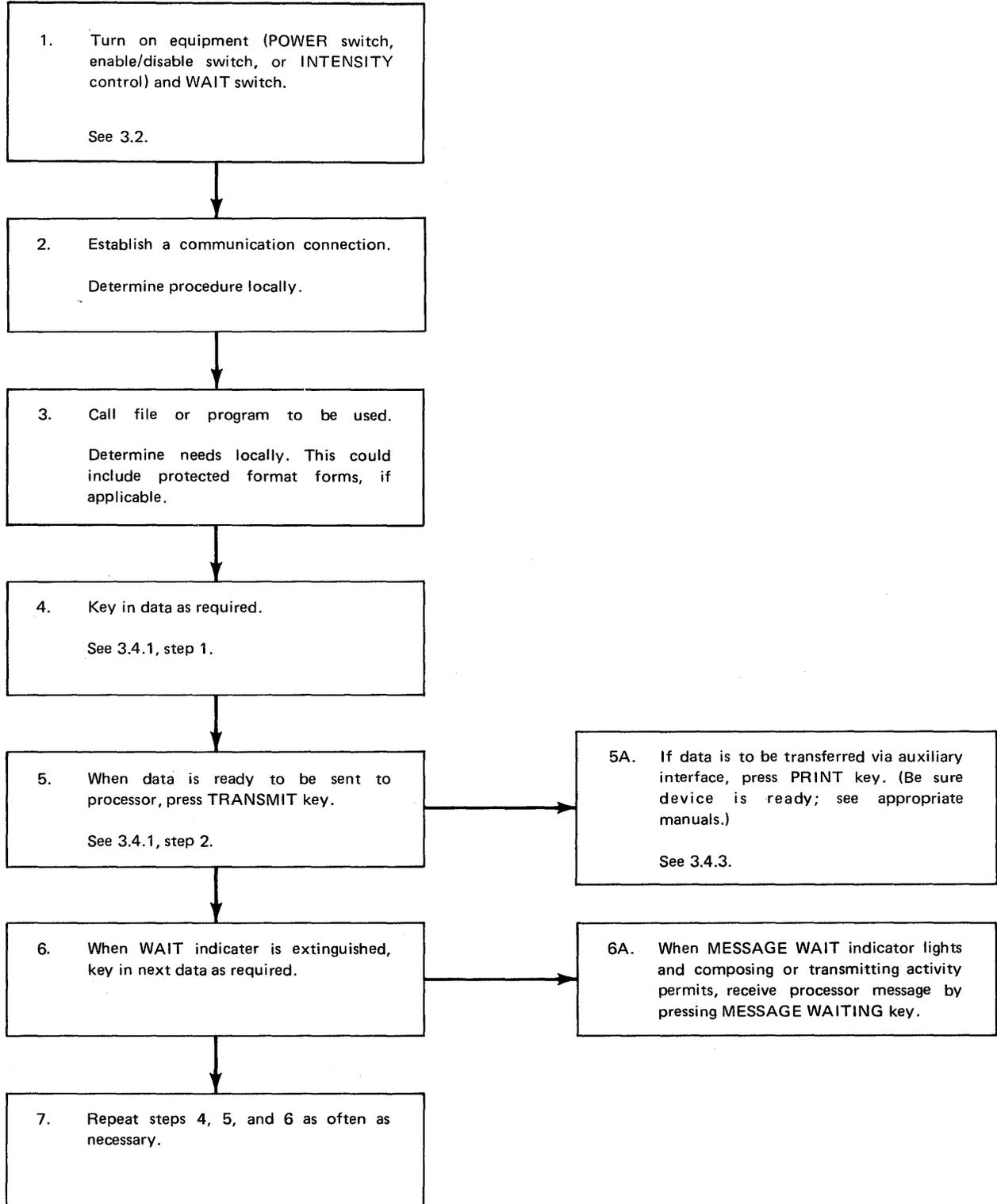


Figure 3-1. UNISCOPE Terminal Operating Procedures

Data changes are made by positioning the cursor over the character to be changed, and then pressing the new character key. Messages in the terminal storage, as they appear on the screen, can be corrected or changed by using the special keyboard editing keys (Table 2-1). The CHAR ERASE key is used to delete single characters. Lines and other positions of the display can be changed with other editing keys as explained in Table 2-1.

Message format is determined by the applications programmer. Before operating the UNISCOPE terminal, the operator must be informed locally of the particular conventions to be used for message formats.

The SOE \triangleright (start of entry) key is pressed after the operator positions the cursor at a place on the screen where the message to the processor is to start. The processor can insert the SOE symbol if programmed to do so; therefore, in some cases, the operator does not have to insert the SOE symbol.

2. When the message is composed, transmit the message by pressing the TRANSMIT key. The keyboard is locked, the WAIT indicator lights, and the UNISCOPE terminal is in a traffic-ready condition. When the terminal is traffic polled by the processor, the data displayed between the SOE symbol and the cursor is transmitted to the processor. If the SOE symbol is not on the screen, all data between the home position (upper left corner of the screen) and the cursor is transmitted. When the processor has received the message and is ready to accept another message, it unlocks the keyboard.

CAUTION

Do not press the WAIT switch except during turn-on procedure and when absolutely necessary, as determined by local operating procedures. Pressing this control interferes with normal activity.

3.4.2. Receiving Processor Messages

During operation of the UNISCOPE terminal, the processor transmits the following types of messages to be displayed on the screen, starting at the cursor position determined by the processor program (text format).

- Reply message

This text message is sent in response to a query message from the terminal.

- Conditional unsolicited message

This text message is not requested by the operator. The operator is alerted by the MESSAGE WAIT indicator and the audible alarm that the processor has a message for display on the screen. After the operator presses the MESSAGE WAITING key, the message is sent to the terminal.

- Unconditional unsolicited message

This text message is not requested by the operator. It is forced unconditionally on the screen without operator control, and it overwrites any characters that may be displayed on the screen in the area addressed by the processor.

NOTE:

The MESSAGE INCOMPLETE indicator lights during the time a text message is being received by the display terminal. The MESSAGE INCOMPLETE indicator goes out when all checks for the message have been satisfied. This signals the operator that the displayed data has been received without error. The operator should not depend on the displayed data if the MESSAGE INCOMPLETE indicator remains lit.

The indications and the resulting operator action required for each indication are described in Table 3-1.

Table 3-1. Operator Response to Processor Output Messages

UNISCOPE Terminal Indication	Operator Action
Reply Message	
WAIT indicator lights and keyboard is locked.	No action. When reply message is transmitted by the processor and correctly received at the UNISCOPE terminal, WAIT indicator is extinguished and the keyboard is unlocked.
Conditional Unsolicited Message	
MESSAGE WAIT indicator lights and audible alarm sounds.	Press MESSAGE WAITING key; MESSAGE WAIT indicator is extinguished and audible alarm stops. WAIT indicator lights and keyboard is locked. When the processor message has been sent and correctly received, the WAIT indicator is extinguished and the keyboard is unlocked.
Unconditional Unsolicited Message	
WAIT indicator lights, MESSAGE WAIT indicator may light, and audible alarm may sound; message is displayed on screen.	No action. Message is transmitted to terminal and displayed on screen. When transmission is complete and correctly received, WAIT indicator is extinguished. If MESSAGE WAIT indicator lights and audible alarm sounds, press MESSAGE WAITING key.

3.4.3. Auxiliary Interface Transfers

Auxiliary interface transfers can be accomplished either manually in offline mode or automatically, under processor control, in online mode. The auxiliary interface is capable of transferring information either to or from the UNISCOPE terminal. This allows the use of auxiliary interface devices having input functions, output functions, or a combination of input and output functions.

The operator can initiate an auxiliary interface transfer by use of the PRINT key on the keyboard. The device to be used should be in a ready condition (as determined by its operating instructions).

To accomplish an output transfer, the operator positions the cursor at the desired location and presses the PRINT key. The WAIT indicator lights and the keyboard is locked. Information from the beginning of the display (or from the nearest SOE symbol to the left of the cursor) to the cursor is then transferred. When the transfer is completed, the WAIT indicator is extinguished and the keyboard is unlocked.

To accomplish an input transfer, the operator positions the cursor over an SOE symbol at the desired location and presses the PRINT key. The WAIT indicator lights and the keyboard is locked. Information is then transferred. When the transfer is completed, the WAIT indicator is extinguished and the keyboard is unlocked.

3.4.4. Manual Keyboard Unlock

If the keyboard remains locked for an excessive amount of time, it can be unlocked by pressing the WAIT control.

CAUTION

Do not press the WAIT switch except during turn-on procedure and when absolutely necessary, as determined by local operating procedures. Pressing this control interferes with normal activity.

3.4.5. Communications Establishment/Disconnection

Procedures for the establishment and disconnection of communications are to be obtained locally since they vary from system to system.

Terminals with keyboards which have the HANG UP key in place of the F4 special function key enable the operator to disconnect the terminal from the communications line. When the operation is complete and the operator wishes to disconnect, the HANG UP key is pressed.

CAUTION

The HANG UP key causes a mandatory disconnect when pressed; if pressed accidentally, communications must be reestablished.

3.5. FAULT DETECTION AND RECOVERY PROCEDURES

Fault detection and recovery procedures are actions required to remedy abnormal conditions that result from terminals, multiplexer, or processor equipment, and ac power faults. These abnormal conditions and the probable causes and operator actions are given in Table 3-2. The probable causes and operator action for each problem are listed in order of greatest probability and/or simplicity of checking and correction, beginning with the most likely or the simplest. Follow the check list in the sequence given. If the trouble remains after performing the procedures in Table 3-2, notify the local Sperry Univac Customer Engineer and supply the following information:

1. Which keys, if any, do not operate correctly?
2. Does the audible alarm function for the conditions outlined in Table 2-1?
3. Does the cursor disappear when the TRANSMIT key is pressed and reappear shortly after the key is released?
4. Does other equipment on the same communications line operate properly?

NOTE:

The extent of operator-performed fault detection and recovery should be determined by local operating procedures.

Table 3-2. UNISCOPE Terminal Fault Check List (Part 1 of 2)

Step	UNISCOPE Terminal Indication	Probable Cause	Operator Action
1	Terminal is completely inoperative (POWER indicator does not light).	Power cable not connected to a live power outlet.	Connect power cable to a live outlet.
		Circuit breaker (on right side under faceplate) is tripped (set to OFF).	Remove faceplate and reset circuit breaker to ON position. If circuit breaker trips again, notify supervisor.
		Lamp in POWER indicator is burned out.	Replace lamp.
		Internal problem.	Notify supervisor.
2	No images appear on screen (POWER indicator lights).	Enable/disable switch is in the OFF (forward) position.	Place the enable/disable switch to the ON (rear) position.
		INTENSITY control is set incorrectly.	Adjust INTENSITY control clockwise until cursor appears. Do not set intensity too high or images will blur and life of display screen will be shortened.
		Internal problem.	Notify supervisor.
3	<p>All terminals attached to a multiplexer are inoperative.</p> <p>A terminal attached to a modem or direct connection module does not operate online.</p> <p>NOTE:</p> <p>POLL indicator on the UNISCOPE 200 terminal will not be blinking.</p>	Multiplexer, modem, or direct connection module is inoperative.	<p>Check that power cable is connected to a live outlet.</p> <p>Reset circuit breaker (if applicable). If it trips again, notify supervisor.</p>
		Processor inoperative or malfunctioning.	Check with supervisor or with processor operator.
		Communications line cable may not be connected properly.	Check cable connector to be sure it is properly plugged in, both in the terminal and in the modem or multiplexer (as appropriate).
		Communications line not functioning.	Notify supervisor.
		Internal problem.	Notify supervisor.
4	When TRANSMIT or PRINT key is pressed, WAIT indicator remains off but keyboard is locked.	Indicator may be burned out.	Replace indicator lamp.

Table 3-2. UNISCOPE Terminal Fault Check List (Part 2 of 2)

Step	UNISCOPE Terminal Indication	Probable Cause	Operator Action
5	WAIT indicator lights when TRANSMIT key is pressed, but data is not transmitted. (This is determined by observing the cursor, which disappears from the screen when the TRANSMIT key is pressed. Failure of the cursor to reappear indicates that the message has not been transmitted.)	The processor may be busy with another transaction.	Wait.
		Communications line cable may not be connected properly.	Check cable connector to be sure it is properly plugged in, both in the terminal and in the modem or multiplexer (as appropriate).
		Multiplexer or modem may not be functioning.	Check circuit breaker, power cables, and power on/off switches on this equipment, as appropriate.
		Communications line or central processor may be inoperative or malfunctioning.	If communications line is switched or dialed, verify that the connection is properly established. Check with supervisor or with processor operator.
6	WAIT indicator lights when PRINT key is pressed but data is not transferred.	Auxiliary interface device not on or not operating.	Check power switch and cables; check operating condition of the device.
7	WAIT indicator lights when PRINT key is pressed but does not light when TRANSMIT key is pressed.	Internal problem.	Notify supervisor.
8	MESSAGE INCOMPLETE indicator remains lit after complete message is displayed on display screen.	Data received by terminal is not valid (data contains a parity error).	Wait for processor to retransmit data. If data is not retransmitted, notify supervisor.
9	Character entered from keyboard is incorrect or entered in wrong position.	Internal problem.	Notify supervisor.
10	Characters entered from keyboard are distorted.	Internal problem.	Notify supervisor.
11	Unit overheating; fan is not running.	Internal problem.	Press the POWER switch to turn off power, and notify supervisor.
12	Unit overheating; fan is running.	Fan outlet is obstructed.	Ensure that the air director under the fan is open to the rear of the terminal.
		Air filter is obstructed.	Remove any external object covering the air filter.
		Air filter is clogged.	Replace the air filter.
13	MESSAGE WAIT, WAIT, or MESSAGE INCOMPLETE indicator not lighting under appropriate conditions.	Lamp burned out.	Replace lamp.
		Internal problem.	Notify supervisor.

4. Operator-Performed Maintenance

4.1. GENERAL

Operator-performed maintenance for the UNISCOPE Display Terminal is limited to replacement or cleaning of the air filter and replacement of indicator lamps. The air filter must be replaced or cleaned as specified to prevent overheating and premature component failure. The air filter should be replaced or cleaned once each month if the unit is in continuous operation, or proportionately less often if operation is not continuous; in this sense, operation includes all power-on time, not just actual use for data communications. The extent of operator-performed maintenance should be determined by local maintenance procedures.

4.2. REMOVAL AND REINSTALLATION OF FACEPLATE

The faceplate must be removed for all maintenance operations on indicator lamps and for certain control adjustments. Remove and reinstall the faceplate as follows:

1. Remove the faceplate by pulling outward on each side of the plate until the four tension fasteners clear the frame around the cathode ray tube (CRT).
2. Reinstall the faceplate by positioning the four tension fasteners within the CRT frame and pressing firmly on the faceplate until the tension fasteners snap into the frame.

4.3. INDICATOR LAMP REPLACEMENT

The indicator lamps used and the methods used to replace them differ for the UNISCOPE 100 and UNISCOPE 200 terminals. Refer to the appropriate procedure in the following paragraphs to replace burned-out indicator lamps.

4.3.1. UNISCOPE 100 Display Terminal

All four indicator lamps may be replaced by the operator. The MESSAGE WAIT and MESSAGE INCOMPL lamps are identical. All lamps may be obtained from the local Sperry Univac Customer Engineer. The Sperry Univac part number of each lamp is included in the appropriate paragraph below.

4.3.1.1. MESSAGE WAIT or MESSAGE INCOMPL Indicator Lamp

1. Remove the faceplate (4.2).
2. Pull outward on the lamp to remove it from the socket.

3. Insert the replacement lamp (Sperry Univac part number 2899110-01) and press it firmly into the socket.
4. Reinstall the faceplate (4.2).

4.3.1.2. WAIT Indicator Lamp

1. Remove the faceplate (4.2).
2. Unscrew the translucent lens. This lens houses the lamp, which is removed in the same operation.
3. Grip the flanged base of the miniature lamp and pull it from the lens.
4. Insert the replacement lamp (Sperry Univac part number 2899290-00) into the lens and press it until the flange is firmly seated against the lens.
5. Screw the lens/lamp assembly into the socket.
6. Reinstall the faceplate (4.2).

4.3.1.3. POWER Indicator Lamp

1. Remove the faceplate (4.2).
2. Pull outward on the translucent lens to remove it from the lamp socket.
3. Screw the lamp out of the socket.
4. Screw the replacement lamp into the socket. (The Sperry Univac part number for this lamp is 2899317-00 for units with serial numbers from 801 up, and 2899290-00 for units with serial numbers below 801.)
5. Press the translucent cover into the lamp socket, orienting the keyed pins with the slots in the socket.
6. Reinstall the faceplate (4.2).

4.3.2. UNISCOPE 200 Display Terminal

The 10 indicator lamps (2 per indicator label) may be replaced by the operator as follows:

1. Remove the faceplate (4.2).
2. Lift the indicator plate covering the indicator lamps.
3. Pull the defective lamp from its pin sockets.
4. Carefully insert the pins of the replacement lamp (Sperry Univac part number 2899441-04) and gently press the lamp into the sockets.
5. Reinstall the indicator plate and the faceplate (4.2).

4.4. AIR FILTER REPLACEMENT

Replacement air filter units must be obtained from the local Sperry Univac Customer Engineer. The Sperry Univac part number for the filter unit is 4956810-05. Replace or clean the filter as follows:

1. Turn off the primary power. (For maximum safety, disconnect the power cable.)
2. Observe whether or not the filter is mounted in a tray located on the bottom right of the terminal.
3. If the filter is mounted in a tray (units with serial numbers from 14,000 up):
 - a. Pull the tray out.
 - b. Either clean the filter or discard it.
 - c. Place the cleaned filter or a replacement filter in the tray and reinstall the tray in its original position.
4. If the filter is not mounted in a tray (units with serial numbers below 14,000):
 - a. Carefully place the terminal on either side (although the left side would make access easier).
 - b. The filter unit is retained by a slot around the perimeter of the filter housing. Compress the flexible filter slightly and pull it out of its housing.
 - c. Install the new or cleaned filter or a replacement filter by pushing the edges of the filter into the filter housing.
 - d. Tilt the terminal back upright and turn the power on.

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