

"Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. As temporarily permitted by regulation it has not been tested for compliance with the limits for Class A computing devices pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference." IL101

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OPERATING INSTRUCTIONS

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BASIC

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### INTRODUCTION

Your 43 Teleprinter provides for message preparation and sending from a send buffer. Received messages may print as they are received or they may be stored in a receive buffer and may be printed later.

Your 43 Teleprinter may have an auxiliary printer attached to it by a cable located at the rear right corner. If an auxiliary printer is attached, either printer may print a message depending on which one was remotely selected.

If your teleprinter is optioned as a receive-only terminal or as an auxiliary terminal (see OPERATOR AFFECTING OPTIONS, No. 2 and 3, Page 38) it can receive messages but cannot send messages.

The following selected operator procedures are provided in the BASIC OPERATING INSTRUCTIONS section of this manual to assist you in the basic operation of your terminal. Detailed descriptions, as required, are provided in the SUPPLEMENTARY OPERATING INSTRUCTIONS section of this manual.

Always be certain that the power switch is on, paper is installed and the alarm is not on before attempting to operate your terminal. The power to the terminal may remain ON continuously.

# To Receive a Message

• Depress tream key if not lit.

- Depress  $\mathbb{R}_{\mathcal{R}C}^{\mathsf{PRINT}}$  key if not lit.
- A message will print when the terminal is selected to receive and receives a message.

PRINT

1

lamp was off, the  $\boxed{REC}_{WTG}$  will be on. To print all the messages received, depress the  $\boxed{REC}_{REC}_{REC}$  key.

*Note 2:* If your terminal has an auxiliary printer, the auxiliary printer will print messages addressed to it provided it is conditioned to receive. Refer to the How to Operate Manual associated with the Auxiliary Printer.

*Note 3:* If this terminal is optioned as an auxiliary printer (see OPERATOR AFFECTING OPTIONS No. 3 Page 38) it will print received messages addressed



# INTRODUCTION (Contd)

- To Prepare and Send a Message (No Contention) (See OPERATOR AFFECTING OPTIONS No. 8 Page 38.)
- Depress TERM key if not lit.

BUFFER

ENTER

- Depress
- key if not lit.
- Type a message in the edit buffer. If a typing error is made, see Simplified Message Edit.

• Depress store key. key lights.

The message will be sent automatically when the terminal is polled.  $\begin{bmatrix} & & \\$ 

and may go out after message is sent.

To Prepare and Send a Message (Contention) (See OPERATOR AFFECTING OPTIONS No. 8 Page 38.)

• Depress



• Depress BUFFER key

- key if not lit.
- Type a message in the edit buffer. If a typing error is made, see Simplified Message Edit.

- Depress the store key. key lights.
- Depress the  $\begin{bmatrix} 1 & -1 \\ L, NE \\ ACTIVE \end{bmatrix}$  key.  $\begin{bmatrix} SND \\ RDV \\ RDV \end{bmatrix}$  key flashes while

sending and may go out after message is sent.

# Simplified Message Edit

To Overwrite an Error While on the Same Line

Example: THE QUICK BROWN FOZ

The "Z" must be changed to an "X". Since you are on

the same line, depress 4 key until, after a one second delay, the silver print head pointer is pointing to "Z" in the word "FOZ".

Depress X key. "X" overtypes "Z". Depress  $f_{HOME}^{5}$ ,  $r_{EDBUF}^{7}$  keys. The corrected message

prints out "THE QUICK BROWN FOX".

To Delete an Error While on the Same Line\_

, Example: THE QUICK BROWN FOOX



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SUPPLEMENTARY OPERATING INSTRUCTIONS .

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#### INTRODUCTION

The 43 Teleprinter provides for message preparation. transmission, and reception of data in an asynchronous or isochronous multipoint private line system utilizing ASCII code. An auxiliary port located at the right rear of the terminal may have an auxiliary printer attached for receiving messages only (cannot send from auxiliary port).

The 43 Teleprinter may also be optioned to perform as a receive-only terminal (data cannot be sent online) for operation in a multipoint private line system. See OPERATOR AFFECTING OPTIONS No. 2 Page 38 and RECEIVE-ONLY OPERATION Page 20.

The 43 Teleprinter may also be optioned to perform as an auxiliary printer and be connected to the auxiliary port of another 43 Teleprinter. See OPERATOR AFFECTING OPTIONS No. 3, Page 38 and AUXILIARY TERMINAL OPERATION Page 20.

Operating speeds at the line port, located at the left rear of the terminal, are 110, 300, 600, 1200 or 1800 baud asynchronous or up to 2400 baud isochronous. 2400 baud asynchronous is available only if the terminal is optioned to operate as an auxiliary printer. Auxiliary port line speeds are 110, 300, 1200 or 2400 baud asynchronous only.



On tractor feed printers, messages with up to 100 characters per line are printed on from 3 inch to 12 inch wide sprocket feed paper. The paper may be fed from a supply box or limited amounts can be placed in a paper holder that clips on the rear of the tractor feed teleprinter.

On friction feed printers, messages up to 80 characters per line are printed on 8-1/2 inch wide roll type paper. The roll is held in a support attached to the rear of the teleprinter.

Keyboard data (or message) is stored in the send buffer and automatically, or manually in some cases, sent on-line. If necessary the data can be recalled for editing.

#### INTRODUCTION (Contd) -

If the Keyboard-Printer (KP) is not available (performing local functions) when messages are received, the messages are stored in the receive buffer, or auxiliary receive buffer if the optional auxiliary printer is not available, until the printer becomes available.

Messages received in the receive buffer can be copied into the edit buffer for editing and/or resending.

A table of options which affect operation of this terminal is located in the operator affecting options section of this manual. See Page 38 Become familiar with the options of this terminal because the operating procedures in this manual are affected by the terminal options.

Refer to the Teleprinter Supplies and Maintenance section of this manual for paper and ribbon replacement information. See Page 21

A pull-out "Directory" card, is located under the front bottom edge of the keyboard. One side of the card provides installation and maintenance information and the other side provides a directory for frequently used telephone numbers and extensions.

#### POWER TURN ON

The power switch is located at the right rear of the teleprinter.

#### Terminal Power

With the power cord plugged in, depress the upper half of the ON-OFF rocker power switch to turn on power to the terminal.



• The TERM ON LINE and PRINT REC MSG lamps normally light when power to your terminal is first turned on. If the terminal prints the message below, see the station manager or supervisor.

> \*\*\*\* DEFAULT OPTIONS LOADED \*\*\*\*

# Memory Power

Power to the memory is on when power to the terminal is on.

- Volatile Memory (Data) Data stored in the memory will be retained idefinitely unless the power cord is unplugged, the switch is turned off, or until it is intentionally cleared.
- Immediately after the terminal is installed, power should be turned on and remain on for at least 10 hours. This will fully charge the internal battery used to retain the installer programmable options for at least 17 days when power is turned off. This need be done only one time unless power to the terminal remains off for many days.

#### **KEYTOP ARRANGEMENT**

The keytop arrangement is divided into three groups according to their purpose or function as shown below. Each group of keys is discussed in the following sections. Reference to this keytop arrangement should be made as required.

The information shown below in the area between the top row of keys and the keyboard is located on the cover and may be used when setting tabs, margins, etc. The designated keys are used in conjunction with the CTRL key.



### CONTROLS AND INDICATORS

This section describes the purpose and operation of most controls and indicators on the 43 Teleprinter. Nearly all the operating controls are across the top of the keyboard. Those on the keyboard are described in the keyboard section.

TERM LOCAL

May be disabled. See OPERATOR AFFECT-ING OPTIONS No. 1 Page 38. Depression

of the key causes the terminal to go off line. Terminal cannot receive or send messages. Key must be lit to load options.



Depression of key causes lamp to light. Terminal can now send and receive messages. If

lamp flashes a trouble is present and messages cannot be sent or received.



When lit indicates characters have been sent or received within the last 10 seconds. If the terminal is optioned for contention operation,

depressing the key puts in a bid to send a message if

the

SND

key is lit. See OPERATOR AFFECTING

OPTIONS No. 8 Page 38.

COPY SEND

When lamp is lit, all sent messages are copied into the receive buffer. Depressing key turns

the lamp on or off unless optioned for copy sent data. See OPERATOR AFFECTING OPTIONS No. 4 Page 38.

Lamp lights due to an alarm condition (ie, low paper, paper-out, cover open). If lamp does not go out with correction of the alarmed

condition, depress the

ALARM key.

When lamp is on, all the messages in the receive buffer will print. If lamp is flashing, only one message in the receive buffer prints (see REC MSG WTG key). If lamp is off keyboard can type

locally to the printer or into the edit buffer if

BUFFER ENTER

key is lit. Depressing changes the state of the key.

TERM TERM LINE COPY ALARM PRINT REC LOCAL ON LINE ACTIVE SEND REC MSG DATA MSG WTG	MSG BUFFER SUMRY ENTER INSERT STRING SND NUM T SUMRY ENTER CLEER	GG EAR
--	--	-----------

# CONTROLS AND INDICATORS (Contd)



Lamp turns on when receive buffer contains messages waiting to be printed. Depressing key causes one message in the receive buffer

to print,

PRINT key to flash and terminal to go to REG

the edit mode. When all messages have been printed, lamp turns off.



When depressed, a short summary of every message in the send and receive buffers (edit. receive, send and was sent buffers in that order)

are printed. A second depression will cause printing

PRINT REC MSG to stop. Active only if

key is off. See OPER-

ATOR AFFECTING OPTIONS No. 12 Page 38 for the number of characters that print for the summary.

ENTER

Depression causes the keyboard printer (KP) to go to the edit mode, even though the terminal may be on-line. In the edit mode, mes-

sages can be entered in the edit buffer, corrected as necessary and then stored for transmission (see EDIT MODE Page 30). Lamp flashes when edit buffer is nearly full. See OPERATOR AFFECTING OPTIONS No. 13 Page 38.



Active only in the Edit mode. Depressing key turns lamp on. When lamp is on, keyboarded

characters are inserted in the edit buffer at the current buffer location. Any data following the inserted data will be shifted toward the end of the edit buffer as characters are inserted until the edit buffer is full. Depress key to end insertion mode.



Active only in the Edit mode. Depressing key clears any previously entered string and causes the terminal to accept a new string of charac-

ters. The string is used for comparison in the search, retrieve or retrieve receive mode. The bell rings indicating no more characters can be entered into the string. Depress key to turn off lamp and exit mode. Mode is also exited when the search, retrieve or retrieve receive function is executed. See OPERATOR AFFECTING OPTIONS No. 12 Page 38 for the maximum number of characters that can be used in the string enter mode.



Lamp is lit if a message is waiting to be sent. Lamp flashes while sending. See To Store One or More Messages for Sending Page 33.

When lamp is turned on by depressing the key, the 14- key cluster at the right side of the keyboard functions primarily as a numeric pad. The return key in the numeric pad performs the same function as the large return key on the keyboard. Side OPERATOR AFFECTING OPTIONS as 17 Page 35 for the function (s) of this key. With the lamp off, the lower designations (edit functions) are active.

Number With the NUM PAD lamp on, edit functions can be performed by use with the CTRL or SHIFT keys.

7	▲ <sup>B</sup>		9
PRINT			PRT/W
EDBUF			CTRLS
4		5	6
←	HOME		$\rightarrow$
ł	2		3
RETRV	↓↓		SRCH
,	0		•
CHAR DLETE	RETRV REC		LINE
RETURN RECALL		s	 TORE

Remainder of the keyboard is unaffected by NUM PAD mode.

Active only in Edit mode. Depression causes the contents of the edit buffer to be cleared from the current location in the buffer through the next message-ending character or the end of the

edit buffer if no message-ending character is encountered.

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**KEYBOARD** 

The keyboard is active whenever the  $\begin{bmatrix} PRINT\\ RSG \end{bmatrix}$  key is not lit. If the  $\begin{bmatrix} BUFFER\\ ENTER \end{bmatrix}$  key is lit, characters will be

entered into the edit buffer.

- 1. ESC Depress key momentarily, then the desired key to perform escape sequence functions or write it into the edit buffer. See SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES Page 37.
- 2. BACK SPACE Causes the printing position to move one printing space backward on the same printing line. Writes a backspace character into the edit buffer.

- 3. TAB Writes the character into the edit buffer. If the horizontal tab option is activated, the printer carriage will move to the next tab stop. If no tab stops are set, carriage will move to the right boundary of the printer and perform a carriage return-line feed function. See Horizontal Tabulation Page 18.
- 4. DC1 DC1 and other special control character keys (keys with abbreviations at top or right side of key) when depressed together with the CTRL key print, perform special functions or write the character in the edit buffer. See SPECIAL CONTROL CHARACTERS Page 19.



#### KEYBOARD (Contd)

- 5. RETURN Returns printer carriage to the left margin of the current line unless otherwise optioned. See OPERATOR AFFECTING OPTIONS No. 15 Page 38 for the function(s) performed by depressing this key. When the CTRL and RETURN keys are operated together, the carriage is returned and the paper advances one line regardless of how key is optioned and no character is written into the edit buffer.
- 6. CAPS LOCK Keyboard produces capital alpha characters when key is locked down. Produces lower case alpha characters when key is released up (affects alpha characters only).
- 7. SHIFT Performs normal shift function (does not release CAPS LOCK mode).
- 8. CTRL Depress and hold while selected key is depressed to perform special control functions. This key is also used during local operations for setting margins, tabs (see KEYBOARD-PRINTER (KP) OPERATION Page 17).

- 9. REPT -- This key provides the attendant the ability to cause any key on the keyboard, keyboard edit cluster and numeric pad to repeat by holding the REPT key and the desired key depressed at the same time.
- 10. DEL NUL Depression of this key alone generates the ASCII DELETE code sometimes used as a time-fill character. Depression of this key together with the CTRL key generates the ASCII NULL character that may also serve as a time or media-fill character.
- 11. LINE FEED Advances the paper one line for each depression if so optioned. See OPER-ATOR AFFECTING OPTIONS No. 16 Page 38 for the function of this key.

## **KEYBOARD EDIT CLUSTER**



depressed and held down while the desired edit control key is selected. The edit key functions are as follows:



- 1. PRINT EDBUF Causes the contents of the edit buffer to be printed or functions to be performed one message at a time from the current buffer location. Depress key again to stop printing message or to print next message.
- 2. The first depression of this key causes a return to the beginning of the current line in the buffer and the printer to carriage return. When operated at the beginning of the line, the current buffer location moves to the beginning of the previous line in the buffer and printer will line feed.
- 3. PRT/W CTRLS Same as Print EDBUF except that special symbols are printed instead of the associated function being performed. (See SPECIAL CONTROL CHARACTERS Page 19.)
- 5.  $\downarrow$  The current location is moved to the beginning of the next line (ie, character following the next line feed). The printer will perform a carriage return-line feed.

# KEYBOARD EDIT CLUSTER (Contd)

- 6. RETRV This key executes a search for a group of characters (string) in the was sent buffer. If the string is found the message is copied into the edit buffer. See To Retrieve a Message for Editing (Was Sent Buffer).
- 7. RETRV REC This key executes a search for a group of characters (string) in the receive buffer. If the string is found the message is copied into the edit buffer. See To Retrieve a Message for Editing (Receive Buffer).
- 8. CHAR DLETE Causes the character at the current buffer location to be erased. The remaining contents of the edit buffer will move forward one position to fill the void created. The printer will overprint the existing character with a block ( ) and move one character to the right, unless the character is a control character. (See SPECIAL CONTROL CHARACTERS Page 19.)
- 9. RECALL Transfers all unsent or sent but unacknowledged messages from the send buffer to the edit buffer. See To Recall a Message for Editing (Send Buffer) Page 34.

*Note:* Returning messages to the send buffer is accomplished one message at a time by use of the STORE key.

- 10. HOME Returns the current edit buffer location to the beginning of the edit buffer (edit home). The printer performs a carriage return-line feed.
- 11.  $\rightarrow$  -Causes the buffer location to move within a message one character to the right, printing the character or performing the function at the current buffer location.
- 12. SRCH Executes a search in the edit buffer for a string of characters from the current buffer location to the end of the edit buffer. See To Search for a Message for Editing (Edit Buffer).
- 13. LINE DLETE Causes the current line in the buffer to be deleted from (line feed to line feed). The remaining contents of the edit buffer will move forward to fill the void created.
- 14. STORE Transfers the contents of the edit buffer to the send buffer one message at a time. The message stored is the message at the current buffer location. See To Store One or More Messages for Sending.

*Note:* If a key is depressed and the function cannot be performed, an alarm bell will ring.

### KEYBOARD-PRINTER (KP) OPERATION

To operate your KP locally the

must be off. At this time messages can be typed, margins changed, tabs set or paper loaded even though the terminal buffers may be on-line. You can now type messages on your keyboard as you would on an ordinary typewriter.

#### Print Head Marker

The next printing location of the print head and the position for setting tabs and margins is indicated after a 1-second delay by the silver print head marker. The print head moves back when printer resumes. The print head marker is also used to indicate the current location in the edit buffer.



# Left- and Right-Hand Margins

When power is turned on, the left- and right-hand margins are reset to the left and right boundary values. See OPERATOR AFFECTING OPTIONS No. 10 and 11 Page 38. Different values can be temporarily set by moving print head (use spacebar) to desired position and depressing the CTRL key together with the indicated key. See SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES Page 37.

- CTRL 7 Sets left margin.
- CTRL 8 Sets right margin.
- CTRL 9 Clears left and right margins.
- MARGINS <u>SET</u> <u>LEFT</u> RIGHT B \* () 7 8 9 0
- CTRL 0 Releases right margin.

*Note:* The bell sounds when a character is printed 8 columns before and at the right margin. Characters from the keyboard are suppressed at the right margin.

# Horizontal Tabulation\*

To utilize horizontal tabulation, tab stops must be set. Tab stops can be set at any desired location between the left and right margins. It may be necessary to first clear existing tabs if they are unwanted, then position the print head (use spacebar) to desired position and enter the horizontal tab. This can be accomplished by depressing the CTRL key together with the indicated key. See SENDING AND RECEIV-ING ESCAPE (ESC) SEQUENCES Page 37.

CTRL 1 - Sets a tab stop.
CTRL 2 - Clears all tab stops.
CTRL 3 - Restores preset tab stops (see Note).

HORZ		RESTORE PRESET TABS
	0	*
	2.	3

*Note:* Preset tab stops may be stored in the terminal. See OPERATOR AFFECTING OPTIONS No. 18 and 19 Page 38. Depressing CTRL 3 restores tab stops to preset values.

# Vertical Tabulation and Form Feed\*

Vertical tabs can be set to any line position from the top of the form to the currently set form length.

VERT	TAB
SET	CLEAR
×	
5	6

# To Set Vertical Tabs

- Depress CTRL 6 to clear all existing vertical tabs (if desired).
- Depress CTRL L (form feed).
- Manually (use platen knob) position top of form to print position.



- Depress CTRL 5 to set tab.
- Continue using LINE to advance form and CTRL 5 to set tabs until all vertical tabs are set.

Note 1: A vertical tab will be executed by depressing CTRL K (vertical tab).

*Note 2:* If there is no vertical tab between the current line position and the end of the form, the printer will advance the paper to the beginning of the next form and perform a carriage return.

\*Response to horizontal and vertical tabs may be disabled in your terminal. See OPERATOR AFFEC-TING OPTIONS No. 5, 6 and 14 Page 38. If form length is zero your terminal will not tab vertically even if vertical tab equals yes.

#### Bell

The bell sounds when characters are entered seven characters before and at the right margin, ie, margin at 80, bell at 73 and 80. Also sounds at left margin when attempting to backspace. Bell sounds when functions cannot be performed, ie, depressing Edit Control keys when not in Buffer Enter mode, depres-

sing with no characters to delete, etc. (See CHAR DLETE Audible Alarm Page 29.)

#### SPECIAL CONTROL CHARACTERS

Control characters are generated from the buffered 43 keyboard to the edit buffer by use of the CTRL key, and at the same time, a control character key. Although some of these characters are functional in the buffered 43, others are used only in other systems.

Graphics such as return ( $\leftarrow$ ), line feed ( $\equiv$ ), delete ( $\varkappa$ ) and the characters shown as printed characters in the chart, are the characters printed when in buffer enter mode and PRT/W CTRLS key is depressed.

Note: The symbol  $\blacksquare$  is always printed when the substitute character is received on-line or when entered into the edit buffer from the keyboard. It is also printed when deleting characters in the edit buffer. The ASCII control character <sup>SB</sup> is printed when the edit buffer is printed with controls.

		-	-
Keytop	Definition	Printed Character	
DC1	Device Control 1	L I	
ETB	End of Transmission Block	1 5	
ENQ	Enquiry	5	
DC2	Device Control 2	Š	1
DC4	Device Control 4	بر ۲۵ در اور ۱۹ در	
EM	End of Media	5	
NAK	Negative Acknowledge	2	
HT	Horizontal Tab		
Sl	Shift-In	ş	
DLE	Data Link Escape	ę.	
GS	Group Separator	Ģ	
SOH	Start of Heading	1	
DC3	Device Control 3	ι. Υ	
EOT	End of Transmission	ε	
АСК	Aaknowladza	é	[
BEL	Acknowledge Bell	B	
BEL	Backspace	ь В	
RS	Record Separator	5	
VT	Vertical Tab	3	
FF	Form Feed	Ť ·	
US	Unit Sep <b>ara</b> tor	r u	
SUB	Substitute Character	S or m	See
CAN	Cancel	<u> </u>	Note
ETX	End of Text	i î	
SYN	Synchronous Idle	5	
STX	Start of Text	ייש מעי לאו לאו אין ארי מעריד אר געש און אין אין אין אין אין אין אין אין אין אי	
SO	Shift-Out	x s	
FS	File Separator	D E	
NUL	Null	Š	
		V	

# **RECEIVE-ONLY OPERATION**

If the 43 Teleprinter is optioned as a receive-only terminal (see OPERATOR AFFECTING OPTIONS No. 2 Page 38 )messages cannot be sent on-line.

Messages can be typed off line, margins changed and tabs set (see KEYBOARD-PRINTER (KP) OPER-ATION Page 17).

Messages can be entered into the edit buffer, edited and reprinted. All edit mode functions can be performed except RECALL, RETRIEVE and STORE. See EDIT MODE Page 30.

All controls and indicators function as explained (see CONTROLS AND INDICATORS Page 9) with the

exception of the

 $\frac{1}{1000}$  key which has no function.

Communication on-line is limited to receiving messages only. See To Receive a Message.

# AUXILIARY TERMINAL OPERATION

If the 43 Teleprinter is optioned as an auxiliary terminal (see OPERATOR AFFECTING OPTIONS No. 3 Page 38)messages cannot be sent on-line.

Messages can be typed off line, margins changed and tabs set (see KEYBOARD-PRINTER (KP) OPERA-TION Page 17).

Messages can be entered into the edit buffer, edited and reprinted. All edit mode functions can be performed except RECALL, RETRIEVE and STORE. See EDIT MODE Page 30.

All controls and indicators function as explained (see CONTROLS AND INDICATORS Page 9) with the

SND

exception of the

key which has no function.

Communication on-line is limited to receiving messages only, under control of the primary teleprinter.

#### Ribbon

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Only cartridges with ribbon designated for use with 43 Teleprinters should be used. The Teletype Corporation part number is 430035.

The cartridge with ribbon can be ordered from Teletype Corporation, 5555 Touhy Avenue, Skokie, IL 60077.

The ribbon should be replaced whenever it becomes frayed or print density becomes light. After the first few ribbons, replacement ribbons should produce 5 million or more legible characters of printing.

#### Sprocket Feed Paper For Tractor Feed Teleprinters

Paper may be from 3 inch to 12 inch wide sprocket feed. The teleprinter requires paper with folds or horizontal perforations located midway between sprocket holes and standard sprocket hole size and spacing. This paper may be single-ply with 8-1/2inch folds to provide 11 inch by 8-1/2 inch copy when the 1/2 inch wide sprocket hole strip is removed at the edge serrations. (Characters are printed to within 7/8 inch of the left and right paper edge before the strips are removed.) Similar replacement paper may be obtained from the supplier listed on the original paper box or from other suppliers listed in the telephone book yellow pages.

Other types of sprocket feed paper with different form lengths, lighter weight, no edge serrations or additional copies, etc, may also be used. Multicopy forms consisting of the original and 2 copies of 12 pound basic paper (using 8 pound basic carbon paper) produce clear copy. Acceptable copy may also be obtained on variations of multicopy forms using different weight paper or carbonless paper, however all paper or forms should be tried before ordering large quantities. Crimped multiple part forms are not recommended and stapled forms are not allowed. Consult your paper supplier for specific needs to assure complete satisfaction.

#### **Friction Feed Paper**

Paper for the 43 Friction Feed Teleprinter should be standard 8-1/2 inches wide, single-ply, furnished in 5 inch maximum diameter rolls with a 1 inch diameter spindle hole.

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# Installing Paper (Friction Feed)

Install paper as shown after removing the unused paper from the printer. It is not necessary to turn off power or open the cover when replacing the paper.



Installing Paper (Tractor Feed, Continuous Forms)

•To install paper, it is not necessary to open the cover or turn off power.





# To Install Ribbon

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There are two kinds of storage in the 43 Teleprinter buffer, nonvolatile (permanent) and volatile (temporary) memory.

Nonvolatile memory is where installer programmable options are stored. These options when selected and stored, provide many of the operational characteristics of your terminal.

The volatile memory is divided into a Send, a Receive and an Auxiliary Receive buffer.

#### Send Buffer

The send buffer is divided into three sections; Edit, Send and Was Sent\*.

\*Data is not treated as Was Sent until the message is automatically acknowledged by the terminal or by the remote end. The send buffer is organized in a circular manner as shown below.



Send Buffer Organization

The edit section accepts data from the keyboard or data transferred from the receive buffer. All editing functions are performed in this section. The edited data when stored in the Send section is the source of the send data. After having been sent and acknowledged, messages are transferred to the Was Sent Section and remain there until the space is needed for composing new messages.

### Receive Buffer

The receive buffer accepts all received data addressed to it from the line and holds it until the printer is available. After printing, the data remains in the buffer until the space is needed for newly received data. The old data (data already printed) may be retrieved as long as it is in the receive buffer. (See to Retrieve a Message for Editing (Receive Buffer) Page 35.

The receive buffer is also organized in a circular manner divided into two sections, Data Not Yet Printed and Data Already Printed.

### Auxiliary Receive Buffer

The auxiliary receive buffer accepts all received data addressed to it from the line and holds it until the auxiliary printer is available. After printing, the data remains in the buffer until the space is needed for newly received data.

The auxiliary receive buffer is also organized in a circular manner divided into two sections, Data Not Yet Printed and Data Already Printed.



**Receive Buffer Organization** 



Auxiliary Receive Buffer Organization

### COMMUNICATION ON-LINE

Your 43 Teleprinter is always on-line unless it is in the local mode (TERM LOCAL key lit) or power is turned off. Terminal local mode may be disabled. See OPERATOR AFFECTING OPTIONS No. 1 Page 38.

### To Receive a Message

- Depress TERM on LINE key if not lit.
  Depress PRINT REC WASG key if not lit.
- A message will print when the terminal is selected to receive and receives a message.

PRINT REC MSG If a message was received while the Note 1: REC MSG WTG will be on. To print all the lamp was off, the key. To print PRINT messages received, depress the REC REC MSG WTG the messages one at a time, depress the key. REC MSG WTG After one message prints, if the kev is still lit.

depress again for the second message.

Note 2: If your 43 Teleprinter has an auxiliary printer, the auxiliary printer will print messages addressed to it provided it is conditioned to receive. Refer to the How to Operate Manual associated with the Auxiliary Printer. Note 3: If this 43 Teleprinter is optioned as an auxiliary printer (see OPERATOR AFFECTING OPTIONS No. 3 Page 38) it will print received messages addressed



*Note 4*: If the bell rings for approximately one second, See Audible Alarm below.

### Audible Alarm

(See OPERATOR AFFECTING OPTIONS No.9 Page 38 .)

If optioned for audible alarm the bell will ring for one second indicating the terminal or auxiliary terminal (if present) is being selected and there is not enough space in the buffer to receive a message. To make

space available, depress

key if REC Key is

lit or place the auxiliary printer in a receive mode to print data in the buffer.

### COMMUNICATION ON-LINE (Contd)

### To Prepare and Send a Message (No Contention) (See OPERATOR AFFECTING OPTIONS No. 8 Page 38.)

\* Depress **TERM** key if not lit.

• Depress

key if not lit.

- \* Type a message in the edit buffer. If a typing error is made, See Message Edit.
- Depress STORE key.
   Key lights. The

message will be sent automatically when the

terminal is polled.

key flashes while send-

ing and may go out after message is sent.

# To Prepare and Send a Message (Contention)

(See OPERATOR AFFECTING OPTIONS No. 8 Page 38.)

Depress

TERM key if not lit.

\* Depress

- BUFFER key if not lit.
- Type a message in the edit buffer. If a typing error is made, see Message Edit.



while sending and may go out after message is sent.

# EDIT MODE

Your 43 Teleprinter is placed in the edit mode by



key is lit it will turn off.

While in the edit mode, sending and receiving can take place without interrupting the message preparation.

Before proceeding, become acquainted with the Edit Control keys (INSERT, STRING ENTER, MSG CLEAR and KEYBOARD EDIT CLUSTER) and keyboard operation.

### Message Edit

# To Overwrite an Errored Character

Depress
 Depress
 Rey.
 Depress
 Rey. Message prints out.

Example:

THE QUICK BROWN FAX **Errored Character** \* Position print head marker (ie, use edit controls  $\leftarrow$ ,  $\leftarrow$ ,  $\downarrow$ ,  $\rightarrow$ , etc) at character "A". Type character "O". The "O" character overwrites the character "A". Depress key. then PRINT HOME EDBUF THE QUICK BROWN FOX ..... prints out. To Delete One or More Characters key. • Depress HOME key. Message prints out. • Depress PRINT EDBUF

Example:

THE QUICK BROWN FOOX Character to be deleted

- \* Position print head marker (ie, use edit controls  $\frown$  ,  $\leftarrow$  ,  $\downarrow$  ,  $\rightarrow$  , etc) at character "O". Depress kev. CHAR DLETE Depress then key. HOME EDBUE THE QUICK BROWN FOX. . . . . . . . . prints out. The CHAR key can be depressed simultane-Note: ously with the key to delete a string of char-REPT acters. □ To Delete One or More Lines
- Depress HOME key. Depress There key. Bepress Rev. Message prints out.

EDIT MODE (Contd)



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To Print Edit Buffer Without Special Symbols for			
Control Characters			
5			
• Depress Home key.			
• Depress <b>7</b> PRINT key. Message prints out.			
A depression of the $\begin{bmatrix} 7 \\ PRINT \\ EDBUF \end{bmatrix}$ key while the message is			
printing causes the message to stop printing. A depres-			

sion of the  $\begin{bmatrix} 7 \\ PRINT \\ EDBUF \end{bmatrix}$  key after the message prints causes the second message (if present) to print.

# To Print Edit Buffer with Special Symbols for Control Characters.

- Depress HOME key.
- Depress PRT/W CTRLS
  key. Message prints out with special

symbols for control characters (See SPECIAL CON-TROL CHARACTERS Page 19). Control functions are not performed.

A depression of the retry key while the message is

printing causes the message to stop printing. A depres-

sion of the  $P_{RT/W}$  key after the message prints causes the second message (if present) to print.

# To Store One or More Messages for Sending

- Prepare one or more messages for sending. If more than one message was prepared, the message at the current buffer location will be stored first and sent first.
- Place the print head marker, using edit controls, anywhere in the message to be stored first.

• Depress the store key. so nor key lights.

• Place the print head marker anywhere in the second

message to be stored and depress the 
$$\begin{bmatrix} -\\ s_{\text{TORE}} \end{bmatrix}$$
 key.

• Repeat this procedure until all messages desired are stored.

Note: If fewer than two unoccupied positions remain

in the edit buffer or if the store operation may not take place.

lamp is lit. The

### EDIT MODE (Contd)

# To Determine the Contents of the Various Buffers

\* Depress REC key if lit. Key goes out.

\* Depress key. A summarized list of the con-

tents of the edit buffer, receive buffer, send buffer and was sent buffer prints.

# ☐ To Recall a Message for Editing (Send Buffer)

To recall a message for editing it must be listed in the send buffer summary. See To Determine the Contents of the Various Buffers.

key. Key lights and printer per-

forms a carriage return-line feed.

BUFFER

ENTER

- Depress RETURN
   RECALL
  - All the messages listed in the

send buffer summary are now in the edit buffer

and can be reviewed by depressing the PRINT EDBUF key.

### To Retrieve a Message for Editing (Was Sent Buffer)

To retrieve a message for editing it must be listed in the was sent buffer summary. See To Determine the Contents of the Various Buffers. \* Depress BUFFER key

key. Key lights and printer per-

forms a carriage return-line feed.

\* Depress STRING key. Lamp lights.

• Type a string of characters unique to the message being retrieved.

*Note:* The message retrieved starts with the first character in the string and ends with the first message ending character.

#### Example:

### THE QUICK BROWN

\_\_\_\_Message to be retrieved listed in was sent summary.

key. The

• Type the "THE QUICK"

STRING lamp turns off.

When the string is found, the following occurs:

- Printer carriage return-line feeds.
- The message containing the string is appended to the edit buffer by copying the message starting with the first character in the string and ending with the first message ending character.
- The current buffer location is positioned on the first character of the string.

The message can now be re-edited and stored for transmission.

Note: It is possible the retrieved message will not fit in the edit buffer. In this case the maximum amount of characters that will fit are retrieved and "MAY BE INCOMPLETE" prints.

If the string is not found, the printer carriage returnline feeds, "CANNOT FIND" is printed and the edit buffer remains at its former position.

#### To Retrieve a Message for Editing (Receive Buffer)

To retrieve a message for editing from the receive buffer it must be listed in the receive buffer summary. See To Determine the Contents of the Various Buffers.

BUFFER \* Depress

key. Key lights and printer per-

forms a carriage return-line feed.

 Depress 

key. Lamp lights.

\* Type a string of characters unique to the message being retrieved.

*Note* The message retrieved starts with the first character in the string and ends with the first message ending character.

Example:

### THE QUICK BROWN

\_Message to be retrieved listed in the receive buffer summary.

Type "THE QUICK"

\* Depress key. The lamp turns off. STRING RETRV REC

When the string is found, the following occurs:

- Printer carriage return-line feeds. 1
- 2.The message containing the string is appended to the edit buffer by copying the message starting with the first character in the string and ending with the first message ending character.

### EDIT MODE (Contd)

3. The current buffer location is positioned on the first character of the string.

The message can now be re-edited and stored for transmission.

*Note:* It is possible the retrieved message will not fit in the edit buffer. In this case the maximum amount of characters that will fit are retrieved and "MAY BE INCOMPLETE" prints.

If the string is not found, the printer carriage returnline feeds, "CANNOT FIND" is printed and the edit buffer remains at it former position.

### **To Search for a Message for Editing (Edit Buffer)**

To search for a message for editing the message must be listed in the edit buffer summary. See To Determine the Contents of the Various Buffers.

• Depress

key if not lit. Key lights and

printer performs a carriage return-line feed.

Depress  $\begin{bmatrix} 7 \\ PRINT \\ EDBUF \end{bmatrix}$  key and view the contents of the

buffer. Depress key several times, if necessary, to print all the messages in the edit buffer.

- Depress номе key.
  Depress string enter key. Lamp lights.
- Type a string of characters unique to the message or location within the message being searched.
- Depress the  $\frac{3}{SRCH}$  key.

When the string is found, the following occurs:

- 1. Printer carriage return-line feeds.
- 2. The line containing the string is printed up to and including the last character of the string.
- 3. The current buffer location is at the character following the last character of the string.

If the string is not found, the printer carriage returnline feeds, "CANNOT FIND" is printed and the current edit buffer location is the first position following the last character in the edit buffer.

### SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES

Only the following ESC characters are functional in the 43 Teleprinter. They are performed when sending or receiving the character immediately following the escape character (ESC key).

Use of these or other escape sequences on-line may be system dependent.

- ESC 1 (CTRL 1) Sets horizontal tab stop at current printer column position.
- ESC 2 (CTRL 2) Clears all horizontal tab stops stored in the volatile memory.
- ESC 5 (CTRL 5) Sets vertical tab stop at current line position.
- ESC 6 (CTRL 6) Clears all vertical tab stops stored in the volatile memory.
- ESC H Prepares terminal to resend last message.
- ESC 1 (lower case L) (CTRL 7) Sets left margin.
- ESC x (CTRL 9) Clears left margin. CTRL 9 also clears right margin.
- ESC y (CTRL 3) Restores terminal to the preset horizontal and vertical tab values.
- ESC 8 (CTRL 8) Sets right margin, local function only.
- ESC 0 (CTRL 0) Releases right margin for current line, local function only.

Note. The escape sequence will be entered in the

edit buffer if the key is lit when the control

character (if shown in parentheses) is operated locally. Right margin set (CTRL 8) and right margin release (CTRL 0) are local functions only and are not entered in the edit buffer.

### MESSAGE GENERATOR

The message generator generates a message of up to 15 characters. It is used for entering repetitive message information into the edit buffer. See OPERATOR AFFECTING OPTIONS No. 17 Page 38 for the message generator character string, if any.

Depress key. Lamp lights.
Hold the CTRL key depressed and depress the the 4 key. The message is printed and

entered into the edit buffer.

### OPERATOR AFFECTING OPTIONS

The following options affect operator operation of the 43 Teleprinter. The value of these options should be filled in by the installer or station manager since these options are referred to in this manual and affect the operation of the 43 Teleprinter.

# Check Yes or No

(1)	Terminal Local Mod	e	
	Enabled	Yes No	
(2)	Receive Only Telepr	inter Yes No	·
(3)	Auxiliary Teleprinte	r Yes No	
(4)	Copy Sent Data	Yes No	
(5)	Horizontal Tab	Yes No	
(6)	Vertical Tab	Yes No	
(7)	Double Line Feed	Yes No	·
(8)	Contention	Yes No	·
(9)	Audible Alarm	Yes No	
	Enter the Nu	meric Value	
(10)	Left Bound <b>ar</b> y		<u> </u>
(11)	Right Boundary		_
(12)	Sum Length		

(13)	Edit Buffer Low Warning
(14)	Form Length in Line Feeds
	Enter Alpha or Numeric Value
(15)	Large Key (Return)
(16)	Small Key (Line Feed)
(17)	Message Generator
(18)	Enter the Numeric Value Preset Horizontal Tabs (Column Numbers)
(10)	
(19)	Preset Veritical Tabs (Line Feed Count From Top of Form)
	The following are commonly used symbols may appear in options 15,16 or 17.
	← = Carriage Return
	$\equiv$ = Line Feed
	→ = Horizontal Tab
	= Delete

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#### IF TROUBLE OCCURS

Trouble that is encountered with the 43 Teleprinter should be reported as locally specified. A number to be called in case of trouble may be entered on the directory card pullout by the installer.

If it can be determined that the trouble is in the remote equipment, the attendant at the location in trouble should follow local procedures for that area.

The following table of analysis questions is arranged to aid in the isolation of a trouble for:

- •Local correction.
- •Correction at the remote location.
- •Advising service personnel in advance of trouble visit of Analysis Question results.

Before reporting a trouble, follow the Analysis Questions in the table always starting with Question no. 1 and then proceed according to the "Yes" or "No" directive on the following pages.



	Analysis Question	Yes	No
1.	Is term key lit or flashing?	Go to 2.	Go to 1a.
1a.	Is red power supply lamp on? The red lamp can be seen through air vent slot (6th slot from left) of the bustle. 6th SLOT BUSTLE BUSTLE POWER SUPPLY RED LAMP (Top Left Rear of KP)	Go to 1b.	<ol> <li>Check that power switch is ON.</li> <li>Check that power cord is connected.</li> <li>Check source of power. (Wall switch, other equipment ok, circuit breaker, etc.)</li> <li>Report as local trouble in terminal.</li> </ol>
1b. 40	Is red lamp on the controller lit? Can be seen through the air vent slot (13th slot from left) of the bustle. BUSTLE I3th SLOT CONTROLLER RED LAMP (Top Left Rear of KP)	Go to 1c.	Report as trouble in controller or as trouble in power supply out- put cable to controller.

	Analysis Question	Yes	No
1c.	Does keyboard pass keyboard test? See page 42 for keyboard test.	Reevaluate Question 1. Report as local trouble in 43 Teleprinter.	Report as trouble on keyboard.
2.	Is term key lit steadily? (Data set power on.)	Go to 3.	Report as probable trouble in data set or data set cable.
3.	Can any characters be locally gen- erated from the keyboard to the printer?	Go to 4.	Report as local trouble in the 43 Teleprinter.
4.	Is key lit almost continually? (43 Teleprinters not optioned for contention.)	Go to 5.	Indicates a system problem. See station manager.
5.	Can data be stored and sent (Data received by remote location)? (43 Teleprinters not optioned as receive only or auxiliary terminals.)	Go to 6.	Report as on-line trouble. The Telephone Company may direct you to perform some specific tests.
6.	Can data be received and printed?	Go to 7.	Report as on-line trouble. The Telephone Company may direct you to perform some specific tests.
7.	Is trouble present but not isolated by Questions 1 through 6?	Report trouble to the Telephone Company.	

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### Keyboard Test

Local analysis of the keyboard can be performed easily by depressing certain keys causing certain lamps on the keyboard to light and extinguish. By doing so the attendant can provide information so that the keyboard electronics can be analyzed, thus assisting in trouble analysis.

With keyboard in the CAPS LOCK mode, proceed as follows:

• Depress LINE FEED and QUOTES keys simultaneously with more force than is required in normal operation. The TST indicator will light and remain lit indicating Test mode.



*Note:* If any lamps flash when Test mode is entered, simply depress the LINE FEED and P keys simultaneously to extinguish lamps. Re-enter Test mode by depressing LINE FEED and QUOTES keys.

• Depress the following keys while observing lamps for proper indication.

Depress key	Indicator	Lamp
(or keys):	Key	Condition
A	TERM LOCAL	ON
CTRL & A	TERM LOCAL	OFF
SHIFT NUM PAD 7	TERM LOCAL	FLASH ON
CTRL & 1	TERM LOCAL	FLASH OFF
C	TERM ON LINE	ON
CTRL & C	TERM ON LINE	OFF
SHIFT NUM PAD 9	TERM ON LINE	FLASH ON
CTRL & 3	TERM ON LINE	FLASH OFF
D	LINE ACTIVE	ON
CTRL & D	LINE ACTIVE	OFF
SHIFT NUM PAD 4	LINE ACTIVE	FLASH ON
CTRL & 4	LINE ACTIVE	FLASH OFF
G	COPY SEND DATA	ON
CTRL & G	COPY SEND DATA	OFF
CTRL & RETURN	COPY SEND DATA	FLASHON
CTRL & 7	COPY SEND DATA	FLASHOFF
F	ALARM	ON
CTRL & F	ALARM	OFF
SHIFT NUM PAD 6	ALARM	FLASH ON
CTRL & 6	ALARM	FLASH OFF
E	PRINT REC MSG	ON
CTRL & E	PRINT REC MSG	OFF
SHIFT NUM PAD 5	PRINT REC MSG	FLASH ON
CTRL & 5	PRINT REC MSG	FLASH OFF
B	REC MSG WTG	ON
CTRL & B	REC MSG WTG	OFF
SHIFT NUM PAD 8	REC MSG WTG	FLASH ON
CTRL & 2	REC MSG WTG	FLASH OFF

Depress key	Indicator	Lamp
(or keys):	Key	Condition
L	MSG SUMRY	ON
CTRL & L	MSG SUMRY	OFF
SHIFT NUM PAD,	MSG SUMRY	FLASH ON
CTRL &	MSG SUMRY	FLASH OFF
K	BUFFER ENTER	ON
CTRL & K	BUFFER ENTER	· OFF
SHIFT NUM PAD 3	BUFFER ENTER	FLASH ON
CTRL & K	BUFFER ENTER	FLASH OFF
I	INSERT	ON
CTRL & I	INSERT	OFF
SHIFT NUM PAD 2	INSERT	FLASH ON
CTRL & 9	INSERT	FLASH OFF
H	STRING ENTER	ON
CTRL & H	STRING ENTER	OFF
SHIFT NUM PAD 1	STRING ENTER	FLASH ON
CTRL & 8	STRING ENTER	FLASH OFF
SHIFT & 2	SND RDY	ON
CTRL & NUL	SND RDY	OFF
TAB	SND RDY	FLASH ON
CTRL & 0 (ZERO)	SND RDY	FLASH OFF
O (ALPHA) CTRL & O SHIFT NUM PAD RETURN CTRL & O	NUM PAD NUM PAD NUM PAD NUM PAD	ON OFF FLASH ON FLASH OFF

### (Test Ended)

• Depress LINE FEED and P keys simultaneously with additional force to clear Test mode.

TST indicator will extinguish and bell rings indicating Test mode has cleared.

Note 1: If lamp responded correctly in Test mode, the trouble is probably not in the keyboard.

Note 2: If any lamp failed to respond correctly, report failure when making a trouble call.

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### BRIEF OPERATOR GUIDE



