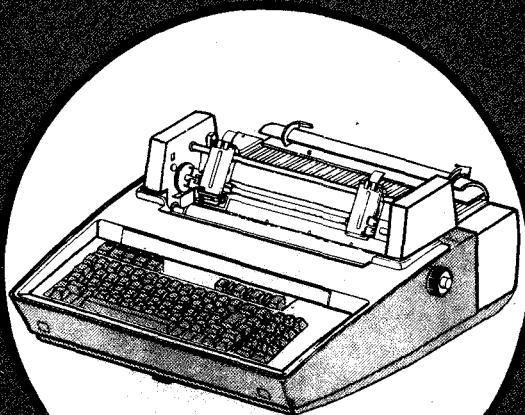
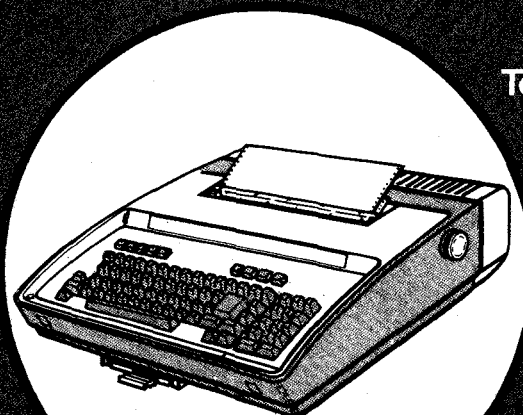




Teletype Corporation



**Buffered Tractor Feed
Set**



**Buffered
Set**

HOW TO OPERATE

the **43 teleprinter**

BUFFERED SEND/RECEIVE

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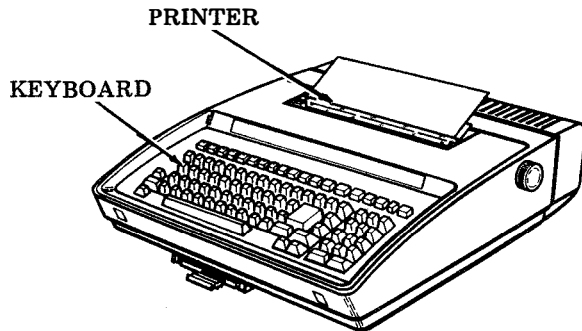
INTRODUCTION

INTRODUCTORY OPERATING INSTRUCTIONS

SUPPLEMENTARY OPERATING INSTRUCTIONS

INTRODUCTION

The purpose of this manual is to provide all instructions necessary to operate the 43 Buffered Send/Receive Teleprinter.



The 43 Buffered Send/Receive (BSR) Teleprinter consists of a keyboard, printer and a memory (buffer) in addition to components used to interface with a data set or over a private line to a computer or other remote terminal.

This manual is arranged in two parts: INTRODUCTORY OPERATING INSTRUCTIONS and SUPPLEMENTARY OPERATING INSTRUCTIONS. The basic and most frequently used operations and functions are provided in the INTRODUCTORY OPERATING INSTRUCTIONS part of this manual and detailed descriptions are provided in SUPPLEMENTARY OPERATING INSTRUCTIONS. A Simplified Reference Guide, Manual 577, is also provided with each terminal. Although the 43 teleprinter is easy to operate when sending, receiving and preparing most messages, maximum use of your teleprinter in your system may be achieved with additional operator training. See instructions in the back of this manual for special training.

INTRODUCTORY
OPERATING INSTRUCTIONS

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INTRODUCTION

The purpose of this part, "INTRODUCTORY OPERATING INSTRUCTIONS", is to provide you with the necessary instructions to make a call, receive messages or to prepare messages to be sent accurately, efficiently and easily. Only basic key functions and operations are included here. All other operations and detailed descriptions are provided in the "SUPPLEMENTARY OPERATING INSTRUCTIONS" part of this manual. Abbreviated instructions for you to originate a call, answer a call and prepare a message are provided on a single sheet in the "Simplified Reference Guide", Manual 577.

Your teleprinter keyboard is similar to a standard typewriter keyboard and has the same keys, ie, shift, space, alpha and numeric characters. It also has a numeric pad, similar to a pushbutton telephone, on the right side of the keyboard. All other key functions and controls required for basic operation are described in this part of the manual.



Your buffered 43 teleprinter allows you to prepare and edit your messages before storing them in a mem-

ory and sending them. It also provides the capability of receiving a message at the same time you are preparing another message. Also, a bell will ring as a warning if you attempt to perform an improper function or operation. In order to improve your operating efficiency, you should acquaint yourself with your teleprinter by reviewing the examples provided (refer to the Table of Contents for a list of the examples). Follow the steps in the sequence given for each example. Do not be concerned with any keys or functions other than those required in these examples at this time. They are explained later in this manual.

It is assumed, for the following examples, the power is ON and, if used, the telephone is equipped with "Data" and "Line/Talk" keys. If your teleprinter is connected directly to a distant terminal and the "TERM ON LINE" lamp is always ON (ready to send and receive), then all references to originating, answering and terminating a call should be disregarded.

MESSAGE SENDING AND RECEIVING

To Originate a Call on Telephone

- Depress  if indicator light is not on.
- Depress  if indicator light is not on.
- Depress your telephone LINE key if not selected.
- Pick up phone, listen for dial tone, then dial.
- Listen for ringing followed by data (high pitch) tone or someone talking.



If tone is heard, depress DATA key on phone.



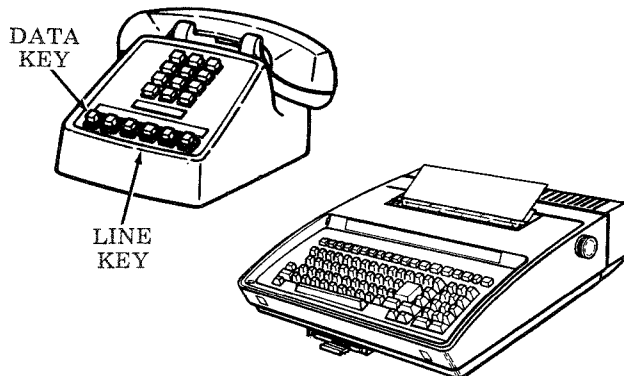
turns on,





turns off.



If someone answers, talk and then depress DATA key on phone when agreed.  turns on  turns off.

- Place phone in cradle and begin sending or receiving data.








- Depress either  or  key to terminate the call.


To Send From the Keyboard

- Originate call, if  is not on, to establish on-line connection.
- Depress  if not on.
- Type message on keyboard.

To Batch Send Messages Stored in Memory

- Originate call, if  is not on, to establish on-line connection.
- Depress  (indicator on when message(s) is stored in memory).
 will flash while message is being sent.
- When indicator stops flashing, depress  to send next message.


Repeat procedure to send all remaining stored messages. When the  indicator turns off

after the last stored message has been sent, press  key again to acknowledge that last message was sent.

To Transfer From Data to Talk



- Send data stating Talk mode is desired.
- When agreed, pick up phone and depress LINE key on phone and talk.



To Batch Receive Messages



- Originate call, if  is not on, to establish on-line connection.
- Depress CTRL-Q ("send" control character DC1) to receive first message and wait until message is received.
- Depress CTRL-Q for each additional message to be received.
- Terminate call.

MESSAGE SENDING AND RECEIVING (Contd)







To Automatically Answer a Call

-  must be on and  key should be on to print.



When phone rings,  turns on,  turns off and data sending or reception begins.

- When calling station terminates the call,  turns off and  turns on.






To Manually Answer a Call

-  indicator must be on and LINE key on phone must be selected prior to call.  should be on to print received message.
- Pick up phone when it rings and talk.
- Depress  and then the DATA key on your phone.  will turn on.
- Replace phone and begin receiving or sending data.
- Depress  or  to terminate the call.

To Print Message as it is Being Received

- Originate call, if  is not on, to establish on-line connection.
- Depress  to turn indicator on.
The teleprinter is ready to print received message.

To Store a Received Message in Memory


- Originate call, if  is not on, to establish on-line connection.
- Depress  to turn indicator off.
When a message is received and stored in memory, the  indicator turns on.
- Depress  key to print out all received messages. The  indicator will turn off after the last received message is printed.




MESSAGE EDITING


To Prepare a Message to be Sent

- Depress  if not on.
- Type data on keyboard.




To correct an error in the line you are typing:

Press the  key ONCE for each character that must be retyped. Type the correction and all following characters.

- Depress  and  keys simultaneously (other message-ending character may be optioned).
- When the data is ready for sending, press the  key.











The  key turns on. This indicates the data is stored and ready to be sent.

To Prepare and Store an Additional Message


- With the  indicator on, depress the  key if not on.
- Type message.
- Add ETX character at end of message. (CTRL-C)
- Depress  key.

MESSAGE EDITING (Contd)









To Insert a Character or Group of Characters Into an Existing Message

- Depress  key if not on.
- Depress  key, then  key.
- Examine copy for location of insert.
- Depress  key, then type a phrase up to the desired point of insert.
- Press  key, then  key*. Phrase will print.
- Press  key to turn it on and type in the desired insertion (don't forget spaces).
- Press  to turn it off.
- Press  key.
- Press  key. Corrected copy will print.



*Phrase may appear more than once in a message.

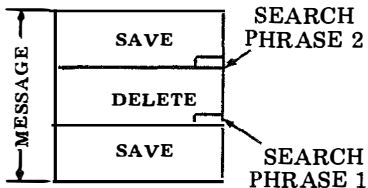
Press  key again to search forward.



To Delete a Character



- Press  key if not on.
- Press  key. Type phrase that ends with the undesired character.
- Press  key.
- Press  key. Phrase will print.
- Press  key. Print head moves left one character.
- Press  key.
- Press  key.
- Press  key. Corrected copy will print.

To Delete a Portion of a Message



- Press  key.
- Press  key.
- Type search phrase 1 which ends with the last character to be deleted.



- Press  key. Phrase 1 will print.
- Press  key once, then type the message-ending character.


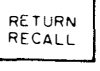









- Press  key, then press  key.

Type search phrase 2, which is the end of the upper portion to be saved, and end it with the last character to be saved.

- Press  key and search phrase 2 will print.
- Press  key. The middle section of the message will be deleted.








To Clear a Message

Note: Use only to remove messages from “send” or “edit” buffers (memory) that you no longer want to send.

- Press  key if not on.
- Press  key. All “send” messages will be put into the “edit” buffer (memory) and  turns off.
- Press  key. The first message prints.
- If you want to keep this message, press  key.
If you want to clear this message, press  key, then press  key.
- Press  key. Second message prints.
- Press  key to keep the message or press  key and then the  key to clear the message.
- Repeat for all remaining messages.


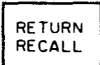

MESSAGE EDITING (Contd)


To Reprint a Received Message

- If lit, depress  to turn it off.
- Depress  if not on.
- Depress  key.  may flash while recalling the message then stay lit.
- Depress  for each message in the receive buffer you wish to reprint, (once for the last message received, twice for the last two, etc) waiting each time for the  key to light steadily.
- Depress  and all messages will print.





TO MOVE MESSAGES INTO THE EDIT BUFFER

Recall a message From the Send Buffer

- Depress  if not on.
- Depress  key once. All messages that were stored are now in "edit" and  will turn off.

- Depress  key. The first message prints. Message may be edited.








Retrieve a Message From the Send Buffer.

- Depress  if not on.
- Depress , lamp turns on.
- Type a string of no more than 16 characters unique to the message to be retrieved.
- Depress . The  lamp turns off.

The message will be found and the line containing the string will be printed up to and including the last character of the string. The message is automatically appended to the edit buffer where it may be edited, stored and transmitted, if desired.

If the message is no longer in the "was sent" buffer and the string is not found, the printer carriage return-line feeds, "CANNOT FIND" is printed and the edit pointer remains at its former position.

To Retrieve a Message From the Receive Buffer for Editing

- Press  key if not on.
- Store, send and acknowledge all prepared messages and clear all unwanted messages in the edit buffer to provide maximum capacity in the edit buffer.
- Press  key. Type a phrase from the desired message.
- Press  key.  turns off and the phrase prints. The message will be retrieved to the edit buffer.
- Press  key to print remainder of message
or
- Press  and then  to check message with control characters.
- Proceed with message editing.

Note 1: If the edit buffer has the capacity to accept the entire message, the phrase and all characters prior to it will be printed and the entire message is stored in the edit buffer.

Note 2: If the edit buffer does not have the capacity to accept the entire message, the buffer will store a portion of the message beginning with the phrase until the edit buffer is filled or to the end of the message and the phrase "MAY BE INCOMPLETE" will be printed.

Note 3: If the phrase was not found, "CANNOT FIND" will be printed.

NOTES: _____

SUPPLEMENTARY
OPERATING INSTRUCTIONS

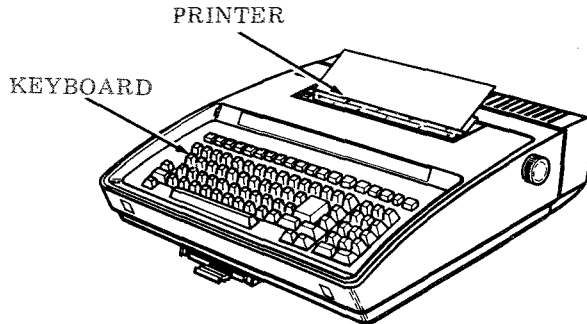
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INTRODUCTION

The purpose of the Supplementary Operating Instructions part of this manual is to provide you with additional information regarding the 43 Teleprinter which is not included in the Simplified Reference Guide Manual 577 or in the Introductory Operating Instructions part of this manual. Refer to Table of Contents.

Your Buffered 43 Teleprinter is operationally compatible with existing Basic 43 Teleprinters, 33 and 35-type terminals and time-sharing computers. Buffering permits storing messages prepared off-line for later transmission or simultaneous message preparation while receiving.



Buffering also permits batch-type transmission and line speeds higher than the continuous printing rate. Transmission speeds are from 100 to 1800 words per minute over the telephone or private line in full duplex operation. Different speeds can be selected by the user to match the remote station.

The 43 Teleprinter may be connected to an external communications device (modem) which may be associated with a telephone for connections and for transmission of data. A permanent connection via private line may also be used in these arrangements.

The telephone is used to establish a data call or to answer a call manually or automatically. In some arrangements the Buffered 43 may be connected directly to a computer or remote terminal.

INTRODUCTION (Contd)

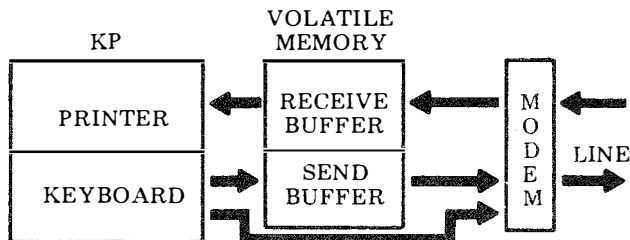
Included in the Buffered 43 is a 132-column pin feed, 100-column tractor feed or 80-column friction feed matrix printer, memory (nonvolatile and volatile) and keyboard with numeric pad.

Keyboarded data can be sent directly on-line or stored locally in the send buffer of the volatile memory. The stored data (or message) can then be recalled for editing or sent from storage manually or automatically.

If the Keyboard-Printer (KP) is not available (local functions) when the terminal is on-line, received messages are stored in the receive buffer of the volatile memory until the printer is available for printing.

The total memory is 16K with approximately 600 characters dedicated to terminal operation. The remaining characters are divided into the receive and send buffer whose size is determined by a keyboard programmable option.

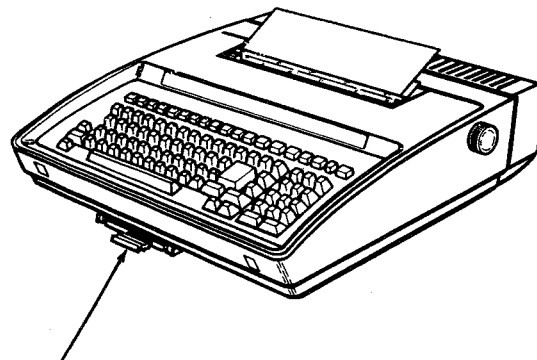
The optional characteristics of the terminal are stored in the nonvolatile memory. These options may be selected and "programmed" by the user or operator. A pull-out "Directory" card, located under the front bottom edge of the keyboard, serves as a record of user programmable options and options not programmable by user on one side. The other side serves as a directory for frequently used telephone numbers and extensions.



A table describing the user programmable options, prompt mnemonics eg. (StrSn) that are used throughout this manual and procedures on how to change these options are given in the OPTIONS section of this manual.

Operator training, in addition to the instructions in this manual, is recommended for increased efficiency and maximized use of the 43 Buffered KSR. (See Teletype Corporation Product Service and Training).

Refer to the MAINTENANCE section of this manual for paper and ribbon replacement information.



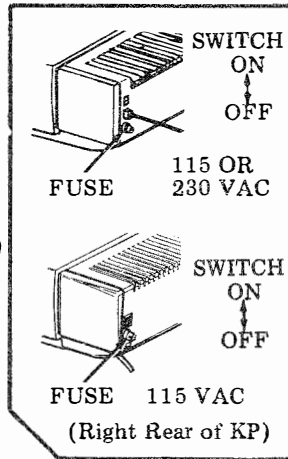
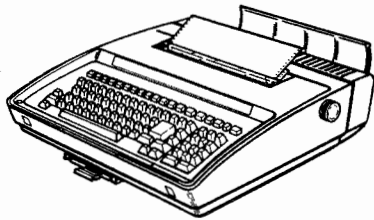
DIRECTORY CARD

POWER TURN ON

The tabletop Buffered 43 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 READY and KP Lamps normally light when all power to your terminal is turned on. Terminal may come up in the Options Prep mode (TERM LOCAL key flashing) if power to the terminal has been off for more than 17 days. (See Options.) Press TERM LOCAL key to exit Options Prep mode.

Memory Power

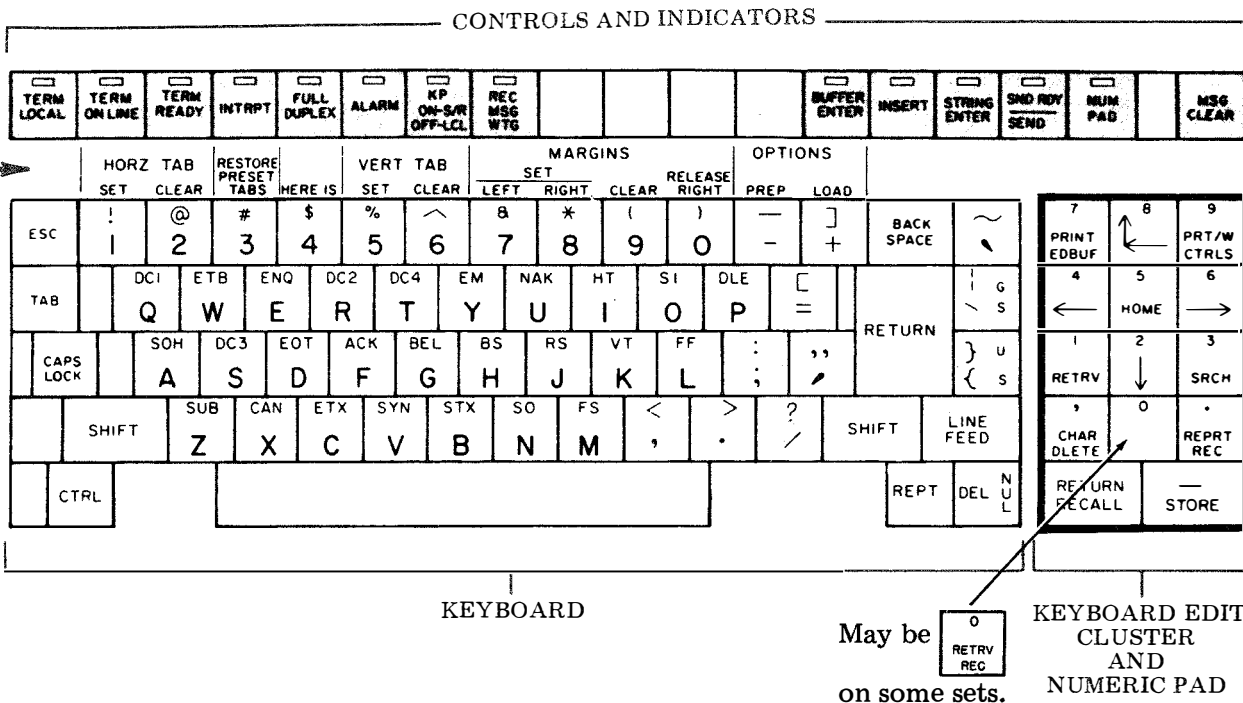
Power to the memory is on when power to the terminal is on.

- Volatile Memory (Data) — Data stored in the memory will be retained indefinitely unless the power cord is unplugged, the switch is turned off or the size of the receive buffer is changed (RBsze).
- Nonvolatile Memory (User Programmable Options) — The options will be in the original states, as indicated by an (*) on the “Directory” card, the first time power is applied to the memory. If power is turned off, the state of the options (as user programmed) will be retained for at least 17 days if the battery is fully charged. (Must be on at least 10 hours for a full charge.) After 17 days, with power off, the options may revert to their original (default) states or values.

KEYTOP ARRANGEMENT

The keytop arrangement is divided into three groups according to their purpose or function as shown here. 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 etched in the label for your convenience and may be used when setting tabs, or margins, or to prepare and load user programmable options (ie, depressing the control and the 1 key simultaneously sets horizontal tab).



CONTROLS AND INDICATORS

This section describes the purpose and operation of most controls and indicators on the 43 Buffered KSR. Nearly all the operating controls are across the top of the keyboard — those on the keyboard are described in the keyboard section.



Places terminal in Local mode — Causes disconnect if terminal is on-line. TERM READY lamp turns off. When TERM LOCAL lamp is on and KP lamp is off, local keyboard-printer operation is possible. Lamp flashes when in the Options Preparation mode.



Indicator Only — Lamp lights when Data mode is established on-line. If in Term Local mode, depress TERM READY and with Data mode established, lamp will light. Lamp will flash and then go off if on-line connection is lost.



Lamp on indicates terminal is ready to send or receive but on-line connection is not established. Depress key to turn on.



This key is active on-line only. Operation of this feature is system dependent. Depression of this key may cause sending to stop at the

remote station. If lamp lights on a received interrupt, keyboard operation will be inhibited on-line until INTRPT key is depressed (lamp extinguishes).



When lamp is off, terminal is operating in Half-Duplex operation (printer copies any send data). Lamp lights indicating Full Duplex operation by depressing key or, if terminal is so optioned, (DUPLX=f) will light at power turn on. Only data received on-line will be printed.



Lamp lights due to an alarm condition (ie, low paper, paper-out, cover open). Depress key to reset after clearing alarm condition on some sets.



When lamp is on, terminal is in the S/R (conversational) mode. The keyboard is actively on-line and the printer prints received data. Depression of key turns off lamp, places KP in Local mode even though the terminal may be on-line. If depressed when lamp is not on and REC MSG WTG lamp is on, the received message will print out.



Lamp turns on when receive buffer contains message waiting to be printed. Depressing key causes printing of messages (KP goes to S/R mode). When all messages have been printed, lamp will turn off.



Depression causes KP to go Local and enter the Edit mode, even though the terminal may be on-line. In the Edit mode, messages can be entered in the edit buffer, corrected as necessary and then stored (see EDIT MODE section). Lamp flashes as a warning when edit/send buffer is nearly full. (EBWrn)



Active only in the Edit mode otherwise bell rings. Depressing key turns lamp on; when lamp is on, keyboarded characters are inserted in the edit buffer at the current buffer location. As characters are inserted any data following the inserted characters will be shifted toward the end of the edit buffer until the edit buffer is full. Depress key to end Insertion mode.



Active only in the Edit mode. Depressing key causes lamp to turn on, clears any previously entered string and causes terminal to accept a new string of up to 16 characters. If more than 16 characters are entered, only the last 16 characters are accepted. The string is used for comparison in Buffer Search or Retrieve modes. Depress key to turn off lamp and Exit mode. Mode is also exited when the Search or Retrieve is executed.



Press to send from Send Buffer; press to stop sending. Lamp on if message is waiting to be sent. Lamp flashing if sending. Send until end of Send Buffer, optioned message ending character sent, received X-off or key depressed.



When lamp is turned on by depressing key, the 14-key cluster at the right side of the keyboard functions primarily as a Numeric Pad. The RETURN key performs the same function as the LgKey option. With the lamp off, the lower designations (edit functions) are active.

Note: With the NUM PAD lamp on, edit functions can be performed by use with the CTRL or SHIFT Keys.

In Num Pad mode, RETURN functions as LgKey.

| | | |
|------------------|------|----------------|
| 7 | 8 | 9 |
| PRINT EDBUF | ← | PRN/W CTRLS |
| 4 | 5 | 6 |
| ← | HOME | → |
| RETRV | ↓ | SRCH |
| 1 | 0 | * |
| CHAR DELETE | | REPR REC |
| RETURN RECALL | | — STORE |

Remainder of the keyboard is unaffected by NUM PAD mode.



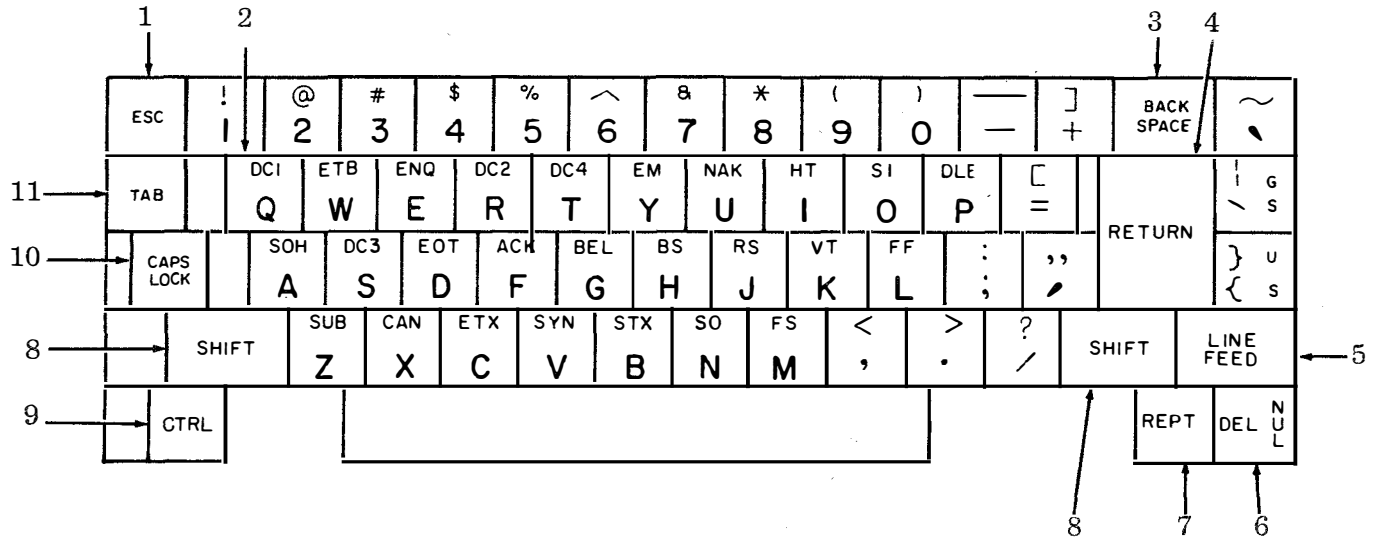
Active only in the Edit or Options Prep mode. Depression causes the contents of the edit buffer to be cleared from the current location in the buffer through the next message-ending character or the end of the edit buffer if no message-ending character is encountered. Also used to clear an option value, if value can be cleared (see User Programmable Option Table).

KEYBOARD

The keyboard is active whenever TERM LOCAL, TERM ON LINE or TERM READY lamps are on.



1. ESC — Depress key momentarily, then the desired key to perform escape sequence functions on-line. See SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES.
2. 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 (codes are sent on-line), print or perform special functions.
3. 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. Send backspace on-line.
4. RETURN — Returns printer carriage to the left margin of the current line unless otherwise optioned (LgKey). Character is sent on-line. 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. No character is sent on-line.
5. LINE FEED — Advances the paper one line for each depression. Also programmable for any one ASCII character (SmKey).
6. DEL NUL — Depression of this key alone generates the ASCII DELETE code sometimes used as a time-fill character. Also obliterates erroneous or unwanted characters. 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.
7. REPT — This key provides 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.
8. SHIFT — Performs normal shift function (does not release CAPS LOCK mode).
9. CTRL — Depress and hold while selected key is depressed to perform special control function on-line. This key is also used during local operations for setting margins, tabs (see Keyboard-Printer (KP) Operation), options preparation and load and answer-back.

10. 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).
11. TAB — Sends the ASCII HT or writes it in memory depending on terminal mode. 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.



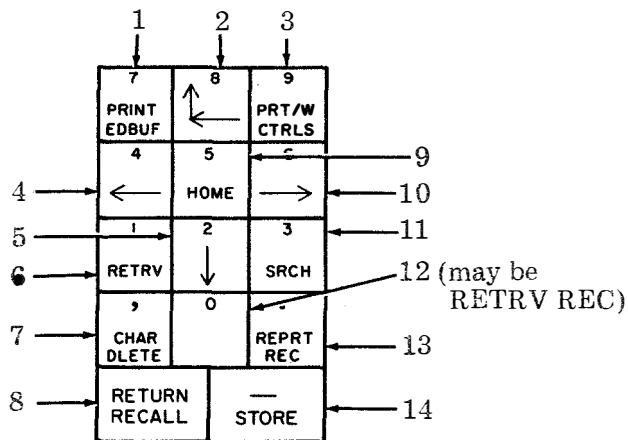
KEYBOARD EDIT CLUSTER

These keys along with INSERT, STRING-ENTER and MSG CLEAR function as edit controls when

the  lamp is on and the  lamp is off. If the

 lamp is on, the CTRL or SHIFT key must be




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



KEYBOARD
EDIT CLUSTER

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 the current location to 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 location moves to the beginning of the previous line in the buffer and printer will line feed.
3. PRT/W CTRLS — Causes the message from the current buffer location to be printed with symbols for control characters (see SPECIAL CONTROL CHARACTERS). Depress key a second time to stop printing or to print next message. May be used to edit received message control characters. (See 12. RETRV REC.)
4.  — The printer carriage and the current buffer location move one character position to the left on the same line. The printer carriage will not move on control characters but location in buffer will be moved back. Movement is limited by all format effectors.
5.  — The current location is moved to the character following the next line feed (ie, beginning of next line). The printer will perform a carriage return-line feed.

6. RETRV — This key executes a search for a group of characters (string) in the data already sent and acknowledged section of the send buffer. See Retrieve a Message From the Send Buffer.
 7. 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.
 8. RECALL — Transfers all unsent or sent but unacknowledged messages from the data stored to the edit buffer.
- Note:* Returning messages to the “data to be sent” section is accomplished one message at a time by use of the STORE key.
9. HOME — Returns the current edit buffer location to the beginning of the edit buffer (edit home). The printer performs a carriage return-line feed. Keytop is slightly higher than others.
 10. → — Causes the printer carriage to move one character to the right each time the key is pressed and prints the character or performs the function at the current Edit Pointer location.
 11. SRCH — Executes a search in the edit buffer for up to a 16-character string from the current buffer location to the end of the edit buffer or to the next message ending character, whichever is encountered first.
 12. RETRV REC — If present on your terminal, pressing this key causes a search for a received message phrase. When found, the message is appended to the edit buffer. The search for the phrase and message-ending characters and copying the message in the edit buffer may require several seconds. Received messages may be edited and control characters examined.
 13. REPRT REC — Used to reprint received messages in the receive buffer. TERM LOCAL must be on and KP must be off.
 14. STORE — Transfers the contents of the edit buffer to the data stored but not sent buffer one message at a time. Data stored is from home location to the first message-ending character. If no message-ending characters have been entered, the entire contents of the edit buffer is stored.
- Note:* If a key is depressed and the function cannot be performed, an alarm bell will ring.

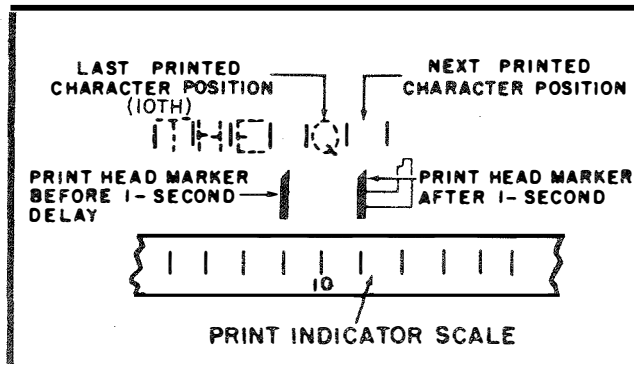
KEYBOARD-PRINTER (KP) OPERATION

To operate your KP Locally (off-line or on-line),

the  lamp must be off. At this time messages can be typed, margins changed, tabs set or paper loaded. 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 by the silver print head marker, located on top of the print head, after a 1-second delay. The print head moves back when printing 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 boundary values set in the user option memory (LfBdy and RtBdy). 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.

- CTRL 7 — Sets left margin.
- CTRL 8 — Sets right margin.
- CTRL 9 — Clears left and right margins.
- CTRL 0 — Releases right margin.

| MARGINS | | | |
|---------|-------|---------|-------|
| SET | | RELEASE | |
| LEFT | RIGHT | CLEAR | RIGHT |
| 8 | * | (|) |
| 7 | 8 | 9 | 0 |

Note: The bell sounds when a character is printed 8 columns before and at the right margin. Printing is suppressed at the right margin.

Horizontal and Vertical Tabulation

Horizontal and vertical tab stops may be used to repeatedly move the print head to a predetermined column or line precisely and easily. Tabs which are frequently used may be entered and stored in memory. They are then called preset tabs. Additional tabs may be entered and cleared as described here without changing the preset tabs. To set and clear the tabs, remotely see SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES. Teleprinter response to horizontal and vertical tabs is enabled in the user option memory HTon? = y* VTon? = y* and FmLgt = (up to 132 max). See User Programmable Option Table.

Horizontal tab stops may be entered at any column position between the left and right margins. First clear the unwanted existing tabs by pressing HORIZ TAB CLEAR (CTRL 2). To enter a horizontal tab, position the print head (using the spacebar) to the desired location and press HORIZ TAB SET (CTRL 1). Repeat for as many tabs as needed.

A horizontal tab will be executed and either sent on-

line or stored in the edit buffer by pressing the

| |
|-----|
| TAB |
|-----|

key. If there is no horizontal tab between the current position and the end of the line, the print head will space to the end of the line, carriage return and line

feed if the

| |
|-----|
| TAB |
|-----|

 key or CTRL 1 is pressed.

- CTRL 1 -- Sets a tab stop.
- CTRL 2 -- Clears all tab stops.

| | |
|----------|-------|
| HORZ TAB | |
| SET | CLEAR |
| | @ |
| | 2 |

Vertical tabs can be set to any line position from the top of the form to the currently optioned form length. First clear all existing vertical tabs by pressing VERT TAB CLEAR (CTRL 6). Press Form Feed (FF) (CTRL L) and then manually, using platen knob, position top of form to the print position. Use the

| |
|--------------|
| LINE FEED |
|--------------|

 key to advance the form to the first vertical tab position desired. Now press VERT TAB SET (CTRL 5) to set the tab. Continue using

| |
|--------------|
| LINE FEED |
|--------------|

 to

advance form and CTRL 5 to set tabs until all vertical tabs are set. A vertical tab will be executed and sent on-line or stored in the edit buffer by pressing CTRL K (vertical tab). 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.

- CTRL 5 -- Sets tab stops.
- CTRL 6 -- Clears all tab stops.

| | |
|----------|-------|
| VERT TAB | |
| SET | CLEAR |
| % | ^ |
| 5 | 6 |

Horizontal and Vertical Tabulation (Contd)

Once the horizontal and vertical tabs are set, they can be entered into the user option memory to become preset tabs. To enter them into memory, first press OPTIONS PREP (CTRL -) then press OPTIONS LOAD (CTRL +). Additional tabs may now be entered and used. When these additional tabs are no longer needed, press CTRL 2 to clear all tabs then press CTRL 3 to restore only the preset tabs. They are also restored on power turn on.

- CTRL 3 — Restores preset tab stops.



To change preset tabs, first press CTRL 2, then press CTRL 6 to clear all tabs. Now press CTRL - and the CTRL + to clear the preset tabs. Now set desired tabs as described earlier and then press CTRL - and CTRL + to place desired tabs in memory.

Form Feed

A form feed is executed and sent on-line or stored in the edit buffer when Form Feed (CTRL L) is pressed. Form length is set by the users option FmLgt. Form feed commands may be disabled by setting FmLgt = 000.

Bell

The bell sounds when characters are entered eight columns before and at the right margin, ie, margin at 80, bell at 73 and 80. Also sounds when BELL (CTRL G) is pressed, BEL code is received, an interrupt is received and when functions cannot be performed, ie, pressing editing keys when not in Buffer Enter mode.

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 (←), line feed (≡), delete (■) 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 or in options prep mode.

Note: The symbol ■ is always printed when the substitute character is received on-line or when entered from the keyboard. The ASCII control character S_B is printed when entered from the keyboard in the user programmable options and when the edit buffer is printed with controls.

| Keytop | Definition | Printed Character |
|--------|---------------------------|-------------------|
| DC1 | Device Control 1 | |
| ETB | End of Transmission Block | |
| ENQ | Enquiry | |
| DC2 | Device Control 2 | |
| DC4 | Device Control 4 | |
| EM | End of Media | |
| NAK | Negative Acknowledge | |
| HT | Horizontal Tab | |
| SI | Shift-In | |
| DLE | Data Link Escape | |
| GS | Group Separator | |
| SOH | Start of Heading | |
| DC3 | Device Control 3 | |
| EOT | End of Transmission | |
| ACK | Acknowledge | |
| BEL | Bell | |
| BS | Backspace | |
| RS | Record Separator | |
| VT | Vertical Tab | |
| FF | Form Feed | |
| US | Unit Separator | |
| SUB | Substitute Character | |
| CAN | Cancel | |
| ETX | End of Text | |
| SYN | Synchronous Idle | |
| STX | Start of Text | |
| SO | Shift-Out | |
| FS | File Separator | |
| NUL | Null | |

*See Note.

MEMORY AND DATA BUFFERS

There are two types of memory in the terminal — non-volatile (permanent) and volatile (temporary) memory.

The nonvolatile memory is where user programmable options are stored. These options when selected and stored, provide many of the operational characteristics of your terminal. About 600 characters of the total memory space (16K) is used for this purpose.

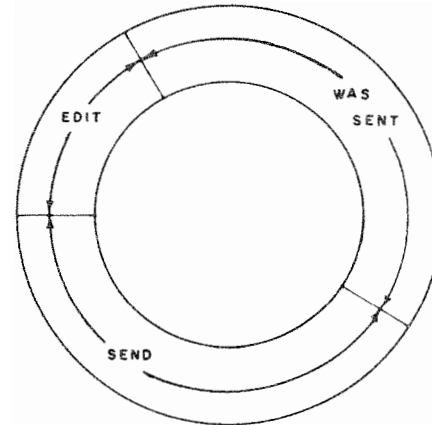
The volatile memory is divided into a Send and a Receive data buffer. The size of the receive buffer is a user programmable option (RBsize). The remaining memory space is the send buffer size ie, total memory, minus 600, minus (RBsize) = send buffer size.

Note: In order to copy the entire contents of the send buffer locally (half-duplex operation), the receive buffer size should typically be at least equal to the send buffer size.

Send Buffer


The send buffer is divided into three sections: EDIT, SEND, and WAS SENT.


The send buffer is organized in a circular manner as shown below.




Send Buffer Organization


The EDIT section accepts data from the keyboard or receive buffer. All editing functions are performed in this section. The edited data is then stored in the SEND area of the buffer. Data may be sent from this

buffer by pressing the  key or upon receipt of a send control character (X-ON). Sending will continue to a message ending character, the

 key is pressed again, a stop sending character (X-OFF) is

sent or received, an ENQ is received or until end of buffer is reached ( turns off). When sending has stopped but message is not acknowledged, receipt of ESC H will return send pointer to beginning of that message for retransmission.

After having been sent and acknowledged, messages remain in the WAS SENT section until the space is needed for composing new messages in the EDIT section.

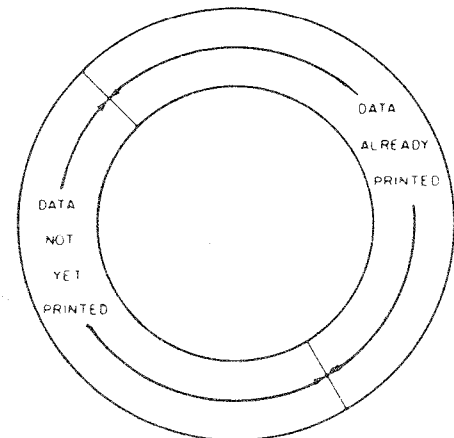
Data is not treated as sent until the message is acknowledged either by receiving a StrSn character or depressing the  key after message is sent. Messages

in the SEND section may be recalled and messages in the WAS SENT section may be retrieved as explained in the Introductory Operating Instructions part of this manual.

Receive Buffer

The receive buffer accepts all received data 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 may be recalled for reprinting or retrieved for re-editing as long as it is in the receive buffer.


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




Receive Buffer Organization

The capacity of the receive buffer depends on the value entered in the user option memory (RBSze).

EDIT MODE

Your terminal is placed in the Edit mode by depressing the  key. If in S/R mode, the KP will go Local.

This will be indicated by the  lamp turning off.

All message preparation and editing functions are performed while in the Edit mode. Refer to Introductory Operating Instruction of this manual for editing functions.

You will notice in certain instances that some of the edit controls (Search, Retrieve, Character Delete, Reprint Receive) do not respond instantaneously. The response time is typically longer when there are many characters in the Edit Buffer. You should wait until the terminal finishes its current operation before depressing any other keys or controls.

While in the Edit mode, simultaneous batch-sending or receiving or both can take place without interrupting the message preparation.

ESTABLISHING COMMUNICATIONS WITH DISTANT TERMINALS

Establishing connection and transferring to the Data mode is basically under the control of the directly connected communications device (modem) and its associated telephone over the switched-network or, without a telephone over private lines. In some arrangements terminals are directly connected to the distant terminal or computer. Use of these external devices should be specified locally since many variations are possible, ie, pushbuttons on modem or on phone, exclusion keys, etc.

The procedures as shown below, that normally apply to operation of the controls of the terminal, should be followed:

Before transferring a telephone call to the Data mode (call originated or answered)

- Place terminal in a standby condition:
 - (1) Turn on ac power.
 - (2) Clear any alarm condition (paper-out, low paper, or cover open).
 - (3) Depress TERM READY key (if not lit). Key should light.

Transfer to Data mode

- The TERM ON LINE key lights under control of the external device or distant station:
 - (1) Data can be sent or received on-line only when the TERM ON LINE key is lit.
 - (2) On some arrangements the TERM ON LINE key may always be lit.

To disconnect a telephone call in Data mode

- Calls may be disconnected as follows:
 - (1) A disconnect code (Dscnt) is received.
 - (2) The TERM LOCAL key is depressed. (TERM LOCAL key will light.)
 - (3) The receive buffer is overflowed.
 - (4) Other log-off procedures.



SEND ON-LINE

Sending on-line from your buffered 43 is accomplished in either of two communication modes, S/R (Conversational) or Send (Batch).



In Full Duplex S/R, the KP is actively on-line sending from the keyboard while the printer prints received data. In Half-Duplex S/R, only alternate two-way communication (ie, either sending or receiving) should be attempted to avoid interspersing of characters.

In Send mode, data is transmitted from the send buffer either from an attendant command or upon receipt of a start sending code (StrSn) as programmed in the user option memory. In the Send mode, the keyboard is disabled on-line.

S/R Send From Keyboard

- Depress  if not on.
- Depress  if not on.
- If required, select half- or full duplex operation.

To Originate a Call

- Establish on-line connection in the usual manner.
- When the distant terminal answers, request Data mode. If the distant terminal called is on automatic-answer, it will respond with a high-pitched answer tone.
- When answer tone is heard, enter the Data mode on the external communications device.
- The  lamp lights and the  lamp turns off. The terminal is now on-line and ready to communicate.
- Simply type message on the keyboard. In full duplex operation, the sender will not print the sent message but may be receiving copy simultaneously while sending.
- Terminate call in the usual manner.

Batch-Send From Buffer

* Prepare message(s) and store (see Edit Mode).

* Depress  if not on.



To Originate a Call and Manually Send


* Establish on-line connection in the usual manner.


* Request Data mode with distant terminal.

If the distant terminal called is on automatic-answer, the terminal will respond with a high-pitched answer tone.



* When answer tone is heard, enter the Data mode on the external communications device.

The  lamp lights and  lamp turns off. The terminal is now on-line and ready to communicate.

* Depress the  (lighted) for each message to be sent.


The  lamp will flash during each message sent and turn off when all stored messages are sent.

* Terminate call in the usual manner.

Note: Receipt of ENQ or depression of  

(HERE IS) while sending from the send buffer stops the transmission and causes the answer-back message

to be sent. Resumption of transmission from the send buffer requires receipt of an X-ON character or

depression of the  key. Control characters, such as ENQ, in the body of a message may also stop transmission.

Controlled Send

Receipt of a Start Sending code (StrSn), will cause messages stored in send buffer to be sent when terminal is provided with automatic-answer (Modem Option).


* Prepare and store message(s) to be sent.

* Depress  if not on.

When terminal is called, the following occurs:

- (1) Telephone rings and is automatically answered.
- (2) An answer-back message may be sent (see Terminal Option Listing ABaa) when call is answered.
- (3) A message is sent upon receipt of start sending code (StrSn).
- (4) Transmission may stop upon receipt of sending code (StpSn).
- (5) If send buffer is empty, terminal will send a negative response upon receipt of (StrSn) code (up to 6 characters).

RECEIVE ON-LINE

Receiving on-line is possible whether the KP is available or not. As a message is received, the  lamp


turns on and the printer, if available, copies the received message (S/R Receive). If the KP is in use for some local operation, the received message will be stored in the terminal's receive buffer. To get a

copy of the received message, the lighted  must





be depressed. Printing will continue until all messages are printed or printing is stopped by going to KP local.

Variations during receive on-line operation are as follows:



- As the end of the receive buffer capacity is reached, a timed break or an X-OFF signal, as selected in the option user memory (StpSn), is sent.
- An X-ON character may be sent to inform the sender to restart sending when the buffer is not low (RBntl).
- The terminal will not automatically answer with a low receive buffer condition as selected in the option user memory (RBLow).
- All data designated for reprinting must be printed before newly received data can be printed.



- A message may be retransmitted by depressing CTRL H before the  key is depressed or the X-ON character is received.


S/R Receive to Printer



- Depress  if not on.
 - Depress .
 - If required, select half- or full duplex operation.
 - When telephone rings, answer call in the usual manner.
 - Upon request by distant terminal, select Data mode on the external communications device.
- The  lamp lights and the  lamp turns off. The terminal is now on-line and ready to print received message.
- Call may terminate by receipt of message-end character or manually by distant terminal.

Receive to Buffer

- Depress  to turn off lamp if on.
- Depress .
- When telephone rings, answer call in the usual manner.
- Upon request by the distant terminal, select Data mode (unless call is automatically answered) on the external communications device.



The  lamp lights and the  lamp turns off. The terminal is now on-line and message is

being received in buffer (indicated by  turning on). Answer-back may be sent prior to beginning of message. At this time you may perform local functions (ie, editing, storing, replacing paper, etc).



- Call may terminate by receipt of Dscnt character or manually by distant terminal.
- Depress  or  (lighted) for message copy.

Automatic-Answer

Modem used must be provided with automatic-answer feature; if it does, proceed as follows:

- Check paper supply.
- Depress  if not on.
- Depress .

No further action is necessary. When called, the terminal automatically answers and goes to the Data

mode. The  lamp lights and the  lamp turns off.

Message is printed and stored in buffer (answer-back may be sent at beginning of message).

SENDING AND RECEIVING ESCAPE (ESC) SEQUENCES

ESC sequences may be used to have certain functions performed at remote locations. The ESC sequences generated and the associated functions performed by 43 buffered terminals are listed below. These sequences are generated by first pressing the ESC key and then one of the keys listed below.

If the receiving (remote) terminal is a similar 43 buffered teleprinter (or if the sequences are received by the 43 teleprinter from a remote sender) the function will be performed after the complete sequence is received. The sending terminal will perform the function locally (except for ESC H) as the ESC sequence is transmitted (only if in the Half-Duplex mode). In Full-Duplex mode, the sending terminal does not print or perform any function locally.

ESC sequences do not print out except when the edit buffer is printed out by pressing the PRT/W CTRLS key. (ESC 2 would print out as E_C2).

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

ESC 1 — Sets horizontal tab stop at current printer column position.

ESC 2 — Clears all horizontal tab stops stored in the volatile memory.

ESC 5 — Sets vertical tab stop at current printer line position.

ESC 6 — Clears all vertical tab stops stored in the volatile memory.

ESC H — Prepares terminal to resend last message.

ESC l (lower case L) (CTRL 7) — Sets left margin.

ESC x — Clears left margin. CTRL 9 also clears right margin.

ESC y — Restores terminal to the preset horizontal and vertical tab values.

Note 1: Except for ESC H these functions may also be performed locally by use of the CTRL and other keys. See KEYBOARD-PRINTER OPERATION.

Note 2: The escape sequence will be sent on-line or entered in the edit buffer when either the ESC sequence or the control character 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.

ANSWER-BACK

The Answer-Back feature is a user programmable option. When entered (ABmsg), the message of up to 20 characters can be sent manually or automatically.

The Answer-Back may be sent automatically:

- * In response to receipt of the ASCII character ENQ (Enquiry).
- * Upon answering an on-line call (if optioned ABaa = y).

The Answer-Back can be generated manually by:

- * Depressing CTRL 4. If the terminal is on-line, the answer-back is transmitted. If the terminal is in the Term Local mode and KP off, the Answer-Back will be printed locally.

Note: Receipt of ENQ or pressing CTRL 4 while sending from the send buffer stops transmission and causes AB to be sent. Resumption of transmission requires receipt of X-ON character or pressing the SEND key.

OPTIONS




A record of how your terminal is optioned is shown on the options side of the directory card provided. The user programmable options may be changed using your keyboard. To change an option you must place your terminal in the Options Preparation mode, keyboard the option change and then load the option. No other terminal functions can be performed while in the Options Preparation mode.

Note: All tab stops that have been set will also be stored when options are loaded. To avoid undesired change of tabs, restore preset tabs before entering Options Prep mode.

User Programmable options are stored in a non-volatile memory. This memory is powered by a battery which is kept fully charged by the terminal power supply. A fully charged battery has sufficient capacity to maintain the memory for up to 17 days.

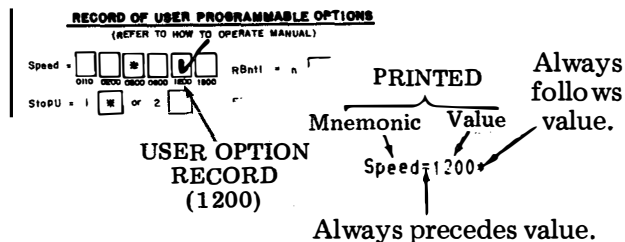
OPTIONS (Contd)


To Enter Option Preparation Mode

- Depress  and  if not on.
- Depress CTRL - (minus). (OPTIONS PREP)  lamp flashes.

The first prompt mnemonic in the option list is printed together with its current value. (See Option Table).


Example:



- If no change is to be made in an option, depress  (next line) for the next listed option.

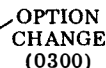
By depressing the next line key, the option list can be stepped through while changing only those options desired. For fast stepping, also hold REPT key depressed.



To Change an Option

- Enter Option Preparation mode (volatile data will be lost at this time on pedestal based sets only. On tabletop sets data will be lost only if this RBsize value is changed).
 - Step through option list using  key until desired option and value is printed.
- The printer carriage will stop in a position ready to accept a new value for the option.
- Type in new value for the desired option change.

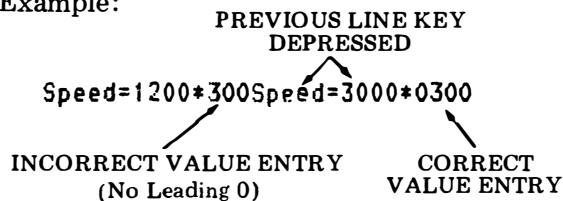
Note: Most entries are lower case.


Example:

Speed: 1200 * 0300 

- If while typing the new value an error is made, the entry must be aborted and retyped. To do this, depress the  (previous line) key and retype correct value. If a value on a previous option is to be changed, depress the  key and step through the list to the desired option.

Example:




- If the current value has a greater number of characters than the new value to be entered, enter the new value, then depress the  key.


Example:

Current Value

ABmsg = CHICAGO*MIAMI

Enter new value, then depress  key to clear the


G and O (the excess characters) from the message. The following options can be completely cleared: LgKey, SmKey, MsEnd, StpSn, StrSn, NegRs, Dscnt or ABmsg.

- If it is desired to abort all the the currently modified values, depress the  key. All options are returned to the values they were assigned prior to entering the Option Preparation mode. You must re-enter mode if any changes are to be made.

To Store New Option List or Preset Tabs

It is not necessary to step through all the options but only those up to the last one that is desired to

be changed. The option list is arranged so that seldom changed characteristics (ie, answer-back message, parity, etc) are near the end of the list while such options as speed, automatic line feed and format effectors are near the beginning. Proceed as follows.

- Clear, then set desired horizontal and/or vertical tabs.
- Enter Option Preparation mode.
- Step through list using  key at the same time

making the appropriate value changes. If only tabs are being preset, omit this step.

Note: The value entered for the option must be restricted to the selection in table shown on Pages 28 and 29.

- Depress CTRL + (plus) to store options (OPTIONS LOAD) when satisfied that the option list is as desired or to store tabs that are currently set.

The new option list and preset tabs are loaded into the nonvolatile memory and the printer carriage return-line feeds. The TERM LOCAL lamp turns off, the TERM READY and KP lamps light.

Note: The Option Preparation mode may be aborted without losing any tabs or changing any options by simply depressing the flashing TERM LOCAL key instead of OPTIONS LOAD.

Mark the "Directory Card" option listing to reflect changes made.

User Programmable Option Table

| <u>Prompt Mnemonic</u> | <u>Printed Default Value</u> | <u>Option</u> | <u>Entry</u> |
|------------------------|------------------------------|---|--|
| Speed = 0300 * | | Speed, Baud (Baud = wpm except 100 wpm. See StopU) | 4 numerals (0110, 0150 or 0200, 0300, 0600, 1200, 1800) (0150 on sets with RETRV REC key) |
| StopU = '1 * | | Units in stop element (2 units are required for 100 wpm operation) | 1 — unit stop 2 — double unit stop |
| LgKey = ← * | | Codes for large key (RETURN) | 1, 2, or 3 ASCII characters or can be cleared |
| SmKey = ☐ * | | Codes for small key (LINE FEED) | 1 ASCII character or can be cleared |
| LfBdy = 000 * | | Left boundary (Column number 1 less than leftmost character) | 3 numerals (131 Max) Pin Feed (079 Max) Friction Feed |
| RtBdy = 080 * | | Right boundary (Column number of rightmost character after which auto CR-LF occurs when on-line. Bell rings and spacing is inhibited when in Local mode). | 3 numerals (132 Max) Pin Feed (100 Max) Tractor Feed (080 Max) Friction Feed <i>Caution: Do not exceed the max values listed for tractor and friction feed.</i> |
| FmLgt = 000 * | | Form Length | 3 numerals (132 Max) |
| HTon? = n * | | Horiz Tab Enable | y / n |
| VTon? = n * | | Vert Tab Enable | y / n |
| PtNL? = n * | | y enables printer to respond with new line when line feed is received or transmitted | y / n |
| DbLF? = n * | | Double Line Feed | y / n |
| RBSze = 02000 * | | Receive Buffer Size | 5 numerals, (typ. 1/2 avail. buffer) (Max 600 characters less than memory size, min is 00002) |
| RBufW = 100 * | | Receive Buffer remaining when full warning sent | 3 numerals (must be less than RBSze) |
| RBLow = 500 * | | Receive Buffer remaining when auto answer is disabled. (Not low at 501 and X-ON may be sent.) | 3 numerals (must be less than RBSze but larger than RBufW) |

| | | | |
|-------|---------|--|---|
| FlWrn | = BRK * | Notification sent when Receive Buffer Full | XOF — X-OFF (StpSn) char. (Upper Case) BRK — Break (timed interrupt) (Upper Case) |
| RBntl | = n * | Send X-ON when Receive Buffer Not Low (less than RBlow) | y / n (Lower Case) |
| EBWrn | = 132 * | Edit Buffer remaining when full warning | 3 numerals |
| ABaa? | = n * | Auto Answer-Back upon answering? | y / n (Lower Case) |
| MsEnd | = * | Ending character for messages | 4 Max Control chars. or can be cleared (must include Dscnt character) |
| StpSn | = * | Stop code for Send or Receive (X-OFF) | 1 Control char. or can be cleared |
| StrSn | = * | Start Sending code (X-ON) | 1 Control char. or can be cleared |
| NegRs | = * | Negative response to Start Send code | Up to 6 ASCII chars. or can be cleared |
| Dscnt | = * | Received character causing disconnect | 1 Control char. (must also be a MsEnd character or can be cleared). |
| DLEr? | = n * | Data Link Escape required prior to disconnect char? | y / n (Lower Case) |
| PrTyp | = E * | Parity Type | O — Odd, E — Even (Upper Case) M — Mark, S — Space (Upper Case) |
| RcPar | = n * | Receive Parity (Error on O or E) | y / n (Lower Case) |
| DS212 | = n * | 212 Data Set high speed select (1200) | y / n (Lower Case) |
| HsStp | = 1 * | 212 Data Set units in stop element at high speed' (1200) when DS212=y | 1 — unit stop 2 — double unit stop |
| Duplx | = h * | Half- or Full Duplex | h/f (Lower Case) (State of teleprinter after power on sequence or Options load only) |
| ABmsg | = * | Answer-Back Message | Up to 20 ASCII characters or can be cleared |

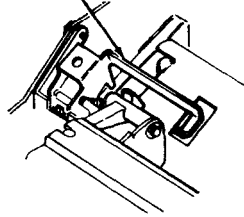
MAINTENANCE

To Install Paper (Pin Feed)

- Install paper as shown after centering the print head and removing the unused paper. It is not necessary to disconnect an on-line call, open the cover or turn off power. However, to avoid loss of data, paper should not be replaced without requesting the remote terminal to stop sending.

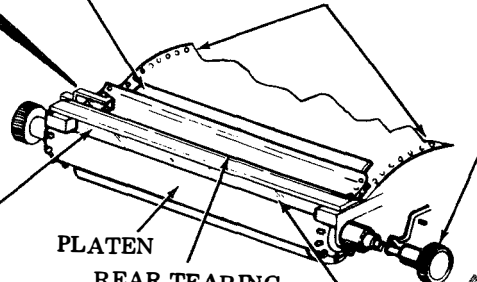
Note: Paper may be fed directly from the supply box or if the paper holder is used, a limited stack of forms may be placed in the holder.

- 1 Pull the paper-out sensing lever towards you until it latches. Lift rear edge of paper separator and tilt forward.



- 2 Fold back first sheet, if desired, and route paper behind the paper separator. Line up sprocket holes on leading edge of both sides of paper with sprocket pins. Insert under rear side of platen. Release paper separator.

PAPER
SEPARATOR

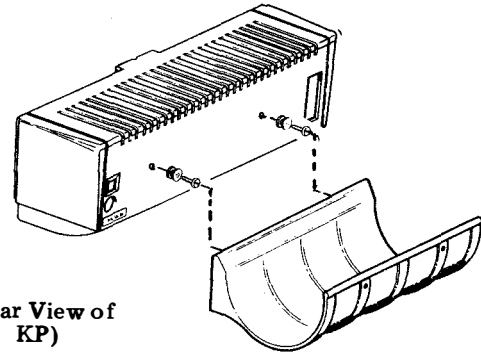


PLATEN

REAR TEARING
EDGE


PAPER
GUIDE
(Plastic Bar)

- 3 Advance paper to paper guide using platen knob.



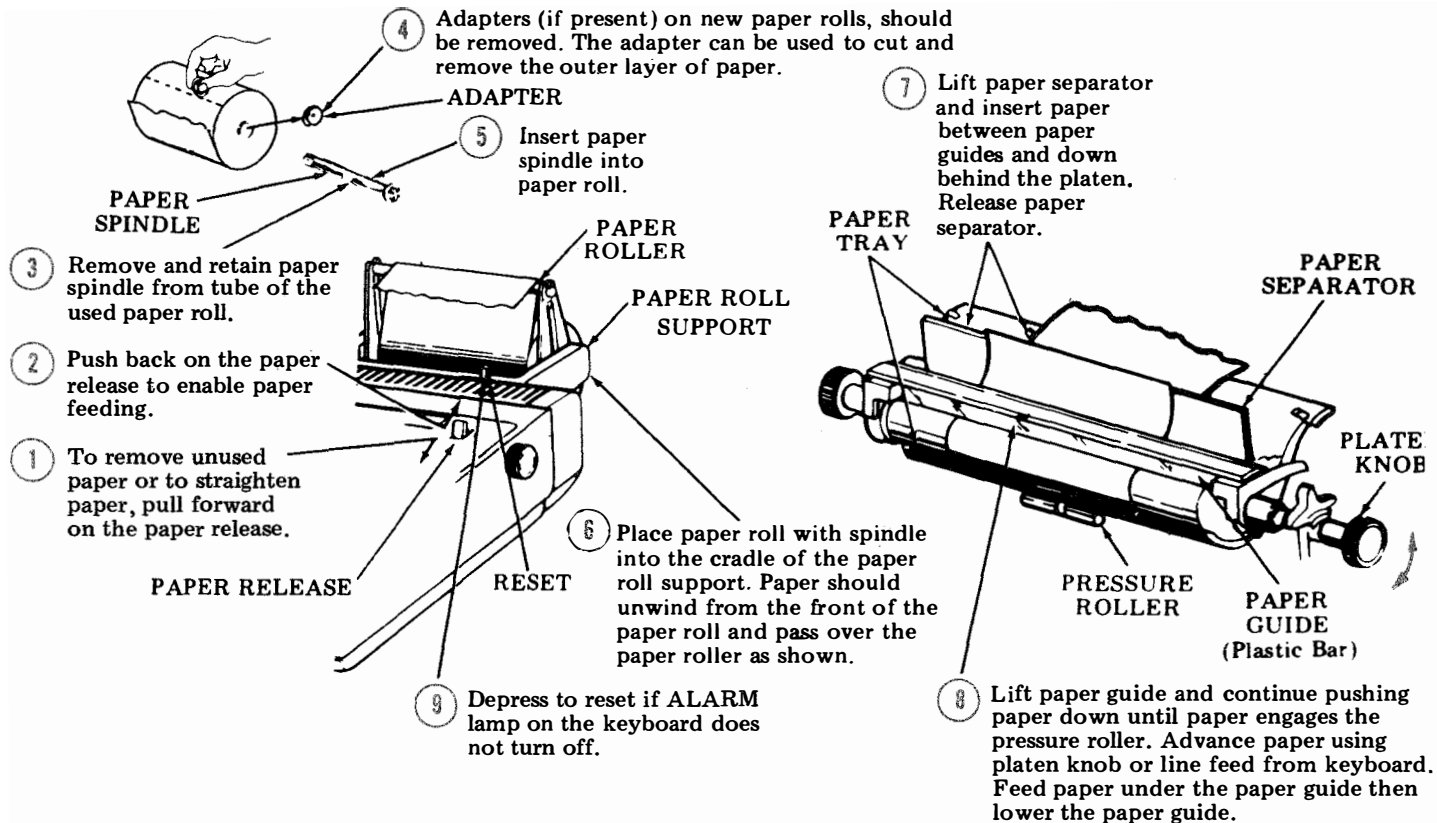
(Rear View of
KP)

- 4 Lift paper guide (plastic bar) thereby unlatching the paper-out sensing lever.
- 5 Advance paper under the paper guide then close guide. Paper may be fed to desired position using CTRL RETURN keys. (With power off the platen will be free rolling and CTRL RETURN is inoperative.)

- 6 Depress  key to extinguish ALARM indicator if not off.

To Install 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 but to avoid loss of data, paper should be replaced after the remote terminal stops sending.



MAINTENANCE (Contd)

To Install Paper (Tractor Feed, Continuous Forms)

To reinstall paper as shown, it is not necessary to disconnect an on-line call, open the cover or turn off power. To avoid loss of data, however, paper should not be replaced without requesting the remote terminal to stop sending. See next page if tractors or paper must be repositioned or to check drag bail roller position.

PAPER DRAG BAIL

TRACTOR LID

Paper path.

PLATEN

PAPER SENSOR

ENGAGED

DISENGAGED

SOFT ROLL
BUTTON

- ④ Route paper under paper sensor and platen while holding sensor lever down, then pull the paper until it extends beyond tractors.

- ③ Lift paper drag bail until locked in the raised position

- ⑤ Place the paper feed holes over the tractor pins keeping paper straight in tractor mechanism and close lids. This should cause the paper drag bail to fall into its operating position.

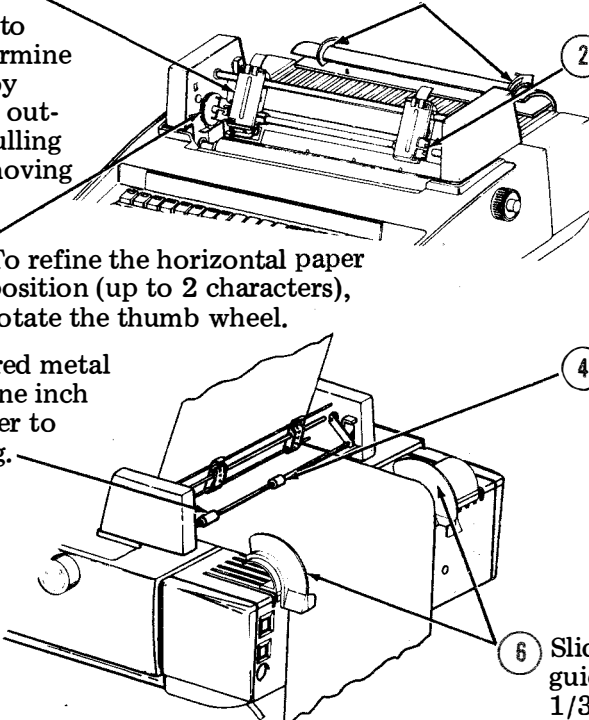
- ① Open tractor lids outward and remove unused paper.

- ② Pull release lever forward to assure the pressure rollers (possible future use) remain in the disengaged position.

- ⑥ To advance paper, use line feed key or rotate platen knob. To slightly reposition the form or a line vertically, use soft roll button on platen knob and rotate platen knob. Release soft roll button.

If the paper width is changed or is repositioned horizontally, some or all of the following steps should be taken. With paper partially installed (Steps 1 through 4 on previous page), perform the following as required.

Note: To assure proper operation, the left tractor should be in its fully left position.

- 
- The diagram shows a typewriter with a sheet of paper partially inserted. A label 'PAPER GUIDES' points to the top of the paper support mechanism. Seven numbered callouts (1-7) point to various adjustment points on the tractor and paper guides. Step 1 points to the right paper guide. Step 2 points to the right tractor release. Step 3 points to the thumb wheel. Step 4 points to the paper drag roller. Step 5 points to the metal roller. Step 6 points to the paper guides. Step 7 points to the margin setting.
- ① Move right paper guide to accommodate paper width. Squeeze left tractor release to reposition left tractor. Determine the aligned paper position by grasping both incoming and outgoing forms together and pulling upward and to the rear, removing any slack.
 - ② Squeeze the right tractor release with your thumb and forefinger and position the tractor to engage the paper feed holes then close lid. Tractor may require side to side adjustment to hold form flat against the platen.
 - ③ To refine the horizontal paper position (up to 2 characters), rotate the thumb wheel.
 - ④ Position the paper drag bail dark colored plastic roller to approximate center of paper.
 - ⑤ Position the light colored metal roller approximately one inch from right edge of paper to equalize the paper drag.
 - ⑥ Slide the left and right paper guides to provide some to 1/32 inch clearance from their respective paper edges.
 - ⑦ Set right margin (and left margin), if necessary. To reposition form vertically see ⑥ on previous page.

MAINTENANCE (Contd)

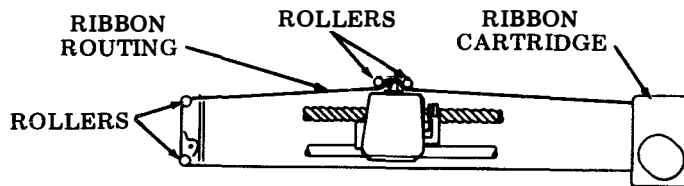
To Install Ribbon

Refer to Ribbon Installation under printer cover.

- ① Center print head and open cover. Alarm lamp lights.
- ② Pull print head locking lever back (towards keyboard) as far as it will go.
- ③ Remove and discard cartridge with used ribbon by grasping and lifting the cartridge. This applies only when changing a ribbon.
- ④ Place new ribbon around the outside of rollers.
- ⑤ Pull on cartridge to the right and pass ribbon between print head and rollers (see Routing Diagram below).
- ⑥ Place ribbon cartridge on the right-hand bracket and allow magnet to pull cartridge down into place. Make sure it is down.
- ⑦ Position print head against ribbon, with thumb on top of the print head push the print head toward the platen, then move locking handle fully to the rear until it snaps into place.
- ⑧ Close cover.
- ⑨ Depress ALARM key to extinguish (on some sets).

430035
CARTRIDGE
WITH RIBBON

COVER RELEASE
(2 Places)



Routing Diagram

Note: Make sure ribbon is fully on all four rollers before closing cover.

Supplies

Ribbon

The ribbon cartridges provided by Teletype Corporation utilize ribbon material chosen for its physical stability and nonabrasive inks which have a lubricating quality. The use of ribbon cartridges without these required properties may reduce print head performance and life in addition to shorter ribbon life.

The ribbon cartridge should be replaced whenever the ribbon becomes frayed or print density becomes light. Ribbons obtained from Teletype Corporation should produce 5 million legible printed characters.

The Teletype Corporation part number for a package of six ribbon cartridges is TP430484 and can be ordered from Teletype Corporation, using the order form furnished with each terminal.

Sprocket Feed Paper

Paper for the 43 Pin Feed Teleprinter must be 12 inch sprocket feed, while tractor feed paper may be from 3 inch to 12 inch sprocket feed. Both teleprinters require 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 8-1/2 inch 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 below or 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.

Wallace Business Forms Inc.
444 W. Grand Ave.
Chicago, IL 60610
Cat. No. E-6879

Moore Business Forms, Inc.
1315 W. 22nd. St.
Executive Plaza III
Oakbrook, IL 60521
Form #1280J

Duplex Products Co.
228 W. Page
Sycamore, IL 60178
Cat. No. 1-1280-15P

MAINTENANCE (Contd)

If Trouble Occurs

Trouble that is encountered with the terminal should be reported as locally specified. A number to be called in case of trouble may be entered on the "Directory" card 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.

Before reporting a trouble, the attendant or local supervisor should:

First

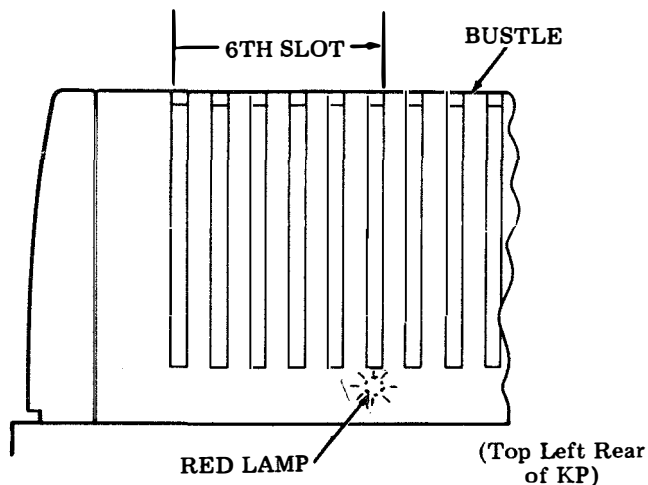
Check the following.

- Make sure that all terminal ac power cords are properly seated in power outlets.
- Is the power switch turned on?
- Are attendants experiencing the same trouble on other terminals?

Second

Answer each one of the following questions. Any "No" response to a question can indicate a source of trouble within the terminal.

- Are any control indicators on?
(Power available, cords plugged in and cover closed.)
- Is red power supply lamp on?
The red lamp can be seen through air vent slot (6th slot from left) of the bustle.



- Can any characters be locally generated from the keyboard to the printer?
- Can certain control indicators be made to light?
(See Keyboard Test.)

- Can data be stored and sent (data received by remote terminal)?
- Can data be received and printed?

Third

Report any "No" response to the questions when making a trouble call.

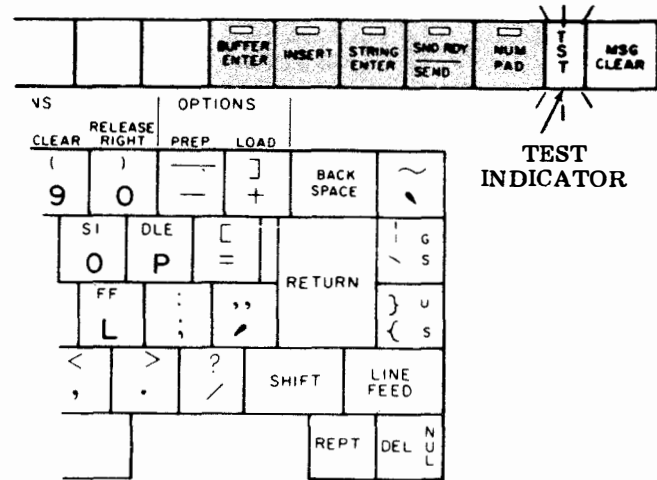
Keyboard Test

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. Ignore all other teleprinter actions or responses.

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

MAINTENANCE (Contd)

| Depress key (or keys): | Indicator Key | Lamp Condition |
|---|--|------------------------------------|
| A CTRL & A SHIFT PAD 7 CTRL & 1 | TERM LOCAL TERM LOCAL TERM LOCAL TERM LOCAL | ON OFF FLASH ON FLASH OFF |
| C CTRL & C SHIFT PAD 9 CTRL & 3 | TERM ON LINE TERM ON LINE TERM ON LINE TERM ON LINE | ON OFF FLASH ON FLASH OFF |
| D CTRL & D SHIFT PAD 4 CTRL & 4 | TERM READY TERM READY TERM READY TERM READY | ON OFF FLASH ON FLASH OFF |
| G CTRL & G CTRL & RETURN CTRL & 7 | INTRPT INTRPT INTRPT INTRPT | ON OFF FLASH ON FLASH OFF |
| F CTRL & F SHIFT PAD 6 CTRL & 6 | FULL DUPLEX FULL DUPLEX FULL DUPLEX FULL DUPLEX | ON OFF FLASH ON FLASH OFF |
| E CTRL & E SHIFT PAD 5 CTRL & 5 | ALARM ALARM ALARM ALARM | ON OFF FLASH ON FLASH OFF |
| B CTRL & B SHIFT PAD 8 CTRL & 2 | KP KP KP KP | ON OFF FLASH ON FLASH OFF |
| J LINE FEED MSG CLEAR CTRL & LINE FEED | REC MSG WTG REC MSG WTG REC MSG WTG REC MSG WTG | ON OFF FLASH ON FLASH OFF |

| Depress key (or keys): | Indicator Key | Lamp Condition |
|---|--|------------------------------------|
| K CTRL & K SHIFT PAD 3 CTRL & K | BUFFER ENTER BUFFER ENTER BUFFER ENTER BUFFER ENTER | ON OFF FLASH ON FLASH OFF |
| I CTRL & I SHIFT PAD 2 CTRL & 9 | INSERT INSERT INSERT INSERT | ON OFF FLASH ON FLASH OFF |
| H CTRL & H SHIFT PAD 1 CTRL & 8 | STRING ENTER STRING ENTER STRING ENTER STRING ENTER | ON OFF FLASH ON FLASH OFF |
| SHIFT & 2 CTRL & NUL TAB CTRL & 0 (ZERO) | SND RDY SND RDY SND RDY SND RDY | ON OFF FLASH ON FLASH OFF |
| O (ALPHA) CTRL & O SHIFT 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 indicating Test mode has cleared. Ignore all other teleprinter actions or responses.

Note 1: If lamps 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.

TELETYPE CORPORATION PRODUCT SERVICE AND EDUCATION SERVICES

PRODUCT SERVICE

On the following page is a list of Teletype Corporation Product Service locations which provide maintenance repair and service on all Teletype Corporation products.

For 24 hour information concerning service call toll free:

U.S. 800/323-4226

IL 800/942-4192

EDUCATION SERVICES

Customers are also provided technical training on the installation, maintenance and repair of Teletype Corporation products

or

Sales Workshops on selected Teletype Corporation products for sales personnel who require basic knowledge to enable them to answer customer questions about the features, functions and benefits of Teletype products.

For information about class schedules, enrollment, tuition, any special training needs, or training to be conducted at customer selected locations, please contact:

TECHNICAL TRAINING

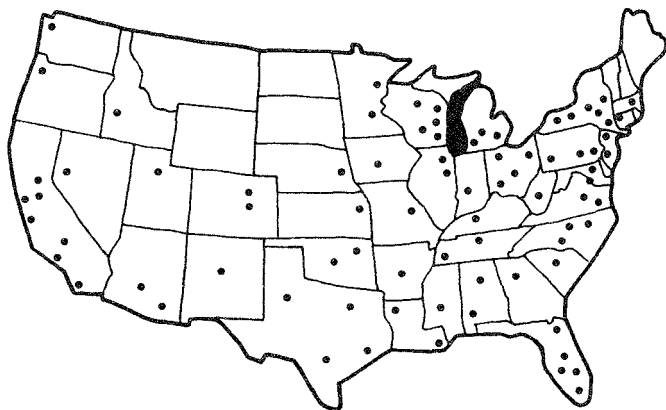
6200 Route 53
Lisle, Illinois 60532
c/o BSCTE, Room 406
Information: 312/960-6722
Enrollment: 312/960-0500

SALES TRAINING

5555 Touhy Avenue
Skokie, Illinois 60077
Department 3221
Information: 312/982-2538
TLX 25-4051
TWX 901/223-3611

Teletype Corporation

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| Fort Lauderdale | Omaha | |

NOTES:



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HOW TO OPERATE MANUAL 386
Issue 5, February 1983