



How to operate...



The **43 Teleprinter**

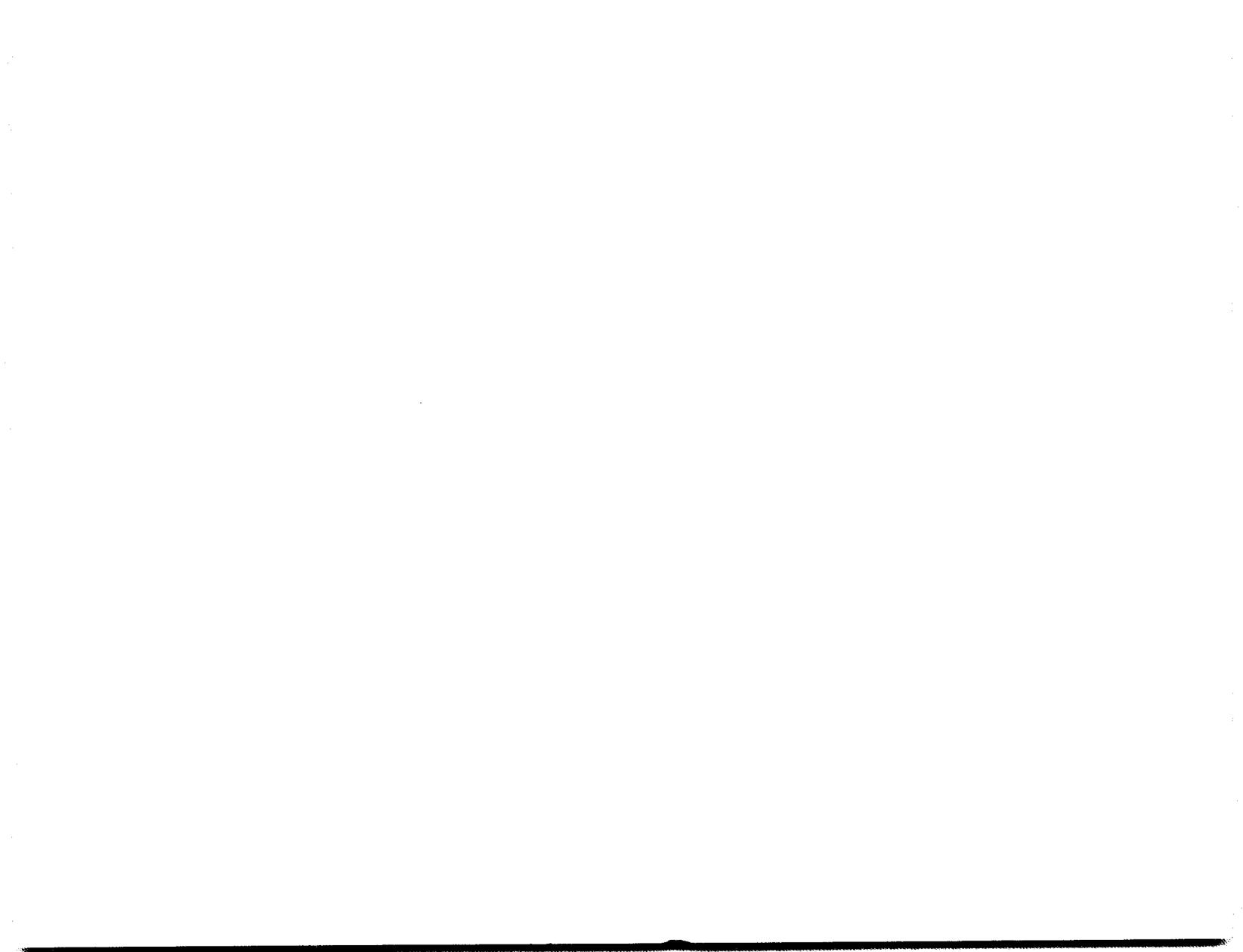
Basic KSR
for dataphone[®] Service

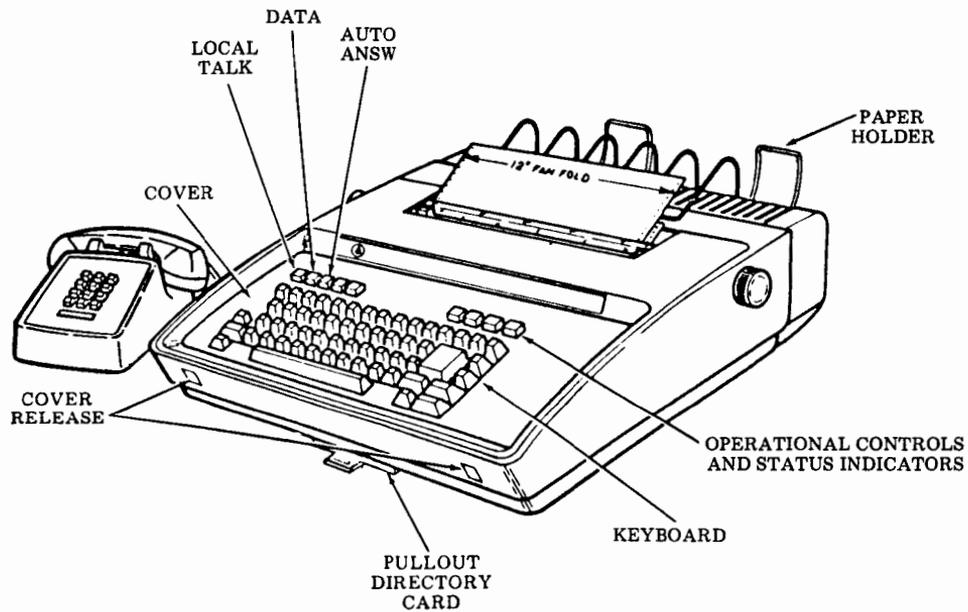
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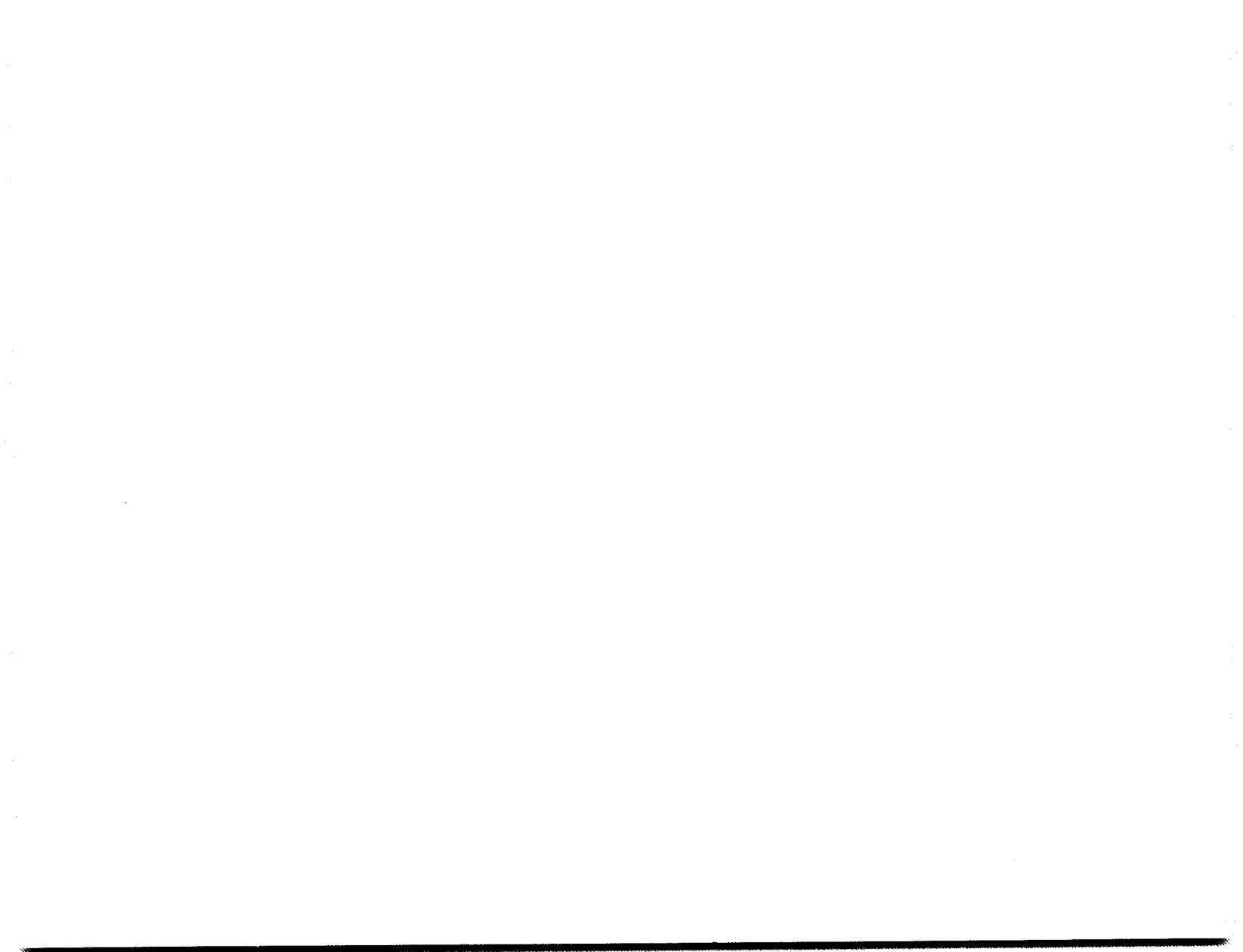
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43 KSR Teleprinter



HOW TO OPERATE INSTRUCTIONS

(Pages 1 Through 10)

1. INTRODUCTION

The 43 Basic KSR Teleprinter is associated with a modular telephone and provides character-at-a-time keyboard-printer send-receive operation.

When connected to a remote station in DATAPHONE switched network service, transmission speeds are 10 characters per second (cps) (100 wpm) or 30 cps (300 wpm) and can be selected by the attendant to match the remote station.

Calls are originated in a manner similar to regular telephone calls and can be answered either automatically or manually. The telephone can be used for normal voice communication or data messages can be exchanged over the telephone line using controls on the 43 Teleprinter.

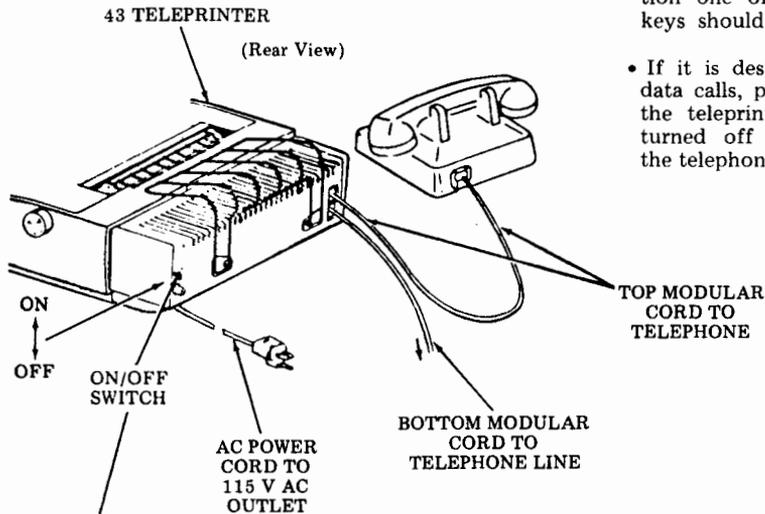
Messages are printed with up to 132 characters per line. The paper may be fed from a supply box or limited amounts can be placed in a paper holder that clips on the rear of the teleprinter.

The 43 Teleprinter may be temporarily (moved to another location) within the same building. See Page 2 for connections and see Page 20 in case of trouble.

Note: The paper used with this teleprinter is a new 12 inch wide sprocket feed. See Page 8 for ordering information.

CONNECTIONS AND POWER TURN ON

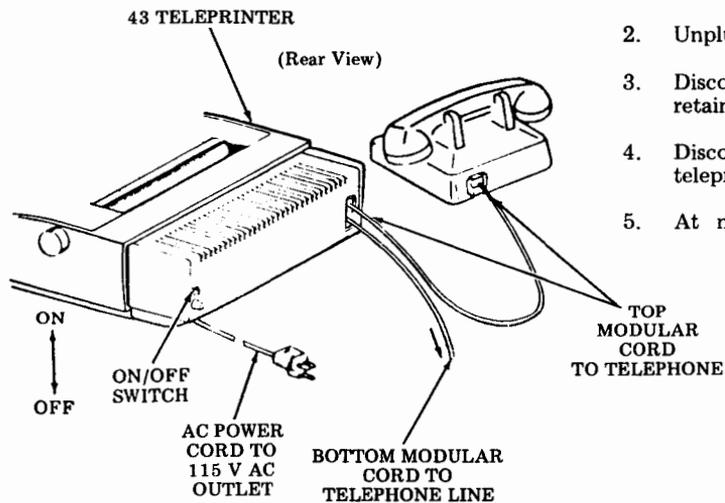
- Make sure ac power cord and telephone cords are connected as shown before turning on power.



- Turn on power to teleprinter by depressing upper half of ON/OFF switch.

- When power is turned on, the print head will move fully left and the AUTO ANSW key on the keyboard console will light. During normal operation one of the three operational mode control keys should always be lit indicating power is on.
- If it is desired to automatically answer incoming data calls, power should be left on, however, when the teleprinter is not in use, the power may be turned off without affecting the normal use of the telephone.

RELOCATING TELEPRINTER

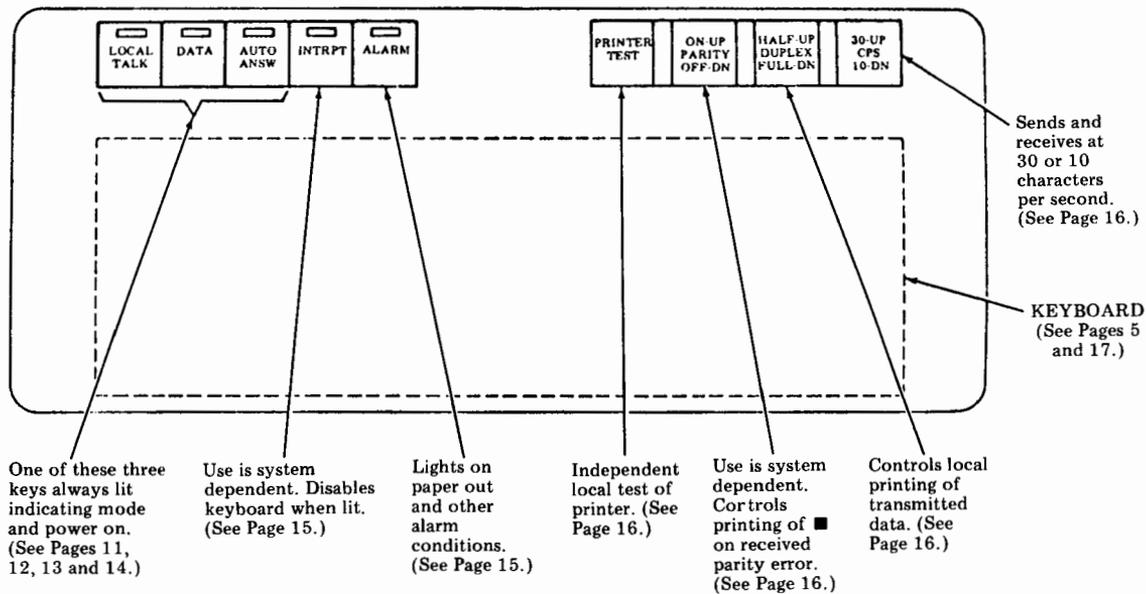


If the teleprinter is to be moved to another location within the building, the following steps should be observed:

1. Turn off power to teleprinter by depressing lower half of ON/OFF switch.
2. Unplug ac power cord from outlet.
3. Disconnect top modular cord from phone and retain with teleprinter.
4. Disconnect bottom modular cord from the teleprinter and reconnect to phone.
5. At new location connect as shown in figure.

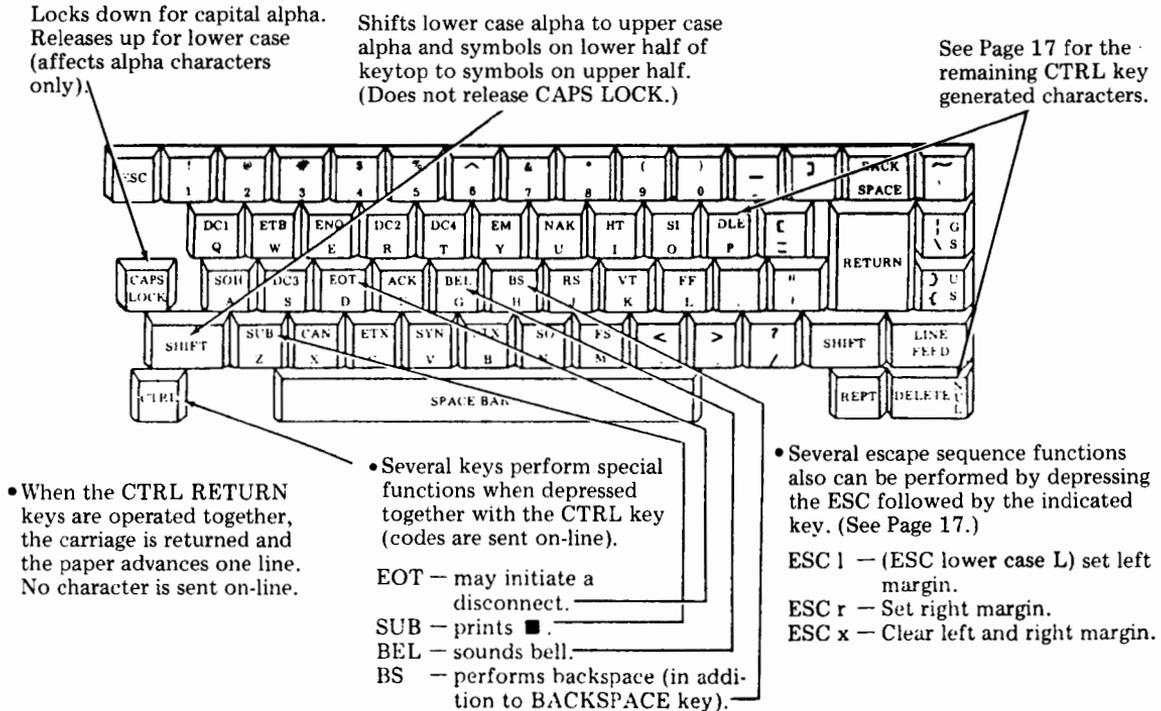
OPERATIONAL CONTROLS AND STATUS INDICATORS

- Use and function of the operational control and status indicators should be reviewed before the 43 Teleprinter is operated locally or on-line.



KEYBOARD LAYOUT

- The keyboard is operational locally in the Local Talk mode and on-line in the Data mode.



ORIGINATING, ANSWERING AND DISCONNECTING CALLS

- Telephone calls must be originated and answered as follows in order to send and receive data or to talk. Calls can also be disconnected as described below. Power must be on to complete a data call (see Page 2).

To Originate a Data Call:

1. LOCAL TALK key lit. Depress if not lit, (if DATA key was lit wait 6 seconds) lift handset and dial in normal manner.
2. Listen for tone or talk:
 - If tone is heard, transfer to Data.
 - If no tone is heard, talk, then transfer to Data when agreed.
3. Transfer to Data mode by depressing DATA key and hang up. Key lights (may flash before lighting).
4. Data transmission may begin.

To Answer a Data Call:

With AUTO ANSW Key Lit:
(May be depressed to light.)

1. No action required. Phone rings once. DATA key lights and AUTO ANSW key extinguishes.
2. Data transmission may begin.

With LOCAL TALK Key Lit:
(Depress if not lit.)

1. When phone rings lift handset and talk.
2. When agreed, transfer to Data by depressing DATA key and hang up.

3. Key lights (may flash before lighting).
4. Data transmission may begin.

To Disconnect a Data Call Manually:

- Depress the LOCAL TALK key or:
- Transfer to Automatic Answer mode. Wait 6 seconds before originating another call.

To Disconnect a Data Call Automatically:

- Send EOT or:
- Other system log-off procedures.

Note: Automatic disconnect can only be implemented if the distant end recognizes it.

To Disconnect in Local Talk Mode:

- Hang up handset or:
- Call may also disconnect from remote signals.

KEYBOARD-PRINTER OPERATION

- The keyboard-printer can be operated locally with the LOCAL TALK key lit or on-line with the DATA key lit.

• 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 and when an interrupt is sent.

• Local Return Line Feed

The carriage is returned and the paper advances one line when the CTRL RETURN keys are operated together. No character is sent on-line.

• Printer

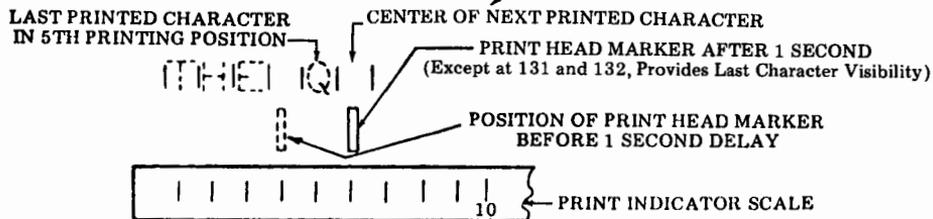
The printer copies all printable data messages except that in full duplex (DUPLEX key down — Data mode) the printer copies received data only.

• Margin Setting

When power is turned on, the left- and right-hand printing margins are reset to 1 and 132. They may be set or cleared locally or on-line by using the escape sequences. See Page 5 To change either margin outward, both must be reset.

• Indicator Scale

The next printing location of the print head and the position for setting left- and right-hand margins is indicated by the print head marker at the print indicator scale after 1 second delay. The print head moves back when printing resumes.



TELEPRINTER SUPPLIES MAINTENANCE

The Telephone Company maintains the 43 Teleprinter and provides service. The equipment is inspected and serviced periodically.

It is your responsibility to keep the teleprinter equipped with sufficient paper and ribbon. In addition, an adequate supply of these items should be ordered and kept in storage.

Ribbon

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

The cartridge with ribbon can be ordered from Teletype Corporation, 5555 Touhy Avenue, Skokie, IL 60076. An order form included with each new cartridge may be used for this purpose or established ordering procedures may be followed for large orders.

The ribbon should be replaced whenever it becomes frayed or print density becomes light.

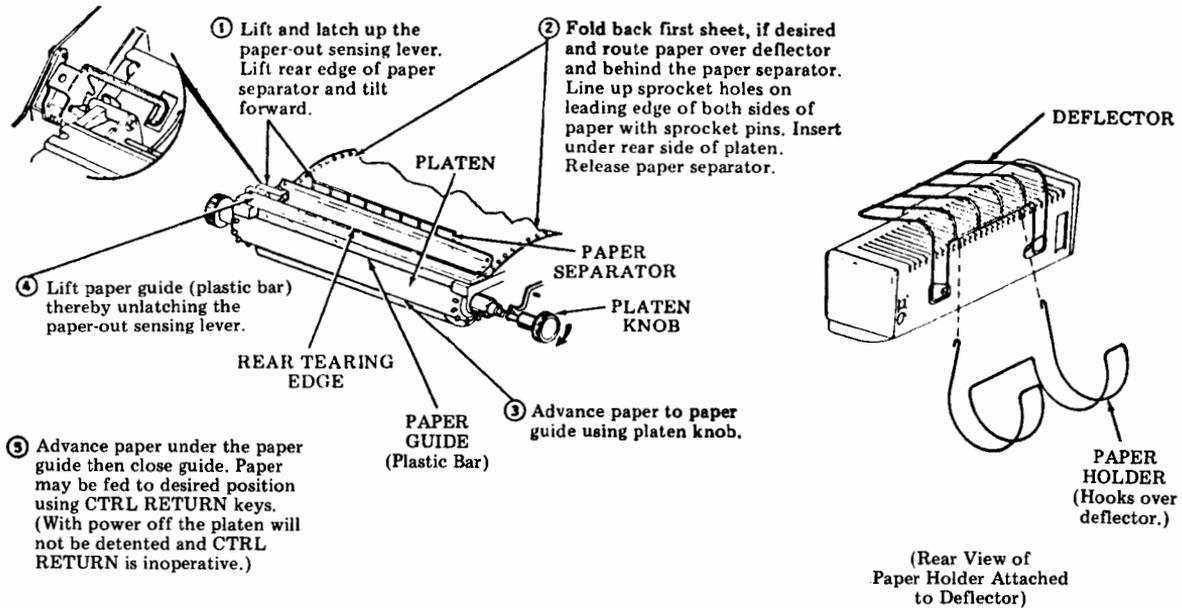
Paper

Paper for the 43 Teleprinter must be 12 inch wide sprocket feed. The original and up to two-copy multi-ply forms may be used. Only the first box of paper is supplied with each teleprinter and is single-ply with 8-1/2 inch folds to provide 11 inch x 8-1/2 inch copy when the serrations are removed. Replacement paper may be obtained from the supplier listed on the original paper box or other suppliers. Contact your sales representative for ordering information.

INSTALLING PAPER

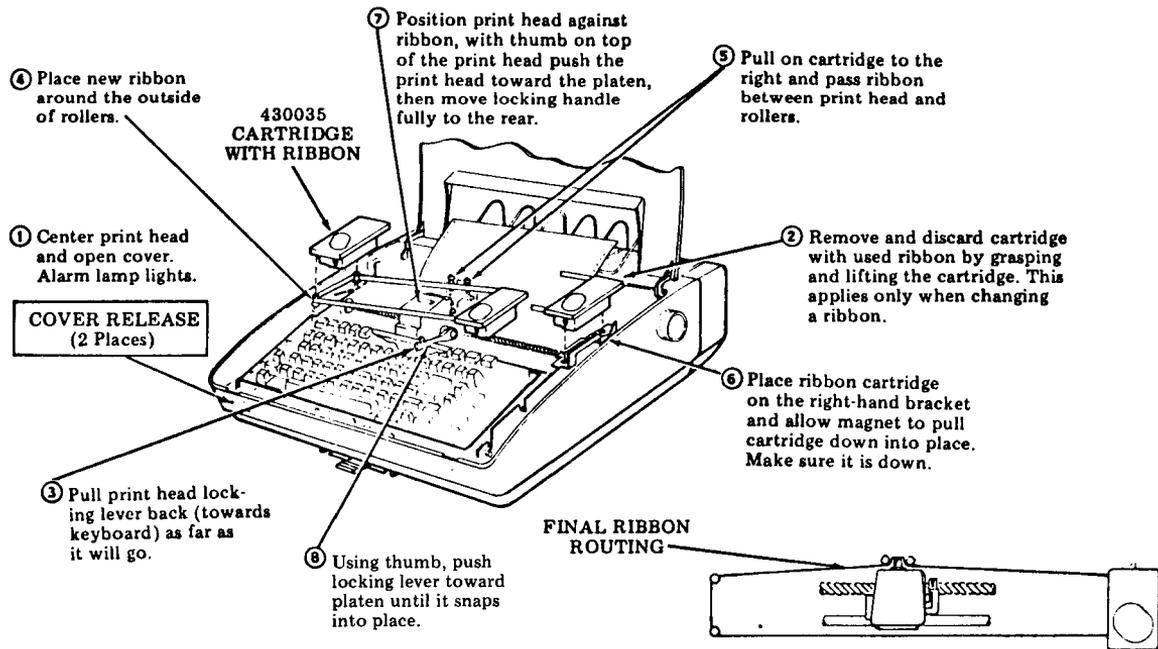
- Install paper as shown after centering the print head and removing the unused paper. It is not necessary to disconnect the call in the Data mode or turn off power. However, to avoid loss of data, paper should not be replaced without interrupting the remote sender.

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 and fed over the deflector.



INSTALLING RIBBON

- Any data received with the cover open will not be printed and the keyboard and operational controls will be disabled. Power may remain on.



Remember Steps.

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

SUPPLEMENTARY OPERATIONAL INFORMATION

LOCAL TALK MODE KEY



Key lights in Local Talk mode.

- The telephone is enabled for normal telephone use and the keyboard printer can be operated locally off-line in the Local Talk mode. See Page 6 for telephone and Page 7 for keyboard-printer operation.
- The Local Talk mode can be entered:
 - At any time, momentarily depressing the LOCAL TALK key will disconnect call in Data mode.
 - By depressing the PRINTER TEST key. (See Page 16.)
 - Opening the cover or removing paper in the Automatic Answer mode.
 - Receiving eight line feeds in the Data mode after paper-out alarm.
- The Local Talk mode can be terminated by:
 - Depressing AUTO ANSW key.
 - Transferring call to Data mode.
 - Turning off power.
- Can be used to clear Loop-Back mode or immediately stop flashing of DATA key when a call attempt is abandoned.

DATA MODE KEY



Key lights in Data and when in Analog Loop-Back.

- Data can be sent or received on-line in the Data mode only.
- The Data mode can be entered:
 - Automatically — following a telephone call in the Automatic Answer mode.
 - Manually — after a telephone connection has been established in the Local Talk mode by momentarily depressing the DATA key before hanging up.
- The Data mode will be terminated disconnecting the call when:
 - Eight line feeds are received after paper-out alarm. (See Page 15.)
 - The mode is manually transferred to Automatic Answer (Page 13) or Local Talk (Page 11).
 - The character EOT is received.
 - Carrier from the remote station is lost.
 - The local printer test is operated (Page 16).
 - The call is disconnected for any reason (Page 17).
 - Power is turned off.
- The telephone is disabled during the Data mode (cannot ring, dial or talk).
- The DATA key may blink indicating a short interruption in carrier (short flash).
- Transfer to Data cannot be completed if the answering station turned on power after the call was received.

Note: The DATA key flashes during transfer from the Local Talk mode. If the transfer is not properly completed within 20 seconds, (ie, local or distant station does not go to Data mode, etc.) the DATA key will stop flashing, the call will disconnect and the AUTO ANSW key will light.

AUTOMATIC ANSWER MODE KEY



Key lights in Automatic Answer mode.

- When power is turned on, the teleprinter will be in the Automatic Answer mode. In this mode the telephone cannot be used in the normal manner. (No dial tone and no dialing or talking but the ringer can sound) and no printing or data transmission can occur.

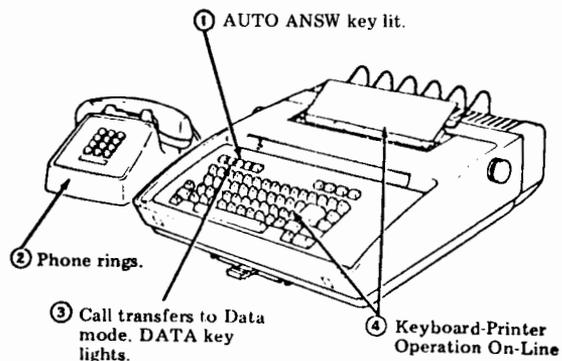
- Telephone calls received in the Automatic Answer mode will be answered automatically after one ring on the telephone and the AUTO ANSW light will turn off.

Note: The handset must be on-hook to answer the call.

- Following the ring, the teleprinter will automatically transfer to the Data mode only after the remote originating station transfers to the Data mode.

- The Automatic Answer mode can also be entered:

- Automatically -- following calls in the Data mode. (See Page 12 for Data mode.)
- Automatically -- following a flashing DATA key when a call origination is not completed.



- Depressing AUTO ANSW key momentarily after local operation or talking on the phone. (See Page 11 for Local Talk mode.) If depressed during Data mode the call will disconnect.

- The Automatic Answer mode can also be terminated by:

- Opening the cover.
- Operating local printer test.
- Removing paper.
- Manual transfer to Local Talk mode.
- Turning off power.

TRANSFER TO TALK MODE

Calls can be transferred from the Data mode to the Talk mode. (See Page 6 for transfer back to the Data mode.)

To transfer to the talk mode, lift the handset and depress the LOCAL TALK key.

The other party must also go to Talk within 4 seconds.

DISCONNECTING CALLS

- Telephone calls in the Local Talk mode will be disconnected when the handset is placed on-hook.
- Transfer to Automatic Answer from the Local Talk mode or incomplete transfer to Data (after 20 seconds) will also disconnect the call.
- Telephone calls in the Data mode will be disconnected when:
 - An EOT is received.
 - The printer test is initiated.
 - Manual transfer to Automatic Answer.
 - Transfer to Local Talk mode (disconnects after 4 seconds if handset is on-hook).
 - Eight line feeds received on-line after the ALARM key lights due to a paper-out condition.

INTERRUPT AND ALARM KEYS



Key lights when transmission has been interrupted by the remote station.

Note: The use of this key is system dependent. It may not be operable with some remote stations. When operable, its use should be under direction of the system.

- The INTRPT key operates as follows:
 - It lights under control of the remote station. When lit, keyboard sending is disabled.
 - If depressed momentarily when lit, the interrupt is canceled.
 - If depressed when not lit, the remote station sending may be interrupted ie, stop sending. Locally the bell rings and the key lights momentarily.
- Interrupt is also canceled by a disconnect or when power is **turned off**.



Key lights or flashes when alarm condition exists.

- Lights when:
 - Paper-out condition is sensed. This is an advance warning that eight received or automatic line feeds later, in the Data mode, the call will disconnect or after thirteen line feeds, paper will be out at the print head.
 - When the cover is opened.
 - When printer test is operated.
- Can be cleared by:
 - Replacing paper or closing cover.
- Flashes when:
 - Teleprinter is in a Loop-Back Test mode.
- Can be cleared (when flashing) by:
 - ESC = sequence.
 - Depressing LOCAL TALK key.
 - Turning off power.

PRINTER TEST, PARITY, DUPLEX AND CHARACTER SPEED KEYS



An independent test of the printer is provided for use by the attendant or field service personnel. The test consists of continuous printing of the 95 character set (plus a space) as shown below. During the test, the bell rings at the end of each line and automatic return of the carriage and line feed is performed within margin restraints.* The test should not be performed in the Data mode since the call will be disconnected. Depression of the PRINTER TEST key initiates the test. The test is terminated when this key is released. (See Pages 11, 12, 13 and 15 for keys that light or extinguish during test.)

Sample of Test Message

```
■!"#$%&'()*+,-./0123456789;:<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
■!"#$%&'()*+,-./0123456789;:<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~
```



The proper position of this key depends on the system application. The remote sender may or may not be equipped to send correct (even) parity. The 43 Teleprinter always sends even parity. When the PARITY key is on, characters received with incorrect (odd) parity will print as the substitute character symbol ■, when parity is off, the character that is received will be printed or performed if it is a printable character or a valid function. The PARITY key alternately locks down (DN) for parity off or releases up for parity ON to set the parity checking mode.

*If margins are set for less than 96 characters, a character will be skipped (not printed) each time a new line starts, except for the new line that starts a new cycle of the printing.



Half-Duplex (key up) — printer copies data sent and received. The printer can be blinded to on-line transmission from the local keyboard while receiving messages simultaneously from the remote sender. This mode is known as Full Duplex (key down — DN).

- Functions not performed in Full Duplex are:
 - Bell on CTRL G — character sent.
 - LOCAL CR-LF on CTRL RETURN — character not sent.

In Half-Duplex, the printer copies all data sent and received but only one sender can operate at a time without interference, ie, characters from the keyboard will be inhibited if the unit is receiving on-line. The key locks down or releases up.



In order to communicate in the Data mode, the transmission rates of the sending and receiving stations must be the same. This key alternately locks down or releases up and sets the on-line operating speed of the station to either 30 (key up) or 10 (key down — DN) characters per second (300 or 100 words per minute).

SPECIAL KEYBOARD CHARACTERS

- Code for the following characters are generated from the 43 Teleprinter keyboard by use of the CTRL key and the key with the symbol shown, operated together.

These characters are not functional in the Model 43 Teleprinter but may be used in some systems.

DC1	EM	GS	VT	SYN
ETB	NAK	SOH	FF	STX
ENQ	HT	DC3	US	SO
DC2	SI	ACK	CAN	FS
• DC4	DLE	RS	ETX	NUL

- The special escape sequences listed below (in addition to those on Page 5) are functional in the 43 Teleprinter by sending (or receiving) the character immediately following the escape character (ESC key).

Use of other escape sequences are system dependent. (Character following ESC will not print.)

ESC >	Analog Loop-Back
ESC <	Digital Loop-Back*
ESC =	Clears either Loop-Back

*Used under direction of Test Center only.

- Repeat speed varies depending on 10, 30 cps on line and approximately 50 cps locally.

KEY TELEPHONES AND EXTENSIONS

- The telephone directly associated with the 43 Teleprinter is used in accordance with the originating answering and disconnecting procedures on Pages 6 and 14. Other phones cannot be used to originate data calls. The phone may be or have an extension and therefore would be subject to the limitations of extension telephones, for example:
 - Lifting handset, dialing or talking on an extension can interfere with data transmission.
 - Calls may not be disconnected if the extension is off-hook.
- In some cases, the phone may be a "designated" extension of a key telephone set. These extensions may be arranged (by use of an exclusion feature) to prevent interference from other phones. The telephone company installer indicates the presence of any extension phones on the pullout directory card located under the front of the keyboard. The card may also be used to write in frequently used telephone numbers.

WHEN TROUBLE OCCURS

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.

Trouble that is encountered with Telephone Company provided equipment should be reported as locally specified by calling the number entered on the directory card pullout by the installer.

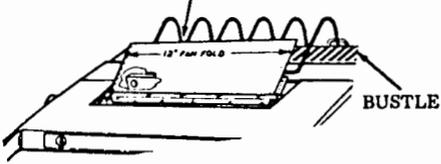
If it can be determined that the trouble is in the remote equipment, the attendant at the location in trouble should follow local procedures for that area.

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.

Note: If a trouble is reported on a transported 43 Teleprinter, it should be returned to its original **INSTALLED LOCATION IN THE BUILDING** as shown on the directory card.

Troubleshooting Sequence

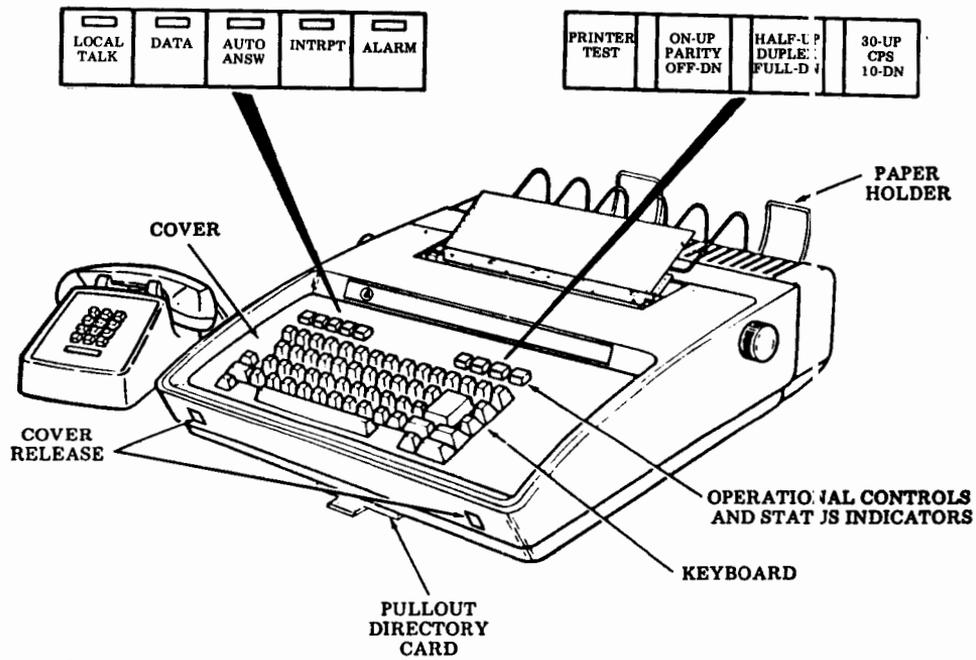
ANALYSIS QUESTION	YES	NO
<p>1. Are one of the three mode keys lit? (LOCAL TALK, DATA or AUTO ANSW)</p>	Go to 2.	<p>1. Check that power switch is on. 2. Check that power cord is connected. 3. Check source of power. (Wall switch, other equipment OK, circuit breaker, etc). 4. Report as local trouble in equipment.</p>
<p>2. Does test message print properly while the PRINTER TEST key is depressed? Sample of message appears on Page 16.</p>	Go to 4.	Turn off power momentarily. Go to 3.
<p>3. Is red lamp on power supply lit? (Visible through slot in bustle 6th slot from the left).</p> 	Report as local trouble in printer.	Report as local trouble in power supply.
<p>4. Does printer respond properly to keyboard operation? (Local-Talk mode)</p>	Go to 5.	Report as local trouble in keyboard.
<p>5. Does printer respond properly to keyboard operation in Analog Loop-Back mode? (ie, print double in half-duplex.) (Entered from keyboard in Local Talk mode by ESC sequence, ended by ESC -.) (Depress DATA key to light. ALARM key flashes.)</p>	Go to 6.	Report as local trouble in "modem".

ANALYSIS QUESTION	YES	NO
<p>6. Does telephone operate normally in the Local Talk mode? (Dial tone, dialing, ringing, talk)</p>	<p>Go to 8.</p>	<p>1. Check that modular cords are connected at rear of teleprinter. 2. Go to 7.</p>
<p>7. Does telephone operate normally when connected directly to line? (ie, modular cord from line connected to phone)</p>	<p>Report as local trouble in teleprinter.</p>	<p>Report as local trouble in telephone.</p>
<p>8. Does phone ring repeatedly in Automatic Answer mode? (ALARM key not lit.)</p>	<p>Report as on-line trouble in teleprinter.</p>	<p>Go to 9.</p>
<p>9. Does DATA key light following call in Automatic Answer or when DATA key is depressed after originating call? (Connection established.)</p>	<p>Go to 11.</p>	<p>1. Remote station must also go to Data mode. 2. Check that modular cords are not reversed, ie, top cord should go to phone. 3. If key does not flash or light, report as trouble in teleprinter. 4. Go to 10.</p>
<p>10. Is proper tone heard in handset*? (High tone if remote party answered the call automatically or transferred to Data.)</p>	<p>Report as on-line trouble in teleprinter. (Call does not transfer to Data mode.)</p>	<p>Trouble may be in remote station. (Call does not transfer to Data.)</p>

*If originating a call.

ANALYSIS QUESTION	YES	NO
11. Are data messages properly sent and received in the Data mode?	Go to 12.	<ol style="list-style-type: none"> 1. Check proper speed, DUPLEX and PARITY key positions. 2. Check that INTRPT key is not lit. 3. Report as on-line trouble in teleprinter unless trouble occurs with only one other station.
12. Is trouble present but not isolated by Questions 1 through 11?	Report trouble to the Telephone Company.	

NOTES: _____



43 KSR Teleprinter



Attendant Manual
999-300-126
Issue 1, March 1977

