



BASIC KSR

the 43 teleprinter



HOW TO OPERATE

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TABLE OF CONTENTS

HOW TO OPERATE THE TELEPHONE

Introduction	ii
Conventions and Power Turn On	ii
Operational Controls and Status Indicators	ii
Keypad Layout	4
Establishing Communications With Distant Terminals	ii
Keypad Printer Operation	7
Teletype Supply Maintenance	ii
Installing Paper (Sprinkled Feed)	ii
Installing Paper (Precision Feed)	10
Installing Ribbons	11

REFLECTIONS ON OTHER TELEPHONE MODES

Local Talk Mode Key	13
Date Mode Key	14
Automatic Answer Mode Key	15
Transfer to Talk	17
Disconnecting Calls	17
Interrupt and Alarm Keys	18
Printer Test, Busy, Duplex and Character Special Keys	18
Special Keypad Characters	19
Key Telephones and Extensions	11
When Trouble Occurs	12



43 KSR Sprinter Feed Telegraph



43 KSR Precision Feed Telegraph

HOW TO OPERATE INSTRUCTIONS (Pages 1 Through 11)

INTRODUCTION

The 43 Basic 858 Teletypewriter provides character-at-a-time input/output and send-receive operation. Transmission speeds are 10 characters per second (cps) (100 wpm) or 20 cps (200 wpm) and can be selected by the operator to match the remote station.

The 43 Teletypewriter 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.

When connected directly to an associated modular telephone, calls are originated in a manner similar to regular telephone calls and can be answered either automatically or manually. The teletypewriter can be used for normal voice communication or data messages can be exchanged over the telephone line using contacts on the 43 Teletypewriter.

In some arrangements the 43 Teletypewriter may be connected directly to a computer or remote terminal.

On sprocket feed printers, messages with up to 132 characters per line are printed on 11/2 inch wide sprocket feed paper. The paper may be fed from a stack, box or limited amounts may be placed in a paper holder that clips on the rear of the teletypewriter. (See Page 8 for paper supplies.)

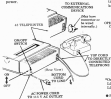
On friction feed printers, messages up to 80 characters per line are printed on 8 1/2 inch -wired typewriter. The roll is held in a support attached to the rear of the teletypewriter.

The ribbon is part of a cartridge that can be readily replaced with the cover open. Replacement ribbon cartridges can be obtained from Teletype Corporation (see Page 8). An order form is included with each new ribbon.

A pullout directory card holder under the front of the keyboard may be used to write in frequently used telephone numbers and any key extensions (see Page 11). Exceptions to standard operating features should be recorded on the reverse side of the card.

CONNECTIONS AND POWER TURN ON

- Make sure all power cord and modular telephone cable or cord to any external communications device are connected as shown before turning on power.



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

- When power is first turned on, the print head will move fully left and the TEST READY key on the operator console will light. During normal operation one of the three operational mode control keys should always be lit indicating power is on.

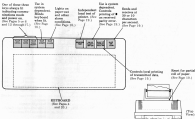


- On units with a directly connected telephone, the LOCAL and TEST READY keys are marked LOCAL/TALK and AUTO ANSWER, respectively.

- Flags should normally be left on to automatically answer incoming calls on arrangements so equipped or receive data messages. However, when not in use, the power to the teleprinter may be turned off without affecting the normal use of the telephone.

OPERATIONAL CONTROLS AND STATUS INDICATORS

- Use and function of the operational control and status indicators should be reviewed before the 63 Teletypewriter is operated locally or remotely.



KEYBOARD LAYOUT

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

Locks down for capital alpha. Releases up for lower case alpha characters only.

Shifts lower case alpha to upper case alpha and symbols on lower half of keyboard to symbols on upper half. (Data mode releases CTRL LOCK.)

See Page 20 for the remaining CTRL key generated characters.



- Several keys perform special functions in addition to sending the code when depressed together with the CTRL key:

- ESC — may initiate tele-printer line connection
- ESC — prints ■
- ESC — search fail
- ESC — performs backspace in addition to BACKSPACE key.

- Several escape sequence functions also can be performed by depressing the ESC followed by the indicated lower case key. (See Page 20.)
- ESC l — rESC lower case L) set left margin.
- ESC r — set right margin.
- ESC a — clear left and right margin.
- ESC w — Release left and right margin.

Procedure for Arrangements Without an Associated Terminal Directly Connected to the Terminal

- Establishing connection and transferring to the Data mode on these arrangements is basically under the control of the directly connected communications device (console) and its associated telephone over the established network or, without a telephone over private lines. In these arrangements terminals are directly connected to the distant terminal or console. One of these external devices should be qualified locally since many variations are possible, i.e., publications on modems or on consoles, exclusive keys, automatic answer, etc.
- The procedures as shown below, that normally apply to operation of the console of the terminal, should be followed:
 - Before transferring a telephone call to the Data mode (call originated or answered) or to place terminal in a ready condition:
 1. Turn on ac power key (Page 11)
 2. Clear any alarm condition (paper-out, cover open),
 3. Depress TERM READY key (if not lit). Key should light.
 - Transfer to Data mode:
 - The DATA key lights under control of the external device or distant station:
 1. Calls can be sent or received on-line only when the DATA key is lit and the LOCAL key is not lit.
 2. On some arrangements the DATA key may light immediately without the TERM READY key being lit.
 - To disconnect a telephone call in DATA mode:
 - Calls may be disconnected as follows:
 1. An EOT code is received. (TERM READY key may light.)
 2. The LOCAL key is depressed. (LOCAL key will light.)
 3. Paper-out and light received line break. (LOCAL key will light.)
 4. Other log-out procedures, loss of data signals, etc.

Procedure for Arrangements With an Associated Telephone Directly Connected to the Terminal.

- Telephone calls must be originated and answered as follows in order to send and receive messages or calls. Calls can also be disconnected as described below. Power must be on to complete a data call (see Page 11).



■ To Originate a Call:

1. LOCAL TALK key on keypad if not on dial in normal manner. (If dial tone is not heard, hang up immediately.)
2. Listen for Data 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 Call With AUTO ANSWER Key Lit. (May be depressed to light.)

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

■ To Answer a Call 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 Call:

1. In Data mode:
 - Depress the LOCAL TALK key or
 - Send EOF or other hang-up procedure or
 - Transfer to Automatic Answer mode.
2. In Local Talk mode:
 - Hang up handset.

Note: Call may also disconnect from remote station, such as received EOF. See the backside of the directory card for any exception to this function, Option 400B.

KEYBOARD-DRIVEN OPERATION

■ **The keyboard printer can be operated locally with the LOCAL or LOCAL-TALK key or remotely with the DATA key(s).**

■ Signal Bell

The signal bell sounds when characters are received from characters before and at the right margin, in response to the left margin (L) and (R). Adjustments at left margin when adjusting to font-size and when an interrupt occurs.

■ Local Return Line Feed

The carriage is returned and the page advance key (or when the LOCAL RETURN key) are operated together. The carriage is set on the

■ Printer

The printer copies all printable data messages except that in full duplex (this mode only) the printer copies received data only.

■ Margin Setting

When power is turned on, the left- and right-hand printing margins are fixed at L and R0 as standard but at L and R1 or R2 can be chosen freely. They may be set or cleared locally or remotely by using the margin adjustment key (Fig. 4). To change either margin, return, backspace or more.

■ Indentation Mode

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

LEFT PRINTED CHARACTER IN INDENTATION POSITION

CENTER OF NEXT PRINTED CHARACTER

FRONT HEAD MARKER AFTER 1 SECOND
(Margin at L0 and R0, Printer Set (Standard Printing))

POSITION OF FRONT HEAD MARKER BEFORE 1 SECOND DELAY

PRINT INDICATOR SCALE



TELEPRINTER SUPPLIES MAINTENANCE

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

Ribbons

Only cartridges with ribbons designated for use with 44 Teleprinter should be used. Teletype part number is 450885.

The cartridge with ribbon can be ordered from Teletype Corporation, 5955 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 long orders.

The ribbon should be replaced whenever it becomes frayed or print clearly becomes light. After the first few ribbons, replacement ribbons should produce 2 million or more legible characters of printing.

Paper

Paper for the 44 Sprocket Feed Teleprinter must be 12 inch wide sprocket feed. The original and up to two-copy multiplicity forms may be used. Paper frequently used with such teleprinter is single-ply and has 8-1/2 inch holes to provide 11 inch x 8-1/2 inch copy when the sprockets are removed. This single-ply 20 pound basis paper may be obtained from the suppliers listed below or other suppliers.

Wallace Business Forms Inc.
444 W. Grand Ave.
Chicago, IL 60606
Cat. No. E-6879

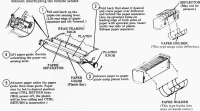
Duplex Products Co.
224 W. Page
Springfield, IL 62716
Cat. No. 1-1188-107

Paper for the 44 Friction Feed Teleprinter should be standard 8-1/2 inches wide, single-ply, furnished in 5 inch maximum-diameter rolls with a 2 inch diameter spindle hole.

INSTALLING PAPER (Special Feed)

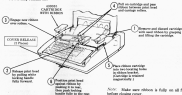
Install paper as shown after centering the print head and removing the original paper. It is not necessary to open the cover or turn off power. However, to avoid loss of data, paper should not be replaced without interrupting the remote session.

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

❗ **Install ribbon as shown after centering the print head and opening cover.** (Status lamp lights.) **Stop data received with the cover open will not be printed and the keyboard and operational controls will be disabled. Power may remain on.**



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

SUPPLEMENTARY OPERATIONAL INFORMATION
(Pages 12 Through 20)

LOCAL TALK MODE KEY

(Arrangements With a Directly-Connected Modular Telephone)



Key lights in Local Talk mode.

■ The Local Talk mode can be entered:

- At any time, by momentarily depressing the LOCAL TALK key. Will disconnect call to Data mode.
- By depressing the PRINTER TEST key. (See Page 18.)
- Opening the cover or removing paper in the Automatic Answer mode.
- Receiving right line feeds in the Data mode after paper-out alarm.

■ The telephone is enabled for normal 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 terminated by:

- Depressing AUTO ANSWER 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 is answered.

(Arrangements With No Directly Connected Telephone)



Key lights in Local mode.

■ The keyboard printer can be operated locally off-line in the Local mode. (Telephones associated with a local communication device may be able to operate regardless of the condition of the LOCAL key.)

■ The Local Talk mode can be entered:

- At any time, by momentarily depressing the LOCAL TALK key. This may cause a disconnect.
- When PRINTER TEST key is operated.
- Opening the cover or by removing paper in the Automatic Answer mode.
- Receiving right line feeds in the Data mode after paper-out alarm.

(Arrangements With a Directly Connected Modular Telephone)

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

■ Data can be sent or received either in the Data mode only.

■ The Data mode can be entered:

- Automatically — following a telephone call or Analog Loop-Back in the Automatic Answer mode.
- Manually — after a telephone connection has been established in the Local Talk mode by immediately 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 14.)
- The mode is manually transferred to Automatic Answer (Page 18) or Local Talk (Page 12).

- The character **NOT CTRL D** on the Model 40 keyboard) is received.
- Data signals from the remote station are lost.
- The local printer test is operated (Page 18).
- 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 flash following a short interruption in data signals about 100 ms.

■ 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 Automatic Answer or Local Talk modes. If the transfer is not properly completed within 30 seconds, (in local or distant stations does not go to Data mode, etc.) the DATA key will stop flashing, the call will disconnect and the AUTO ANSWER key will light.

Arrangements With No Directly Connected Telephone



Key lights in Data mode:

- With key in **LOCK** and **ALARM** lamps not lit, data can be sent and received on line.
- The Data mode is under control of the external communications device or directly connected (distant terminal) (see **TERM READY**).

• The **DATA** key is blocked from operation.

AUTOMATIC ANSWER MODE KEY

(Arrangement With a Directly Connected Modular Telephone)



Key light is in Automatic Answer mode.

- When power is turned on, the telephone will be in the Automatic Answer mode. In this mode the telephone will be partially disabled. (No dial tone and no ringing 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 key will turn off.

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

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

- The Automatic Answer mode can also be initiated:

- Automatically — following calls in the Data mode. (See Page 20 and 14 for Data mode.)
- Automatically — following a flashing DATA key when a call is not completed.



- Depressing AUTO ANSW key momentarily after local operation or talking on the phone. (See Page 13 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.

Arrangements With No Directly Connected Telephone



Key lights indicating Terminal Ready mode.

- When power is turned on, the TERM READY lamp will light, indicating a standby condition during which calls may be accepted or extended.
- When calls are complete and data communication is established as indicated by the DATA lamp lighting, the TERM READY lamp turns off.

- The Terminal Ready mode can also be terminated by:

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

- The Terminal Ready mode can be initiated by depressing the TERM READY key momentarily. If depressed during the Data mode, a telephone call may disconnect or DATA lamp may extinguish.

- On private line arrangements, the TERM READY lamp lights only when the terminal is ready but the remote terminal or external data set is not ready.

TRANSFER TO TALK

(Arrangements With a Directly Connected Modular Telephone)

Calls can be transferred from the Data mode to the Talk mode. (See Page 5 for transfer back to the Data mode.)

To transfer to the Talk mode, lift the handset and depress the LOCAL TALK key at each station.

Note: If the LOCAL TALK keys are not depressed within 4 seconds of each other a position disconnect or transfer to the automatic answer mode may occur. This can be avoided by generating "go to talk" signals that should be exchanged before the transfer is initiated.

(Arrangements With No Directly-Connected Telephone)

Call transfer to Talk from the Data mode is under the control of external data communications devices and any associated telephone. Transferring to the Local mode may cause a disconnect. Normally, however, the external communications device will cause the EXCHG lamp to extinguish and the TERM READY to light when transfer to Talk is initiated.

DISCONNECTING TELEPHONE 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 interruptive transfer to Data after 30 seconds will also disconnect the call.
- Telephone calls in the Data mode may 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 (special level only).

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 operator.

■ The **INTERRUPT** key operates as follows:

- It lights under control of the remote station. When **RT** key/button sending is disabled.
 - If depressed momentarily when **RT**, the interrupt is cancelled.
 - If depressed when not lit, the remote station sending may be interrupted or, stop sending. Locally held rings and key lights momentarily.
- Interrupt is also cancelled by a disconnect or when power is turned off.



Key lights or flashes when alarm condition exists.

■ Lights when:

- Paper-out condition is sensed (station feed). This is an advance warning that eight received line feeds exist (in the Data mode), the roll will

disconnect. Also, after station line feeds, paper will be out of the print head.

- Low paper condition is sensed (station feed). This is an advance warning that 25 to 50 feet of paper remain on the paper roll.
 - When the cover is opened.
 - When printer test is operated.
- Flashes when:
- Teletypewriter is in a Loopback Test mode.
- Can be cleared by:
- Replacing paper or closing cover.
 - On station feed printers, if a partially full paper roll is installed, it may be necessary to depress the **INTERRUPT** key on the paper roll support. See Page 19.
 - When flashing by:

ESC = square.
Expressing **LOCAL/TALK** key.
Turning off power.

Note: In some systems, the **ALARM** key may be flashing during normal operation unaccompanied by printing. Unless otherwise instructed, the alarm should be cleared after selected periods of flashing. See Page 20.

SPECIAL KEYBOARD CHARACTERS

- Codes for the following characters are generated from the 48 Teletypewriter keyboard by use of the CTRL. key and the key with the symbol shown, operated together.

These characters are not functional in the Model 48 Teletypewriter but may be used in some systems.

DC1	RM	CR	VT	STX
STB	PLAC	BSM	FF	ETX
BSQ	HT	DC2	DS	SI
DC3	SI	ACK	CAN	FS
DC4	DLR	RR	ETC	RES

- The special escape sequences listed below (in addition to those on Page 4) are functional in the 48 Teletypewriter by sending (or receiving) the character immediately following the escape character (ESC key).

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

- ESC > Analog Loop-Back
- ESC < Digital Loop-Back
- ESC = Clear ribbon Loop-Back
- ESC % Ribbon carriage and paper advance over line.

Completely non-functional only on arrangements with a directly connected modular teleprinter. Some items may still work.

Used under control of remote station.

- Operational speed varies depending on 75, 50 cps or less and approximately 60 cps locally.

KEY TELEPHONE AND EXTENSIONS

- The modular telephone directly connected to the AS Terminal is used in accordance with the originating answering and disconnecting procedures on Pages 6 and 17. In these arrangements 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 is an extension-free interface with data transmission.
 - Calls may not be disconnected if the extension is off-hook.
- In some cases, the modular phone may be a "designated" extension of a key telephone set. These extensions may be arranged (by use of an extension feature) to prevent interferences from other phones. The installer should indicate the presence of any extension phones on the directory card.
- Key telephones may be associated with external data sets connected to the terminal. One of these phones to originate and answer talk and data calls are under the control of the data set and should be specified locally.

WHEN TROUBLE OCCURS

Trouble that is encountered with the terminal should be reported as locally specified. A customer to be called in case of trouble may be advised on the three-key card pulled by the terminal.


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 here:

- Local connection.
- Connection at the remote location.
- Submitting service personnel in advance of trouble call of Analysis Question results.

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



ANALYSIS QUESTION	YES	NO
<p>1. Are one of the three communication modes being used?</p> <p>■ LOCAL or LOCAL-TALK</p> <p>■ BETA</p> <p>■ TALK REQUEST or AUTO ANSWER</p>	Go to 2.	<p>1. Check that power switch is on.</p> <p>2. Check that power cord is connected.</p> <p>3. Check source of power. (Wall switch, other equipment OFF, circuit breaker, etc.)</p> <p>4. Report as local trouble in equipment.</p>
<p>2. Does test message print properly while the PRINTER TEST key is depressed? (See Page 25.)</p>	Go to 4.	Go to 3.
<p>3. Is red lamp on power supply lit? (Flashes through slot in handle side 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 8 on terminals with a directly connected telephone. Go to 11 for other arrangements.	Report as local trouble in keyboard.

ANALYSIS QUESTION	YES	NO
<p>6. Does printer respond properly to keyboard operation in Analog Comp-Back mode? (i.e. print double in full duplex.) (Entered from keyboard in Local Talk mode by SSC.) requires, coded by SSC "1" (Printer DATA key lit, LARM key flashes.)</p>	Go to 6.	Report as local trouble in "modules".
<p>6. Does telephone operate normally in the Local Talk mode? (Dial tone, ringing, ringing, talk)</p>	Go to 6.	<ol style="list-style-type: none"> 1. Check that modular cords are connected at rear of telephone and phone. 2. Go to 7.
<p>7. Does telephone operate normally when connected directly to line? (i.e. modular cord from line connected to phone)</p>	Report as local trouble in telephone.	Report as local trouble in telephone.
<p>8. Does phone ring regularly in Automatic Answer mode? (LARM key not lit.)</p>	Report as on-line trouble in telephone.	Go to 6.
<p>8. Does DATA key light following call in Automatic Answer or when DATA key is depressed after originating call? (Connection established.)</p>	Go to 13.	<ol style="list-style-type: none"> 1. Remote station must also go to Data mode. 2. Check that modular cords are not inverted, i.e. top cord should go to phone. 3. If key does not flash or light, report as trouble in telephone. 4. Go to 13.

ANALYSIS QUESTION	YES	NO
10. Is proper tone heard in handset? (High tone if remote party answered the call automatically or transferred to data.)	Report as on-line trouble in telephone. (Call does not transfer to Data mode.)	Trouble may be in remote station. (Call does not transfer to Data.)
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 INTERRUPT key is off. 3. Report as on-line trouble in telephone unless trouble occurs with only one other station.
12. Is trouble present but not isolated by Questions 1 through 11?	Report other trouble as specified in local instructions.	



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HOW TO OPERATE MODEL 307

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