43 TELEPRINTER 8-LEVEL BUFFERED SEND/RECEIVE (BSR) STATION

GENERAL DESCRIPTION

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1. GENERAL

1.01 This section provides a general description of the 43 Teleprinter 8-Level Buffered Send/Receive (BSR) Stations (refer to Fig. 1).

1.02 Whenever this section is reissued, the reason for reissue will be listed in this paragraph.

1.03 When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP" (ie, TP410055).

2. DESCRIPTION

2.01 The 43 Buffered Send/Receive (BSR) Station consists of a keyboard, matrix printer and controller in a tabletop housing that can also be mounted on an optional pedestal.

2.02 The 43 BSR stations are available with friction feed or tractor feed paper handling capabilities. See Fig. 1 for teleprinter identification.

Fig. 1—43 Buffered S/R Stations
SECTION 574-500-101

2.03 The station, feature group, EIA cable and documents are ordered in combinations of USOC codes and the material is furnished in separate cartons. The 43 buffered station (factory furnished without a feature group that determines its operating characteristics) must be assembled according to Specification 51055S before the BSR station is installed.

2.04 The 43 BSR stations are furnished with a ribbon cartridge and the stations include a paper holder with mounting hardware (TF) or a paper supply assembly and a roll of paper (FF). An optional paper winder can be attached to friction feed printers and an optional copy holder can be attached to either version.

2.05 The buffers in these stations provide for off-line data preparation (message enter, enter, and store), batch transmission, and line speeds higher than the continuous printing rate.

2.06 Operating speeds are 110, 200, 300, 600, 1200 or 1800 baud using an 8-bit character structure in an asynchronous format with 33/35 ASCII protocol.

2.07 Printout is on a 10 character per inch matrix-style printer. The 80-column friction feed teleprinter uses 8-1/2 inch wide single-ply roll-type paper and the tractor feed teleprinter uses multicopy paper 3-1/2 to 12 inches wide with a maximum of 100 columns. See paragraph 2.10 for paper specifications.

2.08 A 7 by 9 dot matrix produces up-low character shapes for ASCII printing graphics and special symbols for 32 ASCII control codes.

2.09 The teleprinter interface is EIA-type RS-232-C and is intended for use with an external full duplex data set for use on switched network or private lines.

2.10 Paper for the friction feed printer is the standard single-ply, 8-1/2 inches wide, 5 inch diameter roll paper. Paper for the tractor feed printer may range from 3-1/2 to 12 inches wide with standard sprocket hole size and spacing. It may be standard weight, single-ply or multicopy paper consisting of the original and up to two additional copies. Section 570-008-010 provides detailed specifications on the paper and ribbon.

2.11 Inking is provided by a readily replaceable cartridge with ribbon (430035), available from Teletype Corporation.

2.12 The buffered teleprinter operates on 115 Vac ±10 percent at 50 or 60 hertz. Power to the station is approximately 84 watts and is controlled by an on-off rocker switch located at the right rear of the housing.

2.13 The 43 teleprinter 8-level BSR station arrangement consists of a 43 BSR friction feed (USOC 4BF) or tractor feed (USOC 4BG) teleprinter, a feature group (USOC 4BQ), How To Operate Manual 999-300-135, Installation and Removal, Section 574-500-201, and Testing, Section 574-500-502, and one of the following EIA cables:

<table>
<thead>
<tr>
<th>Description</th>
<th>USOC Assigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>430569 Cable Assembly — 3 ft</td>
<td>WES (8J)</td>
</tr>
<tr>
<td>408065 Cable Assembly — 7 ft</td>
<td>WES (4U)</td>
</tr>
<tr>
<td>408066 Cable Assembly — 12 ft</td>
<td>WES (87)</td>
</tr>
<tr>
<td>408067 Cable Assembly — 25 ft</td>
<td>WES (88)</td>
</tr>
<tr>
<td>408068 Cable Assembly — 50 ft</td>
<td>WES (89)</td>
</tr>
</tbody>
</table>

2.14 The friction feed teleprinter weight is 32 pounds and the tractor feed teleprinter weight is 34 pounds.

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Fig. 2—Interface Ports
3. KEYBOARD

3.01 The keytop arrangement is divided into three major groups according to function or purpose. They are the operational controls and status indicators, the basic keyboard and the numeric/edit pad.

3.02 The operational controls and status indicators for the teleprinter are briefly described in Fig. 3.

When lamp is on, terminal is in ENTER state, keyboarded data is put in Edit Buffer and associated controls may be used. Depressing key toggles state. (In ENTER state, KP is automatically placed in LOCAL. When exiting the ENTER state, KP remains LOCAL.) Lamp flashes at Edit Buffer full warning.

When lamp is on, keyboarded characters are inserted at Edit Pointer and remainder of message is pushed down. Depressing key toggles state. Lamp may flash momentarily when entering or exiting mode. Active only in the ENTER mode.

Depressing this key places the terminal in a mode to accept a string of up to the last 16 characters entered when the lamp is on. Active only in ENTER Mode. String is used for comparison in SEARCH, or RETRIEVE. Second depression turns off lamp and exits mode. Old string is deleted when lamp comes on.

When lamp is on, terminal is Full Duplex. When off, Half-Duplex. In Half-Duplex, all transmitted data is copied into the Receive Buffer so that local printed copy can be made. Depressing key toggles state.

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, or optioned message ending character sent or received X-off or push key.

When lamp is on, the function of the 14 key cluster at right side of keyboard is a Numeric Pad as a primary function using the upper designations. When lamp is off, the lower designations are active. Notice edit functions are active when Numeric Pad is enabled only with CONTROL or SHIFT key. Push key to change state. Remainder of keyboard is unaffected by NUM PAD mode.

In ENTER Mode, depressing this key causes the contents of the Edit Buffer to be cleared from the Edit Pointer to the next message ending character.

Fig. 3—Operational Controls and Status Indicators
3.03 The basic keyboard layout is shown in Fig. 4 along with brief descriptions on the keyboard printer operation of several special keys.

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

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

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

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

ESC H — Prepares terminal to resend last message.

- Several escape sequence functions also can be performed by depressing the ESC followed by the indicated key.

<table>
<thead>
<tr>
<th>ESC</th>
<th>@</th>
<th>#</th>
<th>$</th>
<th>%</th>
<th>&amp;</th>
<th>*</th>
<th>(</th>
<th>)</th>
<th>-</th>
<th>+</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAB</td>
<td>DC1</td>
<td>ETB</td>
<td>ENQ</td>
<td>DC2</td>
<td>DC3</td>
<td>EM</td>
<td>NAK</td>
<td>HT</td>
<td>SI</td>
<td>DLE</td>
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<tr>
<td></td>
<td>SOH</td>
<td>DC4</td>
<td>EOT</td>
<td>ACK</td>
<td>BEL</td>
<td>BS</td>
<td>RS</td>
<td>VT</td>
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<td>FG</td>
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<td>JK</td>
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<td>B</td>
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<td>M</td>
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</tbody>
</table>

- Several keys perform special functions when depressed together with the CTRL key (codes are sent on-line).

Sends ASCII HT or writes it in memory.

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

Shifts lower case alpha to upper case alpha and symbols on lower half of keytop to symbols on upper half. (Does not release CAPS LOCKS.)

BS — performs backspace (in addition to BACKSPACE key).

BEL — sounds bell.

EOT — may initiate a disconnect.

SUB — prints □

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

Note: The escape sequence will be sent on-line or entered in the edit buffer when the control character (if shown in parentheses) is operated locally. Right margin set (CTRL 8) and right margin release (CTRL 0) are local functions only and are not entered in the edit buffer.

Fig. 4—Basic Keyboard Layout
3.04 The functions of the numeric/edit pad are briefly described in Fig. 5.

In the ENTER mode, depressing this key returns the Edit Pointer to the beginning of the current line and printer to carriage return. If at the beginning of the line, the Edit Pointer moves to the beginning of the previous line and the printer line feeds. In NUM PAD mode, this key generates numeral 8. In the OPTIONS PREP mode, this key signifies that the operator desires to re-edit the current line.

In the ENTER mode, depressing this key causes the contents of the Edit Buffer to be printed from the current location of Edit Pointer. A second depression will stop printing. In NUM PAD mode, this key generates the numeral 7. Printing stops at meag end char of Stp Sn.

In the ENTER mode, this key is depressed to execute a search in the send "wastebasket" for a string. The "found" message containing the string is appended to the end of the Edit Buffer, the line containing the string is printed through the last character of the string and the Edit Pointer will be positioned on the next character following the last character in the string. If the string is not found, the printer will print "CANNOT FIND" and the Edit Pointer remains at its original position. In the NUM PAD mode, this key generates the numeral 1.

In the ENTER mode, this key generates the character comma.

In the ENTER mode, all the unsent or sent but unacknowledged contents of the Send Buffer are transferred back to the Edit Buffer (ie, the Edit Home is moved to the Send Home position). In the NUM PAD mode, this key generates the character sequence as optioned for the large return key in the user option memory.

This key functions only in the NUM PAD mode and generates the numeral 9 (zero).

In the ENTER mode, depressing this key causes the entire contents of the Edit Buffer to be printed starting at the edit pointer with a unique graphic for each control character. In this mode, the format effectors will be ignored and all printing will be from left margin to right boundary. A second depression of key will stop printing or X-OFF. In NUM PAD, this key generates the numeral 9. Printing stops at meag end char.

In the ENTER mode, depressing this key generates the character comma.

In the ENTER mode, depression of this key will cause a search in the Edit Buffer from the Edit Pointer to the end of buffer for the string. When found, the line containing the string up through the last character in the string will be printed and the Edit Pointer will be positioned on the first character following the string. If the string is not found, the printer will print "CANNOT FIND" and pointer will remain at its original position. In the NUM PAD mode, this key generates the numeral 3.

In the TERM LOCAL mode with the KP in LOCAL, depressing this key will recall a message from the Receive Buffer to be reprinted. The receive message waiting lamp will come on. Printing will occur when the KP is in S/R mode. To stop printing, set KP to LOCAL. In the NUM PAD mode, this key generates the period or decimal.

In the ENTER mode, depressing this key generates the character comma.

In the ENTER mode, depressing this key causes the contents of the Edit Buffer from home to the first message ending character to be designated sent buffer, ie, Edit Home is moved to the character beyond the end of the first message in the Edit Buffer. In the NUM PAD mode, this key generates the minus sign.

4. REFERENCES

4.01 How To Operate Manual 999-300-135 includes information on 43 buffered send/receive teleprinter operation, ribbon and paper replacement.

4.02 Section 574-500 series provide all the necessary information for trained craft personnel to install, maintain, option, and, if necessary, service the 43 buffered teleprinter using recommended lists of maintenance spares.