

ADDITIONAL FEATURES FOR ASYNCHRONOUS "DATASPEED*" 40
 INTEGRATED ROP STATION ARRANGEMENTS
 DETAILED DESCRIPTION

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1. INTRODUCTION

1.01 This document introduces new features now available for use in Integrated Receive-Only Printer Arrangements USO coded 400++, 40P++ and 40R++.

Note: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters "TP", (ie, TP404602).

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

2. GENERAL

2.01 The new features are listed below:

- (a) Expanded Left and Right-Hand Margins (Option 17)
- (b) Printing of Escape Sequences Suppressed (Option 54)
- (c) Shift-In/Shift-Out Detection (Option 55)
- (d) Friction Feed/Tractor Feed Printer (Option 56)

(e) SSI/OEM Interface (Option 57) — SSI Interface Option should be chosen for Integrated ROP applications.

(f) Idle Line Motor Control (Option 58)

(g) Line Wraparound Operation (Option 191).

2.02 Features (a) through (f) are available through the application of newly released printers coded 40P102/ZZ, 40P154/ZZ and 40P202/ZZ. See EL 5660 for details regarding printer 40P102/ZZ, see EL 5429 for details regarding printers 40P154/ZZ and 40P202/ZZ.

2.03 Feature (g) is available through the application of Issue 4 EPROMs 404602, 404603 and 404604, and Issue 3 of EPROM 404605 on circuit card 410142. 410142 is part of the 40C303AA/001 Integrated Controller. In addition to the new feature, the use of Option 125 (80- or 132-column printer used) is canceled.

2.04 For a description of the new printer features see Section 582-210-111.

2.05 Line wraparound allows for the automatic insertion of a NL character when the number of characters in a line of text exceeds the right-hand margin of the printer. Option 191 allows either the printer or the controller to perform this function.

2.06 In addition to the above new features the following time-outs have been changed:

- (a) Idle Line Disconnect (Option 135) changed from 20 seconds to 30 seconds.
- (b) Carrier Fail Disconnect (Option 137) changed from 20 seconds to 15 seconds.

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2.07 Also changed has been the application of the substitute character on parity error detection when Options 152.b. (Substitute Character to Printer on Parity Error) and 158.a. (Odd Parity Used) or 158.b. (Even Parity Used) are selected.

(a) If the Printer has an up-low type carrier and is optioned for no foldover (Option 21.a.), then a tilde (~) will be passed to the printer as a substitute character (this remains the same). A circumflex (^) will be passed to the printer if the printer is optioned for foldover (Option 21.b.).

(b) (If the type carrier is monospace and is optioned for no foldover (Option 22.a.), then the type carrier identification symbol will be passed to the printer as a substitute character rather than a ^ (this has changed). A ^ will be passed if the printer is optioned for foldover (Option 22.b.).

2.08 See EL 5429 for information pertaining to the conversion of 40P101/ZZ, 40P153/ZZ and 40P201/ZZ into printers having the features described in 2.02.

3. FIELD OPTIONS

3.01 For clarity, all of the field options applicable to the Receive-Only Printer Arrangements utilizing the 40C303AA/001 Controller are listed below:

A. Printer Options

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
1. - 16.	Not Present	
17.	<u>Printer Margin and Form Width</u>	
a.	First Printed Column - Column 1 *	Choose 1.
b.2.	First Printed Column - Column 2	
b.3.	First Printed Column - Column 3	
b.4.	First Printed Column - Column 4	
b.5.	First Printed Column - Column 5	
b.6.	First Printed Column - Column 6	
b.7.	First Printed Column - Column 7	
b.8.	First Printed Column - Column 8	
b.9.	First Printed Column - Column 9	
b.10.	First Printed Column - Column 10	
b.11.	First Printed Column - Column 11	
b.12.	First Printed Column - Column 12	
b.13.	First Printed Column - Column 13		Choose 1 appropriate to printer ordered (80- or 132-column).
c.	Last Character on 80th Column*	
d.79.	Last Character on 79th Column	
d.78.	Last Character on 78th Column	
d.77.	Last Character on 77th Column	
	etc.	
d.25.	Last Character on 25th Column	
e.	Last Character on 132nd Column *	
f.131.	Last Character on 131st Column	
f.130.	Last Character on 130th Column	
f.129.	Last Character on 129th Column	
	etc.	
f.73.	Last Character on 73rd Column	

Note 1: Options c. and d.79. through d.25. apply to 80-column printers only. Options e. and f.131. through f.73 apply to 132-column printers only.

Note 2: Options a., b., and d.72. through d.25 and f.121. through f.73. are not available on printers utilizing printer circuit cards 410460 or 410729.

Note 3: Whether c. or e. is factory furnished depends on the printer ordered.

Note 4: If 17.d. or f. is chosen, then Option 191.a. must be chosen.

18.	<u>Paper Feedout</u>	
a.	No Paper Feedout	Choose 1.
b.	Paper Feedout on DSR Loss - 16 Lines	
c.	Paper Feedout on DSR Loss or ETX*	

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
18. (Cont)	<p><i>Note:</i> "Data Set Ready (cc) Loss" assumes that data set operation is used; the actual controlling SSI signal is loss of receive message. The feedout will be up to 16 lines only if Option 39.b. (Forms switch Off) is selected; if Option 39.a. (Forms switch On) is selected, the printer will feed out paper to the next form feed position. Tractor feed printers not using Option 39.a. should normally use 18.a. since the 16 line feedout will be shortened whenever end of form occurs before the 16 lines are up.</p> <p>If 18.c. is enabled and horizontal tabs are to be performed by the 40C303AA/001 controller, character displacement could occur from line feeds initiated by ETX resetting the column count in the printer but not in the controller.</p>	
19. a. b. c. d. e. f. g.	<p><u>Printer Errored Character Symbol</u> Printed on Even Parity Error* Printed on Odd Parity Error Not Printed on Parity Error Printers With 96 Character Set Printers With 64 Character Set Printers With Extended ASCII Character Set Printers With Longest Char. Set Having Less Than 64 Chars.</p>	<p>Choose c.</p> <p>Choose 1 to match type carrier ordered.</p>
	<p><i>Note:</i> Option switches for d., e., f. and g. must be set to reflect longest character set.</p>	
20. a. b.	<p><u>Line Feed on Printer</u> Single* Double</p>	<p>Choose 1.</p>
	<p><i>Note:</i> This option is operator selectable.</p>	
21. a. b.	<p><u>Foldover on Up-Low Printer</u> Lower Case and Upper Case Print* Lower Case Prints as Upper Case</p>	<p>Choose 1 (per type carrier ordered).</p>
22. a. b.	<p><u>Foldover on Monocase Printer</u> Lower Case Prints as Error Symbol Lower Case Prints as Upper Case*</p>	
23. a. b.	<p><u>Extended ASCII on Printer (Extended ASCII)</u> Prints Extended ASCII Characters (No Parity Checks) Does Not Print Extended Characters* (See Option 19.a., 19.b., or 19.c.)</p>	<p>Choose 1.</p>
	<p><i>Note:</i> Option 23.a. requires local engineering — also see Option 55.</p>	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
24. — 38.	Not Present	
39.	<u>Forms (Tractor Feed Printer Only)</u>	
a.	On	] Choose 1.
b.	Off*	
40. — 47.	Not Present	
48.	<u>Incomplete Form Suppresses Paper Alarm</u>	
a.	No (Paper-Out Not Gated With Form-Out)	] Choose 1.
b.	Yes (Paper-Out Gated With Form-Out)* (See Note 2.)	
	<i>Note 1:</i> Not present on printers utilizing printer circuit card 410460.	
	<i>Note 2:</i> Option 48.a. is normally used for DATASPEED 40 Integrated ROP Arrangements.	
49. — 53.	Not Present	
54.	<u>Printing of Escape Sequences Suppressed</u>	
a.	Character After ESC Printed as Received*	] Choose 1.
b.	Printing of Character After ESC Suppressed	
	<i>Note 1:</i> With b. enabled, the character after ESC will be suppressed only if ESC is preceded by a non-ESC character; if ESC ESC X is received, X will be printed.	
	<i>Note 2:</i> If the character following ESC is in column 2 of ASCII (ie, Space through \) then the next character is also suppressed.	
	<i>Note 3:</i> Use Option 132.b. instead of 54.b. for DATASPEED 40 Integrated ROP Arrangements.	
	<i>Note 4:</i> Not available on printers utilizing 410640 or 410729 printer circuit cards.	
55.	<u>Shift-In/Shift-Out (SI/SO) Detection</u>	
a.	SI/SO Detection Not Used*	] Choose a.
b.	SI/SO Detection Enables Printing Additional Characters	
	<i>Note:</i> Not available on printers utilizing 410640 or 410729 printer circuit cards.	

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
56.	<u>Friction Feed/Tractor Feed Printer</u>	
a.	Friction Feed Printer — Motor Held on After Paper Alarm*	Choose 1 to match printer.
b.	Tractor Feed Printer — Motor Turned Off After Paper Alarm	
	<i>Note:</i> Available only on printers utilizing printer circuit card 410076.	
57.	<u>SSI/OEM Interface</u>	
a.	SSI*	Choose a.
b.	OEM	
58.	<u>Idle Line Motor Control</u>	
a.	Disabled — Motor Held on Indefinitely During Idle Line*	Choose 1.
b.	Enabled — Motor Turned Off After 40 Second Idle Line	
	<i>Note:</i> Not available on printers utilizing printer circuit cards 410640 or 410729.	
59.	<u>Speed Selection</u>	
a.	75 Baud	Choose f.
b.	150 Baud	
c.	300 Baud	
d.	600 Baud	
e.	1200 Baud	
f.	2400 Baud*	
g.	4800 Baud	
h.	9600 Baud	
	<i>Note 1:</i> Present on tractor feed printers with 410071 or 410072 circuit cards only.	
	<i>Note 2:</i> Option 59 applies only if Option 57.b. is selected.	
60.	<u>Auxiliary Alarm</u>	
a.	Enable	Choose b.
b.	Disable*	
	<i>Note 1:</i> Present on tractor feed printers with 410071 or 410072 circuit cards only.	
	<i>Note 2:</i> Future alarm mechanism. Select Option 60.b. when alarm mechanism is not present.	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
61.	<u>Regulator Grounding (Circuit Ground to Frame Ground)</u>	Choose 61.a. or 61.b.
a.	SSI	
b.	(OEM) at Printer	
c.	(OEM) External to Printer	

Note: Present on tractor feed printers 40P154/ZZ and 40P202/ZZ only.

B. Controller Options

101.	<u>Operating Speed</u>	Choose a., b., c., e., f., g., h., i., j. or k; Option 101.d. provided for possible future use.
a.	110 Baud	
b.	150 Baud	
c.	300 Baud	
d.	600 Baud	
e.	1050 Baud	
f.	1200 Baud*	
g.	1800 Baud	
h.	2100 Baud	
i.	2400 Baud	
l.	4800 Baud	

Note: Options 102. through 118. apply to multipoint private line operation only; for switched network operation proceed to Option 119. Options 121. through 158. apply to all types of operation.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
102.	<u>Variable Characters for Multipoint P.L. Operation</u>	
a.	CDC No. 1, Character 1] Must choose a character for each position.
b.	CDC No. 1, Character 2	
c.	CDC No. 2, Character 1	
d.	CDC No. 2, Character 2	
e.	CDC No. 3, Character 1	
f.	CDC No. 3, Character 2	
g.	Answer-Back (A/B) 1, Character 1 (R1)	
h.	A/B 1, Character 2 (R2)	
i.	A/B 2 (R3)	
j.	A/B 3 (R4)	
k.	Interrupt	
l.	Start of Heading/Start of Text 1	
m.	Start of Heading/Start of Text 2	
n.	End of Transmission (in addition to EOT or DLE EOT)	
103.	<u>Number of Characters in CDC No. 1</u>	
a.	One Character CDC*] Choose 1.
b.	Two Character CDC	
	<i>Note:</i> The number of characters in this and the following two options is exclusive of DELETE, if used. See Options 106., 107., and 108.	
104.	<u>Number of Characters in CDC No. 2</u>	
a.	One Character CDC*] Choose 1.
b.	Two Character CDC	
105.	<u>Number of Characters in CDC No. 3</u>	
a.	One Character CDC*] Choose 1.
b.	Two Character CDC	
106.	<u>DELETE Must Follow CDC No. 1</u>	
a.	No*] Choose 1.
b.	Yes	
107.	<u>DELETE Must Follow CDC No. 2</u>	
a.	No*] Choose 1.
b.	Yes	
108.	<u>DELETE Must Follow CDC No. 3</u>	
a.	No*] Choose 1.
b.	Yes	
109.	<u>Answer-Back Generated for CDC No. 2</u>	
a.	A/B to CDC 2*] Choose 1.
b.	No A/B to CDC 2	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
110.	<u>Answer-Back Generated for CDC No. 3</u>	] Choose 1.
a.	A/B to CDC 3*	
b.	No A/B to CDC 3	
111.	<u>Printer-Controlled Answer-Back</u>	] Choose 1.
a.	All Answer-Backs Delayed By Time of Option 118. (118.a. — No Delay, 118.b. — Approximatley 180 ms)*	
b.	A/B1 Delayed Until Printer Ready to Accept a Character or by time of Option 118 (Whichever is Longer), A/B2 and A/B3 Delayed by Time of Option 118; A/B2 Sent if Printer Not Ready to Accept a Character Within 2 Seconds	
	<i>Note:</i> b. requires that Option 140.a. be selected.	
112.	<u>Form Feed on Deselect</u>	] Choose 1.
a.	No Form Feed on Deselect*	
b.	FF Character Sent to Printer on Deselect	
113.	<u>Loss of Ability to Receive Causes Deselect</u>	] Choose 1.
a.	Loss of Ability to Receive Does Not Cause Deselect*	
b.	Loss of Ability to Receive Causes Deselect	

Note 1: If 113.b. is selected, 146.b. must be selected. "Ability to Receive", as used here, corresponds to Data Terminal Ready, an EIA interface signal not used internally in the integrated controller. It consists of the following indications:

- (1) the terminal is in service,
- (2) the printer is not in the test mode,
- (3) no paper alarm condition exists (see Option 48.),
- (4) the printer connector is in place (SSI signals present),
- (5) the motor is running at the correct speed with the type carrier initially synchronized to the printer.

When b. is selected, loss of any of these indications except the last (a latching signal) when copying data causes a deselect to occur.

Note 2: Tractor feed printers utilizing printer circuit cards 410071, 410072, 410076 or 410729 will optionally not indicate paper-out until the next detection of form in registration.

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
114.	<u>Line Break on Loss of Ability to Receive ("DTR")</u>	
a.	Loss of "DTR" Does Not Cause Line Break*	} Choose 1.
b.	Loss of "DTR" Does Cause Line Break	
	<i>Note:</i> If Option 113.b. has been enabled, then Option 114.b. is not functional.	
115.	<u>Line Break on Vertical Parity Error</u>	
a.	Vertical Parity Error Does Not Cause Line Break*	} Choose 1.
b.	Vertical Parity Error Does Cause Line Break	
116.	<u>Copy Before STX (As Programmed by 102.l. and 102.m.)</u>	
a.	Copy After STX*	} Choose 1.
b.	Copy After Receiving Valid CDC if Ready to Receive (Before STX)	
	<i>Note:</i> 109.b. and/or 110.b. disable Option 116.b.	
117.	<u>No. of Characters in Answer-Backs</u>	
a.	A/Bs Consist of 1 Character*	} Choose 1.
b.	A/Bs Consist of 2 Characters	
118.	<u>Answer-Back Response Delay</u>	
a.	No Delay After Clear to Send ON From Data Set*	} Choose 1.
b.	Fixed Delay of Approximately 180 Milliseconds	
119.	<u>Variable Characters for Switched Network Answer-Back</u>	
a.	A/B Character 1	} Choose as many characters as are required for answer-back.
b.	A/B Character 2	
c.	A/B Character 3	
d.	A/B Character 4	
e.	A/B Character 5	
f.	A/B Character 6	
g.	A/B Character 7	
h.	A/B Character 8	
i.	A/B Character 9	
j.	A/B Character 10	
k.	A/B Character 11	
l.	A/B Character 12	
m.	A/B Character 13	
n.	A/B Character 14	
o.	A/B Character 15	
p.	A/B Character 16	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
120.	<u>No. of Characters in Switched Network Answer-Back</u>	Choose 1.
a.	1	
b.	2	
c.	3	
d.	4	
e.	5	
f.	6	
g.	7	
h.	8	
i.	9	
j.	10	
k.	11	
l.	12	
m.	13	
n.	14	
o.	15	
p.	16	
	<i>Note:</i> One number <u>must</u> be selected if Option 141.a. is selected.	Choose 1; if b., specify left margin setting required by column number.
121.	<u>Left Margin Setting</u>	Choose 1; if b., specify tab settings required by column numbers.
a.	Left Margin at Column 1*	
b.	Left Margin Begins at Any Column from 2 Up	
122.	<u>Horizontal Tabulation Settings</u>	Choose 1; if b., specify tab settings required by column numbers.
a.	No Horizontal Tab Settings*	
b.	Preprogrammed Tab Settings in Any Column From 2-132.	
	<i>Note:</i> It is necessary that the last printing column be specified. Do not specify any columns to the right of this point. If a HT character is received and no column is specified between the print position and the end of line, the next printing character will print in the first print position of the next line. If all columns between the left- and right-hand margins are specified, a single space will be sent to the printer upon receipt of a HT character.	

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
123. a. b.	<u>Vertical Tabulation Settings</u> No Vertical Tab Settings* Tab Settings of From 2 to 72 Lines	Choose 1; if b., specify tab settings required by line numbers.
	<p><i>Note:</i> Care must be taken not to select vertical tab settings which will carry the printer beyond the form feed position. Option 20.b. (double line feed), if selected, will cause all vertical tab settings to be double those shown. (This allows use of 22-inch forms, if required.)</p> <p>Normally, printer spacing is 6 lines/inch; however, a large gothic font is available which has spacing of 4 lines/inch. Form feed is set by means of optional belts which may be installed to provide form feed for form lengths of from 2-1/2 to 22 inches.</p>	
124. a. b.	<u>Receipt of ENQ Starts Switched-Network Answer-Back/Multipoint Private Line Diagnostic Test</u> ENQ Does Not Start Answer-Back/Test* ENQ Starts Answer-Back/Test	Choose 1.
125. a. b.	<u>Type of Printer Used</u> 80-Column Printer * 132-Column Printer	Choose 1 to match printer ordered.
	<p><i>Note:</i> Not applicable to 40C303AA/001 controllers which have EPROMs 404602, 404603 and 404604 of Issue 4 or higher and 404605 of Issue 3 or higher. These EPROMs are located on circuit card 410142. See Option 191.</p>	
126. a. b.	<u>Pulse or Tone Generated on Receipt of BEL</u> Received BEL Character Does Not Cause Pulse or Tone* Received BEL Character (ASCII or — if Option 127.b., 138.b. or 139.b. selected — Baudot or Typesetter Code No. 1 or No. 2) Causes 1-Second Pulse or Tone Generation	Choose 1.
	<p><i>Note:</i> Pulse generation on paper-out or internal alarm is always provided (not an option). Option 126 controls pulse generation only; tone generation in all cases requires addition of a 403418 Audible Alarm Modification Kit (for ROP Terminals) or other arrangements. Consecutive BEL characters must be received more than one second apart for more than one tone to be heard.</p>	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
127.	<u>Baudot Code Converted to ASCII</u>	b. not used in Bell System Service Offerings.
a.	Baudot Code Not Accepted*	
b.	Baudot Code Converted to ASCII for Printer	
128.	<u>SI/SO Detection</u>	b. provided for future use.
a.	SI/SO Detection Not Used*	
b.	SI/SO Detection Enables Printing Additional Characters	
129.	<u>Horizontal Tabulation</u>	Choose 1.
a.	HT Character Ignored by ROP*	
b.	HT Character Causes Horizontal Tab as Programmed in Option 122. or Set On-Line	
	<i>Note:</i> b. requires Option 17.c. or e.	
130.	<u>Vertical Tabulation</u>	Choose 1.
a.	VT Character Causes Line Feed*	
b.	VT Character Causes Vertical Tab as Programmed in Option 123. or Set On-Line	
131.	<u>Left Margin</u>	Choose 1.
a.	Left Margin Begins at Column 1 Regardless of Programing of Options 121. and 122.*	
b.	Left Margin Begins as Programmed in Option 121.	
	<i>Note:</i> b. requires Option 17.c. or e.	
132.	<u>Printing of Escape Sequences Suppressed</u>	Choose 1.
a.	Character After ESC Printed as Received*	
b.	Printing of Character After ESC Suppressed	
	<i>Note:</i> With b. enabled, the character after ESC will be suppressed only if ESC is preceded by a non-ESC character; if ESC ESC X is received, X will be printed.	
133.	<u>DLE EOT/EOT Disconnect</u>	Choose 1.
a.	DLE EOT Sequence Causes Disconnect or Deselect (No Disconnect or Deselect on EOT Alone)*	
b.	EOT Causes Disconnect or Deselect	
	<i>Note:</i> Option 141.a. (plus Option 140.a.) causes a disconnect and Option 141.b. a deselect in conjunction with this option.	

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
134.	<u>On-Line Printer Control</u>	
a.	DC2 and DC4 Ignored by ROP*] Choose 1.
b.	DC4 Blinds Printer, DC2 Unblinds Printer	
135.	<u>Idle Line Disconnect</u>	
a.	No Disconnect on Idle Line*	] Choose 1.
b.	30-Second Idle Line Causes Disconnect	
	<i>Note:</i> b. requires that Option 140.a. be selected.	
136.	<u>Normal/Inverted SI/SO</u>	
a.	Normal (SI = ASCII)*	] b. provided for future use.
b.	Inverted (SO = ASCII)	
137.	<u>Carrier Fail Disconnect</u>	
a.	No Disconnect on Carrier Fail*	] Choose 1.
b.	No Carrier for 15 Seconds Causes Disconnect	
	<i>Note:</i> b. requires that Options 140.a. and 144.a. be selected.	
138.	<u>Teletypesetter Code No. 1 Converted to ASCII</u>	
a.	Teletypesetter Code No. 1 Not Accepted*	] b. not used in Bell System Service Offerings.
b.	Teletypesetter Code No. 1 Converted to ASCII for Printer	
139.	<u>Teletypesetter Code No. 2 Converted to ASCII</u>	
a.	Teletypesetter Code No. 2 Not Accepted*	] b. not used in Bell System Service Offerings.
b.	Teletypesetter Co. No. 2 Converted to ASCII for Printer	
140.	<u>Interface to Transmission Facilities</u>	
a.	EIA*	] b. not used in Bell System Service Offerings.
b.	20/60 mA	
	<i>Note:</i> b. disables Options 111.b. and 118.b. — A/Bs are not delayed. Likewise, Options 135.b. and 137.b. are also disabled.	
141.	<u>Data Link Control Procedures</u>	
a.	Switched Network and Point-to-Point Private Line Applications*	] Choose 1.
b.	Multipoint Private Line Applications	
142.	<u>Automatic Answer Starts Switched-Network Answer-Back</u>	
a.	Auto Answer Does Not Start A/B*	] Choose 1.
b.	Auto Answer Starts A/B	
	<i>Note:</i> b. requires that Options 140.a. and 151.a be selected. If the data set is placed in the data mode within five seconds after ringing begins, the answer-back will be sent. This could occur with manual as well as automatic answer.	

* Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
143.	<u>Reverse Channel Used/Not Used</u>	
a.	Reverse Channel Not Used — Minimum 400 Ms of Line Break Generated to Stop Sender*	} Choose 1 to match data set ordered.
b.	Reverse Channel Send and Receive (SCA and SCF) Used — SCA Turned OFF to Stop Sender, SCR ON Required to Send A/B	
144.	<u>Monitor Receive Data on Data Carrier Detect (CF) or Data Set Ready (CC)</u>	
a.	Monitor Receive Data on Recognition of CF and CC ON*	} Choose 1 to match data set ordered — 113A requires b.
b.	Monitor Receive Data on Recognition of CC ON	
	<i>Note:</i> The choice of a. or b. depends on the type of data set used; b. is required for the 113A Data Set but is undesirable for all other present Bell System data sets usable with integrated ROP sets. If the selected control signal is OFF, all incoming data signals are ignored.	
145.	<u>Local Copy of Switched-Network Answer-Back</u>	
a.	No Local Copy of A/B*	} Choose 1.
b.	Local Copy of A/B	
	<i>Note:</i> Option 145.b. cannot be used with Data Set 202C; local copy is obtained with 145.a.	
146.	<u>Friction Feed/Tractor Feed Printer</u>	
a.	Friction Feed Printer — Paper Alarm Causes AB2 to be Sent on Next CDC or Data Terminal Ready (CD) OFF on New Call*	} Choose 1.
b.	Tractor Feed Printer — Paper Alarm Signal Causes Immediate Disconnect (See Options 113. and 114.)	
	<i>Note:</i> The response to a paper alarm condition varies with the type of printer and options used:	
	(1) <u>Friction Feed Printer and Option 146.a.</u> The low paper condition is recognized but data continues to be accepted and printed until an end of transmission condition is recognized (133.a. or b., 135.b., or 137.b.). The controller then refuses to accept new messages (per 141.a. or b. procedures) until paper is replenished.	

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
146. (Cont)	<p>(2) <u>Friction Feed Printer and Option 146.b.</u> The low paper condition is recognized and the controller immediately drops Data Terminal Ready to the data set. However, the controller continues to accept data until Data Carrier Detect drops (144.a.) or Data Set Ready drops (144.b.). Data in the buffer at this time will be printed.</p>	
	<p>(3) <u>80-Column Tractor Feed Printer With 410640 Printer Circuit Card and Option 146.a. plus Option 39.a. or b.; 80-Column Tractor Feed Printer With 410071 or 410076 Printer Circuit Card or 132-Column Tractor Feed Printer and Option 146.a. plus Options 39.a. and 48.a.; 80-Column Tractor Feed Printer With 410071 or 410076 Printer Circuit Card or 132-Column Tractor Feed Printer and Option 146.a. plus Options 39.a. and 48.a. or b.</u> The out-of-paper condition is immediately recognized by the printer, which then stops accepting data from the controller. However, the controller continues to accept data from the line until an end of transmission condition is recognized (133.a. or b., 135.b., or 137.b.). If this causes a buffer full condition Option 143. becomes effective. After 15 seconds of no characters being delivered to the printer, the controller goes into alarm and clears the buffer.</p>	
	<p>(4) <u>80-Column Tractor Feed Printer With 410640 Printer Circuit Card and Option 146.b. plus Option 39.a. or b.; 80-Column Tractor Feed Printer With 410071 or 410076 Printer Circuit Card or 132-Column Tractor Feed Printer and Option 146.b. plus Options 39.a. and 48.a.; 80-Column Tractor Feed Printer With 410071 or 410076 Printer Circuit Card or 132-Column Tractor Feed Printer and Option 146.b. plus Options 39.b. and 49.a. or b.</u> The out-of-paper condition is immediately recognized by the printer, which then stops accepting data from the controller. The controller immediately drops Data Terminal Ready to the data set but continues accepting data from the line until Data Carrier Detect drops (144.a.) or Data Set Ready drops (144.b.). After 15 seconds of no characters being delivered to the printer, the controller goes into alarm and clears the buffer.</p>	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
146. (Cont)	<p>(5) <u>Tractor Feed Printer (except Printer With 410640 Printer Circuit Card) and Option 146.a. plus Options 39.a. and 48.b.</u> The out-of-paper condition is not recognized by the printer until the next form is in registration. Data is accepted by the printer from the controller until that time. However, the controller continues to accept data from the line until an end of transmission condition is recognized (133.a. or b., 135.b., 137.b.). If this causes a buffer full condition Option 143. becomes effective. After 15 seconds of no characters being delivered to the printer, the controller goes into alarm and clears the buffer.</p> <p>(6) <u>Tractor Feed Printer (except Printer With 410640 Printer Circuit Card) and Option 146.b. plus Options 39.a. and 48.b.</u> The out-of-paper condition is not recognized by the printer until the next form is in registration. Data is accepted by the printer from the controller until that time. The controller immediately drops Data Terminal Ready to the data set but continues accepting data from the line until Data Carrier Detect drops (144.a.) or Data Set Ready drops (144.b.). After 15 seconds of no characters being delivered to the printer, the controller goes into alarm and clears the buffer.</p>	<p>Choose 1. (a. recommended)</p>
147. a. b.	<p><u>Buffer Fully Enabled/Minimum Usage of Buffer</u> Buffer Fully Enabled — Data Flow to Printer Controlled by Printer to Avoid Data Stacking* Minimum Usage of Buffer — Data Set to Printer at Approximately Same Rate as Received</p> <p><i>Note:</i> b. requires that the data be properly formatted to avoid stacking and possible loss of characters, as for sets controlled by a 40C103 Controller.</p>	<p>Choose 1. (a. recommended)</p>
148. a. b.	<p><u>Motor Turn-Off Delay</u> Minimum Delay — Motor Turns Off Approximately 30 Seconds After Detection of Idle State* Maximum Delay — Motor Turn Off Delayed Approximately 2 Minutes After Detection of Idle State</p>	<p>Choose 1.</p>

*Options marked with an asterisk are factory furnished.

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<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
148. (Cont)	<i>Note:</i> The controller times out for approximately 30 seconds whenever it recognizes an idle state — no characters being printed. At the end of this timeout, Options 135. and 148. are checked: if Option 135.a. is selected, no action is taken, but if Option 135.b is selected, the set is disconnected as explained after Option 133; if Option 148.a. is selected, the motor is shut off, but if Option 148.b. is selected, the timeout is increased. (In switched network operation, the motors will turn off immediately upon detection of the disconnect character(s) if 148.a. is selected; if 148.b. is selected, the 2 minute delay is enabled.) While performing some functions, the minimum times may be lengthened to as much as twice as long.	
149.	<u>New Line Substitution on Carriage Return</u>	
a.	Carriage Return Passed to Printer*	} Choose 1.
b.	New Line Substituted for Carriage Return	
150.	<u>DATA ERROR Lamp Used/Not Used</u>	
a.	DATA ERROR Lamp Lighted on Parity Error*	} Choose 1.
b.	DATA ERROR Lamp Not Used to Indicate Parity Errors	
	<i>Note:</i> Parity errors are determined by Option 158.	
151.	<u>Switched Network/Private Line Applications</u>	
a.	Switched Network Applications — Data Set Ready (CC) ON Turns on Motor*	} Choose 1.
b.	Private Line Applications — Character in Buffer Turns on Motor	
	<i>Note:</i> With a. the motor will be turned on as soon as an ON condition of Data Set Ready is detected. In switched network operation this signal is not turned ON until the data set enters the Data mode following automatic or manual answering of a call, but in private line operation it comes ON with application of power and remains ON all the time. Consequently, the selection of a. will result in the motor turning on on call connection in switched network applications, but remaining on permanently in private line applications. With b. the motor will not be turned on until a character is transferred to the buffer for printing, which will not occur in multipoint private line applications until the terminal is selected to receive and a character is received following the Start of Heading or Start of Text character(s). This character (and all following) will not be transferred to the printer until the printer motor is on and up to speed and the printer signals that it is ready to accept a character (assuming that Option 147.a. is enabled).	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
152.	<u>Errored Character/Substitute Character to Printer on Parity Error</u>	
a.	Errored Character Sent to Printer*	} Choose 1.
b.	Substitute Character Sent to Printer on Parity Error (See Note.)	
	<i>Note:</i> If the type carrier is up-low, a tilde (~) will be sent as the substitute character when Option 21.a. is enabled; a circumflex (^) will be sent if Option 21.b. is enabled. If the type carrier is monospace, the type carrier identification symbol will be sent as the substitute character if Option 22.a. is enabled; a circumflex (^) will be sent if Option 22.b. is enabled.	
153.	<u>Future Use</u>	
a.	All Present Applications*	} Choose a.
b.	Possible Future Use	
154.	<u>Future Use</u>	
a.	All Present Applications*	} Choose a.
b.	Possible Future Use	
155.	<u>Future Use</u>	
a.	All Present Applications*	} Choose a.
b.	Possible Future Use	
156.	<u>Number of Data Bits Per Character (Excluding Parity Bit, if Used)</u>	
a.	5 bits/Character	} Choose 1.
b.	6 bits/Character	
c.	7 bits/Character*	
d.	8 bits/Character	
	<i>Note:</i> Select a. for Baudot Code, b. for Teletype-setter Code c. for ASCII with parity check, and d. for ASCII without parity check.	
157.	<u>Number of Stop Bits Per Character</u>	
a.	1 Stop Bit*	} Choose 1.
b.	2 Stop Bits	
158.	<u>Parity Used</u>	
a.	Odd Parity Used	} Choose 1.
b.	Even Parity Used*	
c.	No Parity Check or Parity Bit Used	
	<i>Note:</i> a. and b. require Option 156.c. for ASCII with one parity bit; c. requires Option 156.d. for ASCII with 8th bit constantly marking or spacing, or present but not checked for parity. (If Options 156.c., 157.a., and 158.c. are selected, the controller will transmit characters having only 9 units instead of 10 — the stop bit will immediately follow the last data bit.)	

*Options marked with an asterisk are factory furnished.

<u>OPTION NO.</u>	<u>DESCRIPTION</u>	<u>ACTION</u>
159.-190.	Not Present	
191.	<u>Line Wraparound Operation</u>	
a.	Line Wraparound Performed by Printer*	Choose 1.
b.	Line Wraparound Performed by Controller	
	<p><i>Note 1:</i> Option 191 is only present on controllers which utilize EPROMs 404602, 404603 and 404604 of Issue 4 or higher and 404605 of Issue 3 or higher. These EPROMs are located on circuit card 410142. See Option 125.</p>	
	<p><i>Note 2:</i> When a right-hand margin is required outside of the range provided by the printer's options, choose Option 191.b. and specify a column in Option 122 to designate the last column to be printed. The controller will provide a NL if data continues beyond this point.</p>	
C. Cabinet Options		
	<u>Ground Connection</u>	
a.	Frame Ground Connected to Signal Ground*	Choose 1; a. -- No Action Required, b. -- Cut Land on P4 Card (410143).
b.	Frame Ground Not Connected to Signal Ground	
	<p><i>Note:</i> A connection between frame ground and signal ground is required for proper operation of the internal test message. Most data sets make this connection either permanently or as an option, but a few do not. If a cable longer than the standard (408065) is used to connect the data set to the ROP, it may be necessary to break this connection at either the cabinet or the data set (but not both) to avoid electrical noise problems (caused by a ground loop).</p>	
D. Operator Console Options		
a.	INTRPT Key Causes Line Break/Reverse Channel Off (Per Option 143.) Whenever Depressed, Indicator Lights Any Time Line Break/Reverse Channel Off Occurs (Manual or Automatic)*	Choose 1; a. -- No Action Required, b. -- Block INTRPT Key With 340701 Blocking Keytop.
b.	INTRPT Key and Indicator Blocked	

*Options marked with an asterisk are factory furnished.