

BELL SYSTEM PRACTICES
Teletypewriter and Data Stations

ADDENDUM P34.101
Issue 2, March, 1958
AT&T Co Standard

28 TELETYPEWRITER

LIST OF UNITS

AND

AUXILIARY FEATURES

1. GENERAL

- 1.001 This addendum replaces Issue 1 of the addendum and supplements Section P34.101, Issue 2.
- 1.002 This addendum is reissued to include additional typing units, typeboxes and miscellaneous features. Marginal arrows indicate the changes.

2. TYPING UNITS

The following change applies to Part 2 of the section:
(a) 2.02—revised

- 2.02 Table 1 shows the codes assigned to 28 typing units and indicates the essential features provided under each of these codes.

3. TYPEBOXES

The following changes apply to Part 3 of the section:

- (a) 3.01 and 3.02 added
(b) Table—revised and numbered 3.03

3.01 The original "thick" typebox containing dummy pallets has been rated Manufacture Discontinued and superseded by a "thin" typebox having no dummy pallets. The new-style typebox can be used in a typing unit adjusted for the old-style typebox without causing any difficulty. However, if an old-style typebox is used in a typing unit adjusted for the new-style typebox **the print hammer stop bracket must be readjusted** to prevent excessive print hammer blows which might result in breakage of the typebox. Typing units may be equipped with new- or old-style typeboxes but the **printing ham-**

mer stop bracket and **printing arm** adjustment should be checked⁷ whenever a typebox is installed. Old-style type pallets and springs can not be used in new-style typeboxes. New-style type pallets and springs can be used in both old- and new-style typeboxes. Parts ordering information for the new-style pallets is shown in Bulletin 1164B.

3.02 The TP150077 pallet springs are replaced by TP157238 springs. The TP152559 pallet box plate (front) is superseded by a TP154616 plate. The TP152559 plate may be obtained for maintenance purposes when required.

3.03 The codes for the typeboxes have not changed and are as follows:

<u>Code</u>	<u>Bell System Type Arrangement</u>
28A	A
28B	B
28C	C
28D	D
28E (Note 1)	A (Long Gothic style)
28E-1 (Notes 1 & 2)	Basically A (Long Gothic style)
28F (Note 3)	A
28F-1 (Note 3)	A (includes # sign)

Note 1: Long Gothic style is not recommended for single line-feed use as the printed character is 0.120-inch high.

Note 2: Deviations from type arrangement "A" are as follows:

- Upper Case B has * (asterisk)
- Upper Case D has ◇ (diamond)
- Upper Case F has # (number sign)
- Upper Case H has → (arrow to right)
- Upper Case M has ∞ (infinity sign)
- Upper Case N has ⊕ (weather symbol)
- Upper Case V has ⊗ (weather symbol)
- Upper Case Z is blank (no pallet)

Note 3: The 28F and 28F-1 typeboxes are to be used only with the 28J and 28J-1 typing units. They have the maximum size type and the characters are approximately 0.180-inch high. No character is provided for upper case H and the upper case P is φ.

4. TELETYPEWRITER BASES

The following changes apply to Part 4 of the section:

(a) Unnumbered paragraph has been numbered 4.01.

4.01 Table 2 shows a summary of bases and associated electrical service units and cabinets.

7. ELECTRICAL SERVICE UNITS

The following change applies to Part 7 of the section:

(a) Unnumbered paragraph revised and numbered 7.03.

7.03 **28E Electrical Service Unit.** This unit is shown in Table 2 and is like the 28B unit except it includes the rectifier and line relay mounting assembly which is wired at the factory. ↵

TABLE 1
CODES FOR 28 TYPING UNITS

Units	Friction Paper Feed	Sprocket Paper Feed	Horizontal Tabulate Feature	Additional Cabinet Terminals	Common Selective Calling Parts	Normal Paper Width Adjustment	Units Marked # or ## Have Same Wiring	Uses 28A, B, or C Base	Stuntbox Used	Stuntbox Assembly Part Number
Typing Units						8½"				
28A Notes 1 & 2	X					8½"	##	X	AG	TP152804
28A-1 Notes 1 & 2		X				8½"	##	X	AG	TP152804
28B		X				8½"	##	X	AR	TP154944
28B-1 (AMA Machine)*	X					7"	##		AX	TP154961
28C		X	X			8½"	##	X	AR	TP154944
28D	X					8½"	##	X	AR	TP154944
28E Note 3	X			X	X	8½"	##	X	AN	TP152810
28F Note 3		X		X	X	8½"	##	X	AN	TP152810
28G Note 3		X	X	X	X	8½"	##	X	AEK	TP157519
28H (For 83B1 Selective Calling System only)	X					8½"			AED	TP157400
28H-1 (For 83C1 Selective φ Calling System only)	X					8½"			AFA	TP157401
28H-2 (For 83C1 Selective φ Calling System only)	X					8½"			AFB	TP157402
28J (For Air Defense)	X					8½"		X	AEG	TP157405
28J-1 (For Air Defense)	X					4½"		X	AEG	TP157405
28K (For 83C1 Selective φ Calling System only)	X					8½"			AFC	TP157404

Note 1—Function pawl stripper ball operated from typebox clutch. All others operated from function clutch.

Note 2—Manufacture Discontinued.

Note 3—Includes TP153920 Selective Calling Parts.

* Equipped with special typebox (TP157000)

φ The 83C1 Selective Calling System is under development as of 1-1-58.

TABLE 2
CODES FOR 28 BASES, ELECTRICAL SERVICE UNITS AND CABINETS

Units	Sending Receiving	Receiving Only	Uses 28A Electrical Service Unit	Uses 28B Electrical Service Unit	Requires 28A Cabinet	Requires 28B Cabinet	For AC	For DC	Floor Mounted	Shelf Mounted	Requires DC Conversion Parts on DC	60-Volt Copylamps	6-Volt Copylamps
Bases													
28A Note 2	X		X										
28B		X	X	X									
28C	X			X									
Electrical Service Units													
28A					X								
28B						X							
28E Note 4						X							
Cabinets													
28A Note 2							X	X	X		X	X	
28B Note 2							Note 1	X	X		X	X	Note 3
28C Note 2							Note 1	X		X	X	X	Note 3
28D							X		X				X
28E							X			X			X

Note 1—May be used on ac but 28D or 28E more satisfactory.

Note 2—Manufacture discontinued.

Note 3—May be converted to low-voltage copylamp arrangement by using TP159357 modification kit.

Note 4—Includes rectifier and line relay mounting.

8. 28 TELETYPEWRITER CABINETS

The following changes apply to Part 8 of the section:
8.04 and 8.05—added

8.04 **28D Teletypewriter Cabinet:** This cabinet is floor⁴ mounted and like the 28B teletypewriter cabinet except that it is equipped with a transformer and two 6-volt copylamps in parallel for use on ac only.

8.05 **28E Teletypewriter Cabinet:** This cabinet is shelf mounted like the 28C teletypewriter cabinet except that it is equipped with a transformer and two 6-volt copylamps in parallel for use on ac only. A directory holder mounted on the left side is included.

9. AUXILIARY FEATURES AND CONVERSION PARTS

The following changes apply to Part 9 of the section:

- (a) 9.02—table revised
- (b) 9.03—added features
- (c) 9.10(a) reference ** —revised
- (d) 9.11.1 through 9.11.7—added features
- (e) 9.15—revised
- (f) 9.19.1 through 9.19.7—added
- (g) 9.20—revised
- (h) 9.24—added

A. Auxiliaries Associated with the Electrical Service Units

9.02 (Change the TP152327 conversion set of parts [rectifier and cable assembly] listed in the table to TP153477.)

B. Auxiliaries Associated with Cabinets

9.03 (Add the following to the listing)

Modification Kit (TP153901)	Facilities for mounting 15A, 15B, 15C, and 15D paper winders on 28A, 28B, and 28C cabinets.
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Modification Kit (TP153926)	A paper guide attached to the back of the cabinet to be used with superfold paper or forms in a friction- or sprocket-feed teletypewriter, respectively. The superfold paper in the friction-feed machine shall be fed under a partial roll of paper to provide a slight drag so that the paper straightener will function properly.
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- Modification Kit (TP154744) Provides incandescent 6-volt copylight system when installed on 28B or 28C cabinet with a 28B electrical service unit. This set of parts uses a 6.3-volt transformer and a 100-ohm resistor for use on ac only.
- Modification Kit (TP154754) Subbase to be added to 28A or 28B cabinets to raise cabinet level 10 inches to permit stand-up operation.
- Modification Kit (TP154777) For use on 28B and 28C cabinets (dc operation) to rewire the two 60-volt copylamps in parallel with a 700-ohm resistor in series with each lamp.
- Modification Kit (TP159357) Replaces TP154744 set of parts for providing a low-voltage copylight system when used on 28B and 28C cabinets. This new set of parts uses a 5.5-volt transformer and does not use a resistor for use on ac only.
- Modification Kit (TP159356) Provides a paper guide that will not obscure the typed copy above the printing point by replacing the TP153771 through TP153787 guide brackets on sprocket-feed typing units having TP153701 through TP153717 paper handling sets of parts.
- Modification Kit (TP154756) A form-out alarm to be installed on 28 floor-mounted cabinets, equipped with rear paper guide set of parts (TP153926), to give an alarm when the last form is being used.

D. Associated with Selective Calling Typing Units

9.10(a) (Change reference indicated by ** to read)

**In this case the AN and AEK stuntboxes are equipped with a shift slide assembly for one to four one-letter CDCs. Where two 2-letter codes are required, the TP154639 slide must be replaced with a TP157164 slide. The TP157164 slide is furnished as part of the TP154750 stuntbox shift slide set of parts.

9.11.1 (Add the following)

Modification Kit (TP158909): This kit provides parts to be used with 28E, 28F, 28G, and 28H typing units for typing all

"call directing codes." Units containing these parts are used with 83A and 83B selective calling systems where it is desired to have all call directing codes typed on some or all machines on the circuit.

9.11.2 Modification Kit (TP153913): This kit may be installed on 28E, 28F, 28G, and 28H typing units to suppress the typing of all call directing codes used in selective calling systems.

9.11.3 Modification Kit (TP153920): This kit is used to modify 28B, 28C, and 28D cabinets for selective calling and consists of a TP157152 terminal block assembly, TP157157 busy light feature, and TP157156 cable assembly. These parts are furnished with the 28E, 28F, and 28G typing units.

9.11.4 Modification Kit (TP154758): This kit includes the stuntbox, cable and terminal blocks used on the 28E typing unit.

9.11.5 Modification Kit (TP154759): This kit includes the stuntbox, cable and terminal blocks used on the 28H typing unit.

9.11.6 Modification Kit (TP154740): This kit is used to convert the stuntbox of a 28E typing unit to a stuntbox for 28H typing unit.

9.11.7 Modification Kit (TP153921): This kit includes plug, cable and connector block to mount the 28A distributor on a teletypewriter base.

F. Miscellaneous Features Associated with Typing Units

9.15 Horizontal Tabulator Mechanism (TP154781): This modification kit is used to convert a 28B or 28F typing unit into a 28C or 28G typing unit, respectively, and to provide tabulating features on friction-feed typing units for 60-, 75-, and 100-wpm operation. This mechanism includes a contact to control an associated transmitter-distributor start magnet. (If parts without this transmitter control are desired, the TP152903 set of tabulator parts should be ordered.) The original parts, TP153908 and TP152304, used to provide tabulating features with and without transmitter control, respectively, may be used for 60- and 75-wpm operation only.

9.19.1 Universal Contacts (TP154785): A modification kit for installing make-before-break universal contacts.

9.19.2 Vertical Spacing—Four Lines to the Inch (TP154742):
This set of parts, when installed on a 28 sprocket-feed typing unit, provides vertical spacing of four lines to the inch in the double line-feed position and eight lines per inch in the single line-feed position. Eight lines per inch is not recommended for use with standard type because of overprinting.

The vertical spacing feature is obtained by changing line-feed spur gears, the two line-feed bars, and the two line-feed bar eccentrics.

9.19.3 Function Lever (TP153670): This function lever is for use where space suppression on the function that operates a latch-release bail is not desired.

9.19.4 Reperforator Control Parts (TP152339): This set of parts is used with the 28A typing unit stuntbox; it locks contact on upper-case H and releases on upper-case F.

9.19.5 Reperforator Control Parts (TP152307): This set of parts is used on 28D, 28E, 28F, 28G, and 28H typing unit stuntboxes; it locks contact on upper-case H and releases on upper-case F.

9.19.6 Selective Calling Parts (TP153920): This set of parts is used to modify 28A and 28B cabinets for selective calling and consists of a TP157152 terminal block assembly, TP157157 busy light feature, and TP157156 cable assembly. These parts are furnished with the 28E, 28F, and 28G typing units.

9.19.7 Multiple Copy Roll Paper Parts (TP152340): A set of parts to provide means for feeding two or three copy paper from a roll on 28A typing units. These parts prevent the carbon paper from getting out of line when rolled multicopy stationery is used.

G. Miscellaneous Features Associated with Bases

9.20 Break-Key Mechanism (TP154726): This modification kit provides for converting the TP153902 signal line break mechanism to the new signal line break mechanism which is furnished on 28C bases and has break contacts separated from the sending contacts.

9.24 Noise Suppressor (TP151369): This is a set of parts to suppress radio frequency induction.

10. MAINTENANCE PARTS KITS

The following additions apply to Part 10 of this section :

10.01 (Add the following maintenance parts kits to the table.)

<u>Equipment to be Serviced</u>	<u>For Maintenance of Single Unit</u>	<u>For Maintenance of 2 to 5 Units</u>
28 Teletypewriter Set (less typing unit)	—	TP152863
28 Typing Unit	—	TP152864