BELL SYSTEM PRACTICES
Teletypewriter and Data Stations

ADDENDUM P35.633
Issue 1, July, 1959
AT&TCo Standard

REPERFORATOR-TRANSMITTER UNITS 14F AND 14G

REQUIREMENTS AND PROCEDURES

1. GENERAL

1.001 This addendum supplements Section P35.633, Issue 3.

1.002 This addendum is issued to revise various requirements and procedures, to include the changes in adjustments authorized for this apparatus by the P98 series Bell System Practices listed at the end of this addendum, and to specify that the information in the section and the addendum applies only to 14F and 14G reperforator-transmitter units limited to 60 or 75 word-per-minute operation.

The following changes apply to Part 1 of the section:

(a) 1.01 — revised
(b) 1.03.1 and 1.04.1 — added

1.01 This section contains the requirements and adjusting procedures for the maintenance of the 14F and 14G reperforator-transmitter units designed for operation at speeds of 60 and 75 words per minute.

1.03.1 The adjustments given herein are arranged in the sequence that should be followed if a complete readjustment of a unit were being made. To prevent lost or garbled first characters after a period of shutdown, **it is particularly important that the specified method of readjusting the mainbail adjusting-screw be strictly followed.**

1.04.1 **To Provide Unshift on LTRS Only:** Standard 14F and 14G reperforator-transmitter units are equipped to unshift on either LTRS or Space. In order to provide for unshift on LTRS only, it is necessary to transfer the Space pullbar from its slot in the pullbar guide to the notch adjacent to the slot. (All units manufactured since 1930 are equipped with pullbar guides having the aforementioned notches.)

(a) On 14 reperforator-transmitter units equipped with pullbar guards and short spring brackets, it will be necessary to loosen (but not to remove) the pullbar guard and the spring bracket associated with the Space pullbar in order to transfer the Space pullbar from its slot to the adjacent notch without damaging the parts involved.

2. REQUIREMENTS AND PROCEDURES

The following changes apply to Part 2 of the section:

(a) 2.42, 2.49, 2.59, and 2.60 — added note
(b) 2.66(b) — revised
(c) 2.90 and 2.96 — added note
(d) 2.129 paragraph heading and (a) and (a)(1) — revised
(e) 2.131 Notes 1 and 2 — replaced by new note
(f) 2.135 and Fig. 68 — revised
(g) 2.138(d)(2) and Fig. 71 — revised
(h) 2.147 and Fig. 72 — revised
(i) 2.147.1 — added
(j) 2.152(c) and Fig. 77 — revised

2.42 **Mainbail Adjusting-screw (Final Adjustment):** Add before (b) To adjust:

Note: To prevent lost or garbled first characters after a period of shutdown, it is most important that before changing this adjustment or any related adjustment that the following adjustments be checked, and remade if necessary, in the order given:

Adjustment	Paragraph
Mainbail	2.11
Pullbar Guide	2.12
Mainbail Adjusting-screw (Preliminary Adjustment)	2.13
Codebar Bellcranks	2.14
Vertical-link Pivot-screw	2.15
Lower Vertical-link Bellcrank Separator-plates	2.16
Codebar Locking-lever Spring	2.37
Mainbail Spring	2.41

2.49 **Intermediate-bail Adjusting-screw:** (Add at the end of this paragraph)

Note: If difficulty is experienced in meeting the specified clearance, add shims (0.004" thick) under the head of the intermediate-bail shoulder-screw, shift-bail shoulder-screw, and shift-latch shoulder-screw.

2.59 **Code-punch-bail-arm Stud (Preliminary Adjustment):** (Add at the end of this paragraph)

Note: Do not take apart defective punches. If satisfactory punching cannot be obtained, replace the entire punch-block assembly.

2.60 **Code-punch Die-plate Alignment:** [Add after subparagraph (e)]

Note: Do not take apart defective punches. If satisfactory punching cannot be obtained, replace the entire punch-block assembly.

2.66 **Sensing and Distributing Clutch-magnet Release-springs:**

(b) With the throwout-lever springs removed, and an armature held lightly against the center leaf of the release spring but not compressing the release spring while the other armature is held in the unoperated position, there should be Min 0.006", Max 0.015" between the magnet core and the armature at the closest point.

(1) To adjust, bend the center leaf-spring.

Note: Check that the operating edges of the leaf extensions are parallel to their respective armatures, as gauged by eye.

2.90 **Code-punch-bail-arm Stud (Final Adjustment):** (Add at the end of this paragraph)

Note: Do not take apart defective punches. If satisfactory punching cannot be obtained, replace the entire punch-block assembly.

2.96 **Code-punch Tape-guide:** (Add at the end of this paragraph)

Note: If the tape does not move freely, insert the punch-block cleaning-tool between the guide plate and the die plate of the punch block and move the tool forward and backward a few times to remove any lint or paper scraps. The punch-block cleaning-tool should never be used while the punch mechanism is moving.

2.129 **Transfer-bail Extension and Transfer T-lever Eccentric-shaft (Final Adjustment):**

(a) Insert a length of tape perforated with the **Y** code combination in the pivoted transmitter, trip the sensing clutch, and rotate the motor by hand until the transfer-bail-extension roller is on the high part of its cam and the **Y** combination is set up on the Y-levers. There should be some clearance, not more than 0.006", between the lower prongs of the No. 1 (rear) and the No. 5 (front) T-levers and

Y-levers when the play in the transfer slides is taken up in a direction to make this clearance a maximum.

(1) To adjust, loosen the transfer-bail-extension clamp-screw and position the extension by means of its elongated hole. **Fig. 60**

2.131 **Distributor Contacts:** (Replace Note 1 and Note 2 just under the title of the adjustment in the section by the following note)

Note: Contact points must be centrally aligned with each other and square, as gauged by eye, when the distributor contact levers are on the low part of their respective cams and the adjusting screws are set to permit the contacts to remain in closed position. Adjust by bending the long and short contact springs as necessary, using a TP124134 bending tool or other satisfactory bending tool. The following adjustments are to be made with the distributor levers on the high part of their cams.

2.135 **Tape-out Sensing-lever Spring:** It should require a push as indicated in Fig. 68 to start the tape-out sensing-lever moving when the lever is in its uppermost position, the tape-out-contact swinger held away from the extension, and the pivoted transmitter held in its vertical position.

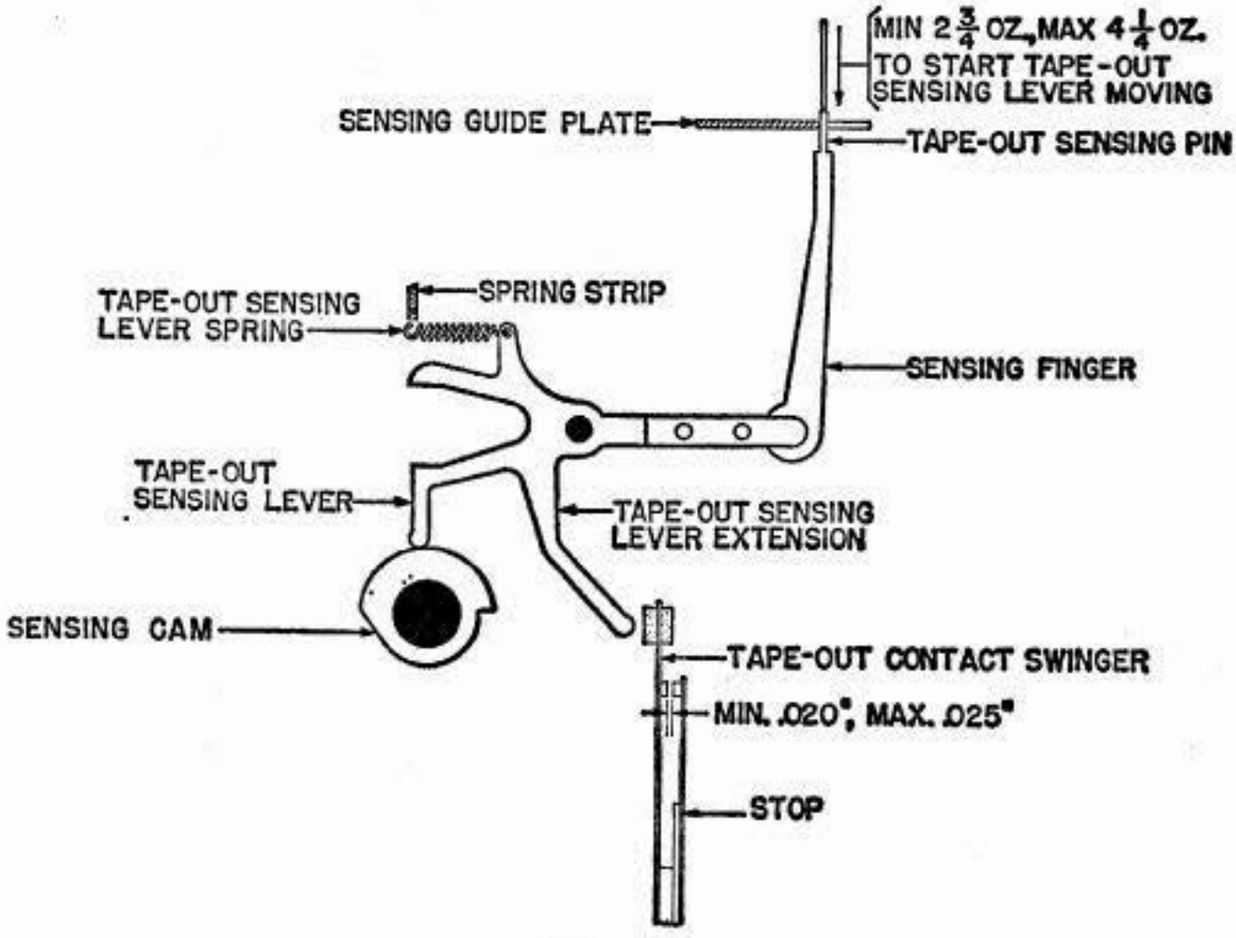

Fig. 68

Note: In order to eliminate friction between the tape-feed lever and the tape-out lever, the tape-feed lever should be positioned toward the rear of the unit when measuring the spring tension.

(a) To gauge, apply the push end of the scale to the tape-out sensing-pin. (The tension may be easily determined by observing the tape-out sensing-lever spring.)

2.138(d) **No. 2 Contact Spring:**

(2) With the No. 5 spring returned to its unoperated position, there should be a clearance of Min 0.010", Max 0.020" between the No. 5 and No. 2 contact-spring tip-insulators. **Fig. 71**

(a) To adjust, bend the No. 2 contact spring between the contact and the tip insulator.

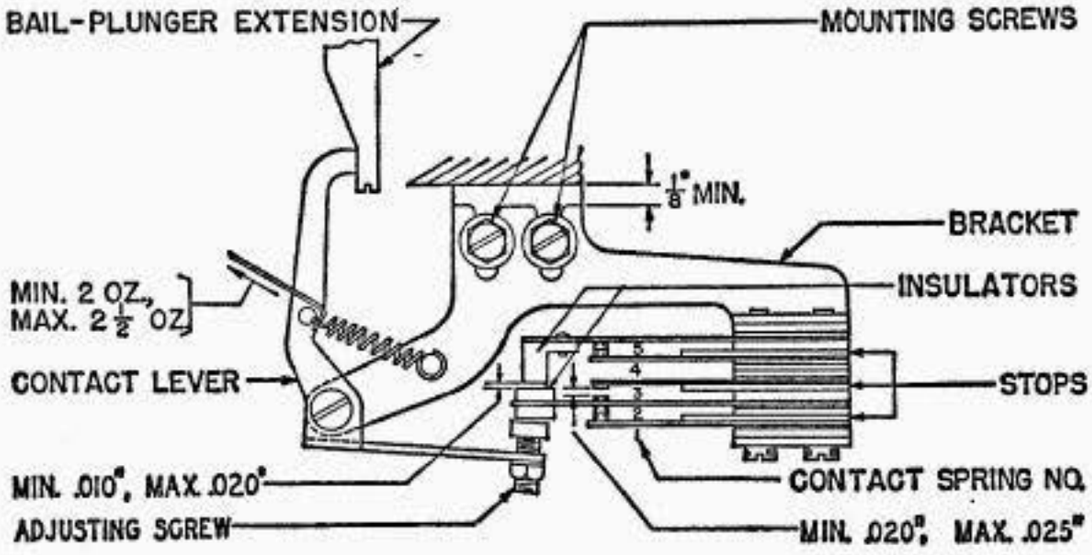

Fig. 71

2.147 **Mainbail-cam clutch-torque** should be measured as follows after the motor has been running at least 10 minutes with the mainbail cam remaining stationary.

(a) It should require a pull as indicated in Fig. 72 to start the mainbail cam moving opposite to its normal direction of rotation. **Fig. 72**

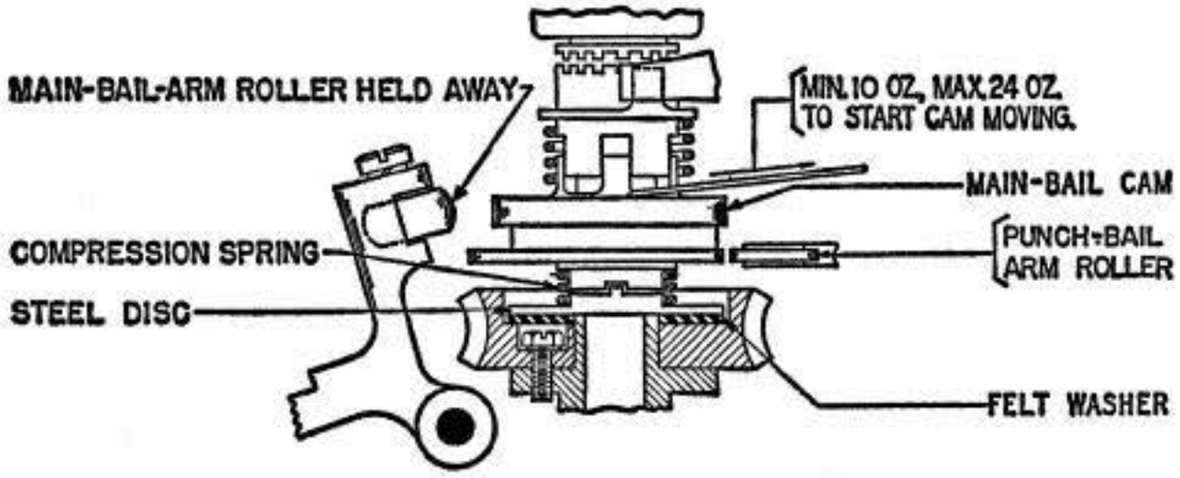

Fig. 72

(1) To gauge, press downward on the mainbail so as to move the mainbail roller away from its cam. At the same time, hold the cam-lever roller and the punch-bail-arm roller away from their cams. Hook the scale in the screw hole on top of the mainbail cam and pull at a right angle to the radius.

2.147.1 **Sensing-contact mechanism** should meet the requirements specified in 2.148 to 2.152, inclusive. To facilitate checking these requirements, the entire sensing-contact assembly may be removed from the base to the extent of the slack in the cable connected to the contact terminals.

Note 1: The sensing-contact-assembly clamping-screws are tightened under pressure at the factory. If for any reason the screws become loosened, they should be tightened with a torque of 20 inch-pounds. This can be accomplished by applying a 5-pound pull at the end of a 4-inch offset screwdriver.

Note 2: The 505A and 507A adjusting tools should be used for bending the sensing-contact springs. The 68B or 70D gram gauge should be used for checking the spring tensions of sensing-contact springs.

2.152 **Tape-feed-indicator-contact Assembly**

(c) With the tape-lever arm in its central position on the tape and the contact-spring-operating lever opposite the center of the low part of the insulator on the long contact-spring, there should be a clearance of Min 0.005", Max 0.025" between the contact-spring-operating lever and the insulator.

Fig. 77B

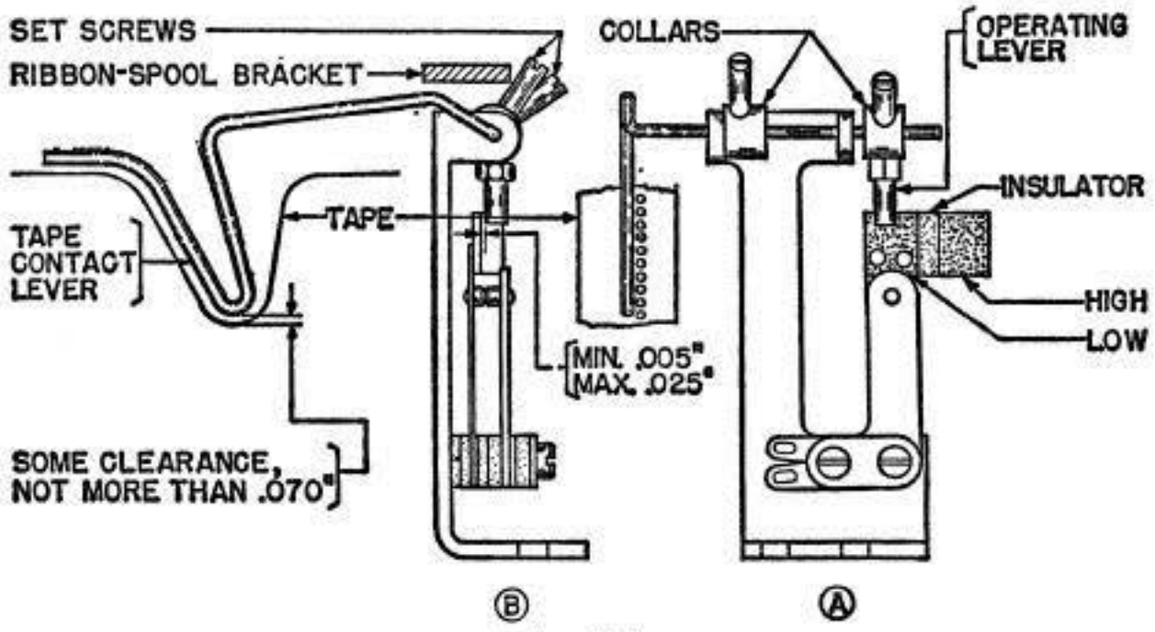

Fig. 77

(1) To adjust, loosen the rear-collar-setscrew post so that the collar will be friction-tight on the tape-contact lever. The collar holding the contact-spring-operating lever can then be positioned to give proper clearance between the operating lever and the insulator.

CHANGES AUTHORIZED BY P98 SERIES BELL SYSTEM PRACTICES

1. Intermediate-bail Adjusting-screw adjustment in 2.49 is revised to include the change authorized for this apparatus by BSP P98.451.
2. Sensing and Distributing Clutch-magnet Release-spring requirement (clearance between the magnet core and the armature) in 2.66(b) is revised to include the change authorized for this apparatus by BSP P98.538.
3. Distributor Contact requirement in 2.131 is revised to include the change authorized for this apparatus by BSP P98.519.
4. Tape-out Sensing-lever Spring requirement in 2.135 and Fig. 68 is revised to include the change authorized for this apparatus by BSP P98.438.
5. Universal Contacts, No. 2 Contact Spring requirement in 2.138(d)(2) and Fig. 71 is revised to include the change authorized for this apparatus by BSP P98.406.
6. Mainbail-cam Clutch-torque requirement in 2.147 and Fig. 72 is revised to include the change authorized for this apparatus by BSP P98.520.
7. Tape-feed-indicator-contact Assembly in 2.152(c) and Fig. 77 Ⓑ is revised to include the change authorized for this apparatus by BSP P98.406.