

BELL SYSTEM PRACTICES
Teletypewriter and Manual
Telegraph Station and P.B.X.
Installation and Maintenance

SECTION P36.461
Issue 4, March, 1940
AT&T Co Standard

84925M TABULATOR MECHANISM AND 89992M TABULATOR TRANSMITTER DISTRIBUTOR CONTROL PARTS FOR 15 TYPING UNIT INSTALLATION

1. GENERAL

1.01 This section outlines the method of installing the 84925M tabulator mechanism and the 89992M tabulator transmitter distributor control parts on the No. 15 typing unit. These latter parts are used only when the typing unit is operating in a No. 19 teletypewriter set. Installation tests and inspections are also covered.

1.02 This section is reissued to omit certain paragraphs under Tests and Inspections which have been transferred to P36.618 Requirements and Procedures since most tabulators are now installed at the factory or in Western Electric Shops. The transferred paragraphs have been modified to fit in with certain revisions of that section.

1.03 Requirements and procedures in connection with the adjustment of these features are given in B.S.P. Section P36.618.

1.04 This section may also be used for installing the 87860M set of tabulator parts which operates on upper case "Z."

2. METHOD OF INSTALLATION

84925M Tabulator Mechanism

2.01 Remove the typing unit from the base. Remove the type bar carriage from the typing unit. Replace the 74995M bell crank retainer on the carriage with the 87343M

bell crank retainer (assem.) using the 1160M screws to mount the new retainer. The pawl should be toward the top of the bell crank mounting plate.

Note: On typing units equipped with the 86775M rear spacing escapement pawl (discernible by the hole in the flat surface of the pawl) it will not be necessary to perform paragraphs 2.02 and 2.04. Instead, the 86776M post, 3640M lock washer, and 3599M nut should be removed from the 86775M spacing escapement pawl assembly which is included in the tabulator set of parts and installed on the 86775M rear spacing escapement pawl on the typing units with the post extending toward the left as viewed from the front of the typing unit.

2.02 From the typing unit remove the 74015M printing bail spring and the 80926M function bail spring. Remove the two 8539M screws and 2191M lock washers which mount the 74107M printing bail bearing. Rotate the main shaft until the printing bail can be moved to its forward position and remove the right-hand 33-340M screw and 2669M lock washer and loosen the left-hand 33-340M screw which mounts the 74167M function lever bail roller. Remove the 81958M printing and function bail assembly from its left-hand bearing and remove from the typing unit. Remove the three 8539M screws and 2191M lock washers which mount the 74244M printing bail on the 74098M shaft and slide the shaft out far enough to remove the 74097M rear spacing escapement pawl and 74760M spring. Install the 87327M rear spacing escapement pawl assembly with the 86776M post toward the left. Replace the 74098M shaft and remount the 74760M spring. Make sure that the 86710M oiler in the 74098M shaft extends upward. Replace and tighten the 8539M screws using the 2191M lock washers as before.

2.03 Remove the 74144M spacing pawl operating arm and replace it with the 89097M operating arm using the same 8539M screws, 7002M washers and 2191M lock washers.

2.04 Install the 81958M printing and function bail assembly in its left-hand bearing taking care to see that the 74067M reset bar and the 74174M bell push bar are in their respective slots in the 74255M function lever comb. Replace the two 8539M screws and 2191M lock washers which mount the 74107M bearing allowing some end play (not more than .004") between the bearing and the printing bail assembly. Gauge by eye and feel. Replace the 74167M function bail roller using the screws and lock washers previously re-

moved. Replace the 74015M printing bail spring and the 80926M function bail spring.

2.05 Set the typing unit on its back; on typing units so equipped, remove the 89442M reset lever down stop assembly. Remove the 74539M send-receive-break mechanism plate and strip of its accessories, leaving the 74890M motor stop contact assembly (if the typing unit is so equipped) connected to its wiring. Assemble all parts removed from the 74539M plate on the new 87324M motor stop and break mechanism plate assembly. Mount the new plate assembly on the typing unit.

2.06 Set the typing unit on its right side; remove the three 6746M screws and 2191M lock washers mounting the 74255M function lever comb and remove the comb. Install the 86768M tabulator function lever in the sixth slot from the bottom of the 74552M vane frame after placing the 74705M function lever spring on the function lever. Looking at the bottom of the typing unit, install the 87326M tabulator latch bar assembly as follows:

2.07 Slide the slotted end of the 86773M link over the 86776M post of the 87327M spacing pawl assembly, and, holding it on the post, rotate the 86769M latch bar toward the front of the typing unit and insert the bar in the second slot from the bottom in the 86758M send-receive-break mechanism plate so that the front right angle projection is toward the right-hand side of the typing unit.

2.08 With the bar thus installed the lobe on the rear extension of the 86768M tabulator function lever should be in the same plane as the 86769M latch bar. Install the 7965M latch bar spring hooking one end in the spring hole just to the rear of the 86758M plate and the other end over the 74692M spring post. Hook the 74705M function lever spring to the hole in the 74019M function lever spring plate.

2.09 With 86773M link engaging the 86776M post on the 87327M spacing pawl assembly and with the 86770M bearing extending out from the bottom of the typing unit, replace the 74255M function lever comb inserting only the upper 6746M mounting screw with its lock washer. Make sure that all function levers and push bars are in their respective slots in the function lever comb before tightening the upper mounting screw. Mount the 86770M bearing on top of the lower part of the 74255M function lever comb using the two 74986M screws; use the lock washers which were previously removed. Check to see that the 86769M latch bar is free in its slots before finally tightening the mounting screws of the function lever comb.

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2.10 Set the typing unit in its normal position. Looking at the typing unit from the left side, remove the 1026M screw from the 74169M selector vane pivot clamp, the second from the top on the vane frame and replace it with the 86761M spring post.

2.11 Before installing the 87325M tabulator bar assembly on the front of the typing unit, loosen the 76699M tabulator bar pivot screws. Mount the 87325M tabulator bar assembly on the 86758M plate making sure that the front projection of the 86769M tabulator latch bar extends through the notched hole at the bottom of the 86766M tabulator latch. Adjust the 76699M pivot screws so that the distance between left-hand pivot arm of the tabulator bar and left bearing in the 86758M plate is approximately equal to the distance from the right-hand pivot arm to the 86760M bearing. Tighten the lock nuts on the pivot screws. Raise the platen to the figures position and replace the type bar carriage. Hook one end of the 74707M spring in the hole in the left end of the 86759M tabulator bar and hook the other end over the 86761M spring post on the vane frame.

89992M Tabulator Transmitter Distributor Control Parts

2.12 The 89992M parts are designed to operate with the 82917M send-receive-break mechanism. If the typing unit is equipped with the 74428M send-receive-break mechanism, replace the mechanism with the 82917M send-receive-break mechanism.

2.13 Remove the two 74986M screws and 2191M lock washers which hold the adapter block to the tabulator bar. Mount the 89993M tabulator bar extension to the front of the tabulator bar at the adapter block and to the rear of the tabulator bar at its left-hand end. Secure the right-hand end of the tabulator bar extension and the adapter block to the tabulator bar with the 8539M screws and the previously removed 2191M lock washers. Secure the left-hand end of the tabulator bar extension with 6746M screw, 7002M washer, and 2191M lock washer, inserting the screw through the slot in the tabulator bar.

2.14 On the base unit, remove, one at a time, the 74514M screws which mount the "break" contact, and replace them with 89996M screws. Mount the 89994M contact lever mounting bracket on the ends of the 89996M screws, which protrude through the 82918M bracket, so that the part with the tapped hole is toward the rear. Secure the bracket with the 3640M lock washers and 3599M nuts.

2.15 Mount the 89995M tabulator contact lever on the contact lever mounting bracket so that the long arm bears against the bakelite tip on the extreme left-hand contact spring of the send-receive-break mechanism, using the 33-38M shoulder screws, 3640M lock washer and 3599M nut.

2.16 Replace the 74707M tabulator bar spring with the 74709M spring. The left-hand contact of the send-receive-break mechanism on the base should be wired in series with the start magnet on the transmitter distributor.

2.17 Check the adjustment of the tabulator latch.

3. TESTS AND INSPECTIONS

Tabulator Mechanism

3.01 Unless the 84925M parts include a new style 86758M plate (identified by portion supporting the left tabulator bar pivot designed to form a stop for vertical travel of 82925M contact lever of the send-receive-break mechanism), there may be occasional instances in which mechanical interference is experienced between the contact lever and the left bearing extension of the 86758M plate. Check by placing the typing unit on the base and operating the send-receive-break mechanism to the extreme vertical travel of the 82925M contact lever.

3.02 If binding between the 82925M contact lever and the 86758M plate is experienced, it may usually be cleared by bending the contact lever 5/16 inch from the left end toward the front of the machine using two pairs of pliers to avoid straining the contact lever at other points. If this bind cannot be cleared by bending the contact lever 10° or 15° installation of a new style 86758M plate is recommended.

3.03 The tabulator mechanism should then be adjusted in accordance with B.S.P. Section P36.618 covering requirements and procedures.