

14 TELETYPEWRITER

MAINTENANCE INSPECTIONS AND TESTS

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1. GENERAL	
1.01 This section specifies the procedures for carrying out the field maintenance of the 14 teletypewriter.	
1.02 The apparatus requirements and adjusting procedures for any particular item which may require adjusting either on a routine inspection or a trouble visit will be found in the section covering requirements and adjustments for the unit affected.	
1.03 The lubrication requirements will be found in the section covering the lubrication for the unit affected.	
1.04 Reference should be made to the associated general sections for the general cleaning procedures, lubrication, and requirements and adjustments.	
1.05 Troubles following maintenance visits have in some cases been noted to be due to the methods of carrying out the maintenance work on teletypewriter apparatus. The instructions in this section have been arranged with the view of avoiding such troubles and it is therefore important that the practices be very carefully followed.	

2. ROUTINE MAINTENANCE PROCEDURES

2.01 The periodic cleaning, lubrication, and inspection work should be carried out in the order shown. This work should be confined to the items specified except for the correction of any condition noted, not mentioned herein, which in the judgment of the repairman is likely to cause trouble before the next regular inspection.

- (1) Obtain the necessary authority for the release of the apparatus. In case the service is to be interrupted during the inspection period, proper authority should also be obtained for the release of the circuit.
- (2) Disconnect the source of power.
- (3) Remove cover.
- (4) Clean, lubricate, and inspect in accordance with the detail procedure given in 3.
- (5) Reconnect the source of power.
- (6) If the motor is of the governed type, examine the motor brushes and, if necessary, recondition or replace them.
- (7) If excessive sparking at the motor brushes is now observed, clean the commutator.
- (8) For governed-type motors, observe the condition of the governor sliprings. If there is pitting or wear, clean the governor rings and brushes. Replace if necessary.
- (9) If motor is of governed type, check speed after it has run for at least 3 minutes. If the speed is as much as 15 spots in 10 seconds, either fast or slow, or if the speed is variable, examine the governor contacts and replace them if necessary.
- (10) Make final check of speed, if governed-type motor, with machine running open and adjust if required.

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- (11) Replace cover and wipe off cover and glass.
- (12) Check items 2 to 5, inclusive, under 4.01, to determine that the machine is functioning properly.
- (13) Measure orientation range on local test to check the condition of the teletypewriter. If receiving only, measure on line, or arrange for test with testboard.
- (14) Make such additional tests as may be required by auxiliary features provided, for example, station sets employed for TWX use.
- (15) After the local tests have been completed lock the range finder in the correct position for the type of service involved. For services requiring maximum margin the correct position should be determined by tests over the loop.
- (16) Check to see that line test key is in line position.
- (17) Notify attendant that machine is again ready for service or, if out of hours, place machine in normal condition for the usual start of service.

3. DETAILS OF CLEANING, LUBRICATING, AND INSPECTING

3.01 The detailed items to be covered in the cleaning, lubricating, and inspecting are given below.

A. Cleaning

3.02 The cleaning should, ordinarily, be confined to the items shown.

- (1) With a dry cloth, clean out the base around the tape guide tube, beneath the platen, and back under the type comb.
- (2) With a dry cloth, wipe off the frame around the keyboard.
- (3) If gummed tape is used, clean out the tape guide tube with a pipe cleaner slightly moistened with water and wipe off the platen with water. Wipe out the tape guide tube with a dry pipe cleaner and wipe off the platen with a dry cloth.
- (4) Clean the type if found to be gummed or dirty.

- (5) Clean the key caps if these are found to be excessively dirty.

B. Lubrication

3.03 After all cleaning has been completed, lubricate the machine in the order shown below. Apply an amount of lubricant just sufficient for the purpose so that it will not be necessary to wipe off any excess oil or grease, as this tends to work dirt and grit into the bearing surfaces.

- (1) Lubricate all points requiring the application of oil.
- (2) Apply grease to all points specified.
- (3) After the lubrication has been completed, the space between the selector armature and the magnet cores should be cleaned by drawing through the space a piece of plain printer tape (not gummed) or some similar strip of plain, hard surface paper. In the same manner clean the space between the armature and the front and back stops.

C. Inspection

3.04 During the processes of cleaning and lubricating, observe the condition of the machine with respect to the following points in so far as can be observed without any dismantling or disturbing of adjustments. Such items as are likely to cause trouble before the next scheduled inspection should be corrected.

- (1) Worn parts, loose parts, parts out of place, parts obviously out of adjustment, or likely to cause trouble.
- (2) Red or rust colored deposit indicates wear which should be investigated and, if necessary, the parts replaced. If the parts are not worn sufficiently to require replacing, special care should be taken in lubricating to see that the oil or grease gets into the bearing parts.
- (3) Bent parts or elongated springs should be investigated and replaced if found abnormal. Do not elongate or cut a spring to adjust the tension; use a new spring.

3.05 Check the following specific items to make certain that they are in satisfactory condition:

- (1) Platen, for wear.

- (2) Platen shift mechanism, for smoothness of operation when shifted by hand.
- (3) Tape-out bell, for satisfactory operation.
- (4) Ribbon, for satisfactory condition.
- (5) Magnet armature, for endplay.
- (6) Armature trip-off eccentric screw, for proper adjustment.
- (7) If the orientation range is unsatisfactory inspect the line relay for adjustment and condition of parts. If required, clean the contacts and adjust the relay.

4. TROUBLE VISIT INSPECTIONS

4.01 When a machine is visited as a result of a trouble report, the following items should be checked after the trouble has been cleared or during the process of clearing it:

- (1) Speed, if motor is of governed type, after at least 3 minutes of operation unless motor is already warm. Should be steady under load. Adjust if required.
- (2) The printing of all type, for alignment.
- (3) Appearance of copy, for strength of printing blow. There should be no embossing of letters on the back of copy for single-copy work, nor on the last copy of multiple-copy work. (Embossing of punctuation marks is permissible.)
- (4) All functions, for correct operation.
- (5) Ribbon feeding and reversing mechanism, for correct operation.
- (6) If it has been necessary to measure the orientation range, be sure to lock range finder in correct position after test is completed. (See 2.01 (15).)