

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

**SECTION P39.550**  
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**AT&T Co Standard**

## **NO. 20 TYPE REPERFORATOR**

### **MAINTENANCE INSPECTIONS AND TESTS**

#### **1. GENERAL**

- 1.01 This section specifies the procedures for carrying out the field maintenance of the No. 20 reperforator.
- 1.02 This section is reissued to give it a Standard rating← and provide reference to Section P35.603. ←
- 1.03 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 on "Requirements and Procedures."
- 1.04 The methods of carrying out the cleaning work are covered in "Teletypewriter Apparatus — Cleaning — General Requirements" and the lubrication is covered in BSP Section P35.603 "Reperforator—Nos. 14 and 20 Type—Lubrica← tion—Requirements and Procedures."
- 1.05 Troubles following maintenance visits have been noted in some cases 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.

#### **2. ROUTINE MAINTENANCE PROCEDURES**

2.01 The periodic cleaning, lubrication and inspection work should be carried out in the order shown below. 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 unless the work is being done out of hours. In case the service is to be interrupted during the inspection period 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 below under Part 3.
- (5) Reconnect the source of power.
- (6) Check the adjustment of the rectifier, if employed.
- (7) If a motor-generator set is employed start and stop it, watching its performance carefully. If it fails to start normally or does not run quietly, investigate and clear the trouble.
- (8) If excessive sparking of the reperforator motor brushes is now observed, clean the commutator.
- (9) For governed type motors, observe the condition of the governor slip rings. If there is pitting or wear, clean the governor rings and brushes. Replace if necessary.
- (10) 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.
- (11) Make final check of speed, if governed type motor and adjust if required.
- (12) Check that the perforations are clean cut and properly spaced and check the tape reel action for ease of feeding.
- (13) Measure orientation range using the characters x y (lower case), since this is a 6 unit selecting code machine, instead of the characters RY commonly used with five unit selecting code machines. 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.
- (14) 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 on the loop.
- (15) Replace and wipe off cover.
- (16) 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 in the paragraphs below.

## **(A) Cleaning**

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

- (1) With a dry cloth, clean out the tape reel holder.
- (2) Empty the chad drawer and check that no chad remain in the chad chute.
- (3) Remove any excess chad from the mechanism.
- (4) Clean the feed wheel and exit guide, using KS-2423 cloth wrapped around a KS-6320 orange stick.
- (5) Clean the motor brushes and the brush holders of governed type motors.

## **(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 bearing surfaces.

- (1) Apply oil to all points requiring lubrication with oil (including "oil-grease-oil"). Complete this before applying any grease.
- (2) Apply grease to all points requiring lubrication with grease (including points requiring "oil-grease-oil").
- (3) Now apply oil to all points where the combination of "oil-grease-oil" is specified.
- (4) After the lubrication has been completed, the selector armature and the magnet cores should be cleaned by drawing between them a piece of KS-7187 paper or equivalent. In the same manner clean the armature 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.