RINGERS

GENERAL MAINTENANCE

AND RINGING TESTS

1.00 INTRODUCTION

This section covers the recommended general procedures, tests, and methods to be followed when inspecting, testing, and maintaining ringers and loud ringing bells, excluding auxiliary signals. More detailed maintenance information is given in other sections covering B, C, and numbered-type ringers.

2.00 GENERAL

2.01 All loud ringing bells and loose ringers, good or defective, should be carried in a suitable protective container.

2.02 The use of proper inspection, testing, and maintenance procedures on all station visits will reduce the number of subsequent customer trouble reports.

2.03 It is important that gong distinctiveness be given due consideration on all station visits, especially at locations where a number of lines with associated ringers are installed and the customer is apt to encounter difficulty in distinguishing the various rings.

2.04 In cases of customers having impaired hearing, it may be necessary to try a number of gong combinations and gong attachments to obtain satisfactory results. Types of gongs and attachments will be found in the sections covering maintenance for the type of ringer involved.

2.05 The armature, pivots, and armature stops shall not be treated with a corrosion or moisture inhibitor.

3.00 CLEANING

For proper operation, the ringer must be free of dirt, dust, grease, and any foreign particles. To properly clean a ringer or loud ringing bell, proceed as follows:

- Employ a No. 7 sash tool, or equivalent, for brushing out dirt. If extensive cleaning is required, detach ringer.

- Cleaning paper such as KS-7187 or KS-7188 which is 1/2 and 1/4 inch wide, respectively, and 2-1/2 inches long shall be used to clean points of contact, such as between the armature or armature stop pins and pole faces. Use a clean piece of paper for each operation.

- On C-type ringers, *always brush toward the gongs* when cleaning the airgap between the armature and inner and outer pole pieces, and between the armature and the permanent magnet.

  Caution: *On C4A ringers in particular, care shall be exercised when cleaning the airgap between the outer pole piece and the armature so as not to distort the thin reed which is a part of the armature hinge.*

- On numbered-type ringers and B-type ringers, brush dirt away from the armature.

- Magnetic particles may be removed with Scotch tape or a telephone company equivalent.

TABLE A

OUTLINE OF WORK OPERATIONS

Work Operations	Visit				
	Service Order			Repair	
Sequence Items	Refer to Appropriate section for	Sets from Shop or Storeroom	Sets Re-used or Recon-nected	No Ringer Trouble Reported or Sus-pected	Where Trouble is Located or Suspected in Ringer
1. Check line and ringer connections and poling of ringer.	Connections	Yes	Yes	Yes	Yes
2. Check type of gong arrangements when two or more ringers are near enough to require distinctive tones.	All Types	Yes	Yes	Yes	Yes
3. Check for presence of armature stop spring or chromium-plated armature.	Numbered Type	Yes	Yes	Yes	Yes
4. If there is evidence of sticking, clean contact surfaces between stop screw and armature, or stroke-limiting arm and yoke, and between armature and pole faces.	General Maintenance		Yes	Yes	Yes
5. Check pivot screw adjustment.	All Types	Subsets Only	Yes	Yes	Yes
6. Check airgap adjustment.	All Types	Subsets Only	Yes	Yes	Yes
7. Check for loose gongs and gong adjustment.	All Types	Subsets Only		Yes	Yes
8. Check position of cords and wiring to see that they do not interfere with ringer operation.		Subsets Only	Yes	Yes	Yes
9. Check biasing spring for condition and type.	Numbered Type	Yes	Yes	Yes	Yes
10. Set biasing spring position and make tests for bell tapping.	All Types	Subsets Only	Yes	Yes	Yes
11. Make tests for cross ringing.	All Types				Yes
12. Make ringing tests.	Local Instructions	Yes	Yes	Yes	Yes
13. Check ringing signal with customer to see that it is satisfactory. Make any adjustments or changes required.*	All Types	Yes	Yes	Yes	Yes
14. Check extension ringers and ringers at extension stations the same as main stations.†	All Types	Yes	Yes	Yes	Yes

* If the armature stroke is readjusted in any of the ringing tests, repeat Sequence Items 6 through 14.
† When a low-impedance ringer is added to or removed from a series bridge, repeat Sequence Items 9 through 14 at other ringers in the bridge.

4.00 OUTLINE OF WORK OPERATIONS

4.01 The operations preferably should be performed in the order shown in Table A. If a ringer or loud ringing bell cannot be adjusted to meet all tests, it should be replaced.

4.02 Upon completion of work operations, the necessary ringing tests shall be made in accordance with 5.00. On all test calls made from the customer's premises, make certain the bells do not tap. If any of the ringer requirements cannot be met, replace the ringer.

5.00 RINGING TESTS

5.01 Methods for obtaining ringing tests will vary with different central offices. Some dial central offices have specific ringing test equipment, others use reverting call switches; still others have the equipment built into the regular connector. Local practices shall be followed to obtain ringing tests.

- In manual central office areas, request the operator to ring the station number under test.
- At PBX extension stations which may be arranged for night connections, test for ringing from central office with night connection as regularly set up in addition to ringing test from PBX.

5.02 All rings received on test should be clear and steady. If the ringing does not meet requirements, the ringers shall be adjusted according to the section covering ringer maintenance for the type ringer in use.

5.03 Ringing and margin tests for manual stations being prepared for cutover to dial are normally set up by the local cutover committee.