

OUT TRUNK SWITCH AND MASTER SWITCH TESTS

STEP-BY-STEP OFFICES

1. GENERAL:

1.1 This section describes a method of testing out trunk switches, the associated master switch and trunks outgoing to repeaters.

1.2 This routine should be made during a period of very light traffic.

1.3 Any outgoing trunk or out trunk switch that fails to meet the requirements of this routine, should be made busy in the approved manner.

2. APPARATUS:

2.1 Ten No. 375-A Make-busy Tools.

2.2 One Watch (having second hand) or Stop Watch.

2.3 No. 528 Receiver (or equivalent) equipped with cords and test picks.

3. METHOD:

(a) Master Switch Operation Test:

3.1 Operate the master switch by inserting a No. 375-A tool into springs No. 3 and No. 4 of the test jack located on the relay equipment associated with the master switch under test. Observe that it operates smoothly and at approximately the same speed in traveling from trunk 10 to 1 as it does in traveling from 1 to 10.

3.2 While the master switch is oscillating, short-circuit springs No. 3 and No. 4 of the test jack of any idle out trunk switch. Observe that the switch does not plunge. Should the out trunk switch plunge, it would indicate that the open main battery is not removed while the master switch is in motion.

3.3 While the master switch is oscillating, observe that all idle plungers are engaged with the guide shaft. A failure of a plunger to pick-up, generally occurs on

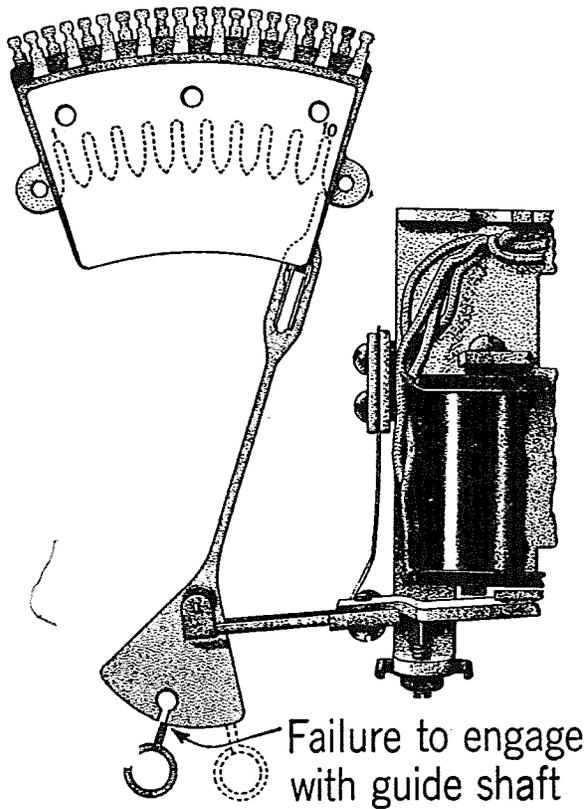


Fig. 1.

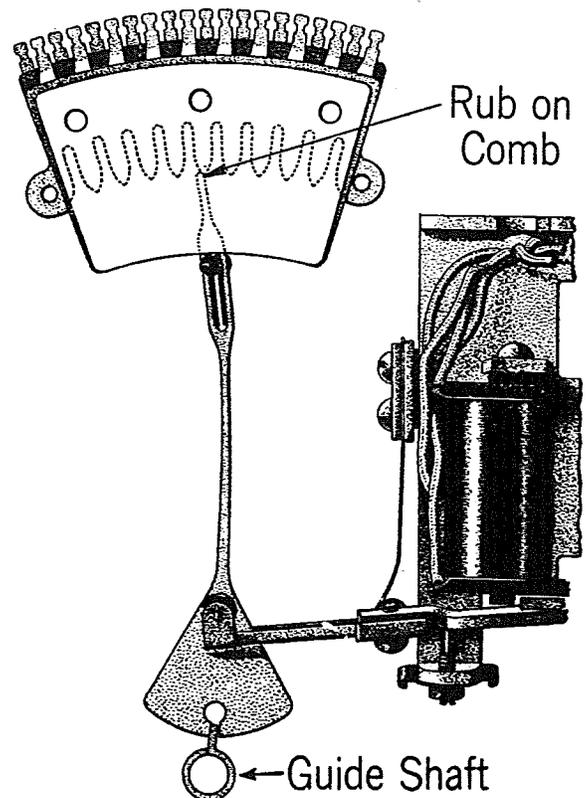


Fig. 2.

positions 1 and 10. See Fig. 1. Also observe if any plunger has a tendency to rub on the bank comb. See Fig. 2.

(b) Master Switch Speed Test:

- 3.4 Operate the master switch by inserting a No. 375-A tool into springs No. 3 and No. 4 of the test jack located on the associated relay equipment. Hold the thumb or finger in such a position that when the master switch segment is at position ten, it will strike the thumb or finger perceptibly at each cycle of the master switch.

Note: The master switch speed is designated in cycles, by which is meant a complete operation of the switch from trunk 10 to trunk 1 and back to 10.

- 3.5 With an ordinary watch having a second hand, or with a stop watch, count the number of cycles within a period of thirty seconds. The speed of the master switch should be within the test requirements given in Division 030.

(c) Out Trunk Switch Operation and Trunk Test:

- 3.6 Set all idle out trunk switches of the section under test opposite trunk 10. Plunge the first ten out trunk switches by momentarily crossing springs No. 3 and No. 4 of the test jacks and hold these switches operated by inserting No. 375-A make-busy tools between springs No. 1 and No. 2 of the test jacks. Observe as each switch is plunged, that the master switch advances the remaining plungers opposite the next idle trunk. When all trunks have been made busy, observe that the master switch does not oscillate. Should the master switch fail to advance, it would indicate that the start circuit is open, or faulty adjustment of either the out trunk switch or the master switch wiper. Should the master switch oscillate, it would indicate that the master switch stop circuit is open. Should any out trunk switch fail to hold, it would indicate that no holding ground was being returned from the repeater.
- 3.7 During the period that the master switch stop feature is operated, test for ground on the open main circuit by applying battery through the test receiver to the

third spring from the top of a test jack of any idle out trunk switch in the section under test, and listen for a pronounced click.

- 3.8 Should no click be heard in the receiver, it would indicate that a busying ground is not being returned on the release trunks from the contacts of the B relay of the associated relay equipment.
- 3.9 Cross test jack springs No. 3 and No. 4 of the eleventh out trunk switch and transfer the No. 375-A make-busy tool from the first to the eleventh out trunk switch. Observe that the master switch advances to the position vacated by the first switch and that the eleventh switch seizes this trunk. Remove the cross from test jack springs No. 3 and No. 4. Should the master switch pass an idle trunk, it would indicate faulty adjustment of the master switch wiper.
- 3.10 Cross test jack springs No. 3 and No. 4 of the twelfth out trunk switch and transfer the No. 375-A make-busy tool from the second to the twelfth out trunk switch. Observe that the master switch advances to the position vacated by the second switch and that the twelfth switch seizes this trunk. Remove the cross from the test jack springs No. 3 and No. 4.
- 3.11 Continue in like manner on consecutive trunks until the first ten switches have been replaced by the second ten.
- 3.12 When this routine is performed on the subsequent test period, plunge the first switch on trunk 9; the next period, on trunk 8, etc. In this manner, each of the twenty switches will have been tested on each trunk. For the remaining out trunk switches in the section where the same sequence cannot be followed, plunge each remaining switch in the same manner on each trunk, using some of those previously tested to make the trunks busy.
- 3.13 In bays where trunks outgoing to repeaters are not all in use, the number of out trunk switches used in making the test should be in proportion to the available trunks.

4. REPORTS:

- 4.1 The required record of this routine should be entered on the proper form.