

UNIVERSAL CORD AND POSITION CIRCUITS
TELETYPEWRITER SWITCHBOARD NO. 1

1. GENERAL

1.01 This section describes tests of the universal cord and the associated position circuits, used in the teletypewriter switchboard No. 1. The tests are as follows:

- (A) Operation Test of Cords
- (B) Position Busy Test
- (C) Operator's Lockout Feature
- (D) Test of Teamwork Feature
- (E) A-C. Continuity and Cut-Out Test of Cords and Plugs

1.02 This section is reissued to replace Provisional Issue 1, to cover the operator's lockout feature and other minor changes.

2. APPARATUS

Tests (A), (B), (C) and (D)

- 2.01 Test Circuit for Cord and Position, SD-63488-011, Fig. 1, (J66121AH).
- 2.02 SR Control Test Set, SD-63488-011, Fig. 2, (J64710A).
- 2.03 Two No. 710 or P3F Cords equipped with a No. 310 Plug on one end and a No. 309 Plug on the other end.

Test (E)

- 2.04 Test Circuit for Cord and Position, SD-63488-011, Fig. 1, (J66121AH).
- 2.05 Control Test Set (Potentiometer and Receiver) SD-63488-011, Fig. 3, (J64703A).
- 2.06 One No. 710 or P3F Cord equipped with a No. 310 Plug on one end and a No. 309 Plug on the other end.

3. METHOD

(A) Operation Test of Cords

3.01 Connect the C and D jacks of the SR control test set to the C and D jacks, respectively, of the testing circuit. The lamp in the SR control test set should light when the C jack of the SR control test set is connected to the C jack of the test circuit.

3.02 Test for +48 Volts on Ring: Insert the plug of the cord to be tested into the A jack of the test circuit. The lamp in the SR control test set should be extinguished.

3.03 Supervisory Lamp Test: Operate the A key and then the E key in the SR control test set. The cord supervisory and pilot lamps should light.

3.04 Unattended Station Start Test, Back Cord: Operate the associated split key to the rear and depress the unattended station start and the toll signal key. The lamp in the SR control test set should light while the unattended station start and toll signal key is depressed. The cord supervisory and pilot lamps will flash when the unattended station start and toll signal key is depressed and will continue to flash when the key is released. Operate and restore the typing key. The cord supervisory and pilot lamps should change from flashing to steady.

3.05 Unattended Station Start Test, Front Cord: Depress the unattended station start and toll signal key. The lamp in the SR control test set should light while the unattended station and toll signal key is depressed. The cord supervisory and pilot lamps will flash when the unattended station start and toll signal key is depressed and will continue to flash when the key is released. Operate and restore the typing key. The cord supervisory and pilot lamps should change from flashing to steady.

3.06 Station Line Ringing Test, Back Cord: Operate the associated ringing key momentarily to the rear. The lamp in the SR control test set should light while the ringing key is operated.

3.07 Station Line Ringing Test, Front Cord: Operate the associated ringing key momentarily to the front. The lamp in the SR control test set should flash, being lighted for approximately 2 seconds and extinguished for approximately 4 seconds. The cord supervisory and pilot lamps should be extinguished and the ringing guard lamp should light. Restore the A key in the SR control test set. The lamp in the SR control test set and the ringing guard lamp associated with the cord under test should be extinguished.

3.08 Toll Line Ringing Test: Restore the E key of the SR control test set and operate the associated ringing key for approximately 2 seconds. The lamp in the SR control test set should light while the ringing key is operated.

3.09 Splitting Key Test: Operate the D key of the SR control test set and the typing key associated with the cord under test. Test signals should be received on the operator's teletypewriter. If a front cord is under test, operate the split key to the rear (split to back cord). The test signals should cease. If a back cord is under test, operate the split key to the front (split to front cord). The test signals should cease.

3.10 Restore the split key to normal. Test signals should again be received on the operator's teletypewriter. Restore the typing key and the D key in the SR control test set. Test signals should cease.

3.11 Cut-Off Alarm Test: Insert the plug of the other cord under test into the B jack. The supervisory lamp should be extinguished. Remove the plug of the cord from the A jack. The cut-off alarm lamp and the supervisory lamp of the cord removed from the A jack and pilot lamp should light. The alarm buzzer in the supervisor's desk should operate. Insert the plug of the cord momentarily into one of the cut-off alarm clearing jacks of the position under test. The alarm lamp and the supervisory and pilot lamps should be extinguished, and the buzzer in the supervisor's desk should be silenced. Reinsert the cord into the A jack.

3.12 Remove the plug of the cord from the B jack. The cut-off alarm lamp and the supervisory lamp of the cord removed from the B jack and pilot lamp should light. The alarm buzzer in the supervisor's desk should operate. Insert the plug of the cord momentarily into each of the other cut-off alarm clearing jacks of the position under test. The alarm lamp and the supervisory and pilot lamps should be extinguished and the buzzer in the supervisor's desk should be silenced.

3.13 Disconnection: Remove the plug of the cord from the A jack of the test circuit. The lamp in the SR control test set should light. Take down the connections to the SR control test set.

(B) Position Busy Test

3.14 Connect the C and D jacks of the SR control test set to the C and D jacks, respectively, of the test circuit. The lamp in the SR control test set lights when the C jack of the SR control test set is connected to the C jack of the test circuit.

3.15 Busy Test: Touch the tip of the back or front cord plug to the sleeve of the A jack of the test circuit momentarily. The busy lamp at the position under test should light while contact with the sleeve is made.

3.16 Out-of-Order Busy Test: Operate the C key of the SR control test set and touch the tip of the back or front cord plug to the sleeve of the A jack of the test circuit. The busy lamp at the position should light and the buzzer should operate while contact with the sleeve is made. Restore the C key.

(C) Operator's Lockout Feature

3.17 Connect the C and D jacks of the SR control test set to the C and D jacks, respectively, of the test circuit. The lamp in the SR control test set lights when the C jack of the SR control test set is connected to the C jack of the test circuit.

3.18 Operate the B key of the SR control test set and insert the plug of a back cord into the A jack of the test circuit with the associated cord typing key operated. The busy test lamp at the position should light and the lamp in the SR control test set should be extinguished.

3.19 Check that the operator's teletypewriter keyboard is locked out.

3.20 Restore the B key and operate the A key of the SR control test set. The busy lamp at the position should not light and the lamp in the SR control test set should remain extinguished.

3.21 Check that the operator's teletypewriter keyboard is still locked out. Restore the typing key and the A key and take down the connections to the SR control test set.

(D) Test of Teamwork Feature

3.22 Connect the C and D jacks of the SR control test set to the C and D jacks, respectively, of the test circuit. The lamp in the SR control test set should light when the C jack of the SR control test set is connected to the C jack of the test circuit.

3.23 Touch the tip of the cord plug to the sleeve of the A jack of the test circuit momentarily. The busy lamp in the adjacent position either to the right or to the left, depending upon which way the position is teamed, should light, when the tip of the plug is touching the sleeve of the A jack.

3.24 Operate the typing key of the cord under test to the front and insert the plug of the cord into the A jack of the test circuit. The lamp in the SR control test set should be extinguished.

3.25 Operate the A key and then the E key of the SR control test set. The supervisory and pilot lamps, associated with the cord under test should light.

3.26 Restore the A and E keys of the SR control set. The supervisory and pilot lamps associated with the cord should flash.

3.27 Restore the typing team key. The flashing supervisory and pilot lamps should be extinguished.

3.28 Again operate the typing team key and also the D key of the SR control test set. Test signals should be received on the adjacent teamed operator's teletypewriter.

3.29 Remove the cord from the A jack of the test circuit and restore all keys to normal. Test signals on the operator's teletypewriter should cease, and the lamp in the SR control test set should light.

3.30 Take down the connections to the SR control test set.

(E) A-C: Continuity and Cut-Out Test of Cords and Plugs

3.31 Connect the tip and ring conductors of the back cord to the tip and ring conductors, respectively, of the front cord at some convenient point on the terminal strips. Insert the plug of the back cord into the A jack of the test circuit and insert the plug of the front cord into the B jack of the test circuit. Connect the CKT jack of the control test set (potentiometer and receiver) to the D jack of the test circuit.

3.32 Check the operation of the tone circuit by listening in the receiver.

If tone is heard, it is an indication that the tone circuit is functioning properly.

3.33 Turn the knob of the potentiometer until the minimum tone is heard in the test receiver. This condition should exist when the pointer is approximately on "0." If the minimum tone is heard at some other point, an unbalanced condition is indicated. The severity of the unbalance will be indicated by the departure of the pointer from "0." Experience will determine the degree of unbalance which should be investigated. However, if an appreciable tone is heard at all positions of the pointer, it is an indication of trouble.

3.34 Listen in the test receiver during the following operations for any clicks or changes in the volume of the tone which will indicate a cut-out or other trouble condition.

3.35 Manipulate the back and front cords and plugs in the following manner: Hold the plug in the jack with one hand and shake the cord with the other hand. Turn the plug around in the jack so as to cause the jack springs to make contact at all possible points of the tip and ring of the plug.

3.36 Remove the back and front cords from the A and B jacks of the test circuit and remove the connections on the terminal strips placed there for the purpose of this test.

4. REPORTS

4.01 The required record of these tests should be entered on the proper form.