INTERCEPTING TRUNKS FROM TRUNK FINDERS TO A NO. 14C, 14D OR 15C SWITCHBOARD ARRANGED TO TRIP MACHINE RINGING AFTER EXTENDING CALL TO OPERATOR OPERATION TESTS USING TRUNK TEST SET SD-90469-01 AND SD-90469-02 (J94710A) STEP-BY-STEP SYSTEMS

1. GENERAL

1.01 This section describes methods of testing the operating features of 2- and 3-wire intercepting trunks from trunk finders to DSA switchboards. These trunks are of the type which are arranged to signal the operator when battery or ringing current is connected to the tip or ring of the trunk and are not arranged to trip the ringing until after the operator answers.

1.02 This section has been reissued to revise completely the present tests, to combine the former Tests (A) and (B) in Test (A), to include trunks to Nos. 14C and 14D switchboards, to include new trunk circuits not previously covered and to include the use of trunk test set SD-90469-02. This issue covers a general revision and therefore arrows used to indicate changes have been omitted.

1.03 The tests covered are:

(A) 2-Wire Trunks

(B) 3-Wire Trunks

1.04 These tests cover all of the various arrangements of the trunk and associated switchboard circuits and it will be necessary, in order to perform the proper tests, to review the particular arrangements provided in an office before proceeding with the test. It is suggested that paragraphs or subparagraphs be cross-hatched where they do not apply.

1.05 These tests, when made on a routine basis, should preferably be performed during periods of light traffic.

1.06 If an "out of service" failure is encountered on the trunk, the associated trunk finder should be made busy in the approved manner until the trouble is cleared. On 2-wire trunks, the trunk finder may be made busy by inserting a No. 258C plug into the T jack of the trunk.

2. APPARATUS

All Tests

2.01 Trunk Test Set J94710A (SD-90469-01 or SD-90469-02).

2.02 Operator's Telephone Set.

2.03 One W2M Cord (or equivalent) equipped with one No. 310 Plug and two No. 59 Cord Tips (2W12A) - for use where a battery supply jack is not available.

2.04 No. 258C (or equivalent) Make-Busy Plugs as required.

Test (A) Only

2.05 Four P3E Cords equipped with No. 310 Plugs (3P7A) - only three required where a battery supply jack is not available.

Test (B) Only

2.06 Two P3E Cords equipped with No. 310 Plugs (3P7A).

2.07 One W3A Cord equipped with three No. 59 and three No. 108 Cord Tips at one end and a No. 310 Plug at the other (3W3A).

3. PREPARATION

3.01 Connect the BAT-G jack of the test set to a 48-volt battery supply jack, using a P3E cord. If a battery supply jack is not available use a W2M cord, connecting the No. 59 cord tip of the white (tip) conductor to a spare 48-volt battery fuse or to the equipment side of a battery fuse in service, and the red (sleeve) conductor to ground. In no case should the fuse selected exceed 5 amperes.

Note: To avoid possible grounding of the battery supply lead, connect the cord to the test set first and when disconnecting, remove the cord from the test set last.

3.02 Connect the plug of the operator's telephone set to the TEL jacks of the test set. Operate the TRS key.

3.03 Connect together the C and TL jacks, using a P3E cord.

3.04 Connect the GEN jack of the test set to a ringing current supply jack, using a P3E cord (Test (A) only).

4. METHOD

(A) 2-Wire Trunks

4.01 Connect the T jack of the test set to the test jack T of the trunk to be tested, using a P3E cord. If the trunk is busy, the BSY lamp will light in which case remove the plug from the test jack in order to prevent interference with the release of the circuit.

Intercepting from Local

4.02 If the trunk is idle, operate the DL ST key and then operate the T key. The SL lamp should light.

4.03 Operate the CT key and then immediately operate the REV key. When the operator answers, advise her that a test is being made. The C lamp may light when testing trunk circuit SD-31410-01 but will be extinguished in all other cases. Verify with the operator that no tone (toll identification) was heard. If the circuits are arranged to distinguish between "regular" intercepting and "trouble" intercepting from plugging-up lines, verify with the operator that the call was received through the "regular" intercepting answering jack.

Note: If the call is received through the "trouble" intercepting answering jack, or if the C lamp lights momentarily when testing trunks other than SD-31410-01, it may be that the "chain" relays in the incoming sleeve circuit failed to function properly, that the ring-up relay in the ring side of the trunk failed to operate (before the REV key was operated), or that the relay which normally operates from the ring-up relay failed to operate and lock to the sleeve of the trunk.

4.04 When testing trunk circuit SD-31410-01, if the C lamp is lighted, request the operator to operate and restore the flashing key. The C lamp will then be extinguished.

4.05 Request the operator to operate and restore the flashing key.

(a) Trunks Arranged for Flashing on Local Calls - No. 15C Switchboard: Observe that the C lamp lights for a short interval (approximately one-half second) after the flashing key is restored.

(b) Trunks Arranged for Flashing on Local Calls - Nos. 14C and 14D Switchboards: Observe that the C lamp lights while the flashing key is operated.

(c) Trunks Not Arranged for Flashing on Local Calls - Nos. 14C, 14D and 15C Switchboards: Observe that the C lamp does not light during the flashing key operation.

4.06 2-Wire Trunks Not Arranged for Completion of Intercepted Calls: Request the operator to disconnect when she receives the disconnect signal. Restore the CT and T keys. The SL lamp should be extinguished. Restore the REV key and proceed as in 4.11 to 4.17.

4.07 2-Wire Trunks Arranged for Completion of Intercepted Calls: Proceed as in 4.08 to 4.17.

Completion of Intercepted Calls

4.08 Request the operator to remain on the connection and to complete a call to a made busy connector terminal ( ). Busy tone should be heard. Observe that the C lamp does not light.

4.09 Request the operator to disconnect the calling cord and to complete a call to the connector multiple test line terminal ( ). When ringing is tripped, observe that the C lamp follows the interruptions of the test line, i.e., the lamp should light during the test line closures. The test line tone should be heard during the intervals in which the C lamp is lighted.

4.10 Restore the CT and T keys. The C and SL lamps should be extinguished. Restore the REV key.

Intercepting from Toll

4.11 Operate the RING key. The SL lamp should light. Immediately thereafter, operate the CT key and then immediately restore the RING key. The SL lamp should remain lighted.

Note: It is important that the RING key be operated only long enough to light the SL lamp and to operate the CT key in order to avoid ringing on the trunk after the operator has answered.

4.12 When the operator answers, advise her that a test is being made. The C lamp should light for a short interval to indicate tripping. If testing trunk circuit SD-31410-01 the C lamp may remain lighted. In this case, request the operator to operate and restore the tone removal or flashing key. The C lamp should be extinguished.

4.13 If the trunk is arranged for supervision on toll calls, observe that the C lamp relights and remains lighted.

4.14 If the trunk is arranged to supply toll identification tone, verify with the operator that "high" tone was heard and that the tone was removed when she operated the tone removal (or flashing) key.

4.15 Request the operator to operate and restore the flashing key.

(a) Trunks Arranged for Flashing on Toll Calls - No. 15C Switchboard: Observe that the C lamp lights for a short interval (approximately one-half second), if previously extinguished, or that it is extinguished for a short interval (approximately one-half second), if previously lighted, after the flashing key is restored.

(b) Trunks Arranged for Flashing on Toll Calls - Nos. 14C and 14D Switchboards: Observe that the C lamp lights, if previously extinguished, or that it is extinguished, if previously lighted, while the flashing key is operated.

(c) Trunks Not Arranged for Flashing on Toll Calls Nos. 14C, 14D and 15C Switchboards: Observe that the C lamp does not light during the operation of the flashing key.

4.16 Trunks Associated with a No. 15C Switchboard: Operate the T key. Request the operator to remove the plug from the trunk jack and to observe that the trunk lamp does not light for two or three seconds. After waiting that length of time, restore the CT and T keys. All test set lamps should be extinguished. Operate the CT key. The SL lamp should light. When the operator answers, verify the performance of the trunk lamp. The C lamp may light but should be disregarded. Request the operator to disconnect when she receives the disconnect signal. Restore the CT key. All test set lamps should be extinguished. If the trunk is arranged to receive calls through plugging-up lines, proceed as in 4.18 to 4.23. Otherwise, disconnect the test cord from the test jack and restore the DL ST key.

4.17 Trunks Associated with a No. 14C or 14D Switchboard: Request the operator to leave the plug in the trunk jack, to observe the operation of the cord supervisory lamp and the trunk lamp, and to remove and reinsert the plug when the trunk lamp lights. Restore the CT key (the cord supervisory lamp should light). All test set lamps should be extinguished. Operate the CT key (the trunk lamp should light). The SL lamp should light. When the operator answers, verify that the proper cord supervisory signal was received and that the trunk lamp remained extinguished for a short interval until the new call was originated. Request the operator to disconnect the cord from the trunk jack. Restore the CT key. All test set lamps should be extinguished. If the trunk is arranged to receive calls through plugging-up lines, proceed as in 4.18 to 4.23. Otherwise, disconnect the test cord from the test jack and restore the DL ST key.

Note: Where the tone removal key in the position circuit is used to remove the tone in 4.14, the cord supervisory lamp will not light.

Trouble Intercepting

4.18 Operate the REV key and then operate the CT key. The SL lamp should light.

4.19 When the operator answers, advise her that a test is being made. The C lamp may light when testing trunk circuit SD-31410-01 but should be extinguished in all other cases. Verify with the operator that no tone (toll identification) was heard. If the circuits are arranged to distinguish between "regular" intercepting and "trouble" intercepting from plugging-up lines, verify with the operator that the call was received through the "trouble" intercepting answering jack.

4.20 Request the operator to disconnect when she receives the disconnect signal. Restore the CT key. The SL lamp should be extinguished. The C lamp, if previously lighted, should be extinguished.

4.21 Operate the RING key. The SL lamp should light. Immediately thereafter, operate the CT key and then immediately restore the RING key. The SL lamp should remain lighted.

Note: It is important that the RING key be operated only long enough to light the SL lamp and to operate the CT key in order to avoid ringing on the trunk after the operator has answered.

4.22 When the operator answers, request her to disconnect after she receives the disconnect signal. Disregard the C lamp indication. Restore the CT key. The SL lamp should be extinguished.

4.23 Restore the DL ST key and disconnect the test cord from test jack.

(B) 3-Wire Trunks

4.24 Insert the plug of the W3A cord into the T jack of the test set. At the trunk finder frame, connect the No. 59 cord tips of the white (tip), blue (ring) and red (sleeve) conductors to the tip, ring and sleeve terminals on the outgoing trunk terminal strip of the trunk finder associated with the trunk under test. If the trunk is busy, the BSY lamp will light, in which case remove the test clips from the terminals.

Intercepting from Local

4.25 If the trunk is idle, operate the DL ST key and then operate the T key. The SL lamp should light.

4.26 Operate the CT key and then immediately operate the REV key. When the operator answers, advise her that a test is being made. Observe that the C lamp does not light. If the trunk is arranged to distinguish between "regular" intercepting and "trouble" intercepting from plugging-up lines, verify that the call was received through the "regular" intercepting answering jack.

Note: If the call is received through the "trouble" intercepting answering jack, or if the C relay lights momentarily, it may be that the "chain" relays in the incoming sleeve circuit failed to function properly, that the ring-up relay in the ring side of the trunk failed to operate (before the REV key was operated), or that the relay which normally operates from the ring-up relay failed to operate and lock to the sleeve of the trunk.

4.27 Restore the T key. Observe that the SL lamp remains lighted.

4.28 Request the operator to disconnect when she receives the disconnect signal. Restore the CT key. The SL lamp should be extinguished. Restore the REV key.

Intercepting from Toll

4.29 If the trunk is idle (SL lamp extinguished), operate the CT key. The SL lamp should light. When the operator answers, observe that the C lamp lights. The C lamp may be extinguished after a short interval.

4.30 Advise the operator that a test is being made. If the trunk is arranged to distinguish between "regular" intercepting and "trouble" intercepting from plugging-up lines, verify with the operator that the call was received through the "regular" intercepting answering jack.

4.31 Request the operator to disconnect when she receives the disconnect signal. Restore the CT key. The SL lamp should be extinguished. The C lamp, if previously lighted, should be extinguished.

4.32 If the trunk is arranged to receive calls through plugging-up lines, proceed as in 4.33 to 4.35. Otherwise, disconnect the test cord from the terminal strip and restore the DL ST key.

Trouble Intercepting

4.33 If the trunk is idle (SL lamp extinguished), operate the REV key and then operate the CT key. The SL lamp should light. When the operator answers, observe that the C lamp does not light. Advise the operator that a test is being made and verify that the call was received through the "trouble" intercepting answering jack.

4.34 Request the operator to disconnect when she receives the disconnect signal. Restore the CT key. The SL lamp should be extinguished. Restore the REV key.

4.35 Restore the DL ST key and disconnect the test cord from the terminal strip.

5. REPORTS

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