

**SELECTOR REPEATERS
OPERATION TESTS
USING TEST SET SD-31859-01 (J34722B)
335A COMMUNITY DIAL OFFICES**

1. GENERAL

1.01 This section describes methods of testing selector repeaters using test set SD-31859-01.

1.02 This section is reissued to incorporate material from the addendum in its proper location. In this process marginal arrows have been omitted.

1.03 The tests covered are:

- (A) Selector Feature - Operation Test
- (B) Repeater Feature - Operation Test
- (C) Release of Main Office Trunks on Permanent Lines
- (D) First Level Operation Test
- (E) "0" Level Operation Test
- (F) Restricted Service Operation Test

1.04 When performing Tests (A), (B) or (D) it will be necessary to ascertain the numbering plan of the particular office so as to know the digits that should be absorbed and which digits will direct the call to the main office or to the branch office.

1.05 When performing Test (A) a different level should be used for each testing cycle so that eventually all selector repeaters will be tested on each level.

1.06 Test (C) covers only a test of the feature to release the main office trunk when held by permanent lines. Tests of the other features of the line lockout and selector repeater switch time-out release are covered in Section 226-205-500.

1.07 Test (D) applies only where service code selectors are provided either in the branch office or the main office.

1.08 The test equipment specified in this section is designed to apply proper marginal tests (simulated critical circuit conditions) when the circuit under test and the test equipment have an applied voltage of 48.5 to 50. In those offices where power plants are normally operated at more than 50 volts, the battery voltage should be reduced and maintained within the required limits while the tests are being made.

2. APPARATUS

All Tests

2.01 Test Set J34722B (SD-31859-01).

2.02 No. 1011G Hand Test Set connected to a W2CL Cord equipped with a No. 471A Jack and a No. 240A Plug (2W39A Cord) or the equivalent.

2.03 One P3C Cord equipped at one end with a No. 310 Plug and at the other a No. 240A Plug (3P2A Cord).

2.04 One P3E Cord six feet long equipped with red shelled No. 310 Plugs (3P7A Cord). See 3.02 and 3.03.

2.05 One P3E Cord six feet long equipped with black shelled No. 310 Plugs (3P6D Cord). See 3.02 and 3.03.

Tests (B) and (F)

2.06 One No. 893 Cord six feet long equipped with two No. 360A Tools (1W13B Cord) and two KS-6278 Tools.

3. PREPARATION

3.01 Connect the dial hand test set to the TJ jack of the test set.

3.02 If the test set is equipped with a BAT-G jack, connect it to a 48-volt battery supply jack, using a P3E cord. Otherwise proceed as in 3.03.

3.03 If there is an appearance of the connector test line jacks close enough to permit doing so, make the following connections. Using a P3E cord with black plug shells, connect the B jack of the test set to the B jack of the connector test line on the connector frame. Using a P3E cord with red plug shells connect the R jack of the test set to the R jack of the connector test line. To avoid possible grounding of the battery supply lead, connect to the test set first and, when disconnecting, remove the plug from the test set last.

Note: If using a test set which is not equipped with R and B jacks, insert the plugs (red and black shells) of the cord permanently connected to the test set into the test line jacks R and B, respectively, to supply battery to the test set.

3.04 If it is not possible to make the battery and ground connections to the test set, it will be necessary to disregard all references to the test set C and REV-BAT lamps.

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3.05 Insert the No. 310 plug of the P3C cord into the T jack of the test set.

4. METHOD

(A) Selector Feature - Operation Test

4.01 This test checks the ability of the selector repeater to recognize, from the digits dialed, that the switch is to select a trunk to the next switch in the train, at the branch office, and checks the operational features under loop and leak conditions, of the selector repeater when functioning as a selector.

4.02 If the selector repeater to be tested is normal, insert the No. 240A plug into the test jack of the switch (using test jack springs 1, 2, 3, and 4). If the switch is busy the C lamp will light, in which case the plug may either be removed in order to proceed with other tests or left in the test jack and the test delayed until the C lamp is extinguished.

4.03 If the selector repeater is idle operate the switch of the hand test set to the TALK position and the switch of the cord connected to the hand test set to the ON position. Observe that the C lamp lights and dial tone is heard.

4.04 Dial the digits of the branch office code. Observe that the switch steps to the level dialed and releases without cutting in for each digit to be absorbed as determined in 1.04. Note that dial tone is no longer heard after the first digit has been dialed.

4.05 Dial a digit corresponding to a working level in the office. Observe that the switch stops to the level dialed, cuts in and seizes the first idle trunk.

Note: For the purpose of this test, vacant levels shall be regarded as working levels and tested accordingly. If the vacant level dialed is provided with vacant level trunks, either "vacant level tone" or "no such number tone" should be heard. If the vacant level is connected to intercepting trunks, audible ringing tone should be heard until the operator answers. When the operator answers advise her that a test is being made. If the operator answers in less than four seconds the audible ringing tone may not be heard. If the sleeves of the vacant level are grounded the switch should rotate to

the eleventh rotary step and busy tone should be heard.

4.06 Operate the switch of the hand test set to the MON position and note that the C lamp is extinguished and that the switch restores to normal.

4.07 Operate the switch of the cord connected to the hand test set to the OFF position.

4.08 Proceed as in 4.02 to 4.06 operating the LEAK key of the test set instead of the switch of the cord connected to hand test set.

(B) Repeater Feature - Operation Test

4.09 This test checks the ability of the selector repeater to recognize, from the digits dialed, that the switch is to select a trunk to the main office and checks the operational features under loop and leak conditions, of the selector repeater when functioning as a repeater.

4.10 Proceed as in 4.02.

4.11 If the selector repeater is idle operate the SL key of the test set. The C lamp may light.

4.12 Connect ground to No. 13 switch jack spring of the selector repeater, using a No. 893 cord.

4.13 Operate the switch of the cord connected to the hand test set to the ON position.

4.14 Restore the SL key of the test set and operate the switch of the hand test set to the TALK position. Observe that the C lamp lights or remains lighted. (See 4.11.) Note that dial tone is heard.

4.15 Dial the proper digit or digits to route the call to a main office trunk. The selector repeater should absorb as many digits as determined in 1.04. Note that busy tone is heard.

4.16 Remove the ground connection from the No. 13 switch jack spring and operate the switch of the hand test set to the MON position. Observe that the C lamp is extinguished and that the switch is normal.

4.17 Again operate the switch of the hand test set to the TALK position and observe that the C lamp is lighted and that dial tone is heard.

4.18 Dial the connector multiple test line in a reverse battery group in the main office. Observe that the selector repeater absorbs the proper number of digits as determined in 1.04.

4.19 After the test line has been seized and the ringing has been tripped, note that the REV-BAT lamp lights and follows the interruptions of the test line; i.e., the lamp should light during the test line loop closures.

Note: If ringing induction is heard and if the tripping does not occur during the first or second ringing interval the indication is that the connector is ringing on some terminal other than the test line terminal. In this case remain on the connection for a short time and if a subscriber or an operator answers, advise that a test is being made.

4.20 Operate the switch of the hand test set to the MON position and observe that the C and REV-BAT lamps are extinguished and that the selector repeater is normal.

4.21 Operate the switch of the cord connected to the hand test set to the OFF position.

4.22 Operate the LEAK key of the test set and proceed as in 4.17 to 4.20.

(C) Release of Main Office Trunks on Permanent Lines

4.23 This test checks the ability of the selector repeater to release the trunk to the main office after a predetermined time interval, when the switch is held permanent.

4.24 Proceed as in 4.02 and 4.03.

4.25 Wait for one minute, then dial the main office code. Note that busy tone is heard, indicating that the selector repeater has functioned properly to release the main office trunk.

Note: The time interval will vary from twenty-four to fifty-six seconds. In some offices the shelf permanent signal lamp will light when the trunk has been released. In such cases dial the main office code as soon as the permanent signal lamp lights. If a permanent condition exists on the shelf at the start of the test it will be necessary to wait the one-minute interval.

4.26 Operate the switch of the hand test set

to the MON position and note that the C lamp is extinguished and that the selector repeater is normal.

(D) First Level Operation Test

4.27 This test checks the ability of the selector repeater, depending on circuit arrangements furnished either to absorb or not absorb the first digit "1", and to select, after dialing of either the first digit "1" or the second digit "1", a trunk to a service code selector in the branch office or a trunk to the main office.

Service Code Selectors Provided in the Branch Office

4.28 Proceed as in 4.02 and 4.03.

4.29 Dial a digit "1" and observe that the digit is absorbed. Dial a second digit "1" and note that the switch steps to the first level and selects an idle trunk. If the first digit is not absorbed (where the circuit is so arranged, see 1.04), the switch should select an idle trunk after the first digit "1" is dialed.

4.30 Operate the switch of the hand test set to the MON position and note that the C lamp is extinguished and that the selector repeater restores to normal.

Service Code Selectors Not Provided in the Branch Office

4.31 Proceed as in 4.02 and 4.03.

4.32 Dial the digit "1" and if the selector repeater is arranged to absorb the first digit "1" note that it steps to the first level and releases. If the switch is not arranged to absorb the first digit "1" note that it steps to the first level and stands against the level and does not cut in or restores to normal, depending upon the particular type of selector repeater being tested.

4.33 Dial a second digit "1" and if the switch is arranged to absorb the first digit, observe that the switch steps to the first level and stands against the level and does not cut in or restores to normal depending upon the particular type of selector repeater being tested.

4.34 Dial a digit that will direct the selector in the main office to a service code trunk such as information, repair service or testboard and when the operator or testman answers advise that a test is being made.

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4.35 Operate the switch of the hand test set to the MON position and note that the C lamp is extinguished and that the selector repeater is normal.

(E) "0" Level Operation Test

4.36 This test checks that the selector repeater will select a "0" level trunk when the digit "0" is dialed.

4.37 Proceed as in 4.02 and 4.03.

4.38 Dial the digit "0" and note that the selector repeater steps to the tenth level, cuts in and seizes the first idle trunk.

4.39 Note that audible ringing tone is heard until the operator answers. When the operator answers advise her that a test is being made.

Note: If the operator answers in less than four seconds audible ringing tone may not be heard.

4.40 Request the operator to disconnect when her cord supervisory lamp lights. Operate the switch of the hand test set to the MON position and note that the C lamp is extin-

guished and that the selector repeater restores to normal.

(F) Restricted Service Operation Test

4.41 This test checks that the selector repeater restricts service on levels that are arranged for restricted service.

4.42 Proceed as in 4.02 and 4.03.

4.43 Connect ground to No. 17 switch jack spring (RS lead) using the No. 893 cord.

4.44 Dial a digit corresponding to restricted level and observe that the selector repeater steps to the level dialed and rotates to the eleventh rotary step. Note that busy tone is heard.

4.45 Remove the No. 893 cord from No. 17 switch jack spring (RS) lead and operate the switch of the hand test set to the MON position. Observe that the C lamp is extinguished and that the selector repeater restores to normal.

5. RECORDS

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