

NO-SUCH-NUMBER TONE SUPPLY CIRCUITS TESTS

1. GENERAL

1.01 This section describes methods of testing no-such-number tone supply circuits, in panel, step-by-step, and crossbar offices.

1.02 The tests described are:

- (A) Tone Volume, Pitch, and Manual Transfer, SD-96357-01
- (B) Alarm and Automatic Transfer, SD-96357-01
- (C) Tone Volume, Pitch, and Transfer, SD-96295-01
- (D) Alarm Feature, SD-96295-01

1.03 The test of the alarm feature which is actuated by excessive potential between the filament and plate of the oscillator tube is an operation test only. If a complete test is required, the F relay of each tone generator circuit should be tested as specified in the circuit requirement table.

2. APPARATUS

2.01 No. 716E (or No. 528) Receiver attached to a W2AB Cord equipped with two No. 360A Tools (2W21A Cord) and one No. 365 Tool and one No. 411A Tool.

2.02 No. 136B Tool.

3. METHOD

(A) Tone Volume, Pitch, and Manual Transfer, SD-96357-01

3.01 At the no-such-number tone supply equipment, operate the TST key to place the idle tone generator in operating condition.

3.02 When the associated white lamp is extinguished connect the No. 716E test receiver across contacts 3T and 6T of the J relay and observe that tone is heard and that it rises and falls in pitch approximately 60 times per minute.

3.03 Block non-operated the B relay of the idle tone generator with the No. 136B tool and observe that the tone becomes steady and that its pitch and volume are approximately the same as dial tone. Remove the blocking tool from the B relay.

3.04 If the circuit supplies disconnect tone to timed-release subscriber senders connect one side of the test receiver to 48-volt battery and the other side to contact 6B of the J relay, and observe that the no-such-number tone is heard. Disconnect the test receiver.

3.05 Transfer the load to the idle tone generator by operating the TR key to the opposite position.

3.06 Repeat the procedures of 3.02 to 3.04 to test the other tone generator.

3.07 If it is desired to transfer the load back to the tone generator originally in service, operate the TR key to the opposite position.

3.08 Release the TST key.

(B) Alarm and Automatic Transfer, SD-96357-01

3.09 If tone generator No. 1 is not already supplying the load, transfer the load to it by operating the TST key and then operating the TR key to the No. 1 position after the white lamp 1 is extinguished. Release the TST key and allow approximately a minute for the tube filaments of generator No. 2 to cool before proceeding with the test.

3.10 Operate the TST key and note that lamp 2 lights and that the transfer circuit H relay operates while the tube filaments of generator No. 2 are heating.

Note: While the TST key is operated the automatic transfer feature is inoperative and no alarm other than the white lamp will be received if the generator supplying tone should fail.

3.11 When generator No. 2 reaches operating condition, lamp 2 should be extinguished. When this occurs, insulate contacts 4B-5B of the E relay of generator No. 1. Note that when the C relay next releases lamp 1 is lighted.

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- 3.12 Remove the insulator from the E relay contacts and note that lamp 1 remains lighted after the E relay has released.
- 3.13 Immediately release the TST key and note that the J relay operates and the TR lamp lights.
- 3.14 By means of the test receiver check that the tone is being supplied to the load by generator No. 2 by listening across terminals 14 and 16 of the upper part of the cable well type terminal strip mounted at the extreme right on the front of the unit. If the circuit supplies tone to timed-release subscriber senders, also listen for tone across terminal 12 of the upper part of the terminal strip and terminal 14 of the lower part.
- 3.15 Observe that the audible and visual alarms operate properly.
- 3.16 Momentarily apply ground through the test receiver to the 4T contact of the G relay. Observe that relays H and H1 operate and that the TR lamp is not extinguished while ground is being applied.
- 3.17 If the circuit is arranged to insure filament current to the working generator while a trouble transfer is in effect (Y wiring), connect one side of the test receiver to 48-volt battery, insulate contacts 7B-6B of the G relay, and check that ground remains on the 7B contact of the G relay. Remove the insulator from the G relay.
- 3.18 Momentarily operate the REL key. Note that lamps 1 and TR are extinguished and the audible and visual alarms are retired.
- 3.19 Transfer the load to generator No. 2 by operating the TST key and then operating the TR key to the No. 2 position after the white lamp 2 is extinguished. Release the TST key and allow approximately a minute for the tube filaments of generator No. 1 to cool before proceeding with the test.
- 3.20 Operate the TST key and note that lamp 1 lights and that the transfer circuit H relay operates while the tube filaments of generator No. 1 are heating.
- 3.21 When generator No. 1 reaches operating condition, lamp 1 should be extinguished. When this occurs insulate contacts 4B-5B of the E relay of generator No. 2. Note that when the C relay next releases lamp 2 is lighted.
- 3.22 Remove the insulator from the E relay contacts and note that lamp 2 remains lighted after the E relay has released.
- 3.23 Immediately release the TST key and note that the TR lamp lights.
- 3.24 Observe that tone is being supplied to the load by generator No. 1 by listening across terminals 14 and 16 of the upper part of the cable well type terminal strip mounted at the extreme right on the front of the unit. If the circuit supplies tone to timed-release subscriber senders, also listen for tone across terminal 12 of the upper part of the terminal strip and terminal 14 of the lower part.
- 3.25 If the circuit is arranged to insure filament current to the working generator while a trouble transfer is in effect, proceed as covered in 3.17.
- 3.26 Momentarily operate the REL key and observe that lamps 2 and TR are extinguished.
- 3.27 If the load is to be transferred back to generator No. 1 operate the TST key and when lamp 1 is extinguished, operate the TR key to the No. 1 position. Release the TST key.
- 3.28 At the completion of the tests, verify that tone is being supplied to the load by the generator in service.

(C) Tone Volume, Pitch, and Transfer, SD-96295-01

- 3.29 Start the tone generator by originating a call on one of the associated trunk circuits. This may be done by means of a central office telephone or the outgoing trunk test circuit, when provided. In step-by-step tandem offices, where the central office telephone does not have access to the no-such-number tone supply circuit, a dial hand test set at the selector frame may be used.
- 3.30 At the no-such-number tone supply circuit connect the test receiver across terminals 14 and 16 of the upper part of the cable well type terminal strip mounted on the front of the unit. Observe that tone is heard and that it rises and falls in pitch approximately 60 times per minute. Also observe that it ceases for approximately one-half second in each six-second period.

Note: Certain early circuits are not arranged to interrupt the tone.

- 3.31 By means of the No. 136B tool momentarily block non-operated the IN relay of the tone generator in service and observe that the tone becomes steady and that its pitch and volume are approximately the same as dial tone. Remove the blocking tool from the IN relay.

Caution: The IN relay should be blocked for as short a period as possible since during this time all associated circuits will receive steady tone.

3.32 Transfer the load to the idle tone generator by operating the TR key to the opposite position.

Note: The NT lamp may light for a short time after the position of the TR key is changed.

3.33 Repeat the procedures of 3.30 and 3.31 to test the other generator.

3.34 If it is desired to transfer the load back to the generator originally in service operate the TR key to the opposite position. Observe that tone is being supplied to the load by listening across terminals 14 and 16 of the upper part of the cable well type terminal strip.

3.35 Disconnect the test call from the associated trunk circuit, unless test (D) is to be made at this time.

(D) Alarm Feature, SD-96295-01

3.36 Originate a test call on one of the associated trunk circuits as described in 3.29, if this has not already been done.

Circuits Equipped with "Interrupter and Alarm" Feature

3.37 Insulate contacts 4B-5B of the E relay of the tone generator circuit in service. Observe that, when the C relay next releases, the NT lamp lights and the audible and visual alarms are received.

3.38 Remove the insulator from the E relay contacts and observe that the NT lamp remains lighted after the E relay has released.

3.39 Immediately operate or release the TR key to the other position and observe that the NT lamp is extinguished and the audible and visual alarms are retired.

3.40 Repeat the procedures of 3.37 to 3.39 to test the other tone generator.

Circuits Not Equipped with "Interrupter and Alarm" Feature

3.41 Momentarily remove the AM tube of the tone generator circuit in service. Observe that the NT lamp lights and the audible and visual alarms are received. Immediately replace the AM tube and observe that the NT lamp is extinguished and the alarms are retired.

3.42 Operate or release the TR key to the other position and repeat 3.41 to test the other tone generator.

3.43 If it is desired to transfer the load back to the generator originally in service, operate the TR key to the opposite position.

All Circuits

3.44 After the completion of the tests, verify that tone is being supplied to the load by listening across terminals 14 and 16 of the upper part of the cable well type terminal strip.

3.45 Disconnect the test call from the associated trunk circuit.

4. REPORTS

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