

NO. 1 AND 1B ANNOUNCEMENT SYSTEMS
TIME OF DAY SERVICE
DESK CIRCUITS
TESTS

1. GENERAL

1.01 This section describes tests to be made on time announcement equipment associated with the Announcement Desk No. 1. The tests are as follows:

- (A) Desk Circuit
- (B) Trouble Signal Circuit
- (C) Desk Alarm Circuit
- (D) Supervisor's Signal Circuit
- (E) Transmitting Amplifier Alarm Circuit
- (F) Monitoring on Amplifier
- (G) Filament Current Test
- (H) Filament Activity Test
- (I) Transmission Test

1.02 This section has been reissued to change test (C) to cover desk circuits that have been equipped with a second pair of jacks for the operator's receiver and to outline the use of the spare transmitter in test (E). The visual inspection of vacuum tubes covered in the previous issue of the section as test (H) has been omitted. Test (I) has been added to cover transmission tests and adjustments.

1.03 Transmission test (I) should be made after any of the vacuum tubes in the circuits involved have been changed.

1.04 Since two complete time announcement desk circuits, designated A and B, are provided, both circuits should be tested when testing on a routine basis.

1.05 This section does not include tests to be made on the master and position clocks as this information is contained in another section.

2. APPARATUS

Test (A)

2.01 Test Receiver (No. 528 or equivalent) equipped with Cords and Test Clips.

Tests (A) and (E)

2.02 No. 41AJ Desk Stand or Desk Stand per D-91717 equipped with a No. 615B Transmitter.

Test (E)

2.03 No. 258B (dummy) Plug.

Tests (F) and (I)

2.04 No. 528 Receiver equipped with an R2AC Cord and No. 110 Plug.

Test (G)

2.06 One Weston Portable Milliammeter Model No. 280 Scale 0-750 milliamperes (or 0-1.2 ampere) equipped with a W2BC cord connected to the tip and ring of a No. 291A (or No. 110) Plug.

3. PREPARATION

3.01 For tests (A) and (H) the desk circuit to be tested must be out of service. To avoid interrupting service, monitor on the amplifier as described in (F) before starting the test. If it is in service request the operator to use the other circuit.

3.02 An inspection should be made of the position clocks in the announcement desk to note that the clocks are 7-1/2 seconds ahead of their associated master clocks when the second hand reaches the green segments or the second half of any quarter minute.

3.03 A call waiting condition is required for tests (A), (C), (F) and (I). If no regular calls are being received, originate a call to the time bureau from a local station or insert the plug connected to a No. 528 receiver into the L jack of a spare outgoing distributing circuit.

4. METHOD

(A) Desk Circuit

4.01 At the relay rack, operate the OS key of the desk circuit to be tested. Check that the out of service lamp OS1 at the relay rack is lighted.

4.02 At the announcement desk, check that the red OS lamp is lighted and insert the plug of the spare transmitter into the A jack. Place this transmitter near the transmitter used by the operator, in order to pick up the announcements.

4.03 Operate the volume control key to its + and - positions and note that the deflections on the galvanometer show cor-

responding changes. Leave the key in the same position as the key of the circuit which the operator is using.

4.04 At the relay rack, connect the test receiver to the TEST TERMINALS T and R of the desk circuit which has the lighted OS1 lamp. The time announcement and tone should be heard. Disconnect the test receiver.

4.05 Restore the OS key. The out of service lamp OS1 at the relay rack should flash.

4.06 At the desk, check that the OS lamp is flashing. Remove the plug of the spare transmitter from the A jack. The OS lamp should be extinguished.

4.07 At the relay rack, check that the OS1 lamp is extinguished.

(B) Trouble Signal Circuit

4.08 At the announcement desk, operate the TBL key. Check that the lamp in the associated annunciator cabinet, floor alarm board, pilot lamp or ceiling lamp circuit lights and the alarm bell rings.

4.09 Restore the TBL key. Check that the associated lamp is extinguished and the alarm bell is silenced.

(C) Desk Alarm Circuit

Note: None of the operations of this test should be made while the green AN lamp is lighted or within one-half second after it is extinguished.

4.10 At the announcement desk, momentarily withdraw the plug of the transmitter from the jack of the desk circuit to which it is connected and check that the desk alarm bell rings while the plug is out of the jack.

4.11 Remove the plug of the operator's receiver from the jacks of the circuit and check that the desk alarm bell rings.

4.12 If there is only one pair of jacks for the receiver, reinsert the plug in those jacks. If there are two pairs of jacks, insert the plug into the other pair. The desk alarm bell should be silenced.

4.13 Transfer the operator's transmitter and receiver to the other desk circuit and repeat 4.10 to 4.12 to check the desk alarm with that circuit.

(D) Supervisor's Signal Circuit

4.14 At the announcement desk, operate the SR key. Check that the TIME lamp, usually at the switchboard, lights and the associated buzzer sounds.

4.15 Restore the SR key. Check that the TIME lamp is extinguished and the buzzer is silenced.

(E) Transmitting Amplifier Alarm Circuit

4.16 At the announcement desk, insert the plug of the spare transmitter into the A jack of the desk circuit not in use.

4.17 At the relay rack, insert a No. 258B (dummy) plug into the F jack of the transmitting amplifier associated with the desk circuit to which the spare transmitter is connected.

4.18 Check that the FIL ALM lamp on the amplifier panel and the OS1 lamp at the relay rack are lighted. Also check that the lamp in the associated annunciator cabinet, floor alarm board, pilot lamp or ceiling lamp circuit lights and the alarm bell rings.

4.19 At the desk check that the OS lamp is lighted, then disconnect the spare transmitter.

4.20 At the relay rack, momentarily operate the A key. The FIL ALM lamp on the amplifier panel and the OS1 lamp at the relay rack should be extinguished. Check that the lamp in the associated annunciator cabinet, floor alarm board, pilot lamp or ceiling lamp circuit is extinguished and the alarm bell silenced.

4.21 Remove the plug from the F jack of the amplifier.

(F) Monitoring on Amplifier

4.22 At the relay rack, insert the plug connected with the receiver into the MON jack of the amplifier to be tested. The time announcements should be heard distinctly. The tone signals are not heard at the desk circuit amplifier.

(G) Filament Current Test

4.23 To check an amplifier that is not in service, operate the associated F key. To check a volume indicator that is not in service, request the operator to transfer to the idle desk circuit. Allow approximately 5 minutes to elapse before measuring the current.

4.24 At the relay rack, insert the plug connected to the milliammeter into the F jack associated with the filament circuit to be tested. Observe the reading of the milliammeter.

4.25 The filament current should be within the specified limits. If the reading is outside the limits, replace the ballast lamp with a new lamp and after approximately 5 minutes again read the filament cur-

rent. Failure to secure proper current after a lamp replacement indicates trouble which should be corrected.

(H) Filament Activity Test

4.26 At certain intervals the vacuum tubes of each amplifier, volume indicator and oscillator should be replaced with tubes known to be in good condition. The removed tubes should be tested for filament activity. Where the incoming distributing circuits are arranged for filament activity tests, the 101F and 102F tubes may be substituted in one of those circuits for testing as outlined in the section covering "Incoming Distributing Circuits."

(I) Transmission Test

4.27 Connect the monitoring receiver to the L jack of a spare outgoing distributing circuit, if convenient or to the MON jack of the amplifier associated with the desk circuit in service.

Note: Transmission tests should not be made until the circuit has been in service for at least 10 minutes to allow the tubes to reach a stable condition.

Check of Tone Volume

4.28 At the completion of an announcement, operate the M key associated with the desk circuits. Observe the meter while the tone is being transmitted. The steady reading of the meter should be between $-.5$ db

and $+.5$ db. Release the M key at the end of the tone period. In case the proper reading is not shown, adjust the potentiometer of the clock circuit as required.

Check of the Volume Indicator

4.29 Observe the meter on the volume indicator panel during the tone period. The initial deflection of the volume indicator needle for the time signal should be to about the 50 mark. In case this deflection is not shown, adjust the switch (and the key if necessary) on the volume indicator panel to obtain the proper reading.

Check of Announcement Volume

4.30 At the desk, observe the volume indicator meter during the announcement period. If the operator is speaking in a normal tone and the volume control key is set properly, most of the large swings of the meter needle will be between -2 db and $+2$ db.

4.31 At the volume indicator panel, the meter should show the same readings as the meter on the desk.

4.32 In case the specified readings are not shown on the meters, adjust the switch on the associated amplifier as required to obtain the proper readings.

5. REPORTS

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