

**SEQUENTIALLY CONTROLLED AUTOMATIC TRANSMITTER START SYSTEM (SCATS)  
MESSAGE COUNT CIRCUIT FOR OUTLYING STATION EA-12348-SD  
DESCRIPTION, OPERATION, AND TEST PROCEDURE**

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**1. GENERAL**

**1.01** This section gives a description, the operating principles, and test procedure for the Message Count Circuit for Outlying Station per EA-12348-SD.

**2. DESCRIPTION**

**2.01** The circuit was designed for use at a SCATS (EA-10669-SD) system outlying station to operate in association with the 14 Transmitter-Distributor TD Control Circuit per EA-10963-SD.

**2.02** The purpose of the circuit is to provide a means of limiting the number of messages in a single transmission, and to deactivate the count circuit and restore it to normal if less than the full count of five messages is to be transmitted.

**2.03** As designed, the circuit will count up to five messages before deactivating the transmitter. Observe the following conditions.

(a) If the message tape is not preceded by FIGS H, it will result in a six-message count as the count circuit is based on operating on receipt of six FIGS Hs.

(b) If more than the normal number of FIGS Hs are inserted in the tape, the message count will be decreased by the number of additional FIGS Hs.

**2.04** There are no restrictions as to speed of operation.

**2.05** The equipment consists of one 276J- and seven U-type relays, and associated resistors. The equipment is plate mounted and is normally housed in an ED91472 cabinet.

*Note:* Modifications are required per EA-10963-SD, Fig. 1A. Power is furnished from the rectifier associated with EA-10963-SD. Special function lever parts are required for the 28 TTY per EA-12348-ED, List 2.

**3. THEORY OF OPERATION**

**3.01** Assuming transmission is in progress each time a FIGS H is transmitted, it will ground the FH lead which in turn will set up a chain action through the C1, C2, C3, C4, and C5 relays.

**3.02** The sixth ground on the FH lead will operate fast acting OM relay.

**3.03** Operation of OM relay provides the action necessary to open the clutch magnet path to stop the transmitter.

**3.04** If less than six ground pulses are counted and the transmitter reaches an "end-of-tape" condition, TS1 relay of EA-10963 will release, in turn releasing whichever C relay that had been locked to lower 1 to 2 of the TS relay of EA-10963.

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3.05 The count circuit is thus deactivated and is prepared for the next transmission.

### 4. TESTS

4.01 If possible, tests should be made out of service hours. If tests must be made during service hours, effort should be made to conduct them during a period of light traffic.

4.02 Transmission measurements should be made by the Serving Test Center (STC) on all transmissions to and from the station under test.

4.03 A sufficient number of tests should be made to insure satisfactory operation. In the event of locating and clearing any trouble, all tests shall be repeated on the equipment affected and special attention given to prevent a recurrence.

4.04 To test the count circuit, it is necessary to prepare tapes in standard message format and in varying message lengths.

4.05 Five tapes are required and should consist of two, three, four, five, and six messages.

4.06 Except for transmission measurements, co-ordination with the STC is not required as tests and results can be observed locally.

4.07 The proper format for a message tape is as follows.

FIGS H LTRS AB LTRS CR LF LTRS  
TEXT FIGS H LTRS

*Note:* AB is the station of message destination.

4.08 For test purposes, the station code may be a nonexistent one in order that no station's copying paper or form will be spoiled with test copy.

4.09 A recommended method for checking operations is to address the test messages to the receiving unit of the station under test.

4.10 With the SCATS control circuit in operation, place tape in the transmitter in the following order.

- (1) Six-message tape. (Leave tape in transmitter for Step 2.)

- (2) One-message tape.

- (3) Five-message tape.

- (4) Two-message tape.

- (5) Five-message tape.

- (6) Three-message tape.

- (7) Five-message tape.

- (8) Four-message tape.

4.11 The result of these "tape-available" conditions should be as follows.

- (a) Transmission of the first five messages and deactivation of the count circuit and the transmitter.

- (b) Steps two through eight should have resulted in complete transmission of each tape with deactivation of the count circuit and transmitter at the end of each tape.

- (c) If transmitter deactivation occurs at the end of short tapes and at the five count in the six-message tape, the count circuit can be considered to be operating satisfactorily.

### 5. CONNECTING CIRCUITS

5.01 For connecting circuits use drawing EA-10963-SD "14 TD Control Circuit for Use with 28 TTY".

### 6. REFERENCES

6.01 The following are Bell System Practices and EA drawings related to this section.

AA128.006 — List of General Requirement Sections

581-802-902 LL — 14 Transmitter Control Circuit EA-10963-SD — Description, Operation, and Test Procedure

EA-10669 — SCATS

EA-10964 — Arrangement for Equipping 28E, F, and G Teletypewriters for Certain Selective Functions

EA-11655 — 28 Teletypewriter Stuntbox Equipment Option Chart for Certain Special Functions

EA-12149 — Connect 28 from Transmitter Start Circuit (Used with EA-10963-SD.)

*Note:* For information on basic teletypewriter apparatus, refer to standard instructions covering particular apparatus.