SAGE DATA TRANSMISSIONS SYSTEMS
GROUND-TO-AIR DATA SYSTEM
PERIODIC TEST INTERVALS

1. GENERAL

1.01 This section covers transmission testing of circuits assigned to common user groups (CUG) as used in SAGE Air-Ground Services.

2. TRANSMISSION TESTS

2.01 The 1000 cycle net loss of each circuit should be measured on a weekly basis. The measured loss should not deviate from the assigned loss by more than ±1.0 db.

2.02 The 2600 cycle net loss of each circuit should be measured at the same interval and should not differ from the measured 1000 cycle loss by more than ±2.0 db.

3. SENDING LEVEL AND SENSITIVITY OF 43A1 CHANNELS

3.01 The sending level of the 43A1 channels at both ends of the CUG circuits should be measured on a monthly basis. The measured level should not deviate from the assigned level by more than ±1.0 db.

3.02 The receiving level sensitivity of the 43A1 channels at both ends of the CUG circuits should be checked on a monthly basis. All trunks should be tested for operation within the range of −45 to −51 dbm.

3.03 The following procedures are used at the air-ground testboard for measuring 43A1 sending level and receiving sensitivity.

3.04 *43A1 Sending Level* (Out of Service)

(a) Obtain release of trunk and channel under test as required.

(b) Check filament voltage by connecting volt-ohmmeter (60 V d.c. scale) to the FA (+) and FB (−) pin jack of the 43A1 under test and the 43A1 to be used as a test oscillator for the receiving sensitivity check.

Requirement: Meter should read 20 ±1/2 volts. If requirement is not met, adjust potentiometer FIL ADJ of 43A1 under test for a reading of 20 volts.

(c) At air-ground testboard, insert make-busy (MB) plug into OS jack of trunk under test.

(d) Connect LINE TRANS, LINE REC jacks of trunk to 600-ohm termination jack.

(e) Connect transmission measuring circuit to DROP REC jack of trunk.

Requirement: Meter reading should indicate assigned level ±1 db. If requirement is not met, adjust SEND LEV of 43A1 channel unit (2670 cycles at Direction Center, 2500 cycles at Radio Site) of trunk to obtain a meter reading equal to assigned level.

(f) Remove test connections.

3.05 *43A1 Receiving Level Sensitivity* (Out of Service)

(g) At air-ground testboard, insert MB plug into OS jack of trunk under test.

(h) Patch 600-ohm termination jacks to LINE TRANS, LINE REC jacks.

(i) Connect terminals 4 and 7 of (ST) coil (output of 43A1 channel being used for test oscillator) to IN binding posts of 5A attenuator. Connect OUT binding posts of 5A attenuator to the DROP TRANS jack of trunk under test.

(j) Set 5A attenuator so that the sum of its setting plus measured sending level value of test oscillator provides a test level into DROP TRANS jack of −45 dbm (Example: measured test oscillator output level −28 dbm; 5A setting should be 17 db).

Requirement: ST lamp should be extinguished. If requirement is not met, see (k) below.

(k) Increase 5A attenuator setting by six db.

Requirement: ST lamp should light. If requirement is not met, reduce attenuator setting five db (to provide a −46 dbm adjust level). Adjust REC GAIN potentiometer of 43A1 channel to give just operate condition of RS relay. ST lamp should be extinguished. Increase attenuator setting four db (to provide a −50 dbm adjust level). ST lamp should light.