

MANUAL SUPPLEMENTARY TEST OF NEW
 SUBSCRIBER SENDERS (SD-27810-01)

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1. GENERAL INFORMATION

1.1 Description of Test: This section describes the miscellaneous supplementary tests to be applied to subscriber sender SD-27810-01 before routine.

1.2 Test Procedures

Perform these tests before making supplementary tests with the sender test frame outlined in Section 162.1. Refer to Section 161 for general information.

2. RECORDS AND REQUIREMENTS

2.1 Records: SD-4-1313 and ID-2209 Trouble Records shall be used for this test. See Handbook 50, Section 3.

2.2 Requirements: All tests listed in this section are supplementary and should be completed before the concentrated load test is made.

3. TESTING EQUIPMENT

<u>Amt.</u>	<u>Code</u>	<u>Description</u>	<u>Furnished With</u>
1	ITE-4034 or ITE-4442	Ohmmeter	
1	ITE-4029	Pulse Checking Set	
1	ITE-4015	Continuity Test Set	ITE-4023
1	KS-3008	Stop Watch	
1	ITE-4325 or J24753A	Timing Test Set	
1	R-9572	Test Receiver	ITE-4023
1	KS-16887L1 or 768A	Blocking Tool	

4. FUSING

4.1 Fuses Installed By Shop

4.1.1 Observe each fuse mounting equipped with alarm type fuses and check that each fuse is of the correct type and current carrying capacity as shown on associated circuit drawings, and that each fuse is installed properly.

4.2 Fuses not Installed By Shop

4.2.1 Using a test receiver or volt-ohmmeter check fuse post for absence of battery and ground.

4.2.2 Using fuses of the correct type as indicated by circuit drawings and fuse panel designations, install the following fuses, one at a time, and check that each fuse is associated with the correct circuit and is free from crosses with other unfused posts on the fuse panel

<u>Fuse</u>	<u>Equipment</u>
A	L(SC1) RELAY
B	2L(TR1) "
C	L(AS) "
D	L(RRO) "
E	L(OB) "
F	L(P1) "
G	1L(RA) "
H	L(TKT) "
J	L(TG1) "
K	2L(XB) "
L	L(MAN) "
M	L(C1B) "
N	L(RP) "
P	10(PBC) "

5. CHECK OF COMPENSATING RESISTANCES

5.1 Using the cords furnished with volt-ohmmeter, ITE-4034, connect the X terminal of the ohmmeter to 4 of relay SB and connect the RX10 terminal to 1 of relay C11. Operate the DC and RES keys. Operate relays as shown and check the resistance. The values may vary $\pm 5\%$.

<u>Relays Operated</u>	<u>Resistance</u>
NONE	900
CR1	600
CR2	300
CR1, CR2	0
SB	0
SB, CR3	300
SB, CR4	600
SB, CR3, CR4	900

5.2 Shift lead from 1 of relay CI 1 to 6 of relay AV2. Block operated relays RP1 and AV2. Measure 500Ω resistance. Release relay AV2. Move lead from RX10 terminal of volt-ohmmeter to RX1000 terminal. Block operated relays SB, S5A, and CR5. Read $2.5K \pm 1\%$. Release relays SB, S5A, CR5, and RP1. Remove ITE-4034 from circuit.

6. TIMING REQUIREMENTS

6.1 Perform timing requirements tests as follows:

6.11 Make the test connections shown in Figure 1.

6.12 Connections for leads BK (black), R (red) and W (white) are given on the circuit requirements table of the circuit under test.

6.13 Setting for the key SEND and switch REC are shown on the circuit requirements table (SD-27810-01-F7).

6.14 Set the MCF key to NORM.

6.15 Set the MIL SEC switch for the range which will just cover the maximum time requirement as given in the circuit requirements table.

EXAMPLE:

Time Requirement		MIL SEC Switch
Min.	Max.	Setting
5MS	10MS	0-20
10MS	50MS	0-100
300MS	400MS	0-500
2000MS	5000MS	0-5000
4000MS	8000MS	0-5000 (with half scale calibration)

6.2 Calibration of Test Set

6.21 With the BAT key off, meter should read zero. If not, set pointer to zero with the adjusting screw on meter

6.22 Operate the BAT key to ON and allow set to warmup for 30 seconds. The BAT lamp should light.

6.23 Adjust the meter to read zero by means of the ADJ-0 knob.

6.24 Full Scale Calibration (use for time intervals of 5000 mil seconds or less): Operate key TST to CAL and adjust meter to full scale deflection by turning knob CAL.

6.25 Half-Scale Calibration (use for time intervals greater than 5000 mil seconds): Operate key TST to CAL and adjust the meter to half-scale deflection by turning knob CAL.

6.26 Restore TST key to normal. The meter returns to zero and the set is ready for measurement.

6.27 Recalibrate the set per Paragraphs 6.23 and 6.24 or 6.25 immediately before making each test or if MIL SEC switch setting is changed.

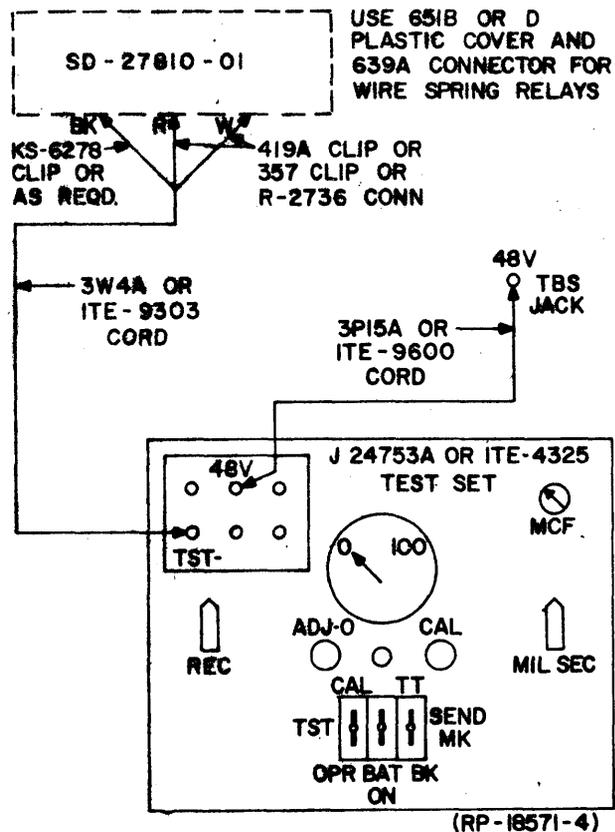


FIG. 1 SETUP FOR J24753A OR ITE-4325 TEST SET

6.3 Test Operation

6.31 Operate and hold key TST to OPR position until meter pointer comes to rest.

6.32 Immediately release and reoperate key TST to OPR position to recycle timer.

NOTE: Some circuits may require manual action to recycle. See circuit requirements table.

6.33 Observe meter reading when pointer comes to rest. Release key TST.

6.34 To obtain measured time in mil seconds refer to Table 1.

TABLE 1

MIL SEC Setting	For MIL-Seconds
0-20	Divide reading by 5
0-100	Read direct
0-500	Multiply reading by 5
0-5000	Multiply reading by 50
0-5000 (half-scale calibration)	Multiple reading by 100

6.35 Compare the test time obtained above with the time requirements of the circuit under test. The test time must lie within the limits given.

6.36 When tests with J24753A or ITE-4325 test sets are completed, release the BAT key to conserve battery life.

6.37 Remove test set from circuit.

7. PG RELAY PULSING REQUIREMENTS

7.1 Setup for Test

7.11 Connect battery and ground jack (or A jack) of test set to 48V TBS jack.

7.12 Connect P jack of test set to PG Jack of sender and block or insulate apparatus as indicated on circuit requirements table (SD-27810-01-F7)

7.2 Checking Per Cent Break

7.21 Set meter of test set to read "0" per cent break by turning CAL knob. When ITE-4029 is used, key C must be operated (during this adjustment only).

7.22 Operate P or PCB key and read per cent break.

7.3 Checking Pulse Speed

7.31 With previously operated keys released, set meter of test set to read "0" per cent break by turning CAL knob. When ITE-4029 is used, key C must be operated (during this adjustment only).

7.32 With ITE-4029

7.321 Operate key S and read meter.

7.322 Operate R key and read meter.

7.323 Note difference in reading and turn ADJ knob while key R is alternately operated or released until difference is as small as possible.

7.324 Release R and S keys and read pulse speed.

7.33 With J94723: Operate key PPS and read pulse speed on scale 20-0 or 40-0 depending on setting of key 20-40.

7.4 Verify pulsing requirements are met per SD-27810-01-F7.

7.41 Remove test set from circuit.

8. CONTROLLED TROUBLE RELEASE FEATURE

8.1 At sender make-busy frame, operate CTR key associated with sender under test at subscriber sender, block operated relay ON1. Verify relays REG and CTR operate. Release key CTR and sender make-busy frame. Verify relay CTR releases. At

→ Arrowed lines indicate new or changed information.

Reason for Reissue:

To remove reference to toothpicks and make reference to standard blocking tool.

alarm Transfer Circuit, block operated relay AT25. Verify relay CTR operates in sender. Release relay AT25 and relay ON1 in subscriber sender.

9. MF CURRENT SUPPLY

9.1 At subscriber sender, attach one lead of R-9572 test receiver to ground. Touch pick, and listen for tone, at the following relays in order: (RRO)1M, (RR1)1M, (RR2)1M, (RR4)1M, (RR7)1M, and (MFS)4M. Verify pitch is about 200 cps higher at each point in sequence.

10. SENDER SUPERVISORY METERS (PDM AND SSM)

10.1 Block operated relays ON1, RA1, and P2A. Verify relay LM operates (6 seconds MAX.) and that relay LMI operates 5 seconds later. At the sender make-busy frame, check that the needle of the partial dial meter is deflected from normal. Block operated relay RGC and verify the needle of the slow completion meter is deflected from normal. Remove blocks from relays ON1, RA1, P2A, and RGC.

11. MAKE-BUSY FEATURES

11.1 Check that relay MB of the sender operates when the sender is made busy at the sender make-busy frame. Check for ground at punching 72 of (LK TST) T.S. on sender unit. Also, check for ground at respective punching 80-84 and 90-94 at (misc.) T.S. of sender frame. Check that sender MB relay operates when a make-busy plug is inserted into GB jack at OT1 frame associated with the marker connector on which the sender under test appears.

11.2 Block operated relay ON1 and SS. Verify associated SS lamp at sender make-busy frame lights. Release relay ON1. Block operated relay REG. Verify SS register at sender make-busy frame scores. Release relay SS and block operated relay TBL. Verify associated T-T trouble register at sender make-busy frame scores. Release relay TBL. Block operated relays SS, C11, and TGL. Verify WA register (if provided) or SS register (WA register not provided) at sender make-busy frame scores. Release relays REG, SS, C11, and TGL.

12. MISCELLANEOUS CIRCUITS

12.1 Test miscellaneous circuit such as the following that are not covered in other tests: (1) Frame test battery; (2) Spare jack to MDF; (3) Frame line circuit; (4) Fuse alarms. Test that the fuse alarm is not stopped when the FA lamp is removed. Repeat the test with the 20A lamp removed.

13. SENDER FRAME MISCELLANEOUS CIRCUIT

13.1 At sender frame, block operated relay IT of miscellaneous circuit. At sender under test, block operated relay ON1. Verify relay IT operates. Release relay IT at sender frame and relay ON1 of sender circuit.

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