TRANSVERTER SD-26010-01

MISCELLANEOUS TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is reissued for the following reasons:

(a) To revise the title to include the schematic drawing number.

(b) To revise Tests A, B, and E.

(c) To make minor changes as required.

1.02 The tests covered are:

1.03 Tests of other trouble detecting features other than those covered in Test F, as well as transverter tests involving the use of the master test frame (MTF), are covered in Section 218-178-501.

1.04 Tests A through G require actions and verifications at the master test frame. Test G requires actions and verifications at the associated switchboard if the all-transverter-busy circuit is arranged to bring in an alarm at an associated switchboard.

1.05 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 3 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the

ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. APPARATUS

All Tests

2.01 322A (make-busy) plugs as required.

2.02 Blocking and insulating tools as required. Use tools and apply, as covered in Section 069-020-801.

Tests A through D and G

2.03 KS-3008 stopwatch or equivalent.

Tests A and E

2.04 One 651D (relay contact connector holder) tool (for use with the 639A tool for making connections to fixed contacts on wire-spring type relays).

Tests A, F, and G

2.05 Test receiver, 716C receiver or equivalent, attached to a W2AB cord, equipped with two 360A tools (2W12A cord), one KS-6278 connecting clip and one 411A (test pick) tool or one 639A (relay contact connector) tool (for use in connecting battery or ground and to test for presence of ground).

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3. METHOD

STEP	ACTION	VERIFICATION
	A. Overall TM1 Timer	
1	At MTF — Insert make-busy plugs into TVMB-, TRMB TV- jacks associated with transverter under test.	
→ 2	At transverter frame — Block operated EXT relay, ***start timing.***	TM1 relay operated. In 14 to 21 seconds — TM1T relay operated. Major alarm sounds. TA lamp lighted. At MTF — TV- lamp associated with transverter under test lighted.
3	At transverter frame — Remove blocking tool from EXT relay.	TM1, TM1T relays released.
4	Momentarily operate AR key.	TA lamp extinguished. Major alarm silenced. At MTF — TV- lamp extinguished.
5	At transverter frame — Momentarily connect ground to 3F of CBR relay.	TM1 relay momentarily operated.

STEP	ACTION	VERIFICATION
6	Momentarily operate 1TR relay.	TM1, TM1A relays momentarily operated.
7	Momentarily operate 2TR relay.	TM1, TM1A relays momentarily operated.
8a	If no other tests are to be made — At MTF — Remove plugs from TVMB-, TRMB TV- jacks.	

B. TM2 Timer

STEP	ACTION	VERIFICATION
1	At MTF — Insert make-busy plugs into TVMB-, TRMB TV- jacks associated with transverter under test.	
2	At transverter frame — Block nonoperated ATB, TR1A, TLK relays.	
→ 3	Block nonoperated CH1 relay, ***start timing.***	TM2 relay operated. In 3 to 5 seconds — TM2T relay operated. Minor alarm sounds. At MTF — TV- lamp associated with transverter under test lighted.
4	At transverter frame — Momentarily operate TM3 relay.	TM2 relay momentarily released.
5	Momentarily operate EXT relay.	TM2 relay momentarily released.
6	Block nonoperated TTRT, TRB relays.	
7	Block operated TRST relay.	
8	Block operated CK1 relay.	TM2 relay released. TM2T relay remains operated.
9	Remove blocking tool from TRST relay.	TM2T relay released.
10	Remove blocking tools from ABT, TR1A, TLK, CH1, TRB, TTRT, CK1 relays.	At MTF — TV- lamp extinguished.
11	Momentarily operate TRRAR key.	Minor alarm silenced.
12a	If no other tests are to be made — Remove plugs from TVMB-, TRMB TV- jacks.	

STEP	ACTION	VERIFICATION
	C. TM3 Timer	
1	At MTF — Insert make-busy plugs into TVMB-, TRMB TV- jacks associated with transverter under test.	
2	At transverter frame — Block operated GC, RK relays.	
3	Block nonoperated TR1A, ATB, TLK relays.	
4	Block nonoperated CH2 relay, ***start timing.***	TM3 relay operated. In 2 to 4 seconds — TM3T relay operated. Minor alarm sounds. At MTF — TV- lamp associated with transverter under test lighted.
5	Momentarily operate RL relay.	TM3 relay momentarily released.
6	Momentarily operate RL1 relay.	TM3 relay momentarily released.
7	Momentarily operate TRL relay.	TM3 relay momentarily released.
8	Remove blocking tool from RK relay.	TM3 relay released.
9	Block nonoperated TM3T relay.	
10	Momentarily operate BI0 relay.	TM3 relay momentarily operated.
11	Block operated BI1 relay.	TM3 relay operated.
12	Momentarily operate BIRA relay.	TM3 relay momentarily released.
13	Remove blocking tool from TM3T relay.	TM3T relay operated.
14	Block nonoperated TTRT, TRB relays.	
15	Block operated TRST relay.	
16	Block operated CK1 relay.	TM3 relay released. TM3T relay remains operated.
17	Remove blocking tool from TRST relay.	TM3T relay released.
18	Remove blocking tools from BI1, TRB, TR1A, ATB, GC, TLK, TTRT, CK1, CH2 relays.	At MTF — TV- lamp extinguished.

STEP	ACTION	VERIFICATION
19	Momentarily operate TRRAR key.	Minor alarm silenced.
20a	If no other tests are to be made — Remove plugs from TVMB-, TRMB TV- jacks.	
	D. TTR Timing	
1	At MTF — Insert make-busy plugs into TVMB-, TRMB TV- jacks associated with transverter under test.	
2	At transverter frame — Block nonoperated DL relay.	
3	Block operated TR1 relay, ***start timing.***	Minor alarm sounds. TR1A, TRST relays operated. In 2 to 4 seconds — TTRT relay operated. TRT, TA lamps lighted. Major alarm sounds. At MTF — TV- lamp associated with transverter under test lighted.
4	At transverter frame — Block operated GCA relay.	
5	Remove blocking tool from TR1 relay.	TR1A, TRST relays released. TTRT relay remains operated.
6	Remove blocking tool from GCA relay.	TTRT relay released.
7	Momentarily operate AR key.	TRT, TA lamps extinguished. Major alarm silenced. At MTF — TV- lamp extinguished.
8	At transverter frame — Remove blocking tool from DL relay.	
9	At MTF — Momentarily operate TRRAR key.	Minor alarm silenced.
10a	If no other tests are to be made — Remove plugs from TVMB-, TRMB TV- jacks.	
	E. Capacitor Timing	
1	At MTF — Insert make-busy plugs into TVMB-, TRMB TV- jacks associated with transverter under test.	

STEP	ACTION	VERIFICATION
→ 2	At transverter frame — Block nonoperated TLK, TR1, TTB relays.	
→ 3	Block operated GCA, RGK, TRC1, BI0 relays.	TTBL relay operated.
4	Momentarily operate EXT relay.	TTBL relay momentarily released.
5	Momentarily operate CBG relay.	TTBL relay momentarily released.
6	Momentarily operate TR1A relay.	TTBL relay momentarily released.
7	Momentarily operate CT1 relay.	TTBL relay momentarily released.
8	Remove blocking tool from BI0 relay.	TTBL relay released.
9	Momentarily operate BI1 relay.	TTBL relay momentarily operated.
10	Block operated BIR relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
11	Remove blocking tool from BIR relay.	CT2 relay released.
12	Block operated C1A relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
13	Remove blocking tool from C1A relay.	CT2 relay released.
14	Block operated C2A relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
15	Remove blocking tool from C2A relay.	CT2 relay released.
16	Block operated C3A relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
17	Remove blocking tool from C3A relay.	CT2 relay released.
18	Block operated C4A relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
19	Remove blocking tool from C4A relay.	CT2 relay released.
20	Block operated CFA relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.

STEP	ACTION	VERIFICATION
21	Remove blocking tool from CFA relay.	CT2 relay released.
22	Block operated TE1 relay.	CT1 relay operated. CT2 relay operated. CT1 relay released.
23	Operate TE1A relay.	CT2 relay released.
24	Remove blocking tools from TE1, GCA, TTB, TRC1, TLK, RGK, TR1 relays.	
25a	If no other tests are to be made — At MTF — Remove plugs from TVMB-, TRMB TV- jacks.	

F. Trouble Detection of False Grounds

1	At MTF — Operate CTOS key.	
2	Insert make-busy plug into TVMB- jack associated with transverter under test.	
3	At transverter frame — Block nonoperated RSTT relay.	
4	Connect ground to 2F of RST9 relay.	Minor alarm sounds. Trouble record taken. XRA designation perforated.
5	Remove test connection from RST9 relay.	
6	At MTF — Momentarily operate TRRAR key.	Minor alarm silenced.
7	At transverter frame — Connect ground to 4F of RST9 relay.	Minor alarm sounds. Trouble record taken — XRB, RB designations perforated.
8	Remove test connection from RST9 relay.	
9	At MTF — Momentarily operate TRRAR key.	Minor alarm silenced.
10	At transverter frame — Connect ground to 8F of TM1T relay.	Major, minor alarms sound. TA lamp lighted. Trouble record taken — XRL designation perforated.

STEP	ACTION	VERIFICATION
11	Remove test connection from TM1T relay.	
12	Momentarily operate AR key.	Major alarm silenced. TA lamp extinguished.
13	At MTF — Momentarily operate TRRAR key.	Minor alarm silenced.
14	At transverter frame — Connect ground to 2F of TOK relay.	Minor alarm sounds. Trouble record taken — XICK designation perforated.
15	Remove test connection from TOK relay.	
16	Remove blocking tool from RSTT relay.	
17	At MTF — Momentarily operate TRRAR key.	Minor alarm silenced.
18	Restore CTOS key.	
19a	If no other tests are to be made — Remove plug from TVMB- jack.	

G. All Transverters Busy Alarm

1	At MTF — Insert make-busy plug into TVMB- jack for any transverter.	At transverter frame — ATB relay operated.
2	At MTF — Remove plug from TVMB- jack.	At transverter frame — ATB relay released.
3	Repeat Steps 1, 2 for each equipped transverter.	
4	At transverter frame — Block operated ATB relay for each transverter except the highest.	
5	At MTF — Insert make-busy plug into TVMB- jack associated with highest numbered transverter, ***start timing.***	ACTVB lamp lighted. In 41 to 73 seconds — CTVBA lamp lighted. Minor alarm sounds. If the all-transverter-busy circuit is arranged to bring in an auxiliary signal — At associated switchboard — Auxiliary lamp lighted.
6	At MTF — Remove plug from TVMB- jack.	ACTVB lamp extinguished.

STEP	ACTION	VERIFICATION
7	Momentarily operate ACTVB- AR key.	CTVBA lamp extinguished. Minor alarm silenced.
8	At highest or last transverter (ground present on 6M of ATB relay) in AB lead chain — Block nonoperated ATB relay.	
9a	If the all-transverter-busy circuit is arranged to bring in an auxiliary signal — At associated switchboard — Momentarily operate RL key.	Auxiliary lamp extinguished.
10	At lowest or first transverter in AB lead chain — Test for presence of ground on 6M of ATB relay.	Ground not present.
11	At all other transverters — Remove blocking tools from ATB relays.	