PERMANENT SIGNAL HOLDING TRUNK SD-32370-01

MISCELLANEOUS TESTS

STEP-BY-STEP COMMON CONTROL OFFICES

1. GENERAL

1.01 This section describes a method of testing features of the permanent signal holding trunks used in No. 1, 350A, or 355A step-by-step offices equipped for TOUCH-TONE calling or common control operation.

1.02 This section is reissued to include alarm cutoff key operation in Test E and to add Test G for polarity reversal on tip and ring.

1.03 The tests and features tested are:

A. Seizure: This test determines that the trunk has been seized when a permanent signal is applied.

B. Voice Announcement: This test determines that after seizure a 10-second voice announcement is made.

C. Receiver Off-Hook: This test determines that an off-hook tone is applied after the voice announcement and that the timer enables the receiver off-hook tone circuit for a 50-second timing period. The operation of TM timer is also tested.

D. Voice and Tone Alarms: This test determines that a minor alarm sounds and the VA and TA lamps light when a voice announcement or tone circuit fails.

E. End of Cycle Alarms: This test determines that a minor alarm sounds and that the class lamp flashes at 120 ipm when a permanent signal has had no attention by the test desk or the trouble operator and at 60 ipm when a permanent signal has had attention. This test also checks that the minor alarm will not sound when the alarm cutoff key is operated.

F. Multiple-Seizure Alarms: This test determines that a major alarm sounds and the PSA lamp lights when several permanent signal holding trunks are seized.

G. Polarity Reversal: This test determines that the momentary polarity reversal applied to tip and ring is present.

1.04 The traffic department should be notified before starting and after completing these tests so that any signals caused by performing these tests can be disregarded.

1.05 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 4 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

Tests A Through E and G

2.01 Blocking and insulating tools as required. Apply as covered in Section 069-020-801.

2.02 1011G dial hand test set (handset) equipped with an H2A cord and a 346A plug.

2.03 One testing cord, W4AY cord, 8 feet long, equipped with one 240A plug and one 471A jack (4W10A cord).

Test C

2.04 One KS-3008 stopwatch or equivalent.

Test D

2.05 One testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), and two 639A (relay contact connector) tools.

2.06 One 651-type (relay contact connector) holder.

Test F

2.07 One 18-type resistor as required.

2.08 Two testing cords, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), three KS-6278 connecting clips, and one 639A (relay contact connector) tool.

2.09 One 651-type (relay contact connector) holder.

Test G

2.10 Test receiver, 716C receiver or equivalent, attached to a W2AB cord, equipped with two 360A tools (2W21A cord), one KS-6278 connecting clip, and one 411A (test pick) tool (to check for the presence of battery or ground).

3. PREPARATION

STEP	ACTION	VERIFICATION
	Tests A Through E and G	
1	Operate handset switch to MON and test cord switch to OFF.	
2	At selected permanent signal holding trunk — Connect handset to T jack. *Note:* For testing noncoin trunks, insert plug on test cord into springs 1 through 4 on T jack. For coin trunks, reverse plug to mate with springs 5 through 8 on T jack.	
	Tests A, B, C, E, G	
3	At permanent signal holding trunk — Block nonoperated CC relay.	
4	Block nonoperated LO relay.	

4. METHOD

STEP	ACTION	VERIFICATION
	A. Seizure	
5	At selected trunk — Insulate 7B of TG relay, 4B of AT relay.	

STEP	ACTION	VERIFICATION
6	Operate handset switch to TALK.	Permanent signal tone heard on handset.
7	Operate handset switch to MON.	
8	Remove insulating tools from TG, AT relays.	
9a	If no further tests are to be made — Remove blocking tools from CC, LO relays.	
10a	Remove handset.	
	B. Voice Announcement	
5	At selected trunk — Block nonoperated TG relay.	
6	Operate handset switch to TALK.	10-second voice announcement heard.
7	Operate handset switch to MON.	
8	Remove blocking tool from TG relay.	
9a	If no further tests are to be made — Remove blocking tools from CC, LO relays.	
10a	Remove handset.	
	C. Receiver Off-Hook Tone	
5	At selected trunk — Insulate 1M of AT relay and 11B of EC relay.	
6	Insulate 7B and 11M of TG relay.	
7	Momentarily operate GL relay.	
8	Operate handset switch to TALK.	
9	Remove insulating tool from EC relay.	
10	Momentarily operate TG relay. Start timing.	At permanent signal holding trunk alarm circuit — After approximately 50 seconds, CN or NC lamp lighted. Off-hook tone heard on handset during 50-second timing period.
11	Remove insulating tools from AT, TG relays.	CN or NC lamp extinguished.
12	Operate handset switch to MON.	
13a	If no further tests are to be made — Remove blocking tools from CC, LO, relays.	
14a	Remove handset.	

STEP	ACTION	VERIFICATION
	D. Voice and Tone Alarm	
	Voice Announcement Alarm	
3	At selected trunk — Block nonoperated ANN relay.	
4	At selected trunk — Operate handset switch to TALK.	Minor alarm sounds. VA lamp lighted. Receiver off-hook tone heard.
5	Operate handset switch to MON.	Receiver off-hook tone silenced.
6	Remove blocking tool from ANN relay.	
7	At permanent signal alarm circuit — Momentarily operate AR key.	Minor alarm silenced. VA lamp extinguished.
	Tone Alarm	
8	At selected trunk — Operate handset switch to TALK.	
→ 9	When receiver off-hook tone is heard — Momentarily connect terminal 15 (T) to terminal 25(R) of terminal strip A. ***Caution: Connecting 4F to 8F on TG relay disables tone generator.***	Minor alarm sounds. TA lamp lighted.
10	Operate handset switch to MON.	
11	At permanent signal alarm circuit — Momentarily operate AR key.	Minor alarm silenced. TA lamp extinguished.
12a	If no further tests are to be made — Remove handset.	
	E. End of Cycle Alarms	
5	At selected trunk — Block operated EC relay.	NC lamp lighted. If testing coin trunks — CN lamp lighted. NC lamp extinguished.
6	Operate handset switch to TALK.	
→ 7a →	If testing coin trunks — Momentarily operate AN relay.	If alarm cutoff key is either not provided or not operated — Minor alarm sounds. CN lamp flashes at 120 ipm. If alarm cutoff key is operated — CN lamp flashes at 120 ipm.

STEP	ACTION	VERIFICATION
8b	If testing noncoin trunks — Momentarily operate FL relay.	If alarm cutoff key is either not provided or not operated — Minor alarm sounds. NC lamp flashes at 120 ipm. If alarm cutoff key is operated — NC lamp flashes at 120 ipm.
9	Momentarily operate TS relay.	Minor alarm silent. CN or NC lamp flashes at 60 ipm.
10	Operate handset switch to MON.	
11	Remove blocking tool from EC relay.	
12c	If no further tests are to be made — Remove blocking tools from LO, CC relays.	
13c	Remove handset.	
	F. Multiple-Seizure Alarms	
1	At permanent signal alarm circuit — Determine strapping of multiple trunks as prescribed in circuit note 102 of SD-32370-01.	
2	At a selected trunk — Connect an 18-type resistor whose value is equivalent to the resistance value of trunks strapped together from 1F of MB relay to ground.	Major alarm sounds. PSA lamp lighted.
3	Remove resistor and test connectors used in Step 2.	
4	Momentarily operate AR key.	Major alarm silenced. PSA lamp extinguished.
	G. Polarity Reversal	
5	At selected trunk — Block nonoperated RV and RVA relays.	At selected trunks — Observe that ON relay operates.
6	Operate handset switch to TALK.	
7	Block operated ON relay.	
8	Operate handset switch to MON.	
9	Remove handset.	
10	Test for presence of battery on terminal 21(R) of terminal strip B.	Battery is present.
11	Test for presence of ground on terminal 11(T) of terminal strip B.	Ground is present.

STEP	ACTION	VERIFICATION
12	Remove blocking tool from RV relay.	
13	Test for presence of ground on terminal 21(R) of terminal strip B.	Ground is present.
14	Test for presence of battery on terminal 11(T) of terminal strip B.	Battery is present.
15	Remove blocking tool from RVA relay.	
16	Test for presence of battery on terminal 21(R) of terminal strip B.	Battery is present.
17	Test for presence of ground on terminal 11(T) of terminal strip B.	Ground is present.
18	Remove blocking tool from ON relay.	