

LINE FINDER START AND TRIP CIRCUITS  
MANUAL TEST OF LINE FINDER START CIRCUIT

Routine Tests  
and Inspections  
107.301-3M

1. GENERAL:

1.1 These tests are used to check the start circuits associated with the line finders and are made with the line finder test set (T-501445 or similar circuit) as the line finder frame.

1.2 These tests make a marginal operation check of the ST-A, GA, ST-B, GB, CA, SA, CB and SB relays at the current value equal to the operate test requirements at normal voltage and check their associated leads in the start circuit. A check of the relative speed of operation of the ST-A and ST-B and the GA and GB relays is also made.

2. TESTING EQUIPMENT:

<u>Amount</u>	<u>Code</u>	<u>Description</u>
1	C-42461	Line finder starting test set
1	728	6' three conductor cord equipped with
2	110	Plugs

3. ROUTINE TEST NO. 263-001:

3.1 Test Set Preparation:

3.11 Patch B-GRD jack of the test set to A jack of the line finder frame jack box.

3.12 With all test set keys normal, connect the test plug to the jacks associated with the emergency start circuit.

3.121 This test is made at a time when the circuit is not in use and prior to the test of the regular start circuit. This is to insure its proper operation before being substituted for the regular start circuit.

3.2 Method of Making Test:

3.21 The operation of the test set, lamp signals and indications are as follows:

OPR.	<u>KEYS</u>		LAMP SIGNALS	INDICATION
	OPR.	REL.		

TEST OF ST-A AND GA RELAYS

1	STP.		A lamp lights	Test started ST-A and GA relays.
2		STP.	X lamp lights	Continuity of X lead.

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OPR.	KEYS		LAMP SIGNALS	INDICATION
	OPR.	REL.		
			ST lamp lights	Operation of ST-A relay and closure of TR, K and #1 leads. Operation of STP-G magnet.
			ST lamp out-GA lamp lights	Operation of the GA relay and continuity of the Y and ST leads.
			GA and X lamps out	Test of ST-A and GA relays completed
3	STP.		K lamp lights	Continuity of K lead.
			A and K lamps out	

## TEST OF ST-B AND GB RELAYS

4	STP.		B lamp lights	Test started ST-B and GB relays.
			X lamp lights	Continuity of X lead.
			ST lamp lights	Operation of ST-A relay and closure of TR, K-1 and #2 leads.
			ST lamp out-GA lamp lights	Operation of the STP-G magnet.
			GA and X lamps out	Operation of the GB and continuity of the Y and ST leads.
			K lamp lights	Test of ST-B and GB relays completed.
				Continuity of the K-1 lead

## TEST OF CA AND SA RELAYS

5	STP.		A-BB lamp lights	Test started CA and SA relays
6	STP.		B and K lamps out	
			(CA and X lamps light)	False operation CA relays
7	REL		CA lamp lights	Operation of CA relay - Continuity of CH lead.
8	REL		CA and A-BB lamps out	Operation of SA relay.
			SA lamp lights	Test of CA and SA relays completed.

## TEST OF CB AND SB RELAYS

9	STP		B-AB lamp lights	Test started CB and SB relays.
			SA lamp out	

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OPR.	KEYS		LAMP SIGNALS	INDICATION
	OPR.	REL.		
10		STP	(CA and X lamps light)	False operation of CB relay
11	REL		CA lamp lights	Operation of CB relay-continuity of CH lead.
12		REL	CA and B-AB lamps out SA lamp lights	Operation of SB relay Test of CB and SB relays completed.
CHECK OF RELATIVE SPEED OF OPERATION				
13	STP		A and B lamps light	Operation of ST-A and ST-B relays. The speed of these lamps lighting shows the relative speed of operation of the ST-A and ST-B relays.
14		STP	X lamp lights	
15	REL		X lamp out	
			A and B lamps out	Operation of the GA and GB relays. The relative speed of these lamps going out shows the relative speed of operation of the GA and GB relays.
16		REL		
17	T			
18		T	A and B lamps light	Repeat operations 15 to 18 five times and if the A and B lamps are lighted and extinguished in unison the operation of the ST-A, ST-B, GA and GB relays shall be considered satisfactory.
RESTORING TO NORMAL				
19	DISC		All lamps out	All relays released.
20		DISC	All lamps out	Test circuit normal.

3.3 Disconnection of Test Set.

3.31 Restore all test keys to normal and disconnect the test set by removing the patching cord connected to jack associated with emergency start circuit.

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3.4 Substituting the Emergency for the Regular Start Circuit.

3.41 Change the emergency patching plug from the regular to the emergency start circuit jacks. This should be done as quickly and carefully as possible, so as to cause the least interference with service. Trouble encountered on emergency start circuit shall be cleared before being substituted for the regular start circuit.

3.42 Observe the emergency start circuit for proper operation before proceeding with the test of the regular start circuit.

3.5 Test of Regular Start Circuit.

3.51 With all test keys normal, connect the special test plug of the test set to the jacks associated with the regular start circuit.

3.52 Repeat test for regular start circuit as outlined in paragraph 3.21.

3.6 Restoring Regular Start Circuit to Service.

3.61 After completion of the test and the clearing of any trouble found, remove all test equipment and change the emergency switching plug from the emergency to the regular start circuit jacks. This should be done as quickly and carefully as possible, so as to cause the least interference with service.

3.62 Observe the regular start circuit for proper operation.

4. NOTES:

4.1 Restoring Equipment to Service.

4.11 On completion of test remove all testing equipment.

4.12 Circuits in trouble shall be removed from service and referred to the proper source for clearing.