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METHOD OF OPERATION  
TELEPHONE CIRCUIT

For Outgoing Trunk Test Position - Arranged For Use With Loud Speaking Circuit - Not Arranged For Transfer Key - TROUBLE DESK.

FULL MECHANICAL POWER DRIVEN SYSTEM.

GENERAL DESCRIPTION

1. This circuit is used with trunk lines to the final selector frames, test cords, repair lines, and other circuits which terminate in the outgoing test board position.
2. When answering an incoming call from the final selectors, the machine ringing current is tripped and the operator's telephone set is automatically connected to the calling line.
3. This circuit is provided with a secondary cutout key, and a key for ringing local stations and on lines to other offices. A dial is provided for dialing outgoing calls.

DETAILED DESCRIPTION

OPERATION

4. When the listening key at the outgoing trunk test board (not shown) is operated to the talking position on an incoming call through a final selector, the machine ringing current is disconnected by the operation of a relay in the associated key circuit. Direct current from the repeating coil in the district or the incoming circuit, operates the TP relay. The TP relay operated, connects ground on its armature to the winding of the TP-1 relay, which operates. The TP-1 relay is made slow in releasing to insure a sufficient time interval for the operation of the TP-2 relay, on incoming or outgoing calls. The TP-1 relay operated, connects ground from the dial contacts to battery through the winding of the TP-2 relay, which operates. The TP-2 relay operated (a) locks to ground on the lead S through its make contact and the make contact of the TP relay, (b) disconnects battery from the TP-1 relay causing it to release, (c) operates the T relay over a circuit from ground on lead S-1, break contact of the TP-1 relay, make contact of the TP-2 relay, to battery through the winding of the T relay. The T relay operated, connects the tip and ring of the trunk through to the telephone set. When the final selector is restored to normal the TP relay releases, in turn releasing the TP-2 relay. The TP-2 relay released, disconnects ground from the winding of the T relay which releases, disconnecting the operator's telephone set from the tip and ring of the trunk.

5. When making an outgoing call the dial is operated, closing a circuit from ground on its normally open contact through the winding of the D relay, to battery, operating the D relay, which remains operated during the dialing period for each digit dialed. The D relay operated, disconnects the 54-A retardation coil and places a short circuit across the tip and ring of the line during the dialing periods. When the dial is returned to its normal position, the D relay releases. The D relay released, operates the TP, TP-2 and T relays over a circuit previously described, connecting the operator's telephone set to the tip and ring of the line.



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7. When the key is operated at the outgoing trunk test board, associated with a loud speaking circuit, ground is connected to the lead G, operating the LS-1 and LS relays. The LS-1 relay operated, connects the receiver at the outgoing trunk test board through the make contacts of the LS-1 relay to the talk back circuit at the distant end over the lead R-1 and T-1. The LS relay operated, connects the loud speaking receivers at the distant end to the leads L and LT of the induction coil over leads T and R. When the key in the loud speaking circuit is restored to normal, the LS and LS-1 relays release restoring the circuit to normal.

8. When the SCO key is operated to the ringing position, the operator's telephone set is disconnected from the line circuit and ringing current is connected to the called line. When the key is operated to the cutout position, the 125 ohm winding of the induction coil is short circuited through the key contacts, and the lead LT is disconnected from the tip of the line.



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CIRCUIT REQUIREMENTS

	<u>OPERATE</u>	<u>NON-OPERATE</u>	<u>RELEASE</u>
E671 (D)	Test .057 amp. Readj. .017 amp.	Test .011 amp. Readj. .012 amp.	
E414 (T)	Test .028 amp. Readj. .017 amp.	Test .010 amp. Readj. .011 amp.	
E221 (TP-1)	Test .016 amp. Readj. .015 amp.		Test .0000 amp. Readj. .0003 amp.
E148 (LS) (LS-1)	Test .023 amp. Readj. .018 amp.	Test .013 amp. Readj. .014 amp.	
E73 TP-2	Test .026 amp. Readj. .013 amp.	Test .0095 amp. Readj. .010 amp.	
B17 (TP)	Test .0057 amp. Readj. .0018 amp.		Test .0006 amp. Readj. .0006 amp.

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CHK'D.--RAP.

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