

## TRIP RELAYS TESTS PANEL OFFICES

### 1. GENERAL

1.01 This section describes the method of applying the readjust electrical requirements to trip relays in the incoming selector circuits of panel offices, using the trip relay adjusting sets per SD-20127-01 to SD-20127-07 and per J24707A or J24707B.

1.02 The mechanical and electrical requirements for trip relays are covered in Division 040.

### 2. APPARATUS

- 2.01 Trip Relay Adjusting Set.
- 2.02 No. 357 Tools (Sequence Switch Spring Contact Clips), as required.
- 2.03 No. 361-B Tools (Relay Winding Connectors for E and R type relays), as required.
- 2.04 No. 365 Tools (Suspender Clips), as required.
- 2.05 No. 419-A Tools (Test Connectors), as required.
- 2.06 S3B Cord equipped with No. 110 Plug. For use where a battery supply jack is available.

### 3. PREPARATION

- 3.01 Before making adjustments, remove the circuits involved from service.
- 3.02 Insert the No. 110 Plug of the BAT and GRD cord into the battery supply jack, when provided. Otherwise insert No. 365 tools into the socket connectors (No. 360 tools) on the BAT and GRD cord thus equipped. Then connect the white conductor to ground and the black conductor to battery, properly fused. It is important that direct 48-volt battery be supplied to the set as the adjusting circuit does not operate properly if there is any apparatus in series with the battery supply circuit.
- 3.03 Since it is necessary to observe the release of the relay which, when locked up under control of the trip relay, connects ringing current to the line, remove the relay cover.
- 3.04 Block relays operated or non-operated, insulate relay contacts and insulate sequence switch contact springs, as required, in order to provide necessary circuit conditions for the test and prevent

closure of any circuit which would move the sequence switch out of the ringing position. Then set the sequence switch in the ringing position. Circuit requirement tables ordinarily include instructions for this preparation.

3.05 Connect the TEST cord of the adjusting set as specified on the circuit requirements table. If a circuit requirements table with this information is not available, proceed in general as covered in 3.06 to 3.08 to make the necessary connections to the adjusting set.

3.06 Using a suitable tool inserted in the No. 360-C tool, connect the white (RING) conductor of the TEST cord to some convenient relay spring or sequence switch contact spring which, in the ringing position, is associated with the line side of the trip relay winding.

3.07 With a suitable tool inserted in the No. 360-B tool, connect the black (RESET) conductor of the TEST cord to some convenient relay spring or sequence switch contact spring in an operating circuit of the relay (mentioned in 3.03) which, prior to operation of the trip relay, connects ringing current to the line.

3.08 In order that the above relay, when operated over the RESET lead, may lock under control of the trip relay, it is sometimes necessary to supply ground at a convenient point such that, when the relay is up, a holding path will be provided. This holding path must be such that it passes at some point through the normal contacts of the trip relay. When this auxiliary ground connection is necessary, obtain it by means of the red (GROUND) conductor of the TEST cord with a suitable tool inserted in the No. 360-A tool.

### 4. METHOD

#### (A) Non-Operate

- 4.01 Operate the NON-OPR key and then operate the RESET key.
- 4.02 Await the beginning of a ringing interval as indicated by the buzzer. Then operate the START key. When the test has been applied, observe that the relay which is locked up under control of the trip relay has not released. This indicates that the trip relay did not operate.
- 4.03 If further applications of the non-operate condition are necessary, they can be made by operating the RESET key and

SECTION 215-121-501

then operating the START key during a ringing interval. In order to guard against the possibility of closure through the non-operate resistances occurring during the silent interval, no attempt should be made to apply the test more than once during the same ringing interval.

4.04 If the relay fails to meet the non-operate condition, it should be adjusted in accordance with the section of Division 040, which applies to the type of trip relay involved.

(B) Operate

4.05 Operate the OPR key and then operate the RESET key.

4.06 Await the beginning of a ringing interval as indicated by the buzzer. Then operate the START key. When the test

has been applied, observe that the relay which is locked up under control of the trip relay is released. This indicates that there has been an operation of the trip relay.

4.07 If further applications of the operate condition are necessary, they can be made by operating the RESET key and then operating the START key during a ringing interval. In order to guard against the possibility of closure through the trip resistances occurring during the silent interval, no attempt should be made to apply the test more than once during the same ringing interval.

4.08 If the relay fails to meet the operate condition, it should be adjusted in accordance with the section of Division 040, which applies to the type of trip relay involved.