

SECTION A230.001

sary to obtain the exact specified "release" value and then release MIL-AMPS key.

5. Depress key No. 3 and move No. 3 resistance slides to the left until the approximate specified "operate" value is observed on the milammeter; after the approximate value is obtained, operate key MIL-AMPS to 75 (37.5 on the No. 35-A set) and check the accuracy of the reading on the .075 ampere scale (.0375 ampere scale on the No. 35-A set). Make any further changes in the resistance slides which may be necessary to obtain the exact specified "operate" value and then release MIL-AMPS key and key No. 3.
6. Depress key No. 2 and move No. 2 resistance slides to the left until the exact specified "saturate" value is observed on the milammeter; do not operate MIL-AMPS key at any time while key No. 2 is depressed. When the specified "saturate" value is obtained, release key No. 2.
7. With the locking lever of key No. 4 operated continuously, proceed with test as follows:
8. Depress keys No. 2 and 3 at the same time. After one second, release key No. 2 and follow immediately by releasing and depressing key No. 3 three times at a rate of approximately three times per second. The period relation of "make" to "break" or "on" to "off" should be at an approximate ratio of 2:1.
9. Observe that the cord supervisory signal follows the operation of the relay as keys No. 2 and 3 are depressed and released. Usually it will be necessary for the relay

to follow only three applications of the "operate" current. When it is desired to obtain more flashes, the "saturate" current (key No. 2) should be applied for each three applications of the "operate" current.

10. Where the flashing recall arrangement is employed and the answering cord supervisory relay is being tested, it will be necessary to operate the associated listening key. Care should be exercised to make sure that not more than one key is operated at a time.

Note: The various current values should be checked occasionally to make sure that they have not changed due to voltage variation.

(b) Supervisory Relay Test—With Interrupter Circuit:

1. Start the motor driven interrupter by operating the starting key. The pilot lamp associated with the key indicates whether or not the interrupter relay is operating properly and serves as a guard signal in case the motor is left running when the circuit is not in use. Allow the motor to run for about 15 minutes before making any tests because when cold it runs slightly faster than the rated speed.
2. Before using the current flow test set, be sure that all resistance is cut in to avoid damaging the needle of the milammeter. This is accomplished on the No. 35-C or No. 35-A test set by moving all resistance slides to the extreme right.
3. Arrange test set keys and switches as shown in Fig. 2.

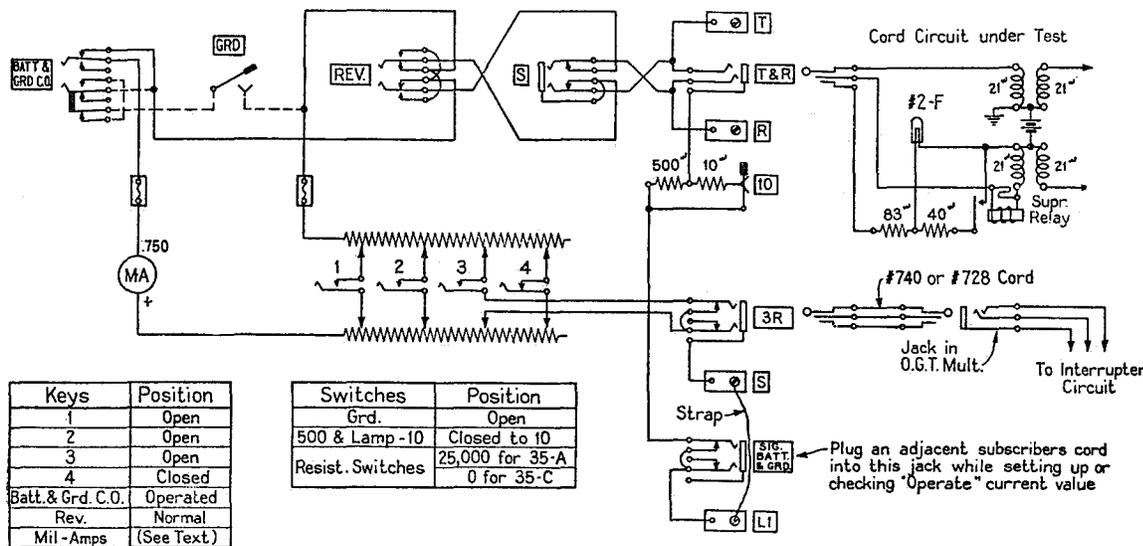


FIG. 2—TESTING SUPERVISORY RELAYS AT FRONT OF SWITCHBOARD—USING NO. 163-A INTERRUPTER CIRCUIT FOR INTERRUPTING "OPERATE" CURRENT

4. Insert plug of cord to be tested into T & R jack of test set. Insert one plug of the No. 728 or No. 740 cord into EXT. KEY-3R jack of test set and insert the other plug into INT jack in outgoing trunk multiple. Insert plug of any answering cord into SIGNAL BATT. & GRD. jack of test set; the supervisory signal associated with cord under test should light.
5. With the locking lever of key No. 4 closed as shown in Fig. 2, move the No. 4 resistance slides to the left until the approximate specified "release" value is observed on the milammeter; after the approximate value is obtained, operate key MIL-AMPS to 15 (37.5 on the No. 35-A set) and check the accuracy of the reading on the .015 ampere scale (.0375 ampere scale on the No. 35-A set). Make any further changes in the resistance slides which may be necessary to obtain the exact specified "release" value and then release MIL-AMPS key.
6. Depress key No. 3 and move No. 3 resistance slides to the left until the approximate specified "operate" value is observed on the milammeter; after the approximate value is obtained, operate key MIL-AMPS to 75 (37.5 on the No. 35-A set) and check the accuracy of the reading on the .075 ampere scale (.0375 ampere scale on the No. 35-A set). Make any further changes in the resistance slides which may be necessary to obtain the exact specified "operate" value and then release MIL-AMPS key and key No. 3.
7. Depress key No. 2 and move No. 2 resistance slides to the left until the exact specified "saturate" value is observed on the milammeter; **do not operate MIL-AMPS key at any time while key No. 2 is depressed.** When the specified "saturate" value is obtained, release key No. 2.
8. Strap terminals S and L1 of test set with a piece of wire. Remove plug from SIGNAL BATT. & GRD. jack and proceed with test as follows:
9. With the locking lever of key No. 4 operated continuously, depress keys No. 2 and 3. After one second, release key No. 2 but keep No. 3 depressed. Hold key No. 3 de-

pressed for about one second to allow the interrupted "operate" current to flow through the relay winding three times.

10. Observe relay operation as indicated by the cord supervisory lamp. The supervisory relay should be considered in satisfactory adjustment if it releases after key No. 2 has been released and follows the three applications of the "operate" current. If more flashes are desired, the "saturate" current (key No. 2) should be applied for each three applications of the "operate" current.
11. Where the flashing recall arrangement is employed and the answering cord supervisory relay is being tested, it will be necessary to operate the corresponding listening key. Care should be exercised to make sure that not more than one key is operated at a time.

Note: The various current values should be checked occasionally to make sure that they have not changed due to voltage variations. To check the "operate" current, open the strap between L1 and S; this opens the sleeve of the interrupter circuit, releasing a relay, thereby short-circuiting the contacts of the interrupter relay. Insert plug of any answering cord into SIGNAL BATT. & GRD. jack of the test set; this furnishes ground to the sleeve of the cord under test, providing for the lighting of the supervisory lamp.

(c) **Audible Flashing Recall:**

1. Following the routine test of the answering cord supervisory relay, place listening key of cord circuit in a normal unoperated position.
2. Operate, release and reoperate key No. 2 of test set and hold it operated. Observe that both audible signal and flash of supervisory lamp are satisfactory.
3. With key No. 2 still depressed, operate listening key and observe that operation of flashing circuit is stopped.

4. **REPORTS:**

- 4.1 Defects found on test should be recorded on proper form.