ALARMS
METHOD OF TRACING
701A AND 711A PBX

1. GENERAL

1.01 This section outlines methods which may be used in locating troubles causing alarm signals at No. 701-A and No. 711-A P B X's. The alarms are as follows:

Switch Frame Fuse Alarm.
Relay Rack Fuse Alarm.
Switchboard Fuse Alarm. (No. 701-A P B X only.)
Call Blocked Alarm.
Permanent Signal Alarm.
Start Lead Ground Alarm.
Chain Circuit Trouble Alarm.
Release Magnet Alarm.
Power Alarm.
Ampere Hour Meter Alarm.

1.02 This section is reissued to cover some minor changes and replaces Provisional Standard Issue 1.

1.03 When the P B X alarms are extended to the central office, the alarms will appear at the central office as class A alarms with the exception of the permanent signal alarm which will appear as a class B alarm.

2. APPARATUS

2.01 Test Receiver (No. 528 or equivalent) equipped with Cords and Clips.

2.02 No. 258-A Plugs and No. 375-A Tools, as required.

3. SWITCH FRAME FUSE ALARM

3.01 This alarm is normally caused by the blowing of a fuse at the fuse panel of the switch frame or the fuse on the associated No. 62-C protector block.

3.02 Observe whether a fuse is actually blown. If the bead end of the coil spring of a fuse is displaced to either side so that it does not rest on the face of the fuse, the alarm spring may be making contact with the alarm bar. In this case reset the coil spring and retire the alarm.

3.03 If a fuse is blown, note which line finder, selector, or selector-connector, etc., is supplied with battery through the fuse.

3.04 Attempt to replace the fuse with a good fuse of the proper capacity. If the fuse does not blow again, test the associated apparatus and if the fuse does not blow, make a record of the circuit so that any repetition of the trouble may be noted.

3.05 If the fuse blows again, make the associated apparatus busy and make a visual inspection. If no reason for the blowing of the fuse is apparent, open the battery feeder at approximately the midpoint of the associated circuit and note to which side the ground causing the trouble lies. Then by further division of the circuit, isolate the point where ground is supplied.

3.06 Remove the ground; close all connections which were opened and again test for ground.

3.07 Replace the fuse; test the apparatus and restore it to service.

4. RELAY RACK FUSE ALARM

4.01 This alarm is normally caused by the blowing of a fuse on the fuse panel of a relay rack or the fuse on the associated No. 62-C protector block.

4.02 Proceed as in 3.02.

4.03 If a fuse is blown, note which trunk circuit, tie line circuit, etc., is supplied with battery through the fuse.

4.04 Proceed as in 3.04 to 3.07.

5. SWITCHBOARD FUSE ALARM (NO. 701-A P B X ONLY)

5.01 This alarm is normally caused by the blowing of a fuse on the fuse panel in the rear of the switchboard positions.

5.02 Note which switchboard position is involved and proceed as in 3.02.

5.03 If a fuse is blown, note which pair of cords, lamp bank, etc., is supplied with battery or ground through the fuse.

5.04 Proceed as in 3.04 to 3.07 except that when a ground fuse is blown, it is necessary to check for battery cross (paragraph 3.05).

6. CALL BLOCKED ALARM

6.01 This alarm is caused by the operation of a line finder G relay for a period of at least 15 to 30 seconds.

6.02 Note that the TST key associated with the group of line relays is normal. Remove the relay cover on the group, subgroup and alarm relay equipment and note the subgroup in which the G relay remains operated.

6.03 If the line finders in this subgroup are hunting and restoring, remove the relay cover from the line relays which are first choice in the subgroup. Block normal the L relay which is operated. The line finders will stop hunting if the trouble is caused by an L relay not releasing. Then check the reason for the CO relay not operating or the L relay not releasing when the CO relay operates, as the case may be.

6.04 If all line finders are not hunting but are busy, check the reason for this condition.

6.05 If the line finders are not hunting and are not all busy, note if the first line finder in the subgroup is on a line. If it is not on a line, note the A relay. If the A relay is operated check why the line finder does not step vertically. If the A relay is normal, check why it does not operate from a ground on the start lead.

6.06 If the first line finder in the subgroup is on a line and the D relay is operated, follow the procedure described above on the line finder which normally would hunt for the line.

7. PERMANENT SIGNAL ALARM

7.01 On successive selectors and selector-connectors whose shafts are normal, move the shaft upward until the off-normal springs make contact. On idle selectors and selector-connectors a click of the release magnet should be heard.

7.02 When the selector or selector-connector is located on which a click is not heard, note the extension to which the associated line finder is connected.

7.03 First determine that the receiver is on the hook at the extension or that no cord is connected to the line at the switchboard, before tracing the shunt or cross from the extension.

8. START LEAD GROUND ALARM

8.01 With a head receiver connected to the equipment end of a fuse on the fuse panel, test for the ground on the start lead as follows:

8.02 Starting with the first line finder in subgroup No. 1 and then the last line finder in subgroup No. 1, first line finder in subgroup No. 2, etc., insert a No. 258-A plug into the associated test jack.

8.03 If the line finders continue to hunt, insulate spring 8 from 10 on the D relay. If the ground is found on spring 8, the ground is on the start lead toward the succeeding line finder. If the ground is found on spring 10, it is on the start lead from the preceding line finder.

8.04 The alarm may be retired when the ground has been removed from the start lead by momentarily operating the associated AR key on the relay rack.

9. CHAIN CIRCUIT TROUBLE ALARM

9.01 Note whether the S or CH relay is released. If the S relay is released and the CH operated, there is a foreign ground on the chain circuit. If the CH relay is released and the S relay operated, there is a foreign potential on the chain circuit.

9.02 Insert a No. 258-A plug into the test jacks of idle line finders in succession until the line finder in which the trouble is located is reached. This will be indicated by the C lamp at the jack panel being extinguished.

9.03 Locate and clear the ground or battery cross at the line finder.

10. RELEASE MAGNET ALARM

10.01 Note frame and side of frame indicated by the alarm lamp. Remove the cover from selectors, connectors and selector-connectors which are off normal until the one is found which is off normal with the A relay normal. If a line finder is involved, look for one which is off normal with the B relay normal.

10.02 Make the switch busy and determine the reason for the switch not restoring.

11. POWER ALARM

11.01 When this alarm is given, note if an alarm type fuse is blown on the relay and fuse panel at the power plant. If this is found to be the case, observe the fuse designation so as to assist in locating the equipment that may be causing the trouble. Note that the alarm type fuse is replaced at the time the cartridge type fuse is renewed.

11.02 If no alarm type fuse is blown, it is an indication of a failure of the ringing current supply. This may be verified by noting that the P and A relays only of the common alarm equipment are operated.

12. AMPERE HOUR METER ALARM

12.01 This alarm indicates that the battery is about 1/3 discharged. Inspect the power apparatus to see that the charging circuit is connected to the battery and is charging at the proper rate.

13. REPORTS

13.01 The required record of the alarms should be entered on the proper form.