ALARMS, AUDIBLE AND VISUAL (EXCLUDING SATT ALARMS) TESTING PROCEDURES

1. General

1.01 This Section replaces Section 230-550-300, Issue 1. Remove and destroy all copies of Section 230-550-300 and Addendum.

1.02 This Section outlines the procedure for testing alarms associated with central office equipment See schematic drawing H-85288 for typical alarm circuits that are tested in this Practice.

1.03 Thetestscheckthatthealarmswillbeseenand heard if an equipment failure occurs.

1.04 The tests should be performed during periods of light traffic, preferably at night

1.05 For alarm tests covering .SATT equipment, refer to appropriate practice.

Floor Pilot Lamps

1.06 Floor pilot lamps (white) indicate the floor on which the trouble occurred (See Fig. 1.) In a single story office, this lamp would not be provided. The lamp is usually wall mounted.

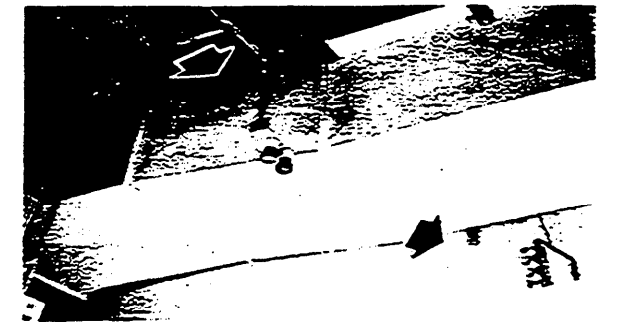


Figure 1. View of Floor Pilot Lamps (Lower Right) and section Pilot Lamps (Center).

Section pilot Lamp

1.07 A section pilot lamp (red or green) indicates the specific section of the floor at which the trouble occurred. (See Fig. 1.) In the larger switchrooms, there are several section lamps to a floor. The lamps are usually mounted on or near one of the walls.

Aisle Pilot Lamp

1.08 Aisle pilot lamps (red or green) indicate the aisle in which the trouble is located- (See Fig. 2) Each aisle is usually equipped with two lamps mounted on the bay.

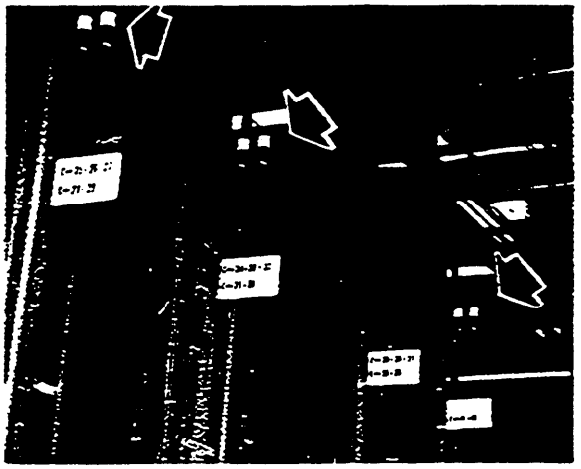


Figure 2. End View of Connector Bays to Show Location of Aisle Pilot Lamps.

Office Alarm Frame Panel Pilot Lamps

1.09 Office alarm frame panel lamps (red or green) indicate the general nature of the trouble causing thealarm. For a typical office alarm frame panel in a small office, see Fig. 3A. It is usually relay rack mounted in a central&d location. In some offices, a

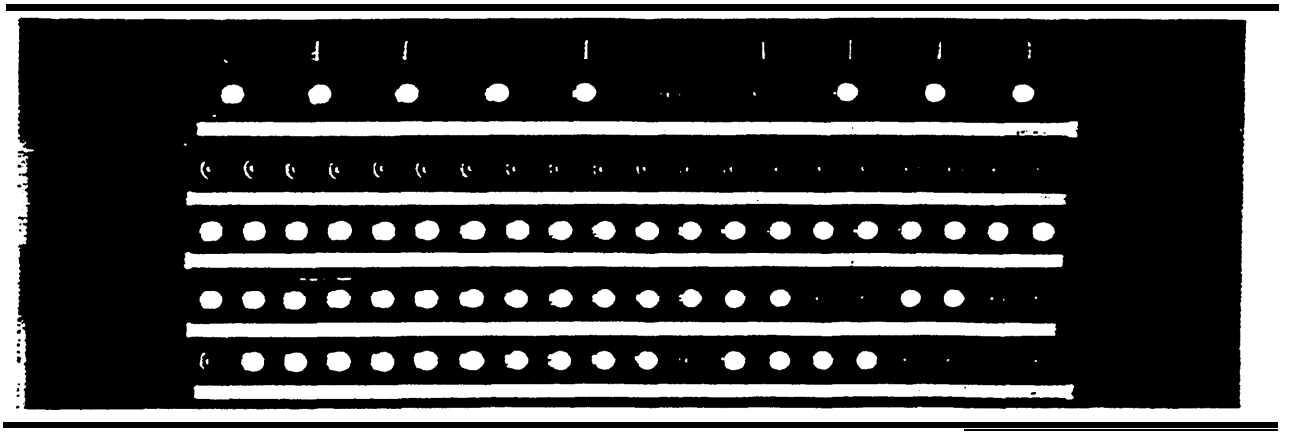


Figure 3A. View of Office Alarm Frame Panel Pilot Lamps.

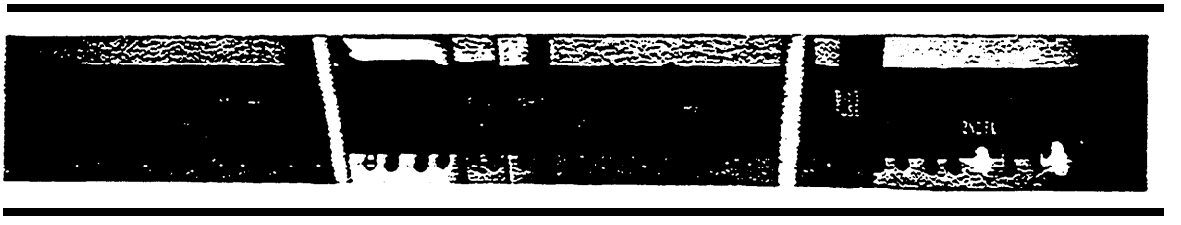


Figure 3B. View of a Portion of the Ceiling Lamps as Seen in some Offices. Ceiling Lamps are Bemg Replaced by Office Alarm Frame Panel Pilot Lamps.

strip of lights were hung from the ceiling. (See Fig. 3B.) The lamps were called ceiling lamps However, they served the same function as the office alarm frame panel pilot lamps.

1.10 In most cases, the office audible alarms originate from either a chime or a power bell. The chime is associated with office minor alarms, such as release alarms, linefinder start alarms, etc. The circuit to the chime is usually interrupted 60 times per minute. The power bell is associated with office major alarms.

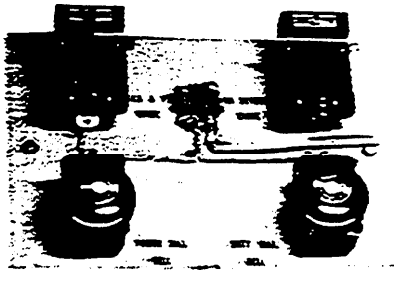


Figure 4. View of Central Office Chimes and Power Bells.

concerning office ringing and power sources. The office chime and power bell are usually wall mounted. (See Fig. 4.)

1.11 For summary of alarms (audible and visual), see Table 1.

2. TEST APPARATUS

2.01 Provide test apparatus as follows:

(a) Resistance cord as shown in Fig. 5

(b) Busy **Clips,** A. E. Co. Type D-15455 or **equivalent**

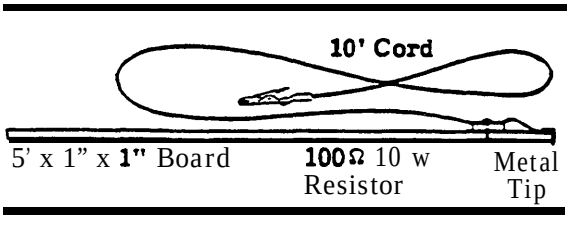


Figure 5. Line Drawing of One Type of Resistance Cord that Could be Used.

Table 1

Summary of Alarms to be Tested

Type of Alarm to be Checked	Visual Alarms					Audible Alarms		
	Bay or Shelf Lamp	Aisle Pilot Lamp	Section Pilot Lamp	Floor Pilot Lamp	O.A.F. Panel Pilot Lamp	Chime	Bell	Buzzer
1. MDF Heat Coil	W				W			X
2. Fuse	R	R	R	W	R	60 IPM		
3. Release	G	G	G	W	G	601PM		
4. Condenser	R			W	R	60 IPM		
5. Supervised Ground	B			W	B	60 IPM		
6. Cross Battery	B			W	B	60 IPM		
7. Liiefmder Blocked	W	G	G	W	G	601PM		
8. Linefinder Start	W	G	G	W	G	60 IPM		
9. Circuit Breaker	R			W	R		X	
10. Ringing Generator	R			W	R		X	
11. Generator Hold-Up Relay	R			W	R		X	
12. High-Low Voltage	R			W	R		(1)	
13. Paystation Coin-Stuck	W or R	G	G	W	G	601PM		
14. Distant Office					W	(2)	(2)	

W - White Lamp
R - Red Lamp
G - Green Lamp
X - Steady Buzzer or Bell
(1) - Pulsating Power Bell
(2) - Audible Alarm depends on type of alarm at unattended office
O.A.F. Office Alarm Frame

3. PROCEDURE

M.D.F. Heat Coil Alarms

3.01 Ground the alarm tell-tale strip at the bottom of each side of each vertical (See Figure 6).

3.02 Lamp (clear) at top of vertical lights and office alarm frame panel pilot lamp (white) lights. MDF buzzer at end of MDF is heard. Stop alarm by removing cord.

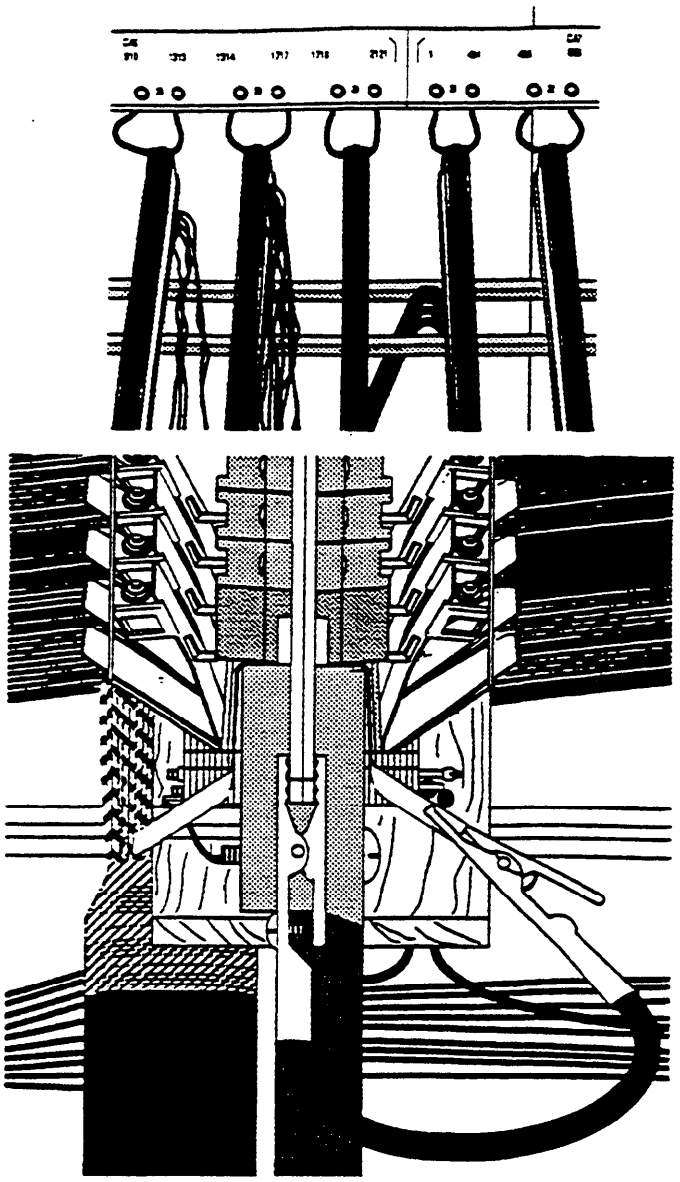


Figure 6. Bottom View: Lower End of a Protector Vertical to Show Placement of Cord

Top View: Upper Ends of MDF Protector Verticals to Show Location of Alarm Lamps.

Fuse Alarms

Examples of Equipment to be Checked:

(a) Plunger Lineswitch Bays

(b) Primary Rotary Lineswitch Bays

(c) Linefinder Shelves

(d) Selector Shelves

(e) Connector Shelves

(f) Test Distributor Shelves

(g) Out Trunk Secondary Shelves

(h) Outgoing secondary Bays

(i) Local Rotary Secondary Bays

(j) Intercepting Service Shelves

(k) Outgoing Secondary A-B Relay Racks

(l) Paystation Repeater Shelves

(m) Repeater Shelves

(n) CLR Repeater Relay Racks

(o) Long Lie Repeater Relay Racks

(p) Supervisory Racks

(q) Distributing Fuse Panels

(r) Miscellaneous Relay Racks

(s) Coin Battery Distibuting Fuse Panels

(t) Meter Racks

(u) Office Alarm Frame Relay Racks

(v) Battery Distributing Fuse Boards

(w) Power Boards

3.03 Place battery from load side of an alarm fuse to each alarm tell-tale strip or terminal Use a resistance cord (See Figure 7).

Figure 7. View of a **Linefinder** Self Fuse Alarm Strip to Show Placement of Resistance Cord.

3.04 There are two important points to remember. One, when the fuse block has alarm tell-tale terminals **instead of an alarm tell-tale strip, place battery to terminal** furthest away from point where alarm lamp is connected. Two, always place the same battery, ground, or generator **on alarm strip or terminal as is on associated alarm fuses.**

3.05 Lamp (red) located next to strip or terminal lights, section pilot lamp (red) lights, aisle pilot lamp (red) lights, floor pilot lamp (white) lights, and office alarm panel pilot lamp (red) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, remove cord.

Release Alarms

Examples of Equipment to be Checked

(a) Linefinders

(b) Selectors

(c) Connectors

3.06 Manually hold a switch shaft of normal (approximately 5 to 20 seconds) until alarm is heard. (See Fig. 8.) After the alarm is heard, check each shelf in the bay in the following manner. Lift shaft of switch in the next shelf. Release the shaft of the switch in original shelf. The alarm should be continuously heard. Repeat the above procedure for each bay.

3.07 There are two important points to remember. One, some connector shelves have separate release relays for local and toll connectors. Two, some incoming selector shelves have separate release relays for each five or less selectors. Normally there is **one** release relay for one shelf of ten or two shelves of ten switches.

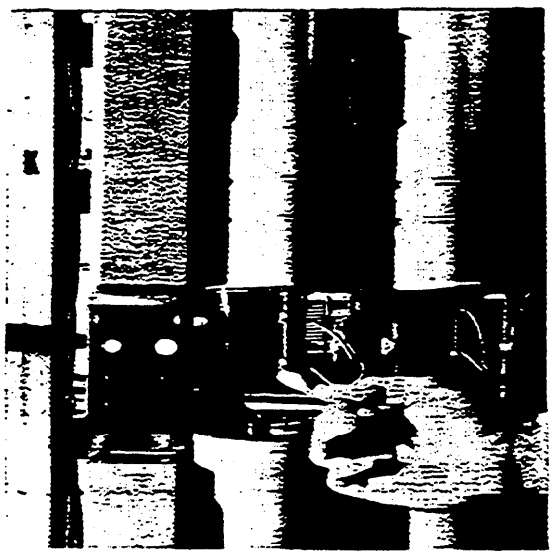


Figure 8. A Portion of a Selector Shelf Showing the Selector Shaft Held Off Normal and Location of the Shelf Alarm Lamp.

3.08 Lamp (green) located on shelf lights, section pilot lamp (green) lights, aisle pilot lamp green lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (green) lights. Office chime is heard (interrupted 60 IPM) Stop alarm, release shaft of witch.

3.09 Each time routine is performed in bay, start with a different switch in a different shelf. In this manner eventually all switches in bay will be used to start the alarm.

Condenser Alarms

Examples of Equipment to be Checked

(a) Primary Rotary Lineswitch Bays

(b) Local Rotary Lineswitch Bays

(c) Outgoing Secondary Bays

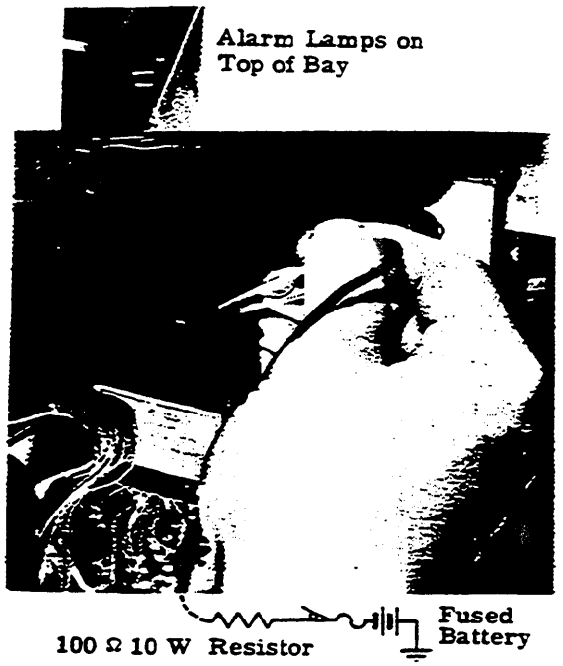


Figure 9. Bottom: A view of the Back Side of the Gate of a Primary Rotary Lineswitch Bay to Show Placement of Resistance Cord, Top: A View of the Alarm Lamps on Top of the Primary Rotary Lineswitch Bay.

3.10 Place battery to open terminal of condenser associated with each two rotary switches. (See Fig. 9.) The open terminal of the condenser is connected to the alarm lamp. Use a resistance cord.

3.11 Lamp (red) located on top of bay lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (red) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, remove resistance cord.

Supervised Ground Alarms
(Includes Cross Battery Alarms.

Examples of Equipment to be Checked

(a) Plunger Lineswitch Bays

(b) Primary Rotary Lineswitch Bays

(c) Out Trunk Secondary Shelves

Self-Aligning Plunger Line-Switch Bay
Supervised Ground Alarms

3.12 Manually hold A relay of master switch operated until alarm is heard (See Fig. 10.) After alarm is heard, check each group in line-up in the following manner. Hold A relay of initial group, push up A relay of next group, release A relay in initial group. Alarm should be continuously heard. Repeat above procedure for each line-up of self-aligning plunger lineswitch groups.

3.13 Lamp (blue) located at top of bay lights (Fig. 10), floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (blue) lights. office chime is heard (interrupted 60 IPM). Stop alarm, release A relay.

3.14 Each time routine is performed, start with a different Lineswitch group in the line-up. In this manner each group will eventually be used to start the alarm.

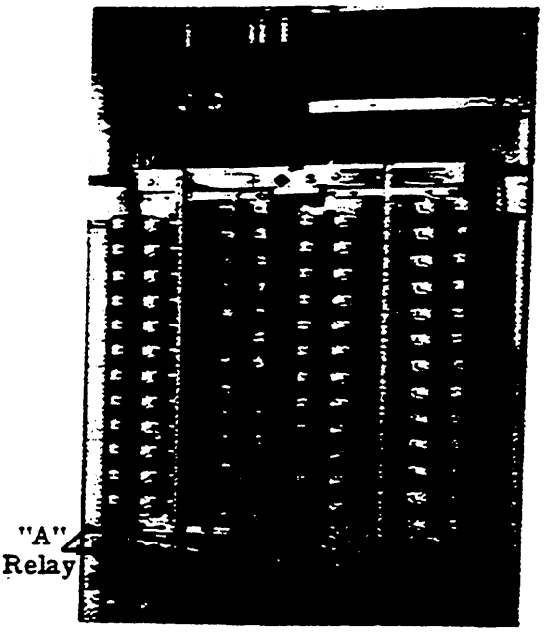


Figure 10. View of a Self-Aligning Plunger Liieswitch Bay to Show Master Switch A Relay and Alarm Lamps.

Self-aligning Plunger Line-Switch
Bay Cross Battery Alarms

3.15 Self-aligning plunger lineswitches do not have cross battery alarms.

Fantail Plunger Lineswitch
Bay Supervised Ground Alarms

3.16 Manually hold locking relay of master switch operated until alarm is heard. (See Fig. 11.) After alarm is heard, check each bay in line-up in the following manner. Hold locking relay of initial bay, push-up locking relay of next bay, release locking relay in initial bay. Alarm should be continuously heard. Repeat above procedure for each line-up of fantail plunger lineswitch bays.

3.17 Lamp (blue) located at top of bay lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (blue) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, release locking relay.

3.18 Each time routine is performed, start with a different lineswitch bay in the line-up. In this manner, eventually each bay will be used to start the alarm.

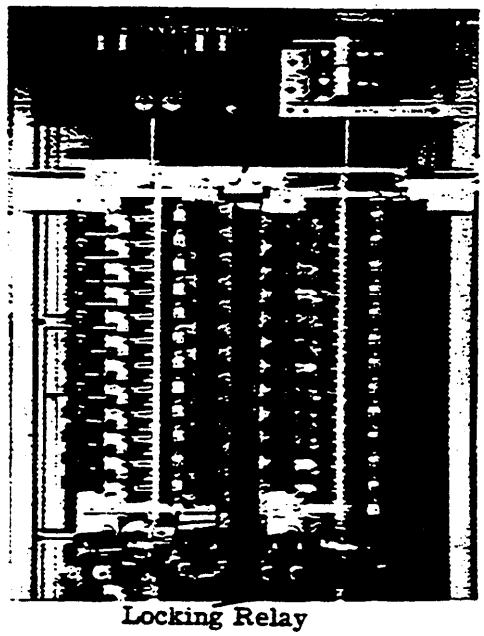


Figure 11. View of a Fantail Plunger Lineswitch Bay to Show Location of Master Switch Locking Relay and Alarm Lamps.

Fantail Plunger Lineswitch
Bay Cross Battery Alarms

3.19 Place battery to the #2 B.C.O. spring of an idle lineswitch in a bay. (See Fig. 12.) Use resistance cord.

3.20 Lamp (blue) located at top of bay lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (blue) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, remove cord.

321 Cross battery alarm is checked in one bay in each Line-up. Each time routine is performed, use a different Lineswitch bay. In this manner each bay will eventually be checked.

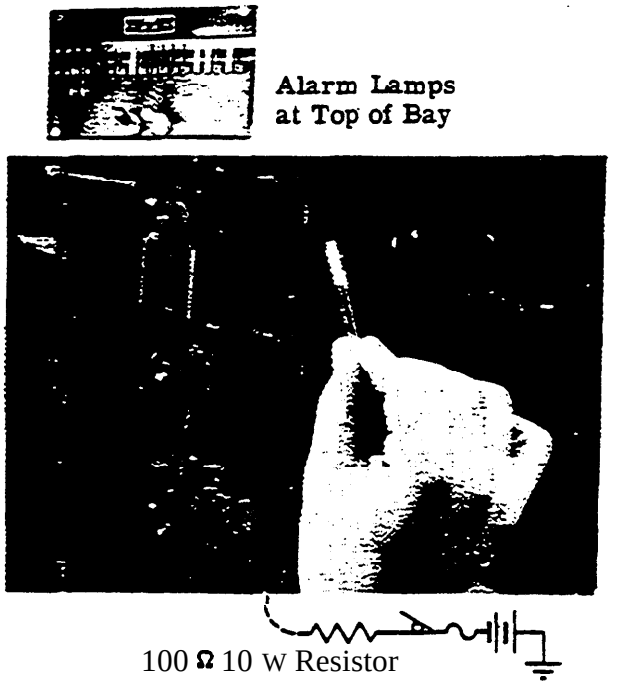


Figure 12. Bottom: View of a Portion of a Lineswitch to Show Placement of Resistance Cord. Top: View of Alarm Lamps at the Top of a Fantail Plunger Lineswitch Bay.

Primary Rotary Line-switch Bays

3.22 Cross positive side of one line with negative side of another line in the same bay. (See Fig. 13.) Use a resistance cord.

Caution: Set idle lineswitches for this test.

3.23 Lamp (blue) located at the top of the bay lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (blue) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, remove cord.

3.24 Cross battery alarm is checked once in each primary rotary lineswitch bay.

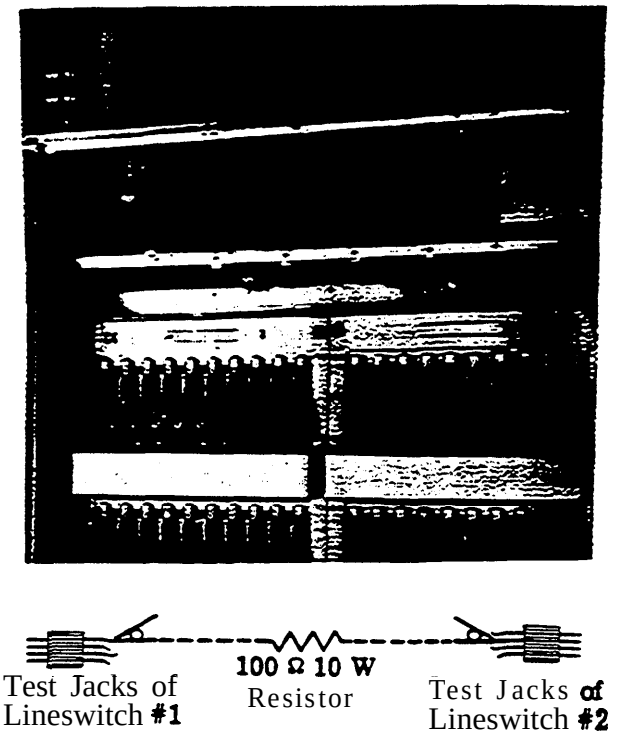


Figure 13. View of a Portion of a Primary Rotary Lineswitch Bay to Show Location of Alarm Lamps on Top of Bay. Line Drawing Shows Placement of Resistance Cord.

Out Trunk Secondary Shelves

3.25 Manually step and hold a rotary switch on the 25th contact. (See Fig. 14.)

Caution: Select idle rotary switch for this test.

3.26 Lamp (white) located at end of shelf lights, floor pilot lamp (white) lights, and office alarm frame panel pilot (green) lights. Stop alarm, release rotary switch.

327 Check one rotary switch in each shelf.

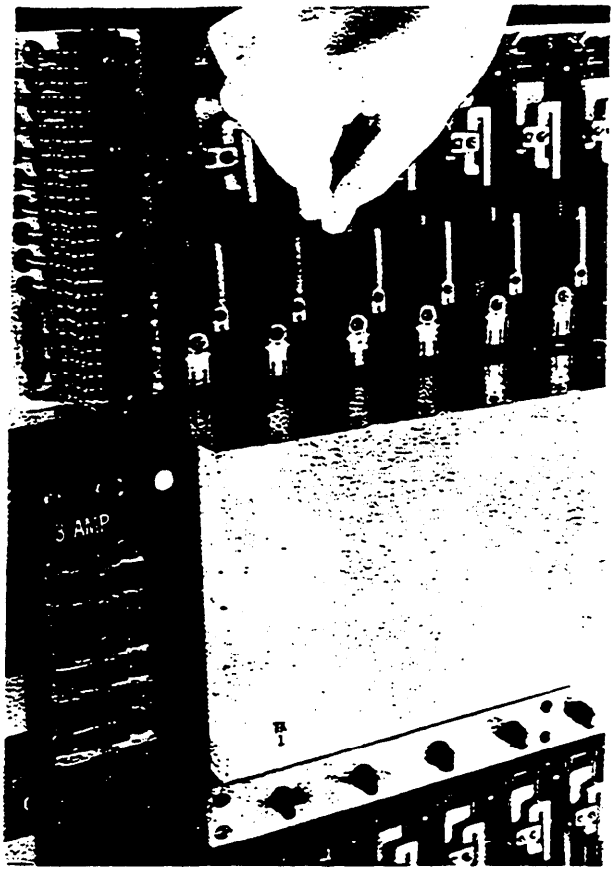


Figure 14. View of a Portion of an Out Trunk Secondary **Shelf** to Show the Location of the shelf Alarm Lamps.

Linefinder Blocked Alarms
Circuits H-753 11, H-75450, H-75463 or Similar]

3.28 Place a short in test jacks 3 and 4 of shelf **distributor relays. Place a short in test jacks 5 and** 6 of shelf distributor relays. Use busy clips. A linefmder in this shelf will move one step vertical and block. After approximately 5 to 15 seconds, the Iinefinder releases. A linefmder in the associated shelf steps vertical and rotary. A **linefinder** blocked alarm is heard for the shelf associated with distributor used for test. (See Fig. 15.)

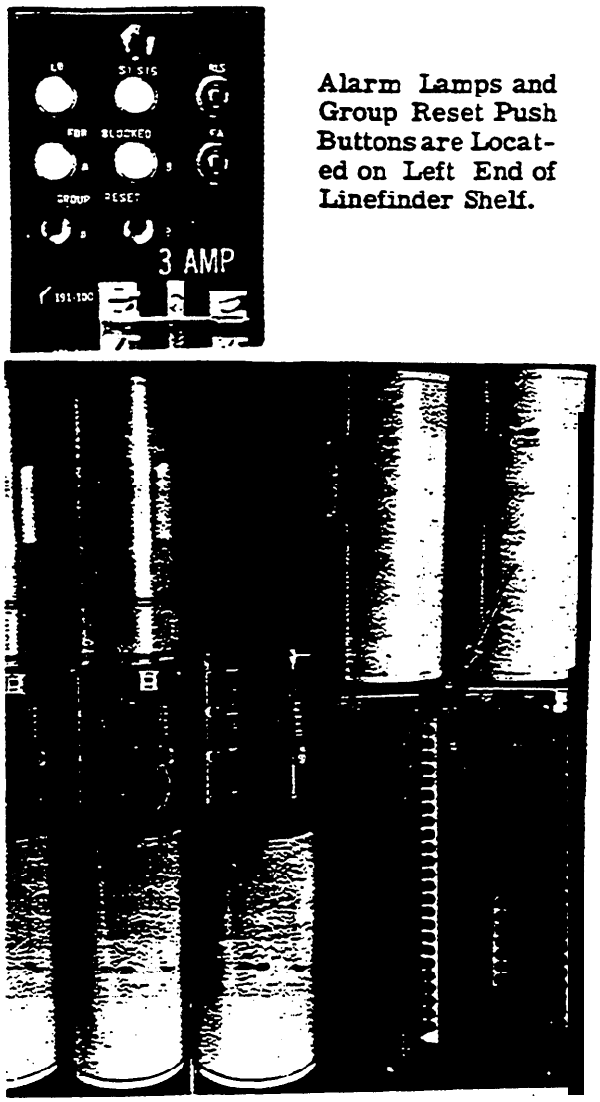


Figure 15. Bottom: **View** of a Portion of a Shelf to Show Shelf Distributor (Group) Relays, and Placement of **Busy Clips.** Top: **View of** Shelf Alarm Lamps and Block Alarm **(Group** Reset) Push Buttons.

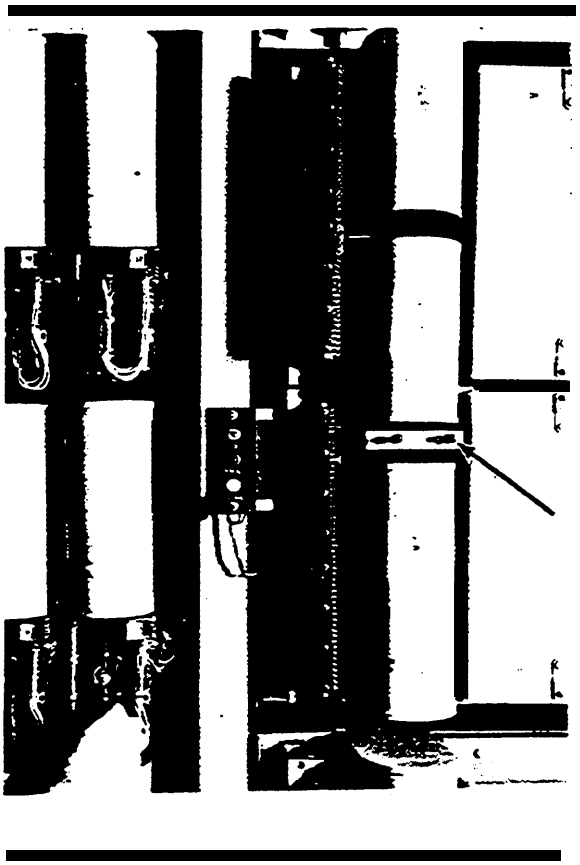


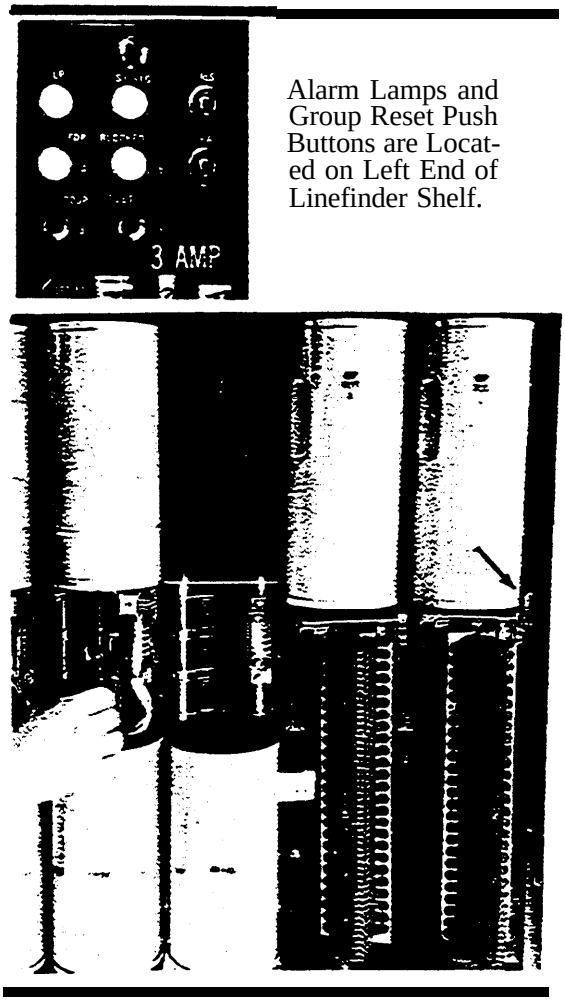
Figure 16. View of a Portion of a Linefinder Shelf to Show Location of the Linefinder Test Key and Alarm Lamps.

329 Two lamps (white) located on linefinder shelf light, section pilot lamp (green) lights, aisle pilot lamp (green) lights, floor pilot lamp (white) lights, and office alarm panel pilot lamp (green) lights. Office chime is heard (interrupted 60 IPM). Stop alarm, remove short from distributor test jacks and push button located on linefinder shelf.

330 Check linefinder blocked alarm in each shelf of linefinders.

Linefinder Start Alarms

331 For linefinder circuits H-38938 or similar, operate linefinder test key. (See Fig. 16.) For linefinder circuits H-75311, H-75450, H-75463 or similar, short distributor test jacks 1 and 2. (See Fig. 17.) Use a busy clip. Prevent one linefinder from operating by manually holding shaft at vertical normal. On linefinder circuits H-38938 or similar, a start alarm is beard. On linefinder circuits H-753 11, H-75450, H-75463 or similar, a start alarm and a linefinder blocked alarm is heard.



Alarm Lamps and Group Reset Push Buttons are Located on Left End of Linefinder Shelf.

Figure 17. Bottom: View of a Portion of a Linefinder Shelf to Show Location of the Shelf Distributor (Group) Relays and Placement of Busy Clip. Top: View of Shelf Alarm Lamps and Block Alarm (Croup Reset) Push Buttons.

332 Lamp (white) located on linefinder sbelf lights, section pilot lamp (green) lights, aisle pilot lamp (green) lights, floor pilot lamp (white) lights, and office alarm panel pilot lamp (green) lights. Office chime is heard (interrupted 60 IPM). Stop alarm by restoring test key or removing busy clip and operating push button on linefinder shelf.

333 Check start alarm in each linefinder bay. Each time start alarm routine is performed, use alternate shelf.

Circuit Breaker Alarm

334 Reduce generator voltage until it equals battery voltage. Check circuit breaker alarm with generator running, knife switch closed, and circuit breaker open. Perform routine when load is light, as it is necessary to open generator from battery.

335 Lamp (red) located on power board lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (red) lights. Office power alarm bell is heard. Stop alarm close circuit breaker. Restore generator voltage to normal.

336 Check circuit breaker alarm for each circuit breaker in office.

Ringing *Generator* alarm

337 Check ringing generator alarm by stopping A.C. **machine.**

338 Lamp (red) on power board lights (Figure **18),** flour pilot lamp (white) lights, and office **alarm frame** panel pilot lamp (red) lights. **Office** power **bell** is heard. Stop **alarm,** restart A.C. machine. Transfer from D.C. machine to A.C. machine.

Generator Hold-up Relay Alarms

3.39 Check alarm by manually closing the **#1** spring to the **#2** spring of a generator hold-up relay (See Figure 18).

3.40 Lamp (red) located on power board lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (red) lights. Office power bell is heard. Check each generator hold-up relay.

Hi&Low Voltage Alarm

3.41 Refer to GTE Practice **205-001-500** for the correct procedures for checking the High/Low Voltage **Alarms.**

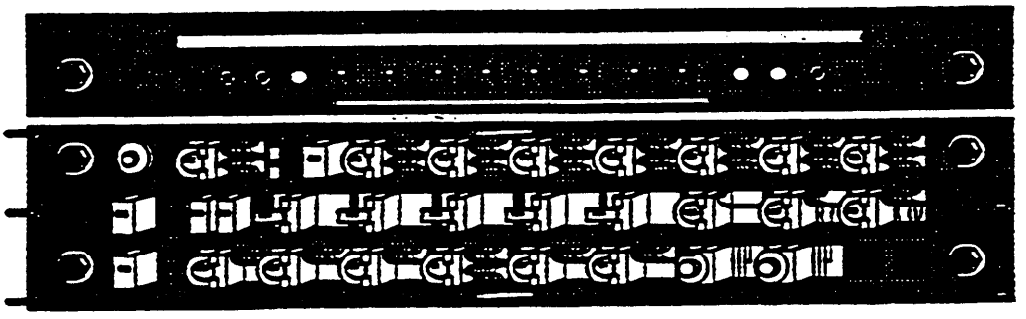


Figure 18. View of a Portion of a Power Board. Top is View of Ringing Generator Alarm Lamps and Control Keys. Bottom is View of Generator Hold-Up Relays (Cover Removed).

Paystation Coin Stuck Alarm

3.42 Check coin-stuck alarm according to local practices.

3.43 Lamp (white) located on paystation repeater lights, section pilot lamp (green) lights, aisle pilot lamp (green) lights, floor pilot lamp (white) lights, and office alarm frame panel pilot lamp (green) lights. Office chime is heard (interrupted 60 IPM).

3.44 Check one paystation repeater associated with each paystation interrupter.

Unattended Office or PABX Alarm

3.45 The unattended office or PABX alarms are checked when in that office Fuse Alarms, release alarms, etc. are checked in the same manner as are the alarms in attended offices. The only difference in alarms is that the alarm is also indicated at the attended office. The alarm is indicated by a lamp (white). The lamp is located on the attended office alarm frame panel. Functional tests of interoffice alarms or for offices attended on a part-time schedule are to be performed prior to securing the unattended office for the day. Both major and minor alarm to the attended office are to be checked.

3.46 Assume a ma.. alarm, such as a battery distributing fuse board fuse alarm is in an unattended office. Check that the alarm is indicated at the attended office. Assume a minor alarm, such as a selector release alarm, is in an unattended office. Check that the alarm is indicated at the attended office.

4. REPORTS

4.01 Complete the required records in accordance with local practices.