

## FUSE ALARMS TESTS PANEL OFFICES

### 1. GENERAL

1.01 This section describes methods of testing fuse alarms in panel offices.

1.02 This section is reissued to include use of a new testing cord and to revise the method of testing alarms associated with 70-type fuses. Since this is a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests covered are:

A. *Individual Circuit Alarms:* This test checks the ability of the fuse alarm to function when a fuse has operated.

B. *Battery Distribution Alarms:* This test checks that the pilot fuse is in parallel with the larger capacity feeder fuse and checks the ability of the fuse alarm to function when the pilot fuse is operated.

1.04 To avoid disturbance to forces normally responsible for responding to these alarms, notify all persons concerned before starting tests and again at completion. If during these tests a regular alarm should originate, the tests should be discontinued immediately so that the alarm will sound in the usual manner. Notify the proper persons that a regular alarm is sounding.

1.05 When the test receiver is being used, it should be connected across fused battery or ground and the alarm terminals or resistances as short a time as possible to avoid overheating of the receiver.

1.06 The test receiver should be kept away from the ear when testing, to avoid excessively loud clicks.

1.07 When testing ANI identifier or outputter fuse alarm circuits, test and release one identifier or one outputter at a time. Where only one identifier is provided, keep the busy condition time to a minimum.

1.08 Not all of the testing cords that are described in Part 2 are required for each test. Some cords are optional, depending on physical layout of equipment involved in the tests.

1.09 *Lettered Steps:* A letter a, b, c, etc, added to a step number in Part 3 of this section, indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

### 2. APPARATUS

2.01 Testing cord, W1AY cord, 8 feet 6 inches long, equipped with two KS-6278 connecting clips (for establishing test connection to alarm bars or alarm studs).

2.02 Testing cord, W1AY cord, 8 feet 6 inches long, equipped with one KS-6278 connecting clip and one 411B tool (used for connecting battery to apparatus, as required).

2.03 Testing cord, W1AY cord, 8 feet 6 inches long, equipped with one 411B tool and one 141 cord tip (used for connecting battery to apparatus, as required, where connection to battery for testing is to be made, using the 720A battery pickup tool).

2.04 Testing cord, W1AY cord, 8 feet 6 inches long, equipped with a KS-6278 connecting clip and a modified 411B tool (for use where an offset tool is required to momentarily establish test connections to alarm bars or alarm studs). To modify the 411B tool, adjust the tool so that about 1-1/2 inches of the metal portion extends beyond the handle. Place the pick end of the

tool in a vise and bend at a 90° angle about 5/8 inch from the end of the pick. Cover the exposed portion of the tool, above the bend, with KS-7851, No. 9 sleeving or equivalent. The offset should be applied after the tool and cord have been assembled.

2.05 720A (battery pickup) tool (used in a spare 70-type fuse position to obtain source of battery for test purposes).

2.06 Meter, KS-14510 volt-ohm-milliammeter, or equivalent.

2.07 Test receiver, 716C receiver with a W2AB cord equipped with two 360A tools (2W21A cord), a KS-6278 connecting clip, and a 411B tool.

2.08 3-inch C screwdriver (for removing and replacing 35-type fuses).

### 3. METHOD

STEP	ACTION	VERIFICATION
<b>A. Individual Circuit Alarms</b>		
1	Test for voltage on alarm bar or cap of fuse block, using meter.	No voltage present.
	<i>Note:</i> To test the alarm circuit of 70-type fuses mounted in an individual fuse block, insert the tip of the 411B tool (attached to the W1AY cord) into the aperture of the fuse block cap and touch the exposed alarm test point. To test the alarm circuit of 70-type fuses mounted in a modular fuse block (such as the 22- or 23-type block), insert the tip of the 411B tool (attached to the W1AY cord) into the aperture provided in the fuse block cover, for the alarm to be tested, and touch the alarm bar.	
2	Measure resistance of alarm bar or cap of fuse holder to ground, using meter.	Minimum 200 ohms.
3	Connect battery to alarm bar or cap of fuse block, using test cord in accordance with local battery supply arrangement.	FA lamp lighted. Aisle pilot lamp lighted (where provided). Audible alarm sounds. If alarm being tested is for ANI output pulser or identifier — Circuit made busy.
4	Disconnect battery.	FA lamp extinguished. Aisle pilot lamp extinguished (where provided). Audible alarm silenced. If alarm being tested is for ANI output pulser or identifier — Associated fuse guard lamp lighted.
5a	If alarm being tested is for ANI output pulser or identifier — At equipment frame — Operate AR key.	Fuse guard lamp extinguished. Circuit restored to normal.

STEP	ACTION	VERIFICATION
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### B. Battery Distribution Alarms

*Caution: When testing alarm-type pilot fuses, every precaution should be taken to avoid accidental grounding of the test equipment, as the battery sides of these fuses are directly connected to main distributing fuses.*

#### 35-Type Pilot Fuse

1	Remove pilot fuse.	
2	Test for battery on one fuse post, using test receiver.	Battery present.
3	Test for battery on other fuse post, using test receiver.	Battery present.
4	Test for battery on fuse alarm stud, using test receiver.	No battery present.
5	Measure fuse alarm stud resistance to ground, using meter.	Minimum 200 ohms.
6	Connect battery to pilot fuse alarm stud, using test cord in accordance with local battery supply arrangement.	FA lamp lighted. Aisle pilot lamp lighted (where provided). Audible alarm sounds. If alarm being tested is for ANI outputer or identifier — Circuit made busy.
7	Remove battery from pilot fuse alarm stud.	FA lamp extinguished. Aisle pilot lamp extinguished (where provided). Audible alarm silenced. Associated fuse guard lamp lighted.
8a	If alarm being tested is for ANI outputer or identifier — At equipment frame — Operate AR key.	Fuse guard lamp extinguished. Circuit restored to normal.
9	Replace pilot fuse.	

#### 70-Type Pilot Fuse

10	Remove fuse from pilot fuse position.	
11	Test for battery on spring upon which base of fuse normally rests, using test receiver.	Battery present.
12	Test for battery on contact nearest small slot in fuse block, using test receiver.	Battery present.
13	Test for voltage on alarm ring (contact nearest large slot in fuse block), using meter.	No voltage present.

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STEP	ACTION	VERIFICATION
14	Measure alarm ring resistance to ground, using meter.	Minimum 200 ohms.
15	Replace fuse.	
16	Connect battery to alarm bar or test point, using test cord in accordance with local battery supply arrangement. See note under Step 1, Test A.	FA lamp lighted. Aisle pilot lamp lighted (where provided). Audible alarm sounds. If alarm being tested is for ANI outpulser or identifier— Circuit made busy.
17	Remove battery from alarm bar or test point.	FA lamp extinguished. Aisle pilot lamp extinguished (where provided). Audible alarm silenced. Associated fuse guard lamp lighted.
18a	If alarm being tested is for ANI outpulser or identifier— At equipment frame— Operate AR key.	Fuse guard lamp extinguished. Circuit restored to normal.