

NO. 4A ANNOUNCEMENT SYSTEM
DISTRIBUTING AND ALARM CIRCUITS
TESTS
COMMON SYSTEMS

1. GENERAL

1.01 This section describes a method of testing the distributing and alarm circuits in the No. 4A announcement system.

1.02 This section is reissued for the following reasons:

- (a) To combine old Test G with Test A.
- (b) To combine old Test H with Test B.
- (c) To add new Tests G, H, and I.
- (d) To change old Test I to Test J.
- (e) To transfer Tests M, N, O, and P to Section 201-508-501.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests covered are:

A. AL1-Type Alarm: This test checks that the AL1 lamp lights and a major alarm sounds when the distributing circuit fails to release after the control circuit is cut through.

B. AL2-Type Alarm: This test checks that the AL2 lamp lights and a major alarm sounds when the distributing circuit fails to operate within 12 to 18 seconds after receiving a start signal from the announcement trunk circuit.

C. Automatic Channel Transfer Feature: This test checks that the announcements are automatically transferred to the other channel when a voice failure occurs in one channel of the Audichron announcement machine. It also checks that a minor alarm sounds and the associated channel voice alarm lamp lights.

D. Voice Failure in Both Channels (Emergency Announcements Originating at Announcement Machine): This test checks that the minor and major alarms sound and a double voice failure is indicated when both channels of the announcement machine fail. It also checks that announcements can be given verbally at the machine and checks the current interruption alarm indication.

E. Voice Failure in Both Channels (Emergency Announcements Originating at Switchboard): This test checks that the minor and major alarms sound and a double voice failure is indicated when both channels of the announcement machine fail. It also checks that announcements can be given verbally at the switchboard and checks the current interruption alarm indication.

F. Fuse Alarm: This test checks that a minor alarm sounds and the fuse alarm is indicated when the 48-volt fuse on the announcement machine operates.

G. Motor Alarm — Regulated Frequency Power Supply: This test checks that a major alarm sounds when either drive motor of the dual channel announcement machine is disconnected from the regulated supply.

H. Oscillator Oven Temperature Alarm — Regulated Frequency Power Supply: This test checks that a minor alarm sounds when the temperature of the oven of either oscillator falls below a predetermined minimum value.

I. Commercial AC Power Failure Alarm: This test checks that a minor alarm sounds when a failure occurs in the commercial ac power supply.

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J. Automatic Transfer Feature: This test checks that the announcements are automatically transferred to the switchboard over the emergency announcement trunks when a voice failure occurs in a single channel announcement machine. It also checks that the emergency announcement lamp lights, a major alarm sounds, and the emergency announcement cutoff key is ineffective when the announcement machine is cut off.

- 1.04** In performing tests requiring the operation of relays, the relays should be operated manually unless otherwise specified.
- 1.05** All tests covered in this section should be made during periods of light traffic.
- 1.06** Action and verification are required at the distributing and alarm equipment and at the announcement machine to perform Tests C through F and J.
- 1.07** In Test D, the emergency announcement must be made at the announcement machine.
- 1.08** Action and verification are required at the switchboard and at the announcement machine to perform Tests E and J.
- 1.09** Local instructions should be followed for recording and reporting any register operations caused by performing these tests.
- 1.10** The distribution and alarm circuit test for the 4A announcement system sub-center (distributing center) is covered in Section 201-508-501.
- 1.11 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 con-

dition 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 The apparatus required for each test is shown in Table A. The details of each item are covered in the paragraph indicated by the number in parentheses.

TABLE A

APPARATUS	TESTS							
	A	B	D	E	F	G	H	I
Cord (2.02)	1	1	1	1	-	1	1	1
Cord (2.03)	-	-	-	-	1	-	-	-
KS-3008 Stop Watch or Equivalent	-	1	1	-	-	-	-	-
Tool (2.04)	-	1	-	-	-	-	-	-

- 2.02** Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord) and two KS-6278 tools (for use in establishing test connections to terminals).
- 2.03** Testing cord, W1AF cord, 8 feet 6 inches long, equipped with two 360A tools and one KS-6278 connecting clip and one 411B (test pick) tool or with two 411B (test pick) tools (for use in applying battery to fuse alarm bus).
- 2.04** Blocking tools, as required. Use tools and apply, as covered in Section 069-020-801.

3. METHOD

STEP	ACTION	VERIFICATION
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A. AL1-Type Alarm

Offices Equipped with a Single Channel Announcement Machine

- 1a If TRNS key is operated —
At distributing and alarm circuit —
Restore TRNS key.

STEP	ACTION	VERIFICATION
2	Connect ground to terminal 19 on F terminal strip.	
3	Operate and hold operated any RA relay.	Major alarm sounded. AL1 lamp lighted.
4	Release RA relay.	
5	Remove ground from terminal 19 on F terminal strip.	
6	Operate INT AR key.	Major alarm silenced. AL1 lamp extinguished. INT GD lamp lighted.
7	Restore INT AR key.	INT GD lamp extinguished.
8	Operate TRNS key.	
9	Connect ground to terminal 19 on F terminal strip.	
10	Operate and hold operated any RB relay.	Major alarm sounded. AL1 lamp lighted.
11	Release RB relay.	
12	Remove ground from terminal 19 on F terminal strip.	
13	Momentarily operate INT AR key.	Major alarm silenced. AL1 lamp extinguished.
Offices Equipped with a Dual Channel Announcement Machine		
14b	If OL1 lamp not lighted — At distributing and alarm circuit — Momentarily operate OL1 key.	OL1 lamp lighted.
15	Connect ground to terminal 1 of terminal strip A.	
16	Operate and hold operated any RA relay.	Major alarm sounded. AL1 lamp lighted.
17	Release RA relay.	
18	Operate MJ AR key.	MJ GD lamp lighted. Major alarm silenced. AL1 lamp extinguished.
19	Restore MJ AR key.	MJ GD lamp extinguished.

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STEP	ACTION	VERIFICATION
20	Momentarily operate OL2 key.	OL2 lamp lighted. OL1 lamp extinguished.
21	Operate and hold operated any RB relay.	Major alarm sounded. AL1 lamp lighted.
22	Release RB relay.	
23	Remove ground from terminal 1 on terminal strip A.	
24	Momentarily operate MJ AR key.	Major alarm silenced. AL1 lamp extinguished.

B. AL2-Type Alarm

Offices Equipped with a Single Channel Announcement Machine

1a	If TRNS key is operated — At distributing and alarm circuit — Restore TRNS key.	
2	Block nonoperated any RA relay.	
3	Connect ground to terminal 19 on F terminal strip; start timing.	Major alarm sounded within 12 to 18 seconds. AL2 lamp lighted.
4	Remove blocking tool from RA relay.	
5	Remove ground from terminal 19 on F terminal strip.	
6	Operate INT AR key.	Major alarm silenced. AL2 lamp extinguished. INT GD lamp lighted.
7	Restore INT AR key.	INT GD lamp extinguished.
8	Operate TRNS key.	
9	Block nonoperated any RB relay.	
10	Connect ground to terminal 19 on F terminal strip; start timing.	Major alarm sounded within 12 to 18 seconds. AL2 lamp lighted.
11	Remove blocking tool from RB relay.	
12	Remove ground from terminal 19 on F terminal strip.	

STEP	ACTION	VERIFICATION
13	Momentarily operate INT AR key	Major alarm silenced. AL2 lamp extinguished.
Offices Equipped with a Dual Channel Announcement Machine		
14b	If OL1 lamp not lighted — At distributing and alarm circuit — Momentarily operate OL1 key.	OL1 lamp lighted.
15	Block nonoperated any RA relay.	
16	Connect ground to terminal 1 on terminal strip A; start timing.	Major alarm sounded within 12 to 18 seconds. AL2 lamp lighted.
17	Remove blocking tool from RA relay.	
18	Remove ground from terminal 1 on terminal strip A.	
19	Operate MJ AR key.	Major alarm silenced. AL2 lamp extinguished. MJ GD lamp lighted.
20	Restore MJ AR key.	MJ GD lamp extinguished.
21	Momentarily operate OL2 key.	OL2 lamp lighted. OL1 lamp extinguished.
22	Block nonoperated any RB relay.	
23	Connect ground to terminal 1 on terminal strip A; start timing.	Major alarm sounded within 12 to 18 seconds. AL2 lamp lighted.
24	Remove blocking tool from RB relay.	
25	Remove ground from terminal 1 on terminal strip A.	
26	Momentarily operate MJ AR key.	Major alarm silenced. AL2 lamp extinguished.

C. Automatic Channel Transfer Feature

1a	If OL1 lamp is not lighted — At distributing and alarm circuit — Momentarily operate OL1 key.	OL1 lamp lighted.
2	At announcement machine — Remove covers from optical systems.	

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STEP	ACTION	VERIFICATION
3	In channel 1, place a card or similar obstruction between each exciter lamp and outside of top lens of optical system; start timing.	At distributing and alarm circuit — Minor alarm sounded within 4 to 6 seconds. VA1 lamp lighted. OL2 lamp lighted. OL1 lamp extinguished.
4	At distributing and alarm circuit — Operate MN AR key.	Minor alarm silenced. MN GD lamp lighted.
5	At announcement machine — Remove cards from channel 1.	At distributing and alarm circuit — VA1 lamp extinguished.
6	At distributing and alarm circuit — Restore MN AR key.	MN GD lamp extinguished.
7	At announcement machine — In channel 2, place a card or similar obstruction between each exciter lamp and outside of top lens of optical system; start timing.	At distributing and alarm circuit — Minor alarm sounded within 4 to 6 seconds. VA2 lamp lighted. OL1 lamp lighted. OL2 lamp extinguished.
8	Remove cards from channel 2.	At distributing and alarm circuit — VA2 lamp extinguished.
9	At distributing and alarm circuit — Momentarily operate MN AR key.	Minor alarm silenced.
10b	If no further tests are to be made — At announcement machine — Replace covers on optical systems.	

D. Voice Failure in Both Channels (Emergency Announcements Originating at Announcement Machine)

1	At announcement machine — Remove covers from optical systems.	
2	In each of the two channels, place a card or similar obstruction between each exciter lamp and outside of top lens of optical system; start timing. /	At distributing and alarm circuit — Minor alarm sounded 4 to 6 seconds after the last lens of channel 1 covered. Major alarm sounded 4 to 6 seconds after the last lens of channel 2 covered. DVA lamp lighted.
3	At announcement machine — Operator operates key for manual operation.	At distributing and alarm circuit — Major and minor alarms silenced. EA lamp lighted. DVA lamp extinguished. At announcement machine — Manual announcement lamp lighted in emergency key and lamp box.

STEP	ACTION	VERIFICATION
4	Originate a call requiring an announcement.	Call waiting lamp lighted on announcement machine key and lamp box.
5	Operator operates announcement key.	Call waiting lamp extinguished.
6	Check ensuing announcement; then disconnect. <i>Note:</i> To eliminate the possibility of service interruption, continue to make announcements as required until announcement machine is return to service.	Operator makes announcement using microphone at announcement machine, then operates announcement key at completion of announcement.
7	Remove cards from channel No. 1 and 2.	
8	Restore key for manual operation.	Manual announcement lamp extinguished in emergency key and lamp box. At distributing and alarm circuit — EA lamp extinguished.
9	Connect ground to terminal 17.	At distributing and alarm circuit — CI lamp lighted.
10	Remove ground from terminal 17.	At distributing and alarm circuit — CI lamp extinguished.
11a	If no further tests are to be made — Replace covers on optical systems.	

E. Voice Failure in Both Channels (Emergency Announcements Originating at Switchboard)

1	At announcement machine — Remove covers from optical systems.	
2	In each of the two channels, place a card or similar obstruction between each exciter lamp and outside of top lens of optical system; start timing.	At distributing and alarm circuit — Minor alarm sounded within 4 to 6 seconds after the last lens of the first channel covered. Major alarm sounded within 4 to 6 seconds after last lens of second channel covered. DVA lamps lighted. At switchboard — DVA lamp lighted.
3	Operate key for manual operation.	At distributing and alarm circuit — Major and minor alarms silenced. EA lamp lighted. DVA lamps extinguished. At switchboard — DVA lamp extinguished.

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STEP	ACTION	VERIFICATION
4	Originate a call requiring an announcement; start timing.	At switchboard — Answering lamp lighted. SC bell sounded. Within 6 seconds after operator inserted plug into answering jack, cord supervisory lamp extinguished and remained dark for a minimum of 10 seconds. Operator makes announcement during 10-second interval.
5	Remove cards from both channels.	
6	Restore key for manual operation.	
7	At switchboard — Check that cord is removed from emergency announcement answering jack.	At distributing and alarm circuit — EA lamp extinguished.
8	At announcement machine — Connect ground to terminal 17.	At distributing and alarm circuit — CI lamp lighted.
9	Remove ground from terminal 17.	At distributing and alarm circuit — CI lamp extinguished.
10a	If no further tests are to be made — Replace covers on optical systems.	

F. Fuse Alarm

1	At announcement machine — Connect battery to fuse alarm bus.	At distributing and alarm circuit — Minor alarm sounded. Fuse alarm (FA) lamp lighted.
2	At distributing and alarm circuit — Operate MN AR key.	Minor alarm silenced. MN GD lamp lighted.
3	At announcement machine — Remove battery from fuse alarm bus.	At distributing and alarm circuit — FA lamp extinguished.
4	At distributing and alarm circuit — Restore MN AR key.	MN GD lamp extinguished.

G. Motor Alarm — Regulated Frequency Power Supply

1	At alarm control circuit — Connect ground to terminal 33.	Major alarm sounded.
2	Operate MJ key.	Major alarm silenced. MJ GD lamp lighted.
3	Remove ground from terminal 33.	

STEP	ACTION	VERIFICATION
4	Restore MJ key.	MJ GD lamp extinguished.
H. Oscillator Oven Temperature Alarm — Regulated Frequency Power Supply		
1	At alarm control circuit — Connect ground to terminal 23.	Minor alarm sounded.
2	Operate MN key.	MN GD lamp lighted. Minor alarm silenced.
3	Remove ground from terminal 23.	
4	Restore MN key.	MN GD lamp extinguished.
I. Commercial AC Power Failure Alarm		
1	At alarm control circuit — Connect ground to terminal 13.	Minor alarm sounded.
2	Momentarily operate ALM CO key.	GUARD lamp lighted. Minor alarm silenced.
3	Remove ground from terminal 13.	GUARD lamp extinguished.
J. Automatic Transfer Feature		
1	At announcement machine — Remove covers from optical systems.	
2	Place a card or similar obstruction between each exciter lamp and outside of top lens of optical system; start timing.	At distributing and alarm circuit — Major alarm sounded within 4 to 6 seconds. EA lamp lighted. At switchboard — EA lamp lighted.
3	At distributing and alarm circuit — Operate EA AR key.	At distributing and alarm circuit — Major alarm silenced. EA GD lamp lighted.
4	Originate a call requiring an announcement, check ensuing announcement, then discon- nect.	
5	At announcement machine — Remove cards from optical systems.	
6	At distributing and alarm circuit — Operate MACH CO key.	MACH CO lamp lighted.
7	Momentarily operate EA CO key.	EA lamp remains lighted. At switchboard — EA lamp remains lighted.

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STEP	ACTION	VERIFICATION
8	Restore MACH CO key.	At distributing and alarm circuit — MACH CO lamp extinguished.
9	Momentarily operate EA CO key.	EA lamp extinguished. At switchboard — EA lamp extinguished.
10	Restore EA AR key.	At distributing and alarm circuit — EA GD lamp extinguished.
11	At announcement machine — Replace covers on optical systems.	