

CIVIL AIR DEFENSE WARNING SYSTEM
DIAL PULSE RECEIVING AND CONTROL CIRCUIT SD-95685-01
MAXIMUM FIVE LINES
AND PUBLIC SIGNAL CONTROL CIRCUIT SD-95688-01
TESTS

1. GENERAL

1.01 This section describes a method of testing dial pulse receiving and control circuit SD-95685-01. It also describes a method of testing the public signal control circuit SD-95688-01 used for disseminating signals to siren stations when this circuit is connected to SD-95685-01.

1.02 This section is issued to cover offices where optional equipment has been added to provide automatic termination of alert signals.

1.03 The tests covered are:

A. Local Operation Test of Dial Pulse Receiving and Control Circuit: This test checks that the equipment will respond properly to dial pulse signals, transmit the correct ringing signals to the warning stations and when the STOP digit is dialed or the automatic signal stopping equipment functions, the circuit is restored to normal. It checks that the office alarm will sound and a lamp indication will lock in when dialing occurs, or when trouble occurs on the incoming loop. It also checks that the extension lamps and the extension cancel alarm key or alarm cutoff circuit function properly, when provided.

B. Test of Siren Line Failure Alarm Feature: This test checks that if a trouble condition occurs on a siren line equipped for continuous line test, the office alarm will sound and the ALM or the LT ALM lamp will light.

C. Fuse Alarm Relay Test: This test checks that if a fuse blows on this equipment, the office alarm will sound and a fuse alarm lamp will light.

D. Local Operation Test of Public Signal Control Circuit Where the Position 2 Signal or the Blue Signal Sounds the Sirens as an ALERT Signal: This test checks that the public signal control equipment will respond properly to signals received over the R and B leads from the dial pulse receiving circuit and transmit the correct signals to the siren stations.

1.04 WARNING: *Permission MUST be obtained from the Telephone Company civil defense (formerly the CADW) network control supervisor before any tests are performed on this equipment. All other Telephone Company personnel who may be concerned shall be informed when tests are to be conducted, and both the control supervisor and other concerned Telephone Company personnel shall be informed when the tests are completed and the equipment is restored to service.*

1.05 WARNING: *When performing maintenance operations on this equipment, it is extremely important to avoid transmitting false signals to the warning stations and siren stations. Therefore, before making the tests covered herein, the SCO (siren cutoff) key, if provided, and the RCO (ringing cutoff) key shall be operated and a plug shall be inserted into the TL (test line) jack to prevent the connection of ringing current to any of the lines. Before restoring the SCO or RCO key to normal or removing the plug from the TL jack, make certain that the equipment is normal.*

1.06 If it becomes necessary to restore this equipment to service at any step in the progress of these tests, a method of rapidly effecting the restoral is described under 3. METHOD for each test.

1.07 Test A requires verification at the extension lamp circuit.

1.08 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 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	C	D
Test Set (2.02)	1	—	—	1
Cord (2.03)	1	—	—	1
Signal Indicator Set (2.04)	1	—	—	—
Cord (2.05)	—	1	—	—
Cord (2.06)	—	—	1	—
Stop Watch (2.07)	1	—	—	1
Plug (2.08)	1	—	—	1
Plug (2.09)	1	1	1	2

Using Dial Hand Test Set

2.02 1011G dial hand test set, equipped with a 2W38A cord assembly consisting of a W2CK cord, a 471A jack, and a 310 plug.

Using Relay Rack Mounted Dial

2.03 Patching cord — P3E cord, 6 feet long, equipped with two 310 plugs (3P7A cord) (for use in patching the DIAL jack to the C jack of the dial pulse receiving circuit).

2.04 Station signal indicator circuit SD-69211-01, Fig. 1, with "Z" wiring, connected to an S3B cord, 10 feet long, equipped with a 310 plug (3W1A cord) as follows:

TESTING CORD TERMINAL	SIGNAL INDICATOR TERMINAL
Tip	L2
Ring	L1
Sleeve	G

2.05 Testing cord — 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), one KS-6278 connecting clip, and one 411A tool (for use in connecting ground to relay springs).

2.06 Testing cord — W1AF cord equipped with one KS-6278 connecting clip and one 411A tool (for use in connecting battery to fuse alarm studs).

2.07 KS-3008 stop watch (or equivalent).

2.08 165D (dummy) plug.

2.09 258D (dummy) plug.

3. METHOD

STEP	ACTION	VERIFICATION
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A. Local Operation Test of Dial Pulse Receiving and Control Circuit

TO RESTORE THIS EQUIPMENT TO SERVICE at any step in the progress of the test, immediately remove the blocking tools from any relays that may be blocked, dial 2-88-2-00, then proceed at once with the Restoral Procedure, Steps 63 through 72.

1	Operate SCO key of public signal control circuit, if provided.	SCO lamp lights.
2	Insert plug of signal indicator set into TL jack.	

STEP	ACTION	VERIFICATION
3	Operate RCO key.	CO lamp lights.
	<i>WARNING: Do not restore either of these keys to normal or remove the plug from the TL jack before instructed to do so under the Restoral Procedure, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.</i>	
4	Insert 258D plug into PLS (pulse) jack.	
5	Insert 165D plug into S or SJ (shunt) jack.	
6a	If using dial hand test set — Insert 310 plug into C jack.	
7b	If using relay rack mounted dial — Connect DIAL jack to C jack, using P3E cord.	
8	Remove plug from PLS jack.	ALM or DP ALM lamp remains extinguished. Office alarm remains silent.
9c	If extension lamp circuit is provided — Dial 4.	PD lamp lights. ALM or DP ALM lamp lights. Office alarm sounds. At extension lamp circuit — DP ALM lamp lights.
10d	If CA (cancel alarm) key is provided at extension lamp circuit — Operate it momentarily.	ALM or DP ALM lamp extinguished. Office alarm silenced. At extension lamp circuit — DP ALM lamp extinguished.
11e	If extension CA key is not provided — Operate CA key momentarily.	ALM or DP ALM lamp extinguished. Office alarm silenced. At extension lamp circuit — DP ALM lamp extinguished.
12f	If extension lamp circuit is not provided — Dial 4.	PD lamp lights. ALM or DP ALM lamp lights. Office alarm sounds.
13g	If alarm cutoff circuit is provided — Using office telephone, dial assigned alarm cutoff number ().	ALM or DP ALM lamp extinguished. Office alarm silenced.
14h	If alarm cutoff circuit is not provided — Operate CA key momentarily.	ALM or DP ALM lamp extinguished. Office alarm silenced.

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STEP	ACTION	VERIFICATION
15	Block nonoperated AL relay of dial pulse receiving circuit.	
16i	If PD lamp is still lighted, dial 2.	PD lamp extinguished.
17	Dial 4.	PD lamp lights. PD lamp extinguished in from 15 to 30 seconds.
18	Dial 4. Perform next step within 15 seconds.	PD lamp lights.
→ 19	Dial 4.	Ringer sounds. Position 1 lamp or Y lamp lights. If automatic time-out equipment is provided — After approximately 3 minutes — Ringer silenced. Position 1 lamp or Y lamp extinguished. PD lamp extinguished (if still lighted).
20j	If automatic time-out equipment is not provided — Dial 2.	Ringer silenced. Position 1 lamp or Y lamp extinguished. PD lamp extinguished (if still lighted).
21	Dial 6. Perform next step within 15 seconds.	PD lamp lights.
→ 22	Dial 6.	Ringer sounds. Position 2 lamp or B lamp lights. If automatic time-out equipment is provided — After approximately 3 minutes — Ringer silenced. Position 2 lamp or B lamp extinguished. PD lamp extinguished (if still lighted).
23j	If automatic time-out equipment is not provided — Dial 2.	Ringer silenced. Position 2 lamp or B lamp extinguished. PD lamp extinguished (if still lighted).
24	Dial 8. Perform next step within 15 seconds.	PD lamp lights.
→ 25	Dial 8.	Ringer sounds. Position 3 lamp or R lamp lights. If automatic time-out equipment is provided — After approximately 3 minutes — Ringer silenced. Position 3 lamp or R lamp extinguished. PD lamp extinguished (if still lighted).

STEP	ACTION	VERIFICATION
26j	If automatic time-out equipment is not provided — Dial 2.	Ringer silenced. Position 3 lamp or R lamp extinguished. PD lamp extinguished (if still lighted).
27	Dial 0. Perform next step within 15 seconds.	PD lamp lights.
28	Dial 0.	Ringer sounds. Position 4 lamp or W lamp lights. PD lamp extinguished in less than 30 seconds.
29	Dial 4. Perform next step within 15 seconds.	PD lamp lights.
30	Dial 4.	Position 4 lamp or W lamp extinguished. Position 1 lamp or Y lamp lights. PD lamp extinguished in less than 30 seconds.
31	Dial 6. Perform next step within 15 seconds.	PD lamp lights.
32	Dial 6.	Position 1 lamp or Y lamp extinguished. Position 2 lamp or B lamp lights. PD lamp extinguished in less than 30 seconds.
33	Dial 8. Perform next step within 15 seconds.	PD lamp lights.
34	Dial 8.	Position 2 lamp or B lamp extinguished. Position 3 lamp or R lamp lights. PD lamp extinguished in less than 30 seconds.
35	Dial 0. Perform next step within 15 seconds.	PD lamp lights.
36	Dial 0.	Position 3 lamp or R lamp extinguished. Position 4 lamp or W lamp lights.
37	Dial 2.	Ringer silenced. Position 4 lamp or W lamp extinguished. PD lamp extinguished (if still lighted).
38	Dial 1.	WD lamp lights. WD relay releases in from 15 to 30 seconds. At extension lamp circuit, if provided — WD lamp lights.
39	Operate WD (wrong digit) key momentarily.	WD lamp extinguished. At extension lamp circuit, if provided — WD lamp extinguished.

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STEP	ACTION	VERIFICATION
40	Dial 1. Perform next step within 15 seconds.	Ringer remains silent. Position 1, 2, 3, and 4 lamps or Y, B, R, and W lamps remain extinguished. WD lamp lights.
41	Dial 4.	PD lamp remains extinguished.
42	Operate WD key momentarily.	WD lamp extinguished.
43	Repeat Steps 40 and 42 for digits 3, 5, and 7.	
44	Dial 9.	TST lamp lights. At extension lamp circuit, if provided — TST lamp lights.
45	Operate TST (test) key momentarily.	TST lamp extinguished. At extension lamp circuit, if provided — TST lamp extinguished.
46	Dial 4. Perform next step within 15 seconds.	PD lamp lights.
47	Dial 6.	WD lamp lights. PD lamp extinguished.
48	Operate WD key momentarily.	WD lamp extinguished.
49	Dial 4. Perform next step within 15 seconds.	PD lamp lights.
50	Dial 8.	WD lamp lights. PD lamp extinguished.
51	Operate WD key momentarily.	WD lamp extinguished.
52	Dial 4. Perform next step within 15 seconds.	PD lamp lights.
53	Dial 0.	WD lamp lights. PD lamp extinguished.
54	Operate WD key momentarily.	WD lamp extinguished.
55	Dial 6. Perform next step within 15 seconds.	PD lamp lights.
56	Dial 4.	WD lamp lights. PD lamp extinguished.
57	Operate WD key momentarily.	WD lamp extinguished.
58	Block operated RA relay of dial pulse receiving circuit.	RA1 relay of dial pulse receiving circuit operates.

STEP	ACTION	VERIFICATION
59	Manually operate P4 and P6 relays of dial pulse receiving circuit.	P4 and P6 relays remain operated.
60	Manually operate LE relay of dial pulse receiving circuit momentarily.	WD lamp lights.
61	Remove blocking tool from RA relay.	P4, P6, and RA1 relays release.
62	Operate WD key momentarily.	WD lamp extinguished.
Restoral Procedure		
63	Dial 2.	Ringer remains silent. Signal indicator lamps remain extinguished.
64	Remove blocking tool from AL relay.	
65	Insert 258D plug into PLS jack.	
66a	If using dial hand test set — Remove plug from C jack.	
67b	If using relay rack mounted dial — Remove P3E cord from DIAL and C jacks.	
68	Remove plug from S or SJ jack.	
69	Remove plug from PLS jack.	Ringer remains silent. Position 1, 2, 3, 4, or Y, B, R, W, and PD, WD, and TST lamps remain extinguished.
<p>WARNING: If the signal indicator set is responding in any manner to ringing current or if relay Y, B, R, or W of the dial pulse receiving circuit or any of the relays of the public signal control circuit are operated, do not proceed to Steps 70 through 72, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.</p>		
70	Restore RCO key.	CO lamp extinguished.
71	Remove plug from TL jack.	
72	Restore SCO key, if provided.	SCO lamp extinguished.

B. Test of Siren Line Failure Alarm Feature

TO RESTORE THIS EQUIPMENT TO SERVICE at any step in the progress of the test, immediately remove the insulator or test ground connection and the blocking tool from the CO relay, then proceed at once with the Restoral Procedure, Steps 13 through 15.

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STEP	ACTION	VERIFICATION
1	Operate SCO key.	SCO lamp lights.
2	Insert 258D plug into TL jack.	
3	Operate RCO key of associated dial pulse receiving circuit.	CO lamp lights.
	<i>WARNING: Do not restore either of these keys to normal or remove the plug from the TL jack before instructed to do so under the Restoral Procedure, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.</i>	
4	Block nonoperated CO relay of first continuous line test circuit.	
5	Insulate contact 5T of CO relay.	Office alarm sounds. ALM or LT ALM lamp lights.
6	Remove insulator from 5T of CO relay.	Office alarm silenced. ALM or LT ALM lamp extinguished.
7	Repeat Steps 5 and 6 for contacts 2B and 8B of CO relay.	
8	Connect ground to spring 5T of CO relay.	Office alarm sounds. ALM or LT ALM lamp lights.
9	Remove ground connection from 5T of CO relay.	Office alarm silenced. ALM or LT ALM lamp extinguished.
10	Repeat Steps 8 and 9 for springs 2B and 8B of CO relay.	
11	Remove blocking tool from CO relay.	
12	Repeat Steps 4 through 11 for all other continuous line test circuits provided.	

Restoral Procedure

WARNING: If relay Y, B, R, or W of the dial pulse receiving circuit or any of the relays of the public signal control circuit are operated, do not proceed to Steps 13 through 15 or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.

13	Restore RCO key.	CO lamp extinguished.
14	Remove plug from TL jack.	
15	Restore SCO key.	SCO lamp extinguished.

STEP	ACTION	VERIFICATION
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C. Fuse Alarm Relay Test

TO RESTORE THIS EQUIPMENT TO SERVICE at any step in the progress of the test, immediately remove all test connections, then proceed at once with the Restoral Procedure, Steps 7 through 9.

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|---|---|---|
| 1 | Operate SCO key of public signal control circuit, if provided. | SCO lamp lights. |
| 2 | Insert 258D plug into TL jack. | |
| 3 | Operate RCO key. | CO lamp lights. |
| <p><i>WARNING: Do not restore either of these keys to normal or remove the plug from the TL jack before instructed to do so under the Restoral Procedure, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.</i></p> | | |
| 4 | At fuse panel at top of frame, connect the equipment end of a 48-volt fuse to its associated alarm stud, using W1AF cord. | Office alarm sounds.
FA lamp lights. |
| 5 | Remove test connection between fuse and alarm stud. | Office alarm silenced.
FA lamp extinguished. |
| 6 | Repeat Steps 4 and 5 for one of the RS fuses. | |

Restoral Procedure

WARNING: If relay Y, B, R, or W of the dial pulse receiving circuit or any of the relays of the public signal control circuit are operated, do not proceed to Steps 7 through 9, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.

- | | | |
|---|-------------------------------|------------------------|
| 7 | Restore RCO key. | CO lamp extinguished. |
| 8 | Remove plug from TL jack. | |
| 9 | Restore SCO key, if provided. | SCO lamp extinguished. |

STEP	ACTION	VERIFICATION
D. Local Operation Test of Public Signal Control Circuit Where the Position 2 Signal or the Blue Signal Sounds the Sirens as an ALERT Signal		
<i>TO RESTORE THIS EQUIPMENT TO SERVICE at any step in the progress of the test, proceed at once with the Restoral Procedure, Steps 18 through 27.</i>		
1	Operate SCO key.	SCO lamp lights.
2	Insert 258D plug into TL jack.	
3	Operate RCO key of associated dial pulse receiving circuit.	CO lamp lights.
<i>WARNING: Do not restore either of these keys to normal or remove the plug from the TL jack before instructed to do so under the Restoral Procedure, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.</i>		
4	Insert 258D plug into PLS jack of dial pulse receiving circuit.	
5	Insert 165D plug into S or SJ jack of dial pulse receiving circuit.	
6a	If using dial hand test set — Insert 310 plug into C jack of dial pulse receiving circuit.	
7b	If using relay rack mounted dial — Connect DIAL jack to C jack of dial pulse receiving circuit, using P3E cord.	
8	Remove plug from PLS jack.	ALM or DP ALM lamp remains extinguished. Office alarm remains silent.
9	Block nonoperated AL relay of dial pulse receiving circuit.	
10	Dial 00.	RW1 relay remains released.
11	Dial 2.	
12	Dial 44.	RW1 relay remains released.
13	Dial 2.	

STEP	ACTION	VERIFICATION
14	Dial 66.	RW1 relay operates. CO relays operate, if provided.
15	Dial 2.	RW1 relay releases. CO relays release, if provided.
16	Dial 88.	RW1 relay operates and releases in response to the closed and open settings, respectively, of the "red alert signal generator." (Obtain local settings for timing requirements.) CO relays operate, if provided.
17	Dial 2.	RW1 relay releases and remains released. CO relays release, if provided.

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18c	If test has been interrupted — Dial 2 before proceeding with Steps 19 through 27.	
19	Remove blocking tool from AL relay.	
20	Insert 258D plug into PLS jack of dial pulse receiving circuit.	
21a	If using dial hand test set — Remove plug from C jack.	
22b	If using relay rack mounted dial — Remove P3E cord from DIAL and C jacks.	
23	Remove plug from S or SJ jack.	
24	Remove plug from PLS jack.	ALM or DP ALM lamp remains extinguished. Office alarm remains silent.

WARNING: If relay Y, B, R, or W of the dial pulse receiving circuit or any of the relays of the public signal control circuit are operated, do not proceed to Steps 25 through 27, or a false signal may be transmitted to the warning stations and siren stations connected to this equipment.

25	Restore RCO key.	CO lamp extinguished.
26	Remove plug from TL jack.	
27	Restore SCO key.	SCO lamp extinguished.

4. INTERPRETATION OF LAMP SIGNALS

LAMP

LIGHTED LAMP INDICATES

Dial Pulse Receiving and Control Circuit

CO Ringing supply cut off, except to line 1 (RCO key operated). A plug must be inserted into TL jack to cut off ringing supply to line 1.

or

Equipment removed from service (plug in S or SJ jack).

or

Pulsing circuit opened (plug in PLS jack).

DP ALM or ALM

Visual alarm.

DP ALM

Visual alarm (extension lamp).

PD

A prime digit has been received.

TST

Test digit 9 has been received.

WD

A wrong digit has been received.

Public Signal Control Circuit

LT ALM or ALM

Visual alarm.

SCO

Siren lines are cut off.

Signal Indicator Set (Words and Digits)

1

TEST

2

ALERT

3

TAKE COVER

4

Optional

Signal Indicator Set (Blue Used for ALERT Signal)

Y

Yellow warning signal.

B

Blue ALERT signal.

R

Red TAKE COVER signal.

W

White warning signal.