

## CIVIL AIR DEFENSE WARNING SYSTEM SD-95332-01

### PROCEDURES IN CASE OF ALARM

#### 1. GENERAL

1.01 This section outlines the procedure to be followed when responding to an alarm at the central office control equipment for public signals.

1.02 This section is reissued to add an explanation of the meaning of red and white signals, to cover failure in the timing chain before the operation of the first relay in the chain (Test (B)) and to delete references to the operation of the AR key to extinguish the A3 lamp.

1.03 The procedures covered are:

- (A) Siren Check Failure Alarm (A1 Red Lamp)
- (B) Red Signal Timing Alarm (A2 Red Lamp)
- (C) Control Station Line Alarm (A3 Red Lamp)  
Control Circuit Failure Alarm (A3 Red Lamp)
- (D) A Fuse Alarm (A3 Red Lamp and A4 White Lamp)
- (E) Miscellaneous Alarms (A4 White Lamp)

1.04 Because of the importance of the equipment affected, these alarms should receive prompt attention.

1.05 Red and white signals, wherever mentioned in this section should not be confused with the red and white alarm lamps. A red signal is intended to mean an intermittent or varying tone warning signal which is transmitted by operating a key at the control station to the red position. A white signal is intended to mean a steady siren all clear signal which is transmitted by operating the key at the control station to the white position.

1.06 A ready reference chart indicating alarms, nature of trouble and recommended action is attached to the inside cover of the control equipment in the central office.

#### 2. APPARATUS

2.01 The apparatus required for each procedure is shown in the following list. The details for each item are covered in the indicated paragraphs.

Apparatus		No. Req'd. for Procedure		
		(A)	(C)	(E)
P3E Cord (2.02)	1	-	-	
P3E Cord (2.03)	-	2	-	
No. 258C Plug (2.04)	-	1		X
2.02 P3E cord 4 feet long equipped with No. 310 plugs (3P7E).				
2.03 P3E cord 1 foot long equipped with No. 310 plugs (3P6A).				
2.04 X indicates the number of siren station lines in trouble.				

#### 3. METHOD

##### (A) Siren Check Failure Alarm (A1 Red Lamp)

3.01 When the A1 (Alarm 1) lamp is lighted, it indicates that one or more of the siren station line circuits failed to function satisfactorily in response to the signal, and probably the associated sirens failed to operate.

3.02 Check the SL (spare line) and L (line) lamps. Any lamp, which is not lighted, indicates the siren station line in trouble. Silence the alarms by operating the ACO key.

Note 1: A request may be received from the control station regarding the siren station line in trouble.

Note 2: Make a record of the siren station line in trouble.

3.03 Inspect the RS and WS relays. If one of these relays is steadily operated or operates intermittently no action should be taken.

##### Procedure in Case of Failure of One Siren Station Line

3.04 When it is apparent that the transmission of the signal has been completed, as indicated by the RS and WS relays remaining in their normal positions, patch the L jack of the siren station line in trouble to the SL jack, using a P3E cord. Observe that the L lamp associated with the line in trouble, lights.

3.05 Momentarily operate the AR (alarm release) key and observe that the A1, F (frame), SL and all L lamps, except the one associated with the patched line circuit, are extinguished after an interval.

3.06 After the emergency has clearly passed, obtain permission from the control station to make tests of the control circuit.

3.07 Remove the patch and observe that the L lamp, associated with the line that was patched, is extinguished. Make tests as covered in Section 201-301-501 covering tests of this equipment, to determine whether the trouble is in the control circuit.

3.08 In all cases report the siren station involved, for inspection in accordance with local instructions.

**Procedure in Case of Failure of Two or More Siren Station Lines**

3.09 When it is apparent that the transmission of the signal has been completed, as indicated by the RS and WS relays remaining in their normal positions, momentarily operate the AR key. Observe that the A1, F, SL and all L lamps are extinguished.

3.10 After the emergency has clearly passed, obtain permission from the control station to make tests as covered in the section covering tests of this equipment, to determine whether the trouble is in the control circuit.

3.11 In all cases report the siren stations involved, for inspection in accordance with local instructions.

**(B) Red Signal Timing Alarm (A2 Red Lamp)**

3.12 When the A2 (Alarm 2) lamp is lighted it ordinarily indicates that the timing circuit has failed to operate satisfactorily. This may result in a red signal being translated to a white signal or no signal at all may result. However, failure of the timing circuit may occur prior to the operation of the T1 relay and in this case the A3 lamp will light instead of the A2 lamp. Silence the alarms by operating the ACO key.

Note: No attempt should be made to clear this trouble during the transmission of signals. The transmission of a signal is indicated by the steady or intermittent operation of the RS or WS relay.

3.13 After the trouble has been cleared, momentarily operate the AR key (if the A2 lamp had been lighted). Observe that the A2 or A3 lamp, if lighted, and the F lamp are extinguished.

**(C) Control Station Line Alarm (A3 Red Lamp)**  
**Control Circuit Failure Alarm (A3 Red Lamp)**

3.14 When the A3 (Alarm 3) lamp is lighted it indicates failure of the control

station line or failure of the control circuit to apply operating current to at least one siren station line circuit. The trouble may be in the battery supply line, the red line, the white line or the common equipment. Silence the alarm by operating the ACO key.

Note: No attempt should be made to clear this trouble during the transmission of signals as indicated by the steady or intermittent operation of the RS or WS relay.

3.15 If the alarm is the result of an attempt to originate a signal, the control station may call the central office on the emergency hand set in the casing, in which case follow procedures 3.16 to 3.18 inclusive. No attempt shall be made to originate or change a signal under any conditions unless specifically requested to do so by the control station. If no call has been received within a reasonable time, proceed as covered in 3.19.

Caution: Do not use the emergency hand set in the casing for outward calls because this circuit affords the prescribed means of controlling operation under this condition.

**Procedure When Request for Assistance is Received**

3.16 When the control station requests assistance in transmitting a red signal, insert a No. 258C plug into the ER (emergency red) jack. When the control station requests assistance in transmitting a white signal, insert a No. 258C plug into the EW (emergency white) jack. Remove the No. 258C plug in accordance with instructions from the control station.

3.17 If no siren operates or no L lamps are lighted when a plug is inserted into the ER or EW jack, it means that there probably is trouble in the central office control circuit and if the control station attendant is still on the telephone, or calls again, inform him of this fact and request him to restore his key to normal. If the control station attendant has been informed that there is trouble in the central office equipment or if no communication is received in about 2 minutes, remove the plug from the EW or ER jack and observe that the A3 and F lamps are extinguished.

3.18 If the nature of the trouble is not determined by 3.16 and 3.17, proceed as covered in 3.19.

**Procedure When No Request for Assistance is Received**

3.19 When it is apparent that no signal is being transmitted as is indicated when the right hand armatures of both the

RD and WH relays are against the back stops, proceed as follows until the alarm is retired. Accidental grounding of the battery supply will be avoided if the following sequence of inserting plugs is adhered to.

- (a) Insert one plug of a P3E cord into the EB (emergency battery) jack and then insert the other plug of the cord into the BG (battery ground) jack. If the A3 and F lamps are extinguished the trouble probably is in the battery supply.
- (b) Remove the plug from the BG jack and then remove the plug from the EB jack. Insert one plug of the P3E cord into the T2 jack and then insert the other plug of the cord into the BG jack. If the A3 and F lamps are extinguished the trouble probably is in the red line.
- (c) Remove the plug from the BG jack and then remove the plug from the T2 jack. Insert one plug of the P3E cord into the T3 jack and then insert the other plug of the cord into the BG jack. If the A3 and F lamps are extinguished the trouble probably is in the white line.
- (d) Insert one plug of another P3E cord into the T2 jack and then insert the other plug of the cord into the T1 jack. If the A3 and F lamps are extinguished the trouble probably is in all the lines.
- (e) If one of the above patches retired the alarm, leave this patch up until the trouble has been cleared.

3.20 If it is determined that the trouble is outside the central office, report the trouble in accordance with local instructions. This report, as far as possible, shall include the nature of the trouble and the particular line in which the trouble occurs.

3.21 As soon as a report is received that the trouble on a control station line has been cleared, check that the line has been connected with the proper polarity, in the following manner:

- (a) Check with the control station that the key is in the normal position.
- (b) Block the RS and WS relays non-operated to prevent possibility of a false signal.
- (c) Remove the plugs from the BG, T1, EB, T2 or T3 jacks.

(d) If after removing the plugs there is no alarm proceed as outlined in (g), (h) and (j).

(e) If a continuous alarm occurs, it is an indication that there is still trouble in the loop such as wrong polarity. In this case it will be necessary to proceed as outlined in 3.20, and again report the trouble in accordance with local instructions.

(f) Call the control station and request that the control key be operated to the red position. Observe that the right hand armature of the RD relay operates, the A3 and F lamps light and the alarm bells ring. Silence the alarm by operating the ACO key. Request that the control key be operated to the white position. Observe that the right hand armature of the WH relay operates. Request that the control key be restored to normal. Observe that the left hand armatures of both relay are operated.

(g) Observe that the A3 and F lamps are extinguished.

(h) Remove the blocking tools from the RS and WS relays.

#### (D) A Fuse Alarm (A3 Red Lamp and A4 White Lamp)

3.22 When the A3 and A4 lamps are lighted at the same time, the trouble probably is in the A fuse. Silence the alarm by operating the ACO key.

3.23 If the trouble was in the A fuse, clearing it will extinguish the A4 lamp. Observe that the A3 and F lamps are extinguished.

#### (E) Miscellaneous Alarms (A4 White Lamp)

3.24 When the A4 (Alarm 4) lamp is lighted and the office alarm bells operate, it indicates that there is trouble in a siren station line circuit, the line to the siren station or the siren station equipment. The trouble probably is one of the following. Silence the alarms by operating the ACO key.

- (a) C, D, E, F or G fuse.
- (b) Open short or ground on siren station line.
- (c) Failure of siren station line test delay feature.
- (d) Falsely operated RC relay.
- (e) Falsely operated TL relay.

3.25 Inspect the C, D, E, F or G fuses and if any are blown, replace them. If the trouble was in the fusing observe that the A4 and F lamps are extinguished.

3.26 Inspect the S relays. If an S relay is released when the associated TL relay is released, the trouble probably is an open or ground on the associated siren station line circuit.

3.27 Inspect the MG relays. If an MG relay is operated when the associated TL relay is released, the trouble probably is a short or ground on the associated siren station line circuit.

3.28 If the alarm is caused by an S or MG relay as covered in 3.26 or 3.27, insert as many No. 258C plugs as is necessary into the associated jacks. Observe that the associated lamp or lamps light, that the A4 and F lamps are extinguished.

3.29 If it is determined that the trouble is outside the office, report the siren station involved in accordance with local instructions.

3.30 After the trouble has been cleared, see that there are no plugs in the SL or L jacks and that the SL and L lamps are extinguished.

3.31 If the SL and all of the L lamps are lighted, the trouble probably is in the siren station line test delay feature. After the trouble is cleared, momentarily operate the AR key and observe that the A4, F, SL and all L lamps are extinguished.

3.32 If the RC or TL relay or both relays are operated, after a signal has ended, it indicates that the relays are falsely operated. If an RC relay of a regular siren station line is operated, insert a No. 258C plug into the associated jack and observe that the L lamp is lighted.

3.33 After the trouble is cleared, momentarily operate the AR key. Observe that the A4 and F lamps are extinguished. If a No. 258C plug was used, remove it from the jack and observe that the associated lamp is extinguished.

#### 4. REPORTS

4.01 Any required reports pertaining to the failure should be filled out and forwarded in accordance with local instructions.