

## 11A ALERTING SYSTEM PERIODIC MAINTENANCE AND OVERALL TESTS

### 1. GENERAL

1.01 This section provides operational tests for the 11A Alerting System. The tests consist of initiating and receiving calls and signals by using 2-wire line circuits which connect the system to control centers (SAGE and NCC). Verifications of system operation include the initiation of scramble operations and observation of the operation of specific relays.

*Caution: The tests in this section cannot be performed without the approval of the customer maintenance control center at the combat alert center (CAC) to be tested, and without notifying all areas likely to receive false signals resulting from these tests.*

1.02 This section is reissued to add tests for the modified unit selection receiving circuit. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The tests covered are:

A. **Outgoing Calls on PBX, Central Office, or Private Service System Lines:** This test verifies equipment operation when an outgoing call is originated. This test also verifies equipment capability to place a connected call on hold. Each line should be exercised. For lines provided with dial selection, test calls may be made to a CO testboard or to another station set.

B. **Incoming Calls on PBX, Central Office, or Private Service System Lines:** This test verifies equipment capability to detect and properly respond to incoming calls. Each line should be exercised.

C. **Hangar Lamp Control:** This test verifies system capability to control lamps at hangar areas, and should be performed for each hangar area controlled by the attendant position.

D. **Hangar Paging:** This test verifies the hangar paging facilities, and should be performed for each hangar area controlled by the attendant position.

E. **CAC Directed Scramble:** This test exercises the system and verifies the CAC attendant capability to initiate scrambles.

F. **SAGE and NCC Directed Scrambles:** This test exercises the system and verifies SAGE and NCC control location capability to initiate scramble signals by using interconnecting 2-wire voice and signal circuits. The operating capability of the PBX tie trunk preempting circuitry is therefore verified. This test should include the complete verification of the unit selection receiving circuitry used at collocated CACs by arranging for SAGE or NCC bridged CAC scramble signals. This test should be performed for each SAGE or NCC which is connected to the attendant console.

1.04 In the following tests, the operated relays listed for observation may not be the only relays that operate or release for a given function. The relays listed are used because their operation or release indicates receipt or transmission of particular signals.

*Note:* Verifications preceded by parenthesis are required for confirmation only when the preceding verification has not been received.

1.05 **Lettered Steps:** A letter a, b, c, etc, added to a step number in Part 2 of this

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section indicates an action which may or may not be required depending upon equipment arrangement. 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. METHOD**

<b>STEP</b>	<b>ACTION</b>	<b>VERIFICATION</b>
<b>A. Outgoing Calls on PBX, Central Office, or Private Service System Lines</b>		
1	At attendant position— Operate line pickup key; take attendant handset off-hook.	At attendant position— Line key lamp steadily lighted. (At handset station relay circuit— (TB relay operated. (At line pickup relay circuit— (SL relay operated. (At 2-wire line circuit— (A relay operated.
2a	If outgoing dial selection provided— Dial selected station.	At attendant position— Dial tone audible.
3	When selected station answers— Conduct talking test.	Conversation satisfactory.
4	Momentarily operate HOLD key.	HOLD lamp steadily lighted. Line key lamp winks; handset released.
5	Operate winking line key.	Line key lamp steadily lighted. HOLD lamp extinguished.
6	Conduct talking test.	Conversation satisfactory.
7	Terminate call by placing handset on-hook.	Line key lamp extinguished. (At 2-wire line circuit— (All relays released.
<b>B. Incoming Calls on PBX, Central Office, or Private Service System Lines</b>		
1	At attendant position— Contact selected station and request that a call be placed to line under test.	
2	Await incoming call.	At attendant position— When incoming call is received— Interrupted ringing heard. Line key lamp flashes at 60 ipm. (At 2-wire line circuit— (R relay operated.

STEP	ACTION	VERIFICATION
3	Operate flashing line key; take handset off-hook.	At attendant position— Ringing ceases; line key lamp steadily lighted. (At 2-wire line circuit— (AH relay operated.
4	Conduct talking test.	At attendant position— Conversation satisfactory.
5	Terminate call by placing handset on-hook.	Line key lamp extinguished. (At 2-wire line circuit— (All relays release.
<b>C. Hangar Lamp Control</b>		
1	At attendant position— Go off-hook and operate SCR key.	At attendant position— SCR key lamp steadily lighted. At appropriate hangar— Green (scramble) lamp lighted. (At hangar lamp selector circuit— (GR relay operated. (At lamp relay circuit— (RH relay operated.
2	Operate WAIT key.	At attendant position— WAIT key lamp steadily lighted. At appropriate hangar— AMBER (wait) lamp lighted. (At hangar lamp selector circuit— (YE relay operated. (At lamp relay circuit— (RH relay operated.
3	Operate ABRT key.	At attendant position— ABRT key lamp steadily lighted. At appropriate hangar— RED (abort) lamp lighted. (At hangar lamp selector circuit— (RD relay operated. (At lamp relay circuit— (RH relay operated.
4	At appropriate hangar— Operate acknowledge (ACK) key.	At attendant position— HLR key lamp lighted. Buzzer briefly audible.
5	At attendant position— Operate HLR key.	HLR key lamp and ABRT key lamp extinguished. At appropriate hangar— Abort lamp extinguished. (At scramble release circuit— (HL relay operated, then releases when HLR key released. (At hangar lamp selector circuit—

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STEP	ACTION	VERIFICATION
		(RD relay released. (At lamp relay circuit— (RH relay released.
<b>D. Hangar Paging</b>		
1	At attendant position— Go off-hook and operate HPG key.	At attendant position— HPG key lamp steadily lighted.
2	Conduct voice test of paging system.	At appropriate hangar— Voice transmission satisfactory. (At hangar selector and control circuit— (W, Z relays operated and locked.
3	Reoperate HPG key.	At attendant position— HPG key lamp extinguished. (At hangar selector and control circuit— (W, Z relays released.
<b>E. CAC Directed Scramble</b>		
1	At attendant position— Go off-hook and operate HGR SEL key.	At attendant position— HGR SEL key lamp steadily lighted. (At hangar selector and control circuit— (HA and HB relays operated.
2	Operate WAIT key for selected hangar.	At attendant position— WAIT key lamp lighted. At selected hangar— Wait signal lamp lighted. (At hangar lamp selector circuit— (YE relay operated.
3	Operate and release MAN CONT key; then immediately operate MAN SCR key.  <i>Note:</i> These two keys must be operated within a 5-second time-out period.	At attendant position— MAN CONT, MAN SCR, and SCR lamps steadily lighted; WAIT key lamp extinguished. (At scramble control circuit— (MC relay operated. At all hangar areas— Horn signals operated for approximately 10 seconds. (At master control time-out circuit— (T relay operates 7 ±1 seconds after MAN CONT key is operated. (At scramble time-out circuit— (TO(1) and TO(2) relays operated for approximately 10 seconds, then T relay operated, releasing TO(1) and TO(2). At selected hangar— Tone signals audible over loudspeaker for approximately 10 seconds. Hangar doors open where applicable. Wait signal lamp extinguished.

STEP	ACTION	VERIFICATION
		Scramble signal lamp lighted. (At hangar lamp selector circuit— (GR relay operated. (At door control circuit— (D relay operated. (At horn signal circuit— (P relay operated.
4	Conduct talking test to ensure handset is connected to selected hangar.	At selected hangar— Conversation satisfactory.
5	Simultaneously operate and hold MAN CONT key and MAN RLS key.	At attendant position— All key lamp signals extinguished.
		<b>Note:</b> It may take approximately 10 seconds to obtain the verification.
6	When all key lamps are extinguished, release MAN CONT key and MAN RLS key.  <b>Note:</b> MAN CONT key must be released first.	(At scramble release circuit— (RL relay operated during period MAN RLS key is held operated.
<b>F. SAGE and NCC Directed Scramble</b>		
1	At attendant position— Go off-hook and operate one of MODE I, II, or III keys in the key unit designated LINE SELECTION.	At attendant position— Appropriate mode key lamp steadily lighted.
2	When the SAGE or NCC answers, make arrangements for testing scramble signals by using both the scramble bridge and individual dialing codes at the control location.	Conversation satisfactory.
3	Operate the corresponding key (MODE I, II, or III) in the key unit designated SCRAMBLE CONTROL.	Appropriate mode key lamp steadily lighted. (At scramble control circuit— (M1, M2, or M3 relay operated.
4	Operate a HGR SEL key and an associated SCR key.	At attendant position— HGR SEL and WAIT key lamps steadily lighted. At selected hangar— Wait signal lamp lighted. (At hangar selector and control circuit— (HA and HB relays operated. (At hangar lamp selector circuit— (YE relay operated.
5	Go on-hook and await receipt of scramble signal.	At attendant position— Appropriate mode line key lamp extinguished. When scramble signal (ring-in signal) is

STEP	ACTION	VERIFICATION
		<p>received—  Mode line key lamp flashes for approximately 10 seconds, then steadily lighted.  (At appropriate 2-wire line circuit—  (R relay operated, then released when A relay operated.  (At scramble time-out circuit—  (TO(1) and TO(2) relays operated for approximately 10 seconds, then T relay operated, releasing TO(1) and TO(2).  At all hangar areas—  Horn signals operated for approximately 10 seconds.  (At horn signal circuits—  (P relay operated.  At selected hangar—  Tone signals audible over loudspeakers for approximately 10 seconds. Hangar doors open where applicable. Wait signal lamp extinguished. Scramble signal lamp lighted.  (At hangar lamp selector circuit—  (GR relay operated.  (At door control circuit—  (D relay operated.</p>
6	Monitor (using attendant position loudspeaker) voice transmissions to hangar area from SAGE or NCC.	<p>At attendant position—  Voice transmission satisfactory.  From other loudspeaker locations, receive reports that the voice transmissions were satisfactory.  At selected hangar—  Voice transmission satisfactory.</p>
7	Simultaneously operate and hold MAN CONT key and MAN RLS key.	<p>At attendant position—  All key lamp signals extinguished.</p>
		<p><b>Note:</b> It may take approximately 10 seconds to obtain this verification.</p>
8	When all key lamps are extinguished, release MAN CONT key and MAN RLS key.	<p>(At scramble release circuit—  (RL relay operated during period MAN RLS key is held operated.</p>
	<p><b>Note:</b> MAN CONT key must be released first.</p>	