10A ALERTING SYSTEM

CONSOLE – METHOD OF OPERATION

1. GENERAL

1.01 This section provides a detailed description of all key operations that the attendant may be expected to perform at the control consoles for each type of location in the 10A Alerting System. This information may be used to conduct overall operational tests (see Caution). For general descriptive information of the 10A Alerting System, refer to Section 981-227-100.

> ***Caution: The 10A Alerting System is a security-type system. No operational tests should be performed at any location without the approval of the customer's maintenance control center and the permission of the customer's commanding representatives at NORAD Combat Operations Center (COC), at the location to be tested, and at all other locations likely to receive false signals resulting from tests at the selected location.***

1.02 The 10A Alerting System control consoles at Region, Sector, and Site are shown in Fig. 1, 2, and 3, respectively. Fig. 1 is also typical for NORAD control console panel; however, if the customer desires, the panel layout may be varied. The NORAD panel will be mounted in an available customer console at NORAD location. A monitor console is associated with each control console at NORAD, Region, and Sector locations and is similar to the associated control console except (a) all panel positions are indicators only (no key function), and (b) one additional key (without lighting) is provided in the blank space in the lower left-hand corner for silencing audible alarms. No monitor console is provided at Site locations.

1.03 Fig. 4 through 6 illustrate the 10A Alerting System key-indicator panel layout typical of the control and monitor consoles at NORAD, Region, and Sector. The NORAD layout is subject to possible rearrangement (1.02). Fig. 7 illustrates the Site location console panel layout. The alarm cutoff key (1.02) is provided on each monitor console.

1.04 The key-indicators grouped on the left side of the control and monitor panels are "common controls" associated with overall system functions, local equipment testing, and (if applicable) upstream location signaling and line status. The key-indicators grouped on the right side of the control and monitor panels are associated with downstream location signaling and line status. At Region and Sector locations when the number of downstream locations exceeds ten, increased capability may be obtained by the addition of extension control and monitor consoles to provide for up to ten additional downstream locations. The layout for these downstream key-indicators on the extension consoles is similar to that used for the grouping on the right side of the control and monitor consoles. The "common control" key-indicator group on the control console serves all the downstream locations which appear on the original control and monitor consoles ***and*** associated extension consoles. The extension console panel is mounted in a base similar to that used for the control and monitor consoles.

1.05 All markings illustrated on the key-indicators, Fig. 4, 5, and 6 (NORAD, Region, and Sector), are applied by the customer. However, the customer will likely provide designations different from those shown for the downstream location key-indicators (right-hand group). The markings shown on the key-indicator for the Site location (Fig. 7) will be applied by the customer as illustrated. The remaining two key-indicators (for alert and test alert) at Site location are provided with raised lenses which preclude application of markings.

1.06 The control and monitor console key-indicators have a frosty-white appearance when idle if the consoles are installed in a lighted environment. If installed in a dark environment, the key-indicators are provided with a dim backlighting which aids visual location and identification of each key-indicator in its respective color. All key-indicators are the nonlocking type. To minimize the possibility of accidental broadcast

Fig. 1 — Control or Monitor Console for Region Location

Fig. 2 — Control or Monitor Console for Sector Location

Fig. 3 — Console for Site Location

of false signals to the downstream locations, two keys must be operated to initiate an alert, test alert, or release. For example, to initiate an alert at NORAD or Region location, it is necessary to (1) operate the ALERT key-indicator, and (2) within 3 seconds, operate the MASTER OPERATE key-indicator. Manual acknowledgment signals can only be sent upstream following receipt of an alert or test alert.

1.07 Two types of supervisory lamp signals and two audible signals are employed with the control and monitor consoles. The lamp signals and their functions are:

(a) ***Flash*** — To indicate receipt of an alert or test alert code signal from an upstream location, an automatic acknowledgment of receipt of an alerting code signal from downstream locations, or a line continuity failure visual alarm.

(b) ***Steady*** — To indicate local initiation of an alert, test alert, release, local test of equipment, local retirement of a visual (and audible) alarm, or manual acknowledgment.

The audible signals and their functions are:

(a) ***Bell*** — To indicate receipt of an alert or test alert from the upstream location. Bell also sounds for several seconds and is retired automatically during local test of equipment.

(b) ***Buzzer*** — To indicate continuity failure of upstream or downstream lines. Buzzer also sounds as long as a LOCAL TEST( ) key-indicator is held operated.

2. METHOD OF OPERATION

2.01 Tables B through E provide step-by-step descriptions of attendant operation of the control console at NORAD, Region, Sector, or Site, respectively, including action or reaction of the attendant and visual and audible supervisory signals employed. Table A is the legend required to interpret the symbols used in Tables B through E. Tables B through E contain operations by subheadings which, when combined, provide the complete console operations for the type of location described in the table.

2.02 When the attendant is required to perform operations described under two subheadings in sequence within a table, the step numbering is sequential from Step 1 through the total number of steps required under both subheadings to complete the overall function. For example, in Table B, ***NORAD Control Console,*** subheadings ***To Send Alert*** and ***To Release Alert,*** Steps 1 through 10 are required to complete the overall function. A new and independent function is indicated when the step numbering begins at Step 1 following a subheading.

2.03 The audible and visual signals which appear at the control console also appear at the monitor console (1.07). Momentary operation of the alarm cutoff key at a monitor console (1.02) will silence the monitor console bell or buzzer without affecting the control console bell or buzzer. Since the alarm cutoff key function is the only operation that may be performed at the monitor consoles, it is not included in console function Tables B, C, and D.

2.04 To separate key function from indicator lamp signals in Tables B through E, the key-indicator designations appear twice in each table, once under ***Keys*** and again under ***Indicators.*** The key-indicator designations illustrated in Fig. 4 through 7 are repeated in the associated Tables B through E, respectively, for the applicable control console.

2.05 The following is an index of the tables for console operation functions at each type of location in the 10A Alerting System.

A. Legend

B. NORAD Control Console

C. Region Control Console

D. Sector Control Console

E. Site Console

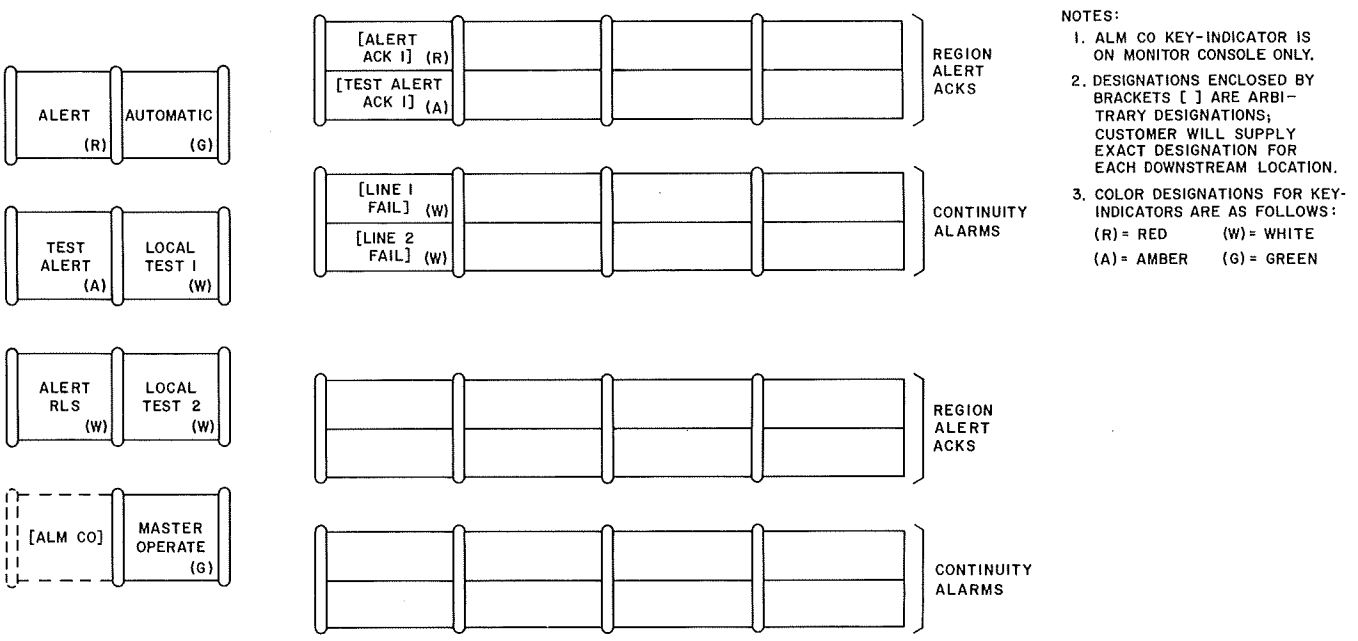


Fig. 4 — NORAD Location Control or Monitor Panel

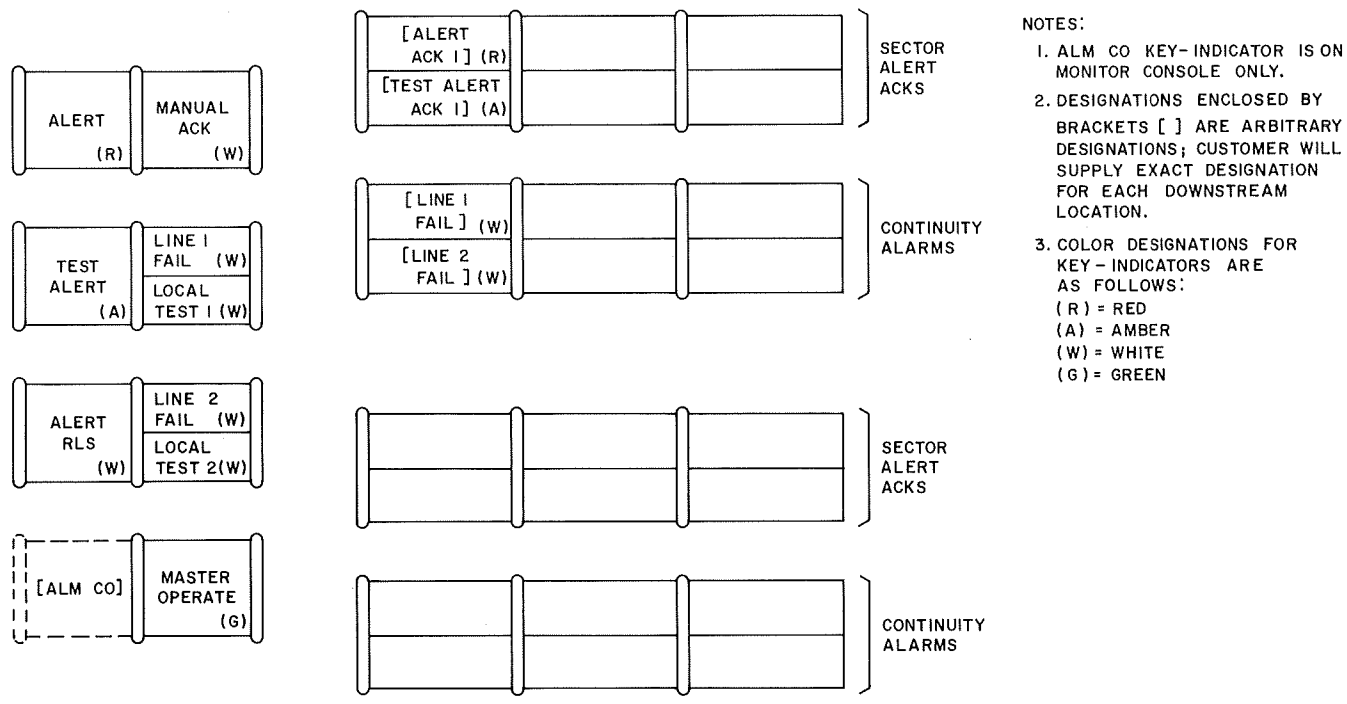
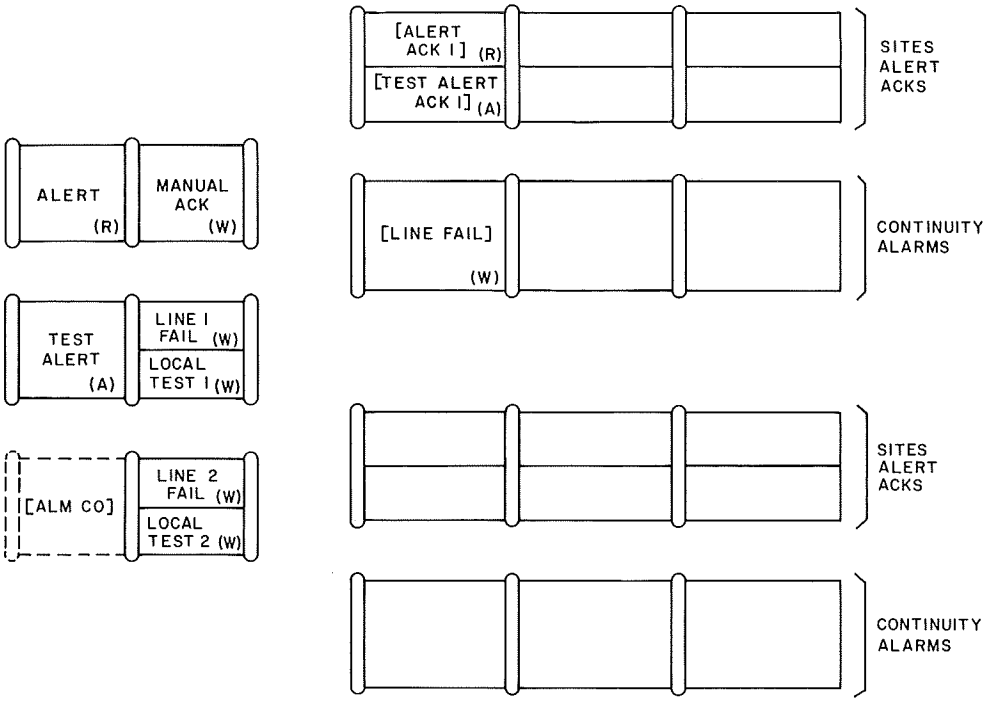


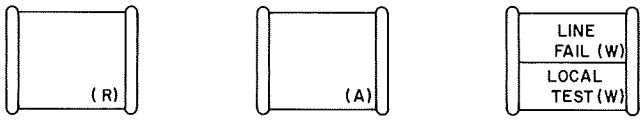
Fig. 5 — Region Location Control or Monitor Panel



NOTES:

1. ALM CO KEY-INDICATOR IS ON MONITOR CONSOLE ONLY.
2. DESIGNATIONS ENCLOSED BY BRACKETS [ ] ARE ARBITRARY DESIGNATIONS; CUSTOMER WILL SUPPLY EXACT DESIGNATION FOR EACH DOWNSTREAM LOCATION.
3. COLOR DESIGNATIONS FOR KEY-INDICATORS ARE AS FOLLOWS:
   (R) = RED
   (A) = AMBER
   (W) = WHITE

Fig. 6 — Sector Location Control or Monitor Panel



NOTE:

COLOR DESIGNATIONS FOR KEY - INDICATORS ARE AS FOLLOWS:
(R) = RED
(A) = AMBER
(W) = WHITE

Fig. 7 — Site Location Panel

TABLE A — LEGEND	
KEY OPERATION	
R	Released
O	Operated
MO	Momentarily operated
INDICATOR LAMP OPERATION	
(R)	Steady red
(A)	Steady amber
(G)	Steady green
(W)	Steady white
(RF)	Flashing red
(AF)	Flashing amber
(GF)	Flashing green
(WF)	Flashing white
●	Dark

TABLE B — NORAD CONTROL CONSOLE

CONDITION												RESULTS										
STEP	ACTION	KEYS										INDICATORS										REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	
To Send Manual Alert																						
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	●	●	● / ●	● / ●	●		
2	Alerting signal initiated	MO										(R)										
3	Alerting signals sent simultaneously to all Regions		MO									(R)	(G)									Step 3 must follow Step 2 within 3 seconds.*
4	After alerting signals sent to each Region											(R)	●									Indicator extinguished approx. 3 seconds after Step 3.
5	Automatic alert acknowledgment signal received from each Region											(R)						(RF) / ●				All Regions acknowledge less than 10 seconds after Step 4. One indicator for each Region.
6	Manual acknowledgment signals received from each Region											(R)						(R) / ●				

* If MASTER OPERATE key is not operated within 3 seconds after ALERT key is operated, ALERT lamp will be extinguished and ALERT and MASTER OPERATE keys must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

TABLE B — NORAD CONTROL CONSOLE (Cont)

STEP	ACTION	CONDITION — KEYS: ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	RESULTS — INDICATORS: ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	REMARKS
To Release Alert																				
7	Alert release initiated			MO							●		(W)				(R) ●			
8	Alert release signals sent simultaneously to all Regions		MO									(G)	(W)				(R) ●			Step 8 must follow Step 7 with 3 seconds.*
9	After alert release signals sent to all Regions											●	●				(R) ●			
10	Automatic release acknowledgment signal received from all Regions																● ●			Automatic release acknowledgment signals received from all Regions in approx. 5 seconds.
To Send Test Alert																				
1	Idle condition	R	R	R	R	R	R	R	R	R	●	●	●	●	●	●	● ●	● ●	●	

* If MASTER OPERATE key is not operated within 3 seconds after ALERT RELEASE key is operated, ALERT RELEASE indicator will be extinguished and ALERT RELEASE and MASTER OPERATE keys must be reoperated.

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
STEP	ACTION	KEYS										INDICATORS										REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	
2	Test alerting signal initiated				MO										(A)							
3	Test alerting signal sent simultaneously to all Regions		MO										(G)		(A)							Step 3 must follow Step 2 within 3 seconds.*
4	After test alerting signals sent to all Regions												●		(A)							Indicator extinguished approx. 3 seconds after Step 3.
5	Automatic test alerting acknowledgment signal received from each Region														(A)			● / (AF)				All Regions acknowledge in less than 10 seconds after Step 3. One indicator for each Region.
6	Manual acknowledgment signals received from each Region														(A)			● / (A)				

* If MASTER OPERATE key is not operated within 3 seconds after TEST ALERT key is operated, TEST ALERT lamp will be extinguished and TEST ALERT and MASTER OPERATE keys must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION											RESULTS									
STEP	ACTION	KEYS									INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	
To Release Test Alert																				
7	Test alert release initiated			MO									W	●			● / A			
8	Test alert release signals sent simultaneously to all Regions		MO									G	W				● / A			Step 8 must follow Step 7 within 3 seconds.*
9	After test alert release signals sent to all Regions											●	●				● / A			
10	Automatic release acknowledgment signal received from all Regions																● / ●			Automatic release acknowledgment signals received from each Region in approx. 5 seconds.
To Test Local Equipment**																				
1	Idle condition	R	R	R	R	R	R	R	R	R	●	●	●	●	●	●	● / ●	● / ●	●	

* If MASTER OPERATE key is not operated within 3 seconds after ALERT RELEASE key is operated, ALERT RELEASE indicator will be extinguished and ALERT RELEASE and MASTER OPERATE keys must be reoperated.

** Local test for facility No. 1 is given. Local test for facility No. 2 is the same except use LOCAL TEST 2 key and observe that LOCAL TEST 2 indicator lights instead of LOCAL TEST 1.

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		REMARKS
2	Facility No. 1 local test initiated					O						(R)	(G)	(W)	(A)	(W)	(W)	(R) / (A)	(W) / (W)	(G)		All control and monitor console indicators remain lighted and buzzer sounds as long as key is held operated.
3	Alert code from generator applied to all associated downstream receivers					R						●	●	●	●	(W)	●	● / ●	● / ●	●		Alert code from sender for facility No. 1 is injected into all associated downstream receivers.
4	Alert acknowledgment signal automatically simulated for each Region											(RF)				(W)		(RF) / ●				Each ALERT ACK indicator flashes approximately 2 seconds after Step 3. ALERT indicator flashes approximately 8 seconds after Step 3 and bell rings continuously.

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION																							RESULTS	
STEP	ACTION	KEYS									INDICATORS													REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC				
5	Facility No. 1 local test automatically retired										●				●		● / ●			Bell silenced approximately 5 seconds after Step 4 begins.				
	Line Continuity Failure Indication*																							
1	If line No. 1 failure occurs																	WF / ●						Buzzer sounds. Failure indication illustrated typical for split indicator provided for line Nos. 1 and 2 to each Region.
2	To retire audible alarm								MO									W / ●						Buzzer silenced.
3	When line service restored																	● / ●						(Automatic restoration)

* Line failure indication for line No. 1 is typical also for line No. 2 to each Region except LINE 2 FAIL indicator lights instead of LINE 1 FAIL indicator.

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		REMARKS
Indication That Region Has Initiated an Alert or Test Alert*																						
1	A Region initiates an alert																	(RF) / ●				Indicator for Region initiating alert.*
* If Region initiates test alert, TEST ACK half of split indicator flashes amber instead of ALERT ACK shown.																						
Indication That Region Has Retired its Alert or Test Alert*																						
2	Region retires its alert																	● / ●				ALERT ACK indicator for Region initiating alert.*
* If Region retires a test alert, TEST ACK half of split indicator is extinguished.																						
To Send Test Alert to Individual Region																						
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	●	●	● / ●	● / ●	●		
2	Test alerting signal initiated to individual Region							MO							(A)							Key selected corresponds to Region to be alert tested.

TABLE B — NORAD CONTROL CONSOLE (Cont)

RESULTS											CONDITION									
STEP	ACTION	KEYS									INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC	
3	Test alerting signal sent to selected Region		MO									(G)		(A)						Step 3 must follow Step 2 within 3 seconds.*
4	After test alerting signal sent to the selected Region											●		(A)						Indicator extinguished within 3 seconds after Step 3.
5	Automatic test alerting acknowledgment signal received from selected Region													(A)			● / (AF)			Selected Region acknowledges in less than 10 seconds after Step 3.
6	Manual acknowledgment signal received from selected Region													(A)			● / (A)			

* If MASTER OPERATE key is not operated within 3 seconds after ALERT ACK/TEST ACK key is operated, TEST ALERT indicator will be extinguished and ALERT ACK/TEST ACK key and MASTER OPERATE key must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

To Release Test Alert to Individual Region
(Same as: To Release Test Alert)

TABLE B — NORAD CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		ALERT	MA OPR	ALERT RLS	TEST ALERT	LOCAL TEST 1	LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	AUTO-MATIC		REMARKS
	To Put NORAD in Automatic Mode																					
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	●	●	●	●	●		
2	NORAD placed in automatic mode									MO										(G)		
	Automatic Alert Received While NORAD is in Automatic Mode																					
3	Automatic alert triggered											(RF)								(GF)		Bell rings continuously.
4	To retire audible signal*	MO										(R)								(G)		Bell silenced.
	To Release NORAD From Automatic Mode																					
5	NORAD released from automatic mode.									MO										●		

* Procedure following Step 4 is the same as in ***To Send Test Alert,*** Steps 4 through 10, except AUTOMATIC indicator remains lighted.

TABLE C — REGION CONTROL CONSOLE

CONDITION												RESULTS									
STEP	ACTION	KEYS										INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	
To Send Manual Alert																					
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	● / ●	● / ●	● / ●	● / ●	●	
2	Alerting signal initiated	MO										(R)									
3	Alerting signals sent simultaneously to all Sectors and to NORAD		MO									(R)	(G)								Step 3 must follow Step 2 within 3 seconds.*
4	After alerting signals sent to Sectors and NORAD											(R)	●								Indicator extinguished approx. 3 seconds after Step 3.
5	Automatic alert acknowledgment signal received from each Sector											(R)						(RF) / ●			All Sectors acknowledge within 10 seconds. One indicator for each Sector.
6	Manual acknowledgment signals received from each Sector											(R)						(R) / ●			

* If MASTER OPERATE key is not operated within 3 seconds after ALERT key is operated, ALERT indicator will be extinguished and ALERT and MASTER OPERATE keys must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	REMARKS
To Release Alert																						
Note: If NORAD has initiated the alert, applicable indicators can be extinguished and alert retired as shown here ***only*** from NORAD.																						
7	Alert release initiated			MO								●		(W)				(R) / ●				
8	Alert release signals sent simultaneously to all Sectors and to NORAD		MO										(G)	(W)				(R) / ●				Step 8 must follow Step 7 within 3 seconds.*
9	After alert release signals sent to all Sectors and NORAD												●	●				(R) / ●				
10	Automatic release acknowledgment signal received from all Sectors																	● / ●				Automatic release acknowledgment signals received from each Sector in approx. 5 seconds.
To Send Test Alert																						
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	● / ●	● / ●	● / ●	● / ●	●		

* If MASTER OPERATE key is not operated within 3 seconds after ALERT key is operated, ALERT indicator will be extinguished and ALERT and MASTER OPERATE keys must be reoperated.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION											RESULTS									
STEP	ACTION	KEYS									INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	
2	Test alerting signal initiated				MO									(A)						
3	Test alerting signals sent simultaneously to all Sectors and to NORAD		MO									(G)		(A)						Step 3 must follow Step 2 within 3 seconds.*
4	After test alerting signals sent to Sectors and NORAD											●		(A)						Indicator extinguished approx. 3 seconds after Step 3.
5	Automatic test alerting acknowledgement signal received from each Sector													(A)			● / (AF)			All Sectors acknowledge in less than 10 seconds. One indicator for each Sector.
6	Manual acknowledgment signals received from each Sector													(A)			● / (A)			

* If MASTER OPERATE key is not operated within 3 seconds after TEST ALERT key is operated, TEST ALERT indicator will be extinguished and TEST ALERT and MASTER OPERATE keys must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK	REMARKS
	To Release Test Alert																					
	Note: If NORAD has initiated the test alert, applicable indicators can be extinguished and test alert retired as shown here ***only*** from NORAD.																					
7	Test alert release initiated			MO										(W)	●			● / (A)				
8	Test alert release signals sent simultaneously to all Sectors and to NORAD		MO										(G)	(W)				● / (A)			Step 8 must follow Step 7 within 3 seconds.*	
9	After test alert release signals sent to all Sectors												●	●				● / (A)			Automatic release acknowledgment signals received from each Sector in approx. 5 seconds.	
10	Automatic release acknowledgment signal received from all Sectors																	● / ●				

* If MASTER OPERATE key is not operated within 3 seconds after ALERT RELEASE key is operated, ALERT RELEASE indicator will be extinguished and ALERT RELEASE and MASTER OPERATE keys must be reoperated.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION											RESULTS									
STEP	ACTION	KEYS									INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK	
To Test Local Equipment*																				
1	Idle condition	R	R	R	R	R	R	R	R	R	●	●	●	●	● / ●	● / ●	● / ●	● / ●	●	
2	Facility No. 1 local test initiated					O					(R)	(G)	(W)	(A)	(W) / (W)	(W) / (W)	(R) / (A)	(W) / (W)	(G)	As long as key is held operated, control and monitor console indicators remain illuminated and buzzer sounds.
3	Alert code from generator applied to all associated upstream and downstream receivers					R					●	●	●	●	● / (W)	● / ●	● / ●	● / ●	●	

* Local test for facility No. 1 is given. Local test for facility No. 2 is the same except use LOCAL TEST 2 key and observe lighting of LOCAL TEST 2 indicator instead of LOCAL TEST 1.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
STEP	ACTION	KEYS										INDICATORS										REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	
4	Alert acknowledge signal automatically simulated for each Sector										(RF)				● / (W)		(RF) / ●			Each ALERT ACK indicator flashes approximately 2 seconds after Step 3. ALERT indicator flashes approximately 8 seconds after Step 3 and bell rings continuously.
5	Facility No. 1 local test automatically retired										●				● / ●		● / ●			Bell silenced 5 seconds after Step 4 begins.
	Line Continuity Failure Between NORAD and Region*																					
1	If line No. 1 failure occurs														(WF) / ●					Buzzer sounds continuously. Line failure indication may appear at any time regardless of the operating status of the system.

* Line failure indication for line No. 1 between NORAD and Region illustrated is typical also for line No. 2.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION										RESULTS											
STEP	ACTION	KEYS								INDICATORS											REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MAN-UAL ACK	
2	To retire audible alarm					MO									(W) / ●						Buzzer silenced.
3	When line service restored														● / ●						(Automatic restoration)
Line Continuity Failure Between Region and Sector*																					
1	If line No. 1 failure occurs																	(WF) / ●			Buzzer sounds. Line failure indication may appear at any time regardless of the operating status of the system.
2	To retire audible alarms								MO									(W) / ●			Buzzer silenced.
3	When line service restored																	● / ●			(Automatic restoration)

* Line failure indication for line No. 1 is typical also for line No. 2 to each Sector.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
		KEYS										INDICATORS										
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	REMARKS
	Receiving Alert																					
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	● / ●	● / ●	● / ●	● / ●	●		
2	Alert sent from NORAD											(RF)						● / ●				Bell rings continuously.
3	To retire audible signal	MO										(R)						● / ●				Bell silenced.
4	Each Sector downstream automatically acknowledges receipt of alert																	(RF) / ●				Each ALERT ACK indicator flashes less than 10 seconds after Step 2.
5	Each Sector downstream manually acknowledges receipt of alert																	(R) / ●				Each ALERT ACK indicator switches to steady when associated Sector manually acknowledges.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS									
		KEYS										INDICATORS									
STEP	ACTION	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	REMARKS
6	Alert receipt manually acknowledged to NORAD									MO		(R)						(R) / ●		(W)	
7	Alert release signal received from NORAD											●						● / ●		●	Each ALERT ACK indicator extinguished approximately 4 seconds after Step 6.
	Receiving Test Alert																				
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	● / ●	● / ●	● / ●	● / ●	●	
2	Test alert sent from NORAD														(AF)			● / ●			Bell sounds continuously.
3	To retire audible signal				MO										(A)			● / ●			Bell silenced.
4	Each Sector downstream automatically acknowledges receipt of test alert.																	● / (AF)			Each TEST ACK indicator flashes less than 10 seconds after Step 2.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION												RESULTS										
STEP	ACTION	KEYS										INDICATORS										REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	
5	Each Sector downstream manually acknowledges receipt of test alert																	● / Ⓐ				Each TEST ACK indicator switches to steady when associated Sector manually acknowledges.
6	To manually acknowledge receipt of test alert									MO					Ⓐ			● / Ⓐ		Ⓦ		
7	Test alert release signal received from NORAD														●			● / ●		●		Each TEST ACK indicator extinguished approximately 4 seconds after Step 6.
	To Send Test Alert to Individual Sector																					
1	Idle condition	R	R	R	R	R	R	R	R	R		●	●	●	●	● / ●	● / ●	● / ●	● / ●	●		
2	Test alerting signal initiated to individual Sector							MO							Ⓐ							Key selected corresponds to Region to be alert tested.

TABLE C — REGION CONTROL CONSOLE (Cont)

CONDITION											RESULTS									
STEP	ACTION	KEYS									INDICATORS									REMARKS
		ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	ALERT	MA OPR	ALERT RLS	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE 1 FAIL / LINE 2 FAIL	MANUAL ACK	
3	Test alerting signal sent to selected Sector		MO									(G)		(A)						Step 3 must follow Step 2 within 3 seconds.*
4	After test alerting signal sent to selected Sector											●		(A)						Indicator extinguished approx. 3 seconds after Step 3.
5	Automatic acknowledgment signal received from selected Sector													(A)			● / (AF)			Selected Sector automatically acknowledges in less than 10 seconds after Step 3.
6	Manual acknowledgement received from selected Sector																● / (A)			Selected TEST ACK indicator switches to steady when associated Sector manually acknowledges.

* If MASTER OPERATE key is not operated within 3 seconds after ALERT ACK/TEST ACK key is operated, TEST ALERT indicator will be extinguished and ALERT ACK/TEST ACK and MASTER OPERATE keys must be reoperated. If option is provided, bell rings at control and monitor consoles until MASTER OPERATE lamp is extinguished.

To Release Test Alert to Individual Region
(Same as: To Release Test Alert)

TABLE D — SECTOR CONTROL CONSOLE

CONDITION									RESULTS							
		KEYS							INDICATORS							
STEP	ACTION	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK	REMARKS
	Receiving Alert From NORAD or Region															
1	Idle condition	R	R	R	R	R	R	R	●	●	● ●	● ●	● ●	●	●	
2	Alert signal received from NORAD or Region								(RF)				● ●			Bell rings continuously.
3	To retire audible signal	MO							(R)				● ●			Bell silenced.
4	Each Site downstream automatically acknowledges receipt of alert.												(RF) ●			Each ALERT ACK flashes less than 10 seconds after Step 2.
5	Each Site downstream manually acknowledges receipt of alert												(R) ●			Each ALERT ACK indicator switches to steady when associated Site manually acknowledges.
6	Alert receipt manually acknowledged to Region							MO	(R)				(R) ●		(W)	

TABLE D — SECTOR CONTROL CONSOLE (Cont)

CONDITION										RESULTS								
STEP	ACTION	KEYS								INDICATORS								REMARKS
		ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK		ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK		
7	Alert release signal received from NORAD or Region									●				● / ●		●		Each ALERT ACK indicator extinguished approximately 4 seconds after Step 6.
	Receiving Test Alert From NORAD or Region																	
1	Idle condition	R	R	R	R	R	R	R		●	●	● / ●	● / ●	● / ●	●	●		
2	Test alert signal received from NORAD or Region										(AF)			● / ●				Bell rings continuously.
3	To retire audible signal		MO								(A)			● / ●				Bell silenced.
4	Each Site downstream automatically acknowledges receipt of test alert													● / (AF)				Each TEST ACK indicator flashes less than 10 seconds after Step 2.
5	Each Site downstream manually acknowledges receipt of test alert													● / (A)				Each TEST ACK indicator switches to steady when associated Site manually acknowledges.

TABLE D — SECTOR CONTROL CONSOLE (Cont)

CONDITION									RESULTS							
		KEYS							INDICATORS							
STEP	ACTION	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK	REMARKS
6	Test alert receipt manually acknowledged to Region							MO		(A)			● / (A)		(W)	
7	Test alert release signal received from NORAD or Region									●			● / ●		●	Each TEST ACK indicator extinguished approximately 4 seconds after Step 6.
	To Test Local Equipment*															
1	Idle condition	R	R	R	R	R	R	R	●	●	● / ●	● / ●	● / ●	●	●	
2	Facility No. 1 local test initiated			O					(R)	(W)	(W) / (W)	(W) / (W)	(R) / (A)	(W)	(W)	While key held operated, control console and monitor console indicators remain illuminated and buzzer sounds.
3	Alert code from generator applied to all upstream and downstream receivers			R					●	●	● / (W)	● / ●	● / ●	●	●	

* Local test for facility No. 1 is given. Local test for facility No. 2 is the same except use LOCAL TEST 2 key and observe lighting of LOCAL TEST 2 indicator instead of LOCAL TEST 1.

TABLE D — SECTOR CONTROL CONSOLE (Cont)

CONDITION									RESULTS							
		KEYS							INDICATORS							
STEP	ACTION	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK	ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / ACK TEST	LINE FAIL	MAN-UAL ACK	REMARKS
4	Alert acknowledge signal automatically simulated for each Site								(RF)		● / (W)		(RF) / ●			Each ALERT ACK indicator flashes approximately 2 seconds after Step 3. ALERT indicator flashes approximately 8 seconds after Step 3 and bell rings continuously.
5	Facility No. 1 local test automatically retired								●		● / ●		● / ●			Bell silenced 5 seconds after Step 4 begins.
Line Continuity Failure Between Region and a Sector*																
1	If line No. 1 failure occurs										(WF) / ●					Buzzer sounds continuously. Line failure indication may appear at any time regardless of the operating status of the system.
2	To retire audible alarm			MO							(W) / ●					Buzzer silenced.

* Line failure indication for line No. 1 between Region and a Sector illustrated is typical also for line No. 2.

TABLE D — SECTOR CONTROL CONSOLE (Cont)

CONDITION										RESULTS								
STEP	ACTION	KEYS								INDICATORS								REMARKS
		ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK		ALERT	TEST ALERT	LINE 1 FAIL / LOCAL TEST 1	LINE 2 FAIL / LOCAL TEST 2	ALERT ACK / TEST ACK	LINE FAIL	MAN-UAL ACK		
3	When line service restored											●						(Automatic restoration)
	Line Continuity Failure Between Sector and a Site																	
1	If line failure occurs														(WF)			Buzzer sounds. Line failure indication may occur at any time regardless of operating status of system. (Indicator for failed line.)
2	To retire audible alarm						MO								(W)			Buzzer silenced.
3	When line service restored														●			(Automatic restoration)

TABLE E — SITE CONSOLE

CONDITION					RESULTS			
STEP	ACTION	KEYS			INDICATORS			REMARKS
		(RED)	(AMBER)	LINE FAIL / LOCAL TEST	(RED)	(AMBER)	LINE FAIL / LOCAL TEST	
Receiving Alert								
1	Idle condition	R	R	R	●	●	● / ●	
2	Alert sent from NORAD or Region				(RF)			Bell rings continuously.
3	Alert manually acknowledged	MO			(R)			Bell silenced; manual acknowledgment signals sent to Sector.
4	Alert release signal received from NORAD or Region				●			
Receiving Test Alert								
1	Idle condition	R	R	R	●	●	● / ●	
2	Test alert sent from NORAD or Region					(AF)		Bell rings continuously.
3	Test alert manually acknowledged		MO			(A)		Bell silenced.
4	Release signal received from NORAD or Region					●		
To Test Local Equipment								
1	Idle condition	R	R	R	●	●	● / ●	
2	Facility local test initiated			O	(R)	(A)	(W) / (W)	While key held operated, console indicators remain illuminated and buzzer sounds continuously.

TABLE E — SITE CONSOLE (Cont)

CONDITION					RESULTS			
STEP	ACTION	KEYS			INDICATORS			REMARKS
		(RED)	(AMBER)	LINE FAIL / LOCAL TEST	(RED)	(AMBER)	LINE FAIL / LOCAL TEST	
3	Alert code from code generator applied to Site receiver			R	●	●	● / (W)	
4	Alert signal automatically simulated				(RF)		● / (W)	Bell rings continuously; occurs approx. 2 seconds after Step 3.
5	Local test automatically retired				●		● / ●	Occurs approx. 2 seconds after Step 4 begins.
Line Continuity Failure From Sector								
1	If line failure occurs						(WF) / ●	Buzzer sounds continuously. Line failure indication may appear at any time regardless of operating status of system.
2	To retire audible alarm			MO			(W) / ●	Buzzer silenced.
3	When line service restored						● / ●	(Automatic restoration)