DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL:

OPERATIONAL DATA AND INDEX

GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

This copy is a reprint which includes current pages from Changes 1 through 13.

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1978

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Operator's Manual: Operational Data and Index

GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

Current to Tape Version 34.1

TM 9-1430-652-10-6, 1 August 1978, is changed as follows:

1. This change includes coverage for Mobile Subscriber Equipment (MSE) applications.

2. Remove old pages and insert new pages as indicated below. New or changed material is indicated by the applicable change number, i.e., Change 15, at the bottom of the page adjacent to the page number. Revised text will have a vertical bar in the margin next to the changed area. Revised illustrations will have a suffix change letter added to the identification number.

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12-30.7 and 12-30.8	12-30.7 and 12-30.8
12-30.11 thru 12-30.21	12-30.11 thru 12-30.21/(12-30.22 blank)
12-30.23 thru 12-30.24	12-30.23 thru 12-30.24
12-32.1 and 12-32.2	12-32.1 and 12-32.2
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12-45/(12-46 blank)	12-45/(12-46 blank)
12-61 and 12-62	12-61 and 12-62
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12-69/(12-70 blank)	12-69/(12-70 blank)
12-71 thru 12-75/(12-76 blank)	12-71 thru 12-75/(12-76 blank)
Index 1 thru Index 4	Index 1 thru Index 4
Index 11 and Index 12	Index 11 and Index 12
---	Index 12.1/(Index 12.2 blank)
Index 17 and Index 18	Index 17 and Index 18

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GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

Current to Tape Version 34.1

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12-30.21 thru 12-30.24	12-30.21 thru 12-30.24
12-32.1 and 12-32.2	12-32.1 and 12-32.2
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12-73 and 12-74	12-73 and 12-74
Index 1 thru Index 6	Index 1 thru Index 6
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OPERATOR'S MANUAL: OPERATIONAL DATA AND INDEX

GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73

Current to Tape Version 34.1

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CHAPTER 12

OPERATIONAL DATA

Section I. INTRODUCTION

12-1. Scope. This volume provides operational reference data that is used by the AN/TSQ-73 operator throughout this series of operator volumes. All listings, illustrations, and abbreviated guides are provided for the experienced operator as a quick reference data source. Also included is the index for all seven operator manuals.

12-2. Reporting Equipment Publications Improvements. The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded to: Commander, U.S. Army Missile Command, ATTN: AMSMI-MMC-LS-LP, Redstone Arsenal, AL 35898-5238. You may also send in your comments electronically to our e-mail address: ls-lp@redstone-emh2.army.mil or by fax 205-842-6546/DSN 788-6546.

Section II. CONTROL COMMAND LISTINGS

12-3. Control Commands. Control Commands (CC) are used to establish AN/TSQ-73 operational program variables. These commands are the primary man-machine interface for system initialization. Control commands are also used to load, activate, and terminate computer program configurations or functions; specify site adaptation data; control various logical and physical devices; and perform miscellaneous functions. Control commands contain both fixed and variable data. Fixed data include, as a minimum, the letters CC, followed by a command code of either two or three octal digits. The command code must be within the octal range 00 thru 163. Variable data consist of one or more items following the command code. Typical variable data are position, altitude, time, etc. The value of these items is variable within predetermined limits. If a command contains variable data items, the items must be separated from the command code and from each other by either a blank space or a comma. Unless otherwise noted, all data items defined in these procedures are required entries and must be entered in the indicated sequence. Leading zeros are not mandatory entries.

a. Response Messages. Messages are printed out on the KPU or ARO to provide operator feedback and to provide a CC entry record (KPU only). These responses are categorized as follows:

(1) *Acknowledge*. This response is generated to acknowledge a valid, legal entry. The output is 77 NN(N) 40 ACK, where NN(N) is the two or three digit command code.

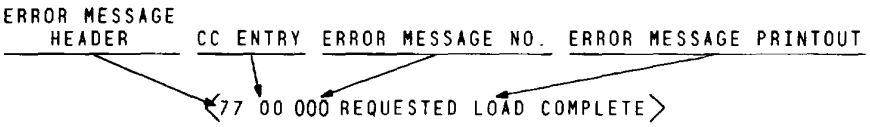
(2) *Error*. This response is generated to indicate rejection of a command entry that is caused by entry of an invalid code (Nonfunctional), format error, or data content error. An example of an error response is 77 NN(N) 35 INPUT MESSAGE IN ERROR. If a CC that is illegal for a brigade-configured system is input, the ADP outputs the message BDE CNFG. Other error messages are shown in figure 12-1.

(3) *Special Responses*. Special responses (prompts/alerts) are generated to provide feedback unique to individual commands. When a control command is entered while the MTU is searching, the KPU will print: "KPU CC BUSY." In addition, default values are included in this category.

(4) *Keywords*. In those instances where keywords are used, data may be changed by keyword address without reentering the entire command code sequence.

b. *Control Command Entry Procedures.* CCs can be entered into the system using the Display Console alphanumeric (AN) keyboard, the Keyboard Printer Unit (KPU), or the ADP Status and Control Panel PROGRAM TEST SELECT thumbwheels (only two-digit CCs with no variable data can be entered). The Display Console ARO and AN Keyboard are capable of serving as a backup to the KPU for the entry of system CCs and display of associated computer generated responses. The mode is entered by operator actuation of the Display Console CONTRL CMD ENTRY control. Actuation of this control causes the blanking-out of all the ARO displays. CC entries are then entered via the AN Keyboard and displayed in Row 1 of the ARO. Entries are posted as entered, left to right with a marker to indicate the position of the next character to be entered. Computer responses generated by CC entry are displayed in Rows 3 thru 8 as required. CC entry and computer response formats are identical to those used with the KPU. Return to the normal ARO displays is achieved by operator actuation of the CONTRL CMD ENTRY control. The CC entry mode can be in effect at only one Display Console at a time.

c. *Control Command Entries*. Refer to table 12-1 and table 12-1.1 for detailed CC definitions, figure 12-2 for CC111 entry definitions, and figure 12-3 for abbreviated CC definitions.



MESSAGE NO.	PRINTOUT	DEFINITION
00	REQUESTED LOAD COMPLETE>	SYSTEM HAS LOADED REQUESTED CONFIGURATION OR MAP
01	INSUFFICIENT CORE>	AMOUNT OF MEMORY IS NOT SUFFICIENT TO ALLOW LOADING OF CONFIGURATION REQUESTED
02	RESTART REQD>	PRINTED DURING CC PROCESSING, WHEN CODES CC05 (PURGE) CC06 (FLUSH), CC07 (SHUTDOWN), CC20 THRU CC22 OR CC24 THRU CC26 (CONFIGURATION), OR CC107 (OTHR SERV) ARE ENTERED, THE OPERATOR IS ALLOWED 30 SECONDS TO PRESS RESTART SWITCH. IF SWITCH IS NOT PRESSED, CC IS IGNORED AND <77 NN 02 RESTART REQD> IS PRINTED WHEN CODES CC01 (OWN SITE LOC), CC02 (DLRP), OR CC04 ARE ENTERED, SYSTEM PARAMETERS ARE CHANGED WHETHER RESTART SWITCHCAP IS PRESSED OR NOT
03	SYSTEM TAPE FORMAT ERROR>	SYSTEM TAPE IS BAD
04	SYSTEM TAPE I/O ERROR>	PROBLEM IN SYSTEM TAPE INPUT/OUTPUT HANDLING
05	SYSTEM TAPE IS DISMOUNTED>	SYSTEM TAPE IS NOT INSTALLED ON MTU OR ASSIGNED (CC104) OR ACTIVATED (CC100)
06	MUST LOAD OCP>	OPERATIONAL CONFIGURATION (CC20 THRU CC22 OR CC24 THRU CC26) MUST BE LOADED INTO SYSTEM
07	AUX FUNCTION ACTIVE>	AUXILIARY FUNCTION PROGRAMS ARE IN OPERATION
10	CONFIGURATION NOT ON TAPE>	REQUESTED CONFIGURATION IS NOT ON TAPE
11	SYSTEM RESTART>	SYSTEM RESTART HAS BEEN ACCOMPLISHED
12	BANK XX PURGED>	MEMORY BANK NO.__ HAS BEEN PURGED (CC40)
13	BANK XX NOT PURGED>	MEMORY BANK NO.__ HAS NOT BEEN SUCCESSFULLY PURGED
14	ALL ON LINE BANKS IN USE>	ALL MEMORY BANKS ARE CURRENTLY IN USE
15	INVALID LIST OPTION>	ATTEMPT TO ENTER OTHER THAN N, L OR EX IN LIST FIELD OF CC156
16	SYSTEM PURGED>	SYSTEM HAS BEEN PURGED (CC05)
17	SYSTEM NOT PURGED>	SYSTEM HAS NOT BEEN SUCCESSFULLY PURGED
20	RESET TIME OF DAY>	TIME OF DAY SHOULD BE ENTERED (CC130)
21	LINK NOT COMM ESTAB>	COMMUNICATION WITH REQUESTED DATA LINK IS NOT ESTABLISHED
22	NO SITE AVAILABLE>	SITE LIMIT REACHED. CANNOT HONOR REQUEST FOR ANOTHER SITE SLOT
23	SPECIFIED LINK IN USE>	COMMUNICATION IS ALREADY TAKING PLACE OVER DATA LINK REQUESTED
24	DUP NAME ENTERED>	DEFENDED POINT (CC121), ATDL-1 STATION ADDRESS (CC03, CC114 AND CC120) ENTRY NAME PREVIOUSLY USED
25	CORRIDOR ACTIVE>	SAFE CORRIDOR (CC123) ENTRY ATTEMPTS TO ADD A POINT TO AN ACTIVE CORRIDOR

MS195924E

Figure 12-1. Error Message Definitions (Sheet 1 of 4)

MESSAGE NO.	PRINTOUT	DEFINITION
26	TOO FEW POINTS)	SAFE CORRIDOR (CC123) ENTRY HAS INSUFFICIENT POINTS ENTERED
27	SPEED/ALT LIMITS INVALID>	SAFE CORRIDOR PARAMETERS (CC124) ENTRY INVALID
30	INVALID SPEED LIMITS>	UPPER SPEED NOT 50 DATA MILES GREATER THAN LOWER SPEED (INCREMENTS ARE IN TENS OF DATA MILES) (CC111)
31	POSITION OFF GRID>	ANY COORDINATE ENTRY NOT ON LOCAL GRID (OUT OF RANGE)
32	NO INTERFACE PROGRAM>	INPUT/OUTPUT HANDLER OR DATA RECORDING LEVELS NOT PRESENT
33	DEVICE TIMEOUT>	DEVICE DOES NOT RESPOND TO ACTIVATE COMMAND
34	DEVICE ADDRESS UNASSIGNED>	DEVICE ADDRESS IN EQUIPMENT STATUS TABLE IS NOT VALID
35	INPUT MESSAGE IN ERROR)	IMPROPER ENTRY FOR ANY KPU ENTRY NOT PROVIDED A SPECIFIC ERROR MESSAGE
36	LINK NOT INITIALIZED>	DATA LINK NOT INITIALIZED - ANY ENTRY INVOLVING DATA LINK ACTIVITY (CC114, CC107, CC112, CC102, CC100)
37	MODEM SWITCHES IN ERROR>	MODEM BIT RATE BPS OR FORMAT SWITCH SET INCORRECTLY
40	ACK>	SYSTEM HAS ACKNOWLEDGED CC ENTRY
41	VOLUME PREVIOUSLY DEFINED>	ATTEMPT TO DEFINE A PREVIOUSLY ENTERED MEZ OR WCZ (CC156)
42	NOT USED	
43	TAPE ALREADY IN USE>	ATTEMPT TO ASSIGN A LOGICAL TAPE (THAT IS ALREADY IN USE) TO A PHYSICAL DEVICE (CC104)
44	REASSIGN MEMORY BANK ADDRESSES RECONFIGURE>	MEMORY BANKS DO NOT RESPOND UPON BOOT LOAD OR GAPS EXIST IN MEMORY BANK ADDRESSING
45	RIE/VSU NOT AVAILABLE-RESTART SIM>	RIE/VSU CANNOT BE PUT ON-LINE. RELOAD SIMULATION PROGRAM (CC30) AFTER CORRECTING PROBLEM
46	NOT USED	
47	BDE CNFG>	ATTEMPT TO PERFORM BN ONLY ACTION AT BRIGADE
50	LIMITS EXCEEDED>	ATTEMPTED ACTIVATION OF SAFE CORRIDOR (CC124) WHEN NINE OTHER CORRIDORS ARE ACTIVE: EXCEED ALTITUDE LIMIT OF VOLUME (CC157)
51	FSCL PREVIOUSLY ENTERED>	ATTEMPT TO DEFINE A PREVIOUSLY ENTERED FSCL (CC156)
52	OUT OF RANGE>	ATTEMPTED TO ENTER TB BLOCK LIMITS WITH A BLOCK SIZE GREATER THAN 1000 (OCTAL) OR TO ENTER OWN SITE ADDRESS OUTSIDE THE RANGE 100-175 (OCTAL)
53	LINK ACTIVE)	ATTEMPTED TO ENTER OWN SITE POSITION (CC01), DATA LINK REFERENCE POINT (CC02) OR OTHER SERVICE DATA (CC107) WITH ANY LINK ACTIVE. CC107 MAY NOT BE PERFORMED WITH ANY TADIL - B LINK ACTIVE
54	DLRP OFF GRID>	FOR CC01 AND CC02 THIS INDICATES THAT DLRP IS NOW OFF GRID AND A REMOTE DATA LINK CANNOT BE INITIALIZED

MS195925F

Figure 12-1. Error Message Definitions (Sheet 2 of 4)

MESSAGE NO.	PRINTOUT	DEFINITION
55	INVALID ID>	VOLUME OR LINE [id] FIELD IS INVALID (CC156, CC157. CC160)
56	LIMIT ERROR - ACTIVE FSCL>	ATTEMPT TO DISPLAY SECOND FSCL (CC157)
57	ERROR - SAME VOLUME>	ENTER INNER VOLUME ID IN [oz] INSTEAD OF OUTER VOLUME ID (CC157)
60	INVALID ENTRY TYPE>	[t) OR [list] FIELD OF CC156 IS INVALID OR HEADER DESIGNATION FOR CC130 IS INVALID
61	TOO MANY VOLUMES>	WCZ COUNT GREATER THAN 20. MEZ OR FSCL COUNT GREATER THAN 2 FOR CC156
62	MAX VOL DISP REACHED>	VOLUME/LINE AREA OF DISPLAY REFRESH FILE IS FULL
63	MUST DELETE A CIRCLE>	ATTEMPTED TO CHANGE THE CENTER POINT ON A CIRCULAR VOLUME (CC156)
64	VOLUME NOT FOUND>	INVALID VOLUME NUMBER ENTERED (VOLUME NOT IN DATA BASE) (CC156. CC157. CC160)
65	ALTITUDE IN ERROR>	UPPER ALTITUDE NOT 1000 FEET (OR MORE) GREATER THAN LOWER ALTITUDE (INCREMENTS ARE IN 1000s OF FEET) (CC157)
66	SYSTEM MODE ERROR>	ERROR IN CC155 ENTRY
67	CC ABORT>	ACKNOWLEDGES THAT OPERATOR ABORTED THE CC ROUTINE WITH AN 'EX' ENTRY IN ANY FIELD DATA NOT RECOVERED
70	NOT USED	
71	NOT USED	
72	NOT USED	
73	NO CURRENT DATE>	ATTEMPTED TO ACTIVATE SIF CODE VALIDATION (CC151) WITH NO VALID CURRENT DATE IN THE SYSTEM (CC130)
74	TWO DATES FOR SAME TABLE>	ATTEMPTED TO CHANGE DATE OF A NEWLY INITIATED SIF CODE TABLE OR ATTEMPT TO ENTER SAME DATE AS AN EXISTING TABLE (CC151)
75	CURRENT SIF CODES UNDEFINED>	ATTEMPTED TO ACTIVATE AUTOMATIC SIF CODE VALIDATION WITHOUT VALID SIF CODES FOR CURRENT PERIOD IN SYSTEM (CC151)
76	MAX FILTERS IN SYSTEM>	ATTEMPT TO CHANGE DATA LINK TRANSMISSION ZONE TABLE ENTRY AND THE NUMBER OF TRANSMISSION ZONES EQUALS OR EXCEEDS 20 (CC111)
77	INVALID POSITION 2>	THE SECOND POSITION DEFINED FOR A RECTANGULAR TRANSMISSION ZONE IS NOT NORTHEAST OF THE FIRST POSITION ENTERED (CC111)
100	INVALID TABLE SPECIFIED>	ATTEMPTED TO LIST. DELETE OR CHANGE A NONEXISTENT SIF CODE TABLE (CC151)
101	TWO TABLES ALREADY EXIST>	ATTEMPTED TO INITIATE A THIRD SIF CODE TABLE (CC151)
102	ENTER VALID START TIME>	ATTEMPT TO ENTER A STOP TIME WITHOUT PREVIOUSLY ENTERING A VALID START TIME (CC160)

MS558778B

Figure 12-1. Error Message Definitions (Sheet 3 of 4)

MESSAGE NO.	PRINTOUT	DEFINITION
103	TADIL-B ILLEGAL FOR PADS-aa>	ATTEMPT TO ENTER UNIT ADDRESS ALPHAS THAT DESIGNATES A TIED TADIL-B UNIT
104	SECOND VALUE MUST BE GREATER THAN OR EQUAL TO ITS CORRESPONDING FIRST>	ATTEMPT TO ENTER A SECOND VALUE OF MISSILE COUNT THRESHOLD OR THREAT PRIORITY THAT IS LESS THAN THE CORRESPONDING FIRST VALUE (CC146 AND CC147)
105	PADS TABLE FULL UNIT ADDRESS NOT ACCEPTED-aa>	ATTEMPT TO ENTER VALID UNIT ADDRESS WHEN THE PAD TABLE IS FULL (CC147)
106	25 ADDRESS LIMIT EXCEEDED, LAST ADDRESS ACCEPTED -aa>	ATTEMPT TO ENTER TOO MANY ADDRESSES AT ONE TIME IN A STRING. LAST ADDRESS ACCEPTED (CC147)
107	INVALID UNIT ADDRESS ALPHAS -aa>	ATTEMPT TO ENTER ILLEGAL ATDL-I UNIT ADDRESS (CC147)
110	UNIT	ATTEMPTED TO DELETE A UNIT NOT IN THE PU/RU TABLE (CC112)
111	PU/RU TABLE FULL>	ATTEMPTED TO ENTER A UNIT WHEN THE PU/RU TABLE IS FULL (CC112)
		MS 013215

Figure 12-1. Error message Definition (Sheet 4 of 4)

Table 12-1. Command Code Entries

Command Code	Description
00	Nonfunctional **NOTE** If the thumbwheel switches on the ADP Status and Control Panel are set to any number except 05, 06, 07, 20-22, 24-26, or 74 and the RESTART2 button is pressed, a CPU restart occurs. 00 is the normal position of the thumbwheel switches.
01	*Name*: ENTER OWN SITE LOCATION Functional Description: This command is used to enter the System Coordinate Center (SCC), altitude above Mean Sea Level (MSL), and delta hours from Greenwich Mean Time (GMT). It is also used to initiate own-site relocation process. *Format Definition*: CC01 [pos] [alt] [t] a. The item [pos][1] is expressed by geographic location (prefaced by G), Universal Transverse Mercator (UTM) coordinates (prefaced by U), or Geographic Reference (GEOREF prefaced by GR). b. The item [alt] is a decimal number, 0-29,999, that defines the site altitude, in feet, above MSL. c. The item [t] is the delta time in hours from GMT (optional). *Example*: CC01 G 43 37 20 N 120 50 10 W 500 8 This command specifies the SCC location as 43 degrees 37 minutes 20 seconds North latitude, 120 degrees 50 minutes 10 seconds West longitude at an altitude of 500 feet above MSL, 8 hours difference between GMT and system time. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. During own-site relocation, all fixed point type files (FUs, STs, SCs, DPs, and HFs, if any), link transmission zone and volumes are relocated relative to new own-site position. If the location is not within 1023 data miles of link transmission zone (CC111); transmittable site or fire unit (CC114); defended point (CC121); safe corridor (CC123); height finder radar (CC126); volume (CC156); or data link reference point (CC02), then the message OFF GRID is output on the KPU. The CC01 location and the site adaptation changes (when applicable) are made even if the message OFF GRID is output except for the DLRP OFF GRID. DLRP must be within 1023 data miles of own-site for relocation to be accomplished. After the process is completed, the system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed and then system performs a CC06 type flush. Do not attempt with an active link. Delta time defaults to zero. **NOTE** If the RESTART2 switch was not pressed after the command (CC01) entry, system parameters for own-site location are still changed.
02	*Name*: ENTER DATA LINK REFERENCE POINT (DLRP) *Functional Description*: This command is used to enter the location of the DLRP. *Format Definition*: CC02 [pos] The item [pos][1] is expressed by geographic location (prefaced by G), UTM (prefaced by U), or GEOREF (prefaced by GR). *Example*: CC02 G 40 10 10 N 120 40 20 W

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
02 (cont)	This command defines the DLRP at 40 degrees 10 minutes 10 seconds North latitude, 120 degrees 40 minutes 20 seconds West longitude. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. If the location is not within 1023 data miles of the own-site location (CC01), then the message DLRP OFF GRID is output on the KPU. The CC02 location and the site adaptation changes (when applicable) are made even if the message DLRP OFF GRID is output. When the command is entered, the system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed and then system performs a CC06 type flush. Do not attempt with an active data link. **NOTE** If the RESTART2 switch was not pressed after the command (CC02) entry, system parameters for DLRP location are still changed.
03	*Name*: ENTER OWN STATION ADDRESS *Functional Description*: This command is used to enter own-site station address. Duplicate station addresses are not allowed. *Format Definition*: CC03 [a] The item [a] consists of two characters: the first character ranges A-N, P, or Q; the second character ranges A-H. (QH is reserved for ATDL-1 general address and cannot be used.) The TADIL B address is input using CC107.4 *Example*: CC03 AB This command defines the own station address as AB. *Special Response*. This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. If a previously entered ATDL-1 station address or own-site address is used in the parameters, the message DUP NAME ENTERED is output on the KPU or command console, and the command is rejected. In master battalion configuration, if a CC147 has been previously entered for the new station address, own site location is updated with the PADS information from that entry in the PADS Table, own site is activated for PADS and local subordinate FUs are activated for TEBA PADS. If any entry is found in the table for the old station address, that entry is removed from the PADS Table. In any other configuration, if a CC 147 has been previously entered for the new station address, that entry is removed from the PADS Table.
04	*Name*: DESIGNATE NUMBER OF ACTIVE CONSOLES *Functional Description*: This command is used to enter the physical number[3] of active display consoles. *Format Definition*: CC04 [c] The item [c] is a decimal number, 1-8 that specifies the number of active display consoles. *Example*: CC04 2 This command specifies two active display consoles on line. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. The system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed and then system performs a CC06 type flush. Defaults to two active consoles.

See footnotes at end of table.

Table 12-1. Command Code Entries
- Continued

Command Code	Description
04 (cont)	**NOTE** If the RESTART2 switch was not pressed after the command (CC04) entry, system parameters for number of active consoles are still changed.
05	*Name*: SYSTEM PURGE *Functional Description*: This command is used to initiate a system purge (reset all memory except executive programs and communications tables). *Format Definition*: CC05 *Special Response*: When the command is entered, the system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed. Using a CC05 clears the memories in the ADP. A complete system load is necessary to return the system to operational status.
06	*Name*: FLUSH VOLATILE FILES (EXCEPT MAPS) AND RESTART Functional Description: This command is used to flush the volatile files (except maps) and restart the CPU. *Format Definition*: CC06 *Special Response*: When the command is entered, the system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed. All tracks will be temporarily deleted from the system. System comes up in manual initiate mode.
07	*Name*: ORDERLY SHUTDOWN *Functional Description*: This command is used to shut down all input/output channels to the peripheral devices except the KPU. *Format Definition*: CC07 *Special Response*: When the command is entered, the system outputs RESTART REQD message. ADP Status and Control Panel RESTART2 switch must be pressed. Pressing RESTART a second time reinstates the previous configuration. The CC100 command is used to return specified peripheral devices and data links to active status.
10	*Name*: DISPLAY DIG QUEUE ENTRY (PRIMARY CPU) *Functional Description*. This command is used to cause a display in the diagnose (DIG) lights of the previous DIG code in the diagnose queue for primary CPU. *Format Definition*: CC10 *Special Response*: When all DIG codes have been displayed, the DIG lamps will return to zero.
11	*Name*: PRINT EQUIPMENT STATUS TABLE AND TMON ERROR COUNTS Functional Description: This command is used to output the equipment status table and the total error counts for one or all devices. *Format Definition*: CC 11 [n] The item [n] is the logical device number, octal 0-72. When no entry is made for [n], the entire table is output. The logical devices are:

See footnotes at end of table.

Table 12-1. Command Code Entries -Continued

Command Code	Description	
	Device	*Logical number*[3]
11 (cont)	Links	00-37
	Consoles (1-8)	40-47 (logical 0-7)
	RIE	50
	VSU	51
	DDG 1	52 (logical 4)
	KPU	53
	MTU 1	54 (logical 0)
	MTU 2	55 (logical 1)
	DOU	56
	IOU, IOX	57
	CPU 1	60 (primary)
	CPU 2	61 (secondary)
	Memories (1-8)	62-71 (logical 0-7; memories 4-7 are nonfunctional)
	DDG 2 (if available)	72 (logical 6)
	Special Response: None	
	NOTE When this command is entered at the display console, data is output on the ARO only if a logical device has been specified. If no device has been specified, the data is output at the KPU.	
12	*Name*: ACTIVATE DATA RECORDING	
	Functional Description: This command is used to activate the data recording function.	
	Format Definition: CC12	
	Special Response: None	
13	*Name*: TERMINATE DATA RECORDING	
	Functional Description: This command is used to terminate the data recording function.	
	Format Definition: CC13	
	Special Response: None	
14-16	*Nonfunctional*	

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
17	*Name*: TERMINATE AUXILIARY FUNCTION *Functional Description*: This command is used to terminate a currently active auxiliary or fault isolation funcation (CC30-CC37, CC50-CC56). *Format Definition*: CC17 *Special Response*: A CC06 flush must be performed after completion of CC30, CC33 or CC34.
20-27	*Name*: LOAD OPERATIONAL CONFIGURATION *Functional Description*: Each of these commands is used to load a particular Air Defense operational configuration. Configurations 20-22 are for Brigade Air Defense operation. Configurations 24-26 are for Battalion Air Defense operation. Commands 20 and 21 for brigade and Commands 24 and 25 for battalion provide maximum capabilities for normal operations. Commands 22 for brigade and 26 for battalion are for degraded modes of operation. Commands 23 and 27 are nonfunctional. *Format Definition*: CC[nn] The item [nn] is an octal number, 20-27, specifying the particular operational configuration, as follows: CC20 Brigade Army Air Defense Mission, normal operations, single or dual CPU, and one auxiliary function available (refer to table 12-1.1) (Raid Data Generation [CC31], Field Utilities [CC34], Map Generation [CC36], Site Adaptation [CC37], or any one fault isolation program [CC50-CC56]). CC21 Brigade Army Air Defense Mission, single or dual CPU, one memory down, normal operations, but no auxiliary function available. (Some auxiliary functions available if fourth memory bank is on line, refer to table 12-1.1.) CC22 Brigade Army Air Defense Mission, single or dual CPU, one memory down, reduced track capacity, and one auxiliary function available (refer to table 12-1.1) (Field Utilities [CC34], Map Generation [CC36], Site Adaptation [CC37], or any one fault isolation program [CC50-CC56]). CC23 Nonfunctional. CC24 Battalion Army Air Defense Mission, normal operational, dual CPU only, and one auxiliary function available (refer to table 12-1.1) (Simulation [CC30], Simulation Playback [CC33], Field Utilities [CC34], Map Generation [CC36], Site Adaptation [CC37], or any one fault isolation program [CC50-CC56]). (Raid Data Generation [CC31] is not available.) CC25 Battalion Army Air Defense Mission, dual CPU only, one memory down, normal operations, but no auxiliary function available. (Some auxiliary functions available if fourth memory bank is on line; refer to table 12-1.1) CC26 Battalion Army Air Defense Mission, single or dual CPU, one memory down, reduced track capacity, and one auxiliary function available (refer to table 12-1.1) (Simulation [CC30], Simulation Playback [CC33], Field Utilities [CC34], Map Generation [CC36], Site Adaptation [CC37], or any one fault isolation program [CC50-CC56]). CC27 Nonfunctional.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
20-27 (cont)	Special Response: Each command must be followed within 30 seconds by pressing START and RESTART2 switches at ADP Status and Control Panel. Entering master battalion (CC143) will enhance battalion (CC24-CC26) capabilities by including brigade functions. If the system is operating in CC24 or CC25 configuration upon receipt of TMON 702610 (secondary CPU), the system must be configured to CC26 if operations are to continue. When reconfiguring from a single CPU to a dual CPU operational configuration, a CC100 61 must be entered prior to loading an operational configuration. When reconfiguring from a dual CPU to a single CPU operational configuration, a CC101 61 must be entered prior to loading an operational configuration. If reconfiguring because of loss of logical memory bank 0 or 1, a new bootload is required before reconfiguration.
30-37	*Name*: LOAD AUXILIARY CONFIGURATION *Functional Description*: Each of these commands is used to load a particular auxiliary configuration. Only one auxiliary configuration can be active at a given time. An auxiliary configuration can be loaded initially if it is the first configuration loaded after bootload or after an operational configuration (CC20-CC22, CC24-CC26) has been loaded. Refer to table 12-1.1 for list of auxiliary functions which can be executed in bootload and each operational configuration. When going from one auxiliary configuration to another, a terminate auxiliary function command (CC17) must be performed. *Format Definition*: CC[nn] The item [nn] is an octal number, 30-37, specifying the auxiliary configuration to be loaded, as follows: *nn* — *Auxiliary Configuration* 30 — *Simulation 31 — **Raid Data Generation 32 — ****Data Reduction 33 — *Simulation Playback 34 — Field Utilities 35 — (Nonfunctional) 36 — Map Generation 37 — ***Site Adaptation/Tape-to-Tape Copy *Unique battalion auxiliary configurations. In the brigade operation, CC30 and CC33 are nonfunctional. **Raid Data Generation [CC31] cannot be performed in operational configuration CC24. ***Tape-to-tape copy is used to copy an existing site adapt tape or master tape. If a tape-to-tape copy function is required, a CC37 must be performed from bootload only. ****Data Reduction [CC32] must be performed from bootload only. Upon completion of data reduction, a fresh bootload must be performed. *Special Response*: None

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
40	*Name*: PURGE UNUSED MEMORY BANK(S) *Functional Description*: This command is used to purge unused memory banks and to put the banks off line. Only memory banks 2 and 3 can be purged. *Format Definition*: CC40 *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26). The KPU will output ALL ON-LINE BANKS IN USE or 03 BANK/>PURGED and/or 02 BANK/>PURGED. When the system is in the bootload configuration, the KPU will output MUST LOAD OCP.
41-47	*Non functional*
50-56	*Name*: LOAD FAULT ISOLATION CONFIGURATION *Functional Description*: Each of these commands is used to load a particular fault isolation function. *Format Definition*: CC[nn] The item [nn] is an octal number[3], 50-56, specifying the fault isolation function to be loaded, as follows: *nn* — *Fault Isolation Function* 50 — Radar Interface Equipment 51 — Video Simulation Unit 52 — Data Display Group 53 — Keyboard Printer Unit 54 — Magnetic Tape Unit 55 — Data Communication 56 — Display Console *Special Response*: Refer to applicable fault isolation flow chart.
57	*Nonfunctional*
60	*Name*: WORST CASE MEMORY TEST *Functional Description*: This command positions the master tape to test for memory faults using a worst case program. *Format Definition*: CC60 *Special Response*: This test is run as a part of fault isolation flow chart in TM 9-1430-655-20-6.
61	*Name*: RIE TEST *Functional Description*: This command is used to position the master tape to test the Radar Interface Equipment (RIE). *Format Definition*: CC61 *Special Response*: This test is run as a part of fault isolation flow chart in TM 9-1430-655-20-3.
62-73	*Nonfunctional*
74	*Name*: OUTPUT CONTENTS OF MEMORY ONTO MAGNETIC TAPE

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
74 (cont)	Functional Description: This command is used to output the contents of memory onto logi-ca]3 MTU 1; a write enabled scratch tape must be mounted on MTU 1 prior to activation. The command must be entered from the ADP Status and Control Panel and is activated by pressing the RESTART2 pushbutton followed by pressing the START pushbutton. To cancel this command after restart, reset the thumbwheels to 00 and press START. *Format Definition*: CC74 *Special Response*: If a write enabled tape is not mounted on logical[3] MTU 1 when START is pressed, the DIG lights display 747474 and remain on until write enabled tape is mounted and START is again pressed.
75-77	*Nonfunctional*
100	*Name*: ACTIVATE A LOGICAL DEVICE OR DATA LINK *Functional Description*: This command is used to activate (connect to the computer) a logical device or a data link. Also, this command may be used to reset an active link with parity error status or open/noisy status condition. If a data link is being activated, the following conditions must be met: a. The modem switch must be set to the IA/TB position. b. The data link must be assigned (CC102).4 c. If the link is TADIL-B, the command criteria and other service data must be specified (CC112 and CC107).4 d. If the link is TADIL-B or ATDL-1, the associated site must have been identified (CC114).4 e. If the link is ATDL-1 SIM, the FU position must have been identified (CC120).4. *Format Definition*: CC100 [n] The item [n] is an octal number[3], 0-72, that identifies the logical device/link to be activated, as follows: a. If configured as battalion (CC24-CC26), the following are legal:

Link /Device (logical)[3]	*Type Link*	*Use (including logical identification)*
0-7	TADIL-B/ATDL-1	Sites
10-37	ATDL-1	Fire Units
4047		Display Console (address 0 = 40, address 1 = 41, etc.)
50		RIE
51		VSU
52		DDG 1 (address 4)
53		KPU
54		MTU 1 (address 0)

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description		
100 (cont)	*Link/Device (logical)*[3]	*Type Link*	*Use (including logical identification)*
	55		MTU 2 (address 1)
	61		CPU 2 (secondary)
	72		DDG 2 (address 6, if available)

b. If configured as master battalion (CC24-CC26 with CC143), the following are legal:

Link /Device (logical)[3]	*Type Link*	*Use (including logical identification)*
0-7	TADIL-B/ATDL-1	Sites
10-37	ATDL-1	Fire Units
4047		Display Console (address 0 8 40, address 1 = 41, etc.)
50		RE
51		VSU
52		DDG 1 (address 4)
53		KPU
54		MTU 1 (address 0)
55		MTU 2 (address 1)
61		CPU 2 (secondary)
72		DDG 2 (address 6, if available)

c. If configured as brigade (CC20-CC22), the following are legal:

Link /Device (logical)	*Type Link*	*Use (including logical identification)*
0-7	TADIL-B/ATDL-1	Sites
10-13	ATDL-1	Sites
14-37		Nonfunctional
40-47		Display Console (address 0 = 40, address 1 = 41, etc.)
50		RIE (nonfunctional)
51		VSU (nonfunctional)
52		DDG 1 (address 4)
53		KPU

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description		
100 (cont)	Link /Device *(logical)*[3]	Type *Link*	*Use (including logical identification)*
	54		MTU 1 (address 0)
	55		MTU 2 (address 1)
	61		CPU 2 (secondary)
	72		DDG 2 (address 6)

Example: CC100 4
This command specifies that link 4 is to be activated.

Special Response: Activation of only the following are site adaptable: display consoles, DDGs, KPU and MTU. When communication has been established on TADIL-B or on ATDL-1, the ADP feeds back the messages LINK n SRCE n COMM ESTAB and LINK n SRCE n COMM ACTIVE. This message is provided when all criteria have been satisfied. ATDL-1 fire unit link activation is verified by examination of row 2, column 5 in the fire unit alphanumeric block on the PPI display. When reconfiguring from a single CPU to a dual CPU operational configuration, CC100 61 must be entered prior to loading operational configuration.

NOTE

Problems may be encountered if remote links are looped back to form a closed loop.
Refer to TM 9-1430-652-10-4.

101 *Name*: DEACTIVATE A LOGICAL DEVICE OR DATA LINK

Functional Description: This command is used to deactivate a specified logical device or data link.

NOTE

The KPU cannot be deactivated by this command. The KPU switch on the ADP front panel performs this function.

Format Definition: CC101 [n]
The item [n] is an octal number3, 0-72, that identifies the logical device or data link to be deactivated (see CC100).

Example: CC101 4

This command specifies the deactivation of link 4.

Special Response: When a data link is deactivated, row 2, column 5 in the fire unit/site alphanumeric block is blank. KPU prints: LINK n SRCE n OFFLINE. CC101 54 or CC101 55 will automatically rewind the tape contained in MTU 0 or MTU 1, respectively. When reconfiguring from a dual CPU to a single CPU operational configuration, CC101 61 must be entered prior to loading operational configuration.

102 *Name*: ASSIGN LINK NUMBER TO MODEM

Functional Description: This command is used to associate a specified link with a physical modem. For TADIL-B links, the command must be followed by a CC114.

Format Definition: CC102 [k] [m]

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
102 (cont)	a. The item [1k] is an octal number3, 0-37, that identifies the data link to be assigned, as follows: (1) If configured as battalion (CC24-CC26): *lk*[4] — *Data Link* 0-7 — TADIL-B/ATDL-1 Sites 10-37 — Hawk FUs (2) If configured as brigade (CC20-CC22): *lk*[4] — *Data Link* 0-7 — TADIL-B/ATDL-1 Sites 10-13 — Remote Sources ATDL-1 Sites b. The item [ml is a decimal number, 1-32 for battalion and 1-20 for brigade that identifies the physical modem to be used. *Example*: CC102 0 1 This command specifies that link 0 is to be associated with physical modem 1. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Refer to tables 12-5 thru 12-7 to identify data link and modem numbers. The [k] entry is referred to as an [n] in CC100 and CC101, and is also used in CC110 and CC111.[4]
103	*Nonfunctional*
104	*Name*: ASSIGN LOGICAL TAPE TO PHYSICAL TAPE UNIT *Functional Description*: This command is used to associate a tape number, (specifying the type of tape), with a physical tape unit (MTU 0 and 1). The correct type of tape must have been mounted on the assigned physical tape unit. *Format Definition*: CC104 [n] MLU [m] a. The item [n] is a decimal number, 1-9, that specifies the type of tape as follows: *n* — *Tape Type* 1 — System Master Tape 2 — Raid Data Generation Inputs (card image tape) 3 — Raid Data 4 — Data Recording 5 — Utility (Scratch) 6-9 — Field Utilities b. MLU stands for "Magnetic Loading Unit." c. The item [ml is either 0 or 1. If the unit address select switch is set to 0, then [ml 0; if set to 1, [ml = 1. *Example*: CC104 5 MLU 1 This command specifies to the computer that a utility (scratch) tape is mounted on MLU 1.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
104	*Special Response*: An Acknowledge response is not output until the tape rewinds. If the (cont) logical tape has been assigned previously to a physical unit, the message TAPE ALREADY IN USE is output on the KPU or command console, and the command is rejected. A CC105 will cancel the current tape assignment.
105	*Name*: CANCEL LOGICAL TAPE ASSIGNMENT *Functional Description*: This command is used to cancel the CC104 tape assignment. *Format Definition*: CC105 [n] The item [n] is a decimal number, 1-9, that specifies the type of tape to be canceled (see CC104). *Example*: CC105 5 This command specifies that the current association of the utility tape is to be canceled. *Special Response*: Tape must be returned to beginning of tape (BOT) by manual rewinding or by performing CC101 [n].
106	*Name*: SET DATA LINK FILTER *Functional Description*: This command allows the operator to set data link filters to control retransmission of SPI, EW/Intel and Simulated tracks. If the command code (CC106) alone is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. The SPI (S), EW/Intel (IN) and Simulated (SM) parameters can be entered in any order. *Format Definition*: CC106 [Pk] S [s] IN [i] SM [sim] a. The item [1k] is the octal number, legal entries are 0-37, of the TADIL-B or ATDL-1 data link that is to have the SPI, EW/Intelligence or Simulated Track Filter changed. b. The item S [s] is the Special Processing Intelligence filter. The variable [s] is either ON or OFF. ON inhibits transmission. Defaults to ON. c. the IN [i] is the Intelligence/Electronic Warfare filter. The variable [i] is either ON or OFF. ON inhibits transmission. Defaults to ON. d. The item SM [sim] is the Simulated Track filter. The variable [sim] is either ON or OFF. ON inhibits transmission. Defaults to ON. e. The function EN sets entered values and ends CC106 processing with an acknowledge message. EN is not required in string mode if SPI, EW/Intel and Simulated filters are entered correctly. Proper string entry terminates CC106 and sets values. Improper entry results in a prompt for that variable and prompt mode takes over. f. The function EX, aborts processing and may be entered at any prompt while the prompt mode is active. *Example*: CC106 3 S OFF IN OFF SM OFF In this example link 3 will have the SPI filter off, the Intel/EW filter off and the Simulated track filter off. Therefor, SPI and Intel/EW data is retransmitted on link 3 and own-site generated simulated tracks are transmitted on this link, while received simulated tracks will be retransmitted on this link. *Special Response*: This command can only be executed in an operational configuration (CC20-22, CC24-26) and is site adaptable. SPI and EW/Intel tracks will always be received and displayed.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
107	*Name*: ENTER OTHER SERVICE DATA *Functional Description*: This command is used to enter own-site TADIL-B address and the TADIL-B track number block limits. *Format Definition*: CC107 [n] [ml a. The item [n] is own-site TADIL-B address and consists of three octal characters in the range 100-175. The input of a TADIL-B address does not affect the own station address that is input using a CC03. The CC03 is for ATDL-1 address; the CC107 is for TADIL-B. b. The item [ml is the TADIL-B assigned track number limits and consists of two entries of four octal characters each, separated by a space, in the range 0200 to 7776. *Example*: CC107 126 0200 0400 This command specifies own-site TADIL-B address 126 and TADIL-B track numbers 0200 thru 0400 inclusive. *Example*: CC107 103 2000 2777 This command specifies own-site TADIL-B address 103 and the maximum 1000 octal numbers assigned from 2000 to 2777. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site-adaptable. Do not attempt with any link (except TADIL-B) active.[4] The system outputs RESTART REQD message. ADP Status and Control Panel RESTART' switch must be pressed and then system performs a CC06 type flush. If a site address outside the range 100-176 or a track number block greater than 1000 is entered, the message OUT OF RANGE is output on the KPU or command console and the command is rejected. If the number of tracks in the system is larger than the block entered, the KPU will print: WARNING: TN BLOCK EXCEEDED.Refer to local SOP for corrective action.
110	*Name*: CHANGE DATA LINK TRANSMISSION ZONE STATUS *Functional Description*: This command is used to change the transmission zone status of data links to ON or OFF. A transmission zone that is ON accepts, transmits and displays selected tracks that fall within the transmission zone as specified in CC111. A transmission zone that is OFF disables the zone for the specified link except as specified in TM 9-1430-652-10-7. A CC111 with a valid transmission zone must precede the CC110. *Format Definition*: CC110 [1k] [ml a. The item [1k] is either an octal number3, 0-37, that identifies the specified link whose transmission zone status is to be changed or the code ALL. If ALL is entered, the status of all links will be changed. (1) If configured as battalion (CC24-CC26): *lk* — *Data Link* 0-37 — The specified TADIL-B or ATDL-1 link ALL — All TADIL-B and ATDL-1 links (2) If configured as brigade (CC20-CC22): *lk* — *Data Link* 0-13 — The specified TADIL-B or ATDL-1 link ALL — All TADIL-B and ATDL-1 links

See footnotes at end of table.

Table 12-1. Command Code Entries
--Continued

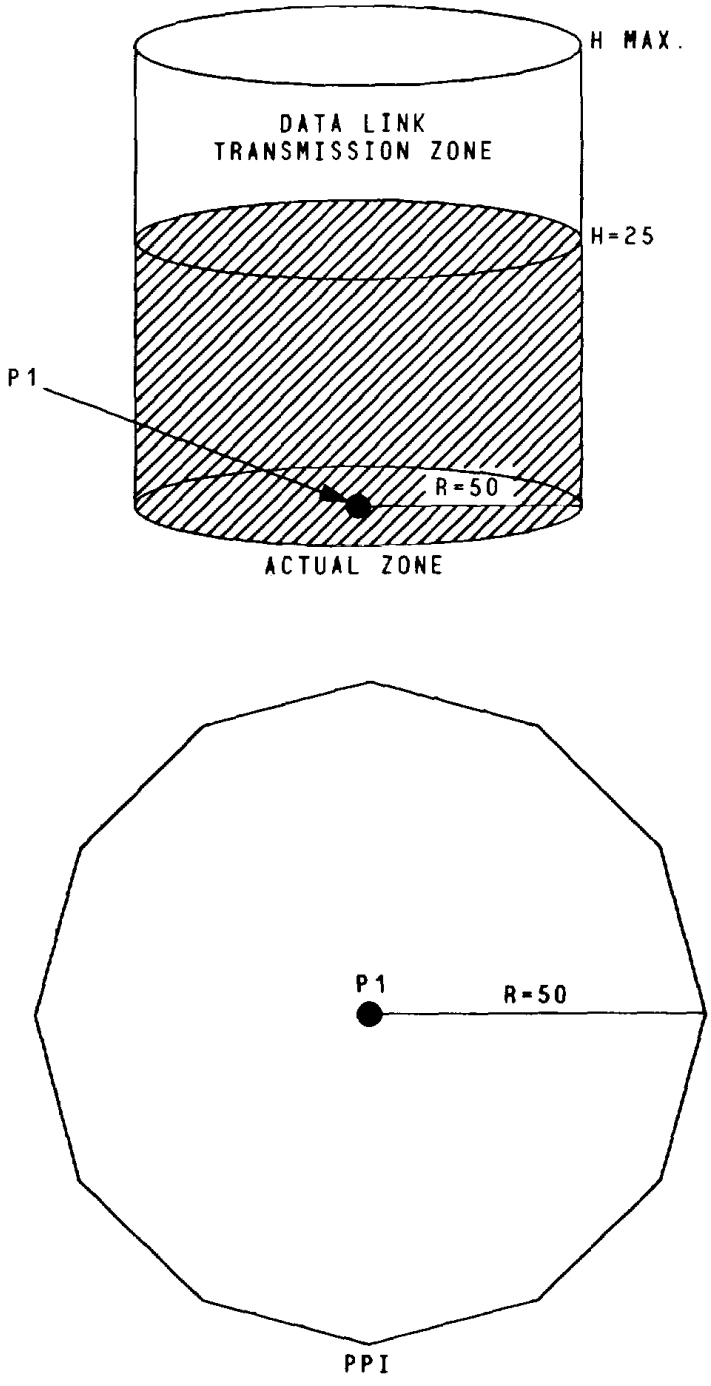
Command Code	Description
110 (cont)	b. The item [m] is either ON or OFF. *Example*: CC110 1 ON This command specifies that the transmission zone status for ATDL-1 link 1 is to be changed to ON. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Active transmission zone for each link is displayed in an ARO display and the transmission zone for a link may be displayed on the PPI. To display Transmission Zone Origin Point field in the ARO and on the PPI requires a valid CC111. Only one link can be displayed at a time. The CC110 defaults to OFF. The [lk] entry is used in CC102 and CC111, and is referred to as [n] in CC100 and CC101. If a valid transmission zone has not been entered, the message INPUT MESSAGE IN ERROR is output on the KPU or command console and the command is rejected.
111	*Name*: SET DATA LINK TRANSMISSION ZONE *Functional Description*: This command is used to define and establish a transmission zone for a specified TADIL-B or ATDL-1 data link. Items are used to specify characteristics of the transmission zone and select categories of tracks which will be received, transmitted and displayed for a data link. Entering an invalid item is equivalent to omitting the item from the command (the entry for that item is ignored). If no origin points are in effect for a given link, no transmission zone will be established, and the command will be rejected upon activation by CC110. Certain types of tracks (i.e., local, special processing (received), emergency, force tell, hostile, pending evaluated unknown, assumed enemy, and true friend) are always passed except for simulated tracks. Because of system response time, the transmission zones are not instantaneous. Depending upon conditions, up to 2 minutes may be required before track that doesn't meet criteria is dropped out of the system. During this time, no remote data will be received so reported status changes on that track will be ignored. If the command code alone is entered (CC111), the operator will be prompted for each transmission zone parameter. However, the operator also has the option to enter the command as stated below, in which case a prompt will be received to complete the position entry. *Format Definition*: CC111 [lk] [items] a. If configured as battalion (CC24-CC26), the item [1k]3'4 is an octal number, 0-37, that identifies the TADIL-B or ATDL-1 link for which the transmission zone is being specified. b. If configured as brigade (CC20-CC22), the item [k]34 is an octal number, 0-13, that identifies the TADIL-B or ATDL-1 link for which the transmission zone is being specified. c. The transmission zone [items] consists of position entries and one or more other entries as follows. The format below lists the type of items to be entered by use of a capital letter and the variables to be entered as small letters in brackets. *Items* — *Entry Format* Point(s) — C [pos] (cylindrical) or R [pos] (rectangular) Height — H [a] ID — ID [id] Speed Limits — LS [Ls] US [us] Display — D [d]

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description
111 (cont)	The entry formats are defined in the following subparagraphs. In each entry, if the trans mission zone is to be modified (for instance, Height), then it is mandatory for the type (H in the case of Height) to be entered followed by a space and the variable ([a] in the case of Height). Brackets are not entered. If an item variable is not to be changed, then the complete entry should be omitted. (1) C [pos] or R [pos1]. The transmission zone has either cylindrical or rectangular volume, each requiring a different format for the transmission zone's origin point(s). (a) C [pos]. A cylindrical volume requires only one point. The item [pos]1 is the center of the circle and may be expressed as geographic (prefaced by G), UTM (prefaced by U), or GEOREF (prefaced by GR) location. **NOTE** The prompt ENTER RADIUS (DM) will be generated following completion of cc111 entries to request the circle's radius (see fig. 12-1.1). The radius of the circle is expressed in data miles (1-511). (b) R [pos1]. A rectangular volume requires two points, P1 and P2. P1 is the southwest corner of the rectangle and P2 is the northeast corner. The items [pos1]] and [pos2)[1] are expressed as geographic (prefaced by G), UTM (prefaced by U), or GEOREF (prefaced by GR) location. **NOTE** The prompt ENTER POS2 will be generated following operator completion of CC111 entries (see fig. 12-2). (2) H [a]. The variable [a] is a positive or negative decimal number, 0-maximum altitude (refer to TM 9-1430-652-10-7), representing a height in thousands of feet. Positive [a] item does not receive, transmit or display tracks from 0 to [a] thousand feet. Negative [a] item does not receive, transmit or display tracks whose altitude is above [a] thousand feet. If the height is not defined in the cc111 command for a transmission zone, the height will default to altitude above zero thousand feet. To delete height, enter H. When track altitude is unknown or estimated, the track will be considered to be in the transmission zone. (3) ID [id]. The ID item is used to select categories of tracks to be received, transmitted and displayed only in the transmission zone. The item is entered as ID [id], where [id] can be any or all of the series of numbers 0, 2, 4, 5, 12 or 13. The meanings of these numbers are given in TM 9-1430-652-10-7. The numbers must be separated by blanks or commas. Previously entered IDs will be deleted. IDs of 1, 3, 8, 9 or 14 will always be received, transmitted or displayed. The ID items can be deleted by entering ID and omitting [id]. (4) LS [Ps] US [us]. The speed item is used to select tracks between a minimum and maximum speed to be received, transmitted and displayed in the transmission zone. The keyword LS is the lower speed limit. The item [Is] is the lower speed limit value (0-999) in tens of data miles per hour. The keyword US is the upper speed limit. The item [us] is the upper speed limit value (5-999) in tens of data miles per hour. The upper limit must be at least 50 data miles (entry of 5) greater than the lower limit. This item defaults to LS=O, US=5 (O to 50 dmph). (5) D [d]. The item D [d] determines if the transmission zone and origin point(s) ARO are to be displayed. The transmission zone display and origin point(s) should be checked by the operator to ensure proper location of the transmission zone. The variable [d] is either ON for displayed or OFF for not displayed. Defaults to OFF.

See footnotes at end of table.



ENTERED COMMAND

CC111 1 C G 42 20 00 N 112 10 00 W H +25
ENTER RADIUS(DM)
50
CC111 1 ID 0.2.4 LS 100 US 150 D ON

MS 558801A

Figure 12-1.1. CC111 Cylindrical Transmission Zone (Sheet I of 2)

NOTE.

Table assumes all tracks are within the area of the transmission zone.

	Track Characteristics	When Displayed	Reason
1.	ALT 022, SP 125, ID 080	Displayed inside and outside transmission zone	Track ID is 8 which is not a selectable ID
2	ALT 040. SP 130, ID 000	Displayed only inside transmission zone	Track meets ALT. ID and speed criteria
3.	ALT 011, SP 120, ID 020	Not displayed	Track does not meet altitude criteria
4.	ALT 040. SP 080. ID 050	Not displayed	Track does not meet ID or speed criteria
5.	ALT 030, SP 120. ID 020	Displayed only inside transmission zone	Track meets ALT. speed and ID criteria
6.	ALT UNK, SP 125. ID 020	Displayed only inside transmission zone	Track with unknown altitude is considered inside altitude transmission area and meets speed and ID criteria
7	ALT 040, SP 130, ID 040	Displayed only inside transmission zone	Track meets ALT. speed and ID criteria

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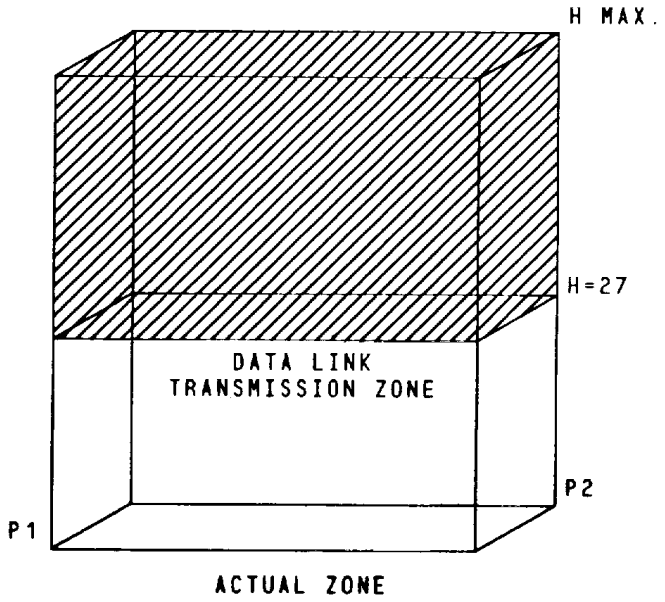
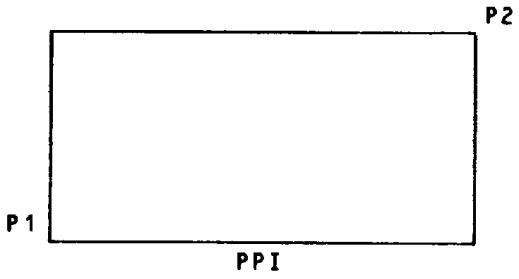
Figure 12-1.1. CC111 Cylindrical Transmission Zone (Sheet 2 of 2)





ENTERED COMMAND

```
CC111 2 R G 42 20 00 N 124 10 00 W H -27
ENTER POS 2
G 42 30 00 N 123 30 00 W
CC111 2 ID 2.4 LS 10 US 150 D ON
```

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Figure 12-2. CC111 Rectangular Transmission Zone
(Sheet 1 of 2)

NOTE:

Table assumes all tracks are within the area of the transmission zone

Track Characteristics	When Displayed	Reason
1. ALT 032, SP 125, ID 080	Displayed inside and outside transmission zone	Track ID is 8 which is not a selectable ID
2. ALT 022, SP 135, ID 020	Displayed only Inside transmission zone	Track meets ALT, ID and speed criteria
3. ALT 030, SP 130. ID 040	Not displayed	Track does not meet altitude criteria
4. ALT 025, SP 180, ID 050	Not displayed	Track does not meet ID or speed criteria
5. ALT 024, SP 130, ID 040	Displayed only inside transmission zone	Track meets ALT, speed and ID criteria
6. ALT UNK. SP 135, ID 040	Displayed only inside transmission zone	Track with unknown altitude is considered inside altitude transmission area and meets speed and ID criteria
7. ALT 024, SP 130, ID 040	Displayed only inside transmission zone	Track meets ALT, speed and ID criteria

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Figure 12-2. CC111 Rectangular Transmission Zone
(Sheet 2 of 2)

Table 12-1. Command Code Entries
Continued

Command Code	Description
111 (cont)	d. Each item is an independent entry. However, each CC111 command entered must have a link lk] entry and one or more item entries. Also, a transmission zone for a link cannot be activated by CC110 [lk] ON unless one of the CC111 command entries for the link specifies the position of transmission zone. e. The following summarizes the rules for display of tracks in the transmission zone. (See fig. 12-1.1 and 12-2 for examples.) (1) Tracks with ID of 1, 3, 8, 9 or 14 will always be displayed inside or outside of the transmission zone. (2) Except as stated in (1) above, tracks with IDs that are not specified in the CC111 ID entry will not be displayed inside or outside of the transmission zone. (3) Tracks with IDs specified in the CC111 ID entry will be displayed only in the transmission zone. (4) Tracks with speed between the lower and upper speed limits specified in the CC111 speed entry will be displayed only in the transmission zone. (5) Tracks with altitude specified in the CC111 altitude entry will be displayed only in the transmission zone. (6) Tracks with unknown or estimated altitude will be displayed in the transmission zone. f. The characteristics of the entered transmission zone and the origin point(s) can be observed in the summary data field and the hooked item data field of the ARO, respectively, by pressing ARO DATA SELECTIONS FILTER DATA. The transmission zone is displayed on the PPI by activating VOLUME and pressing ARO DATA SELECTIONS FILTER DATA. *Example*: CC111 1 C G 42 20 00 N 112 10 00 W H +25 ENTER RADIUS (DM) 50 CC111 1 ID 0, 2, 4 LS 100 US 150 D ON This command specifies the transmission zone for link 1 as follows. Figure 12-1.1 shows the transmission zone for this link and gives examples of tracks that will or will not be displayed. (1) The transmission zone will be cylindrical with a radius of 50 data miles. The center point is located at 42 20 00 N 112 10 00 W (geographic). Selected tracks will be displayed in this area. (2) The altitude of the transmission zone will extend from 25 thousand feet to maximum altitude (refer to TM 9-1430-652-10-7). Selected tracks will be displayed in this area. (3) Tracks with IDs of 0, 2 and 4 have been selected for display. (4) Tracks with speeds between 1000 and 1500 data miles per hour have been selected for display. (5) The transmission zone may be displayed if selected by operator as the one transmission zone for display. *Example*: CC111 2 R G 42 00 00 N 124 10 00 W H --27 ENTER POS2 G 42 30 00 N 123 30 00 W CC111 2 ID 2, 4 LS 10 US 150 D ON This command specifies the transmission zone for link 2 as follows. Figure 12-2 shows the transmission zone for this link and gives examples of tracks that will or will not be displayed.

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description
111 (cont)	(1) The transmission zone will be rectangular with the southwest corner at 42 00 00 N 124 10 00 W (geographic) and the northeast corner at 42 30 00 N 123 30 00 W (geographic). Selected tracks will be displayed in this area. (2) The altitude of the transmission zone will extend from 0 to 27 thousand feet. Selected tracks will be displayed in this area. (3) Tracks with IDs of 2 and 4 have been selected for display. (4) Tracks with speeds between 100 and 1500 data miles per hour have been selected for display. (5) The transmission zone may be displayed if selected by operator as the one transmission zone for display. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. A CC110 [1k] ON is required to activate the transmission zone. Entering CC111 (alone) places the command in the prompt driven mode where each field is prompted for operator entry. The following fields and their associated entries are: *Field* — *Prompt* [lk] — ENTER LINK NUMBER [type] — ENTER VOLUME TYPE (R/C) [pos] — ENTER POSITION 1 [pos2] — ENTER POSITION 2 [rad] — ENTER RADIUS (DM) [a] — ENTER ALT (1000 FT) [id] — ENTER ID S [ls] — ENTER LOWER SPEED [us] — ENTER UPPER SPEED [d] — VOLUME DISPLAY (ON/OFF) **NOTE** When entering data, care must be taken not to exceed the 64-character length allowed by the KPU. Pressing REQ SEND after entering an item and its variable before 64-character length is exceeded will cause the line to be input. The remaining items must be entered by entering CC111 [1k] and items.
112	*Name*: TADIL B COMMAND MESSAGE CRITERIA *Functional Description*: This command is used to control acceptance or rejection of command messages received from a specified TADIL-B site. CC112 commands may be entered to accommodate up to 32 sites. Accept/reject criteria for sites previously entered using CC112 may be changed by this command. If the command code (CC112) alone is entered, the operator will be prompted for each command parameter; however, the operator has the option to enter the command in a string as shown below. CC112 IN [n] [s] [g] [fl

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
112 (cont)	Format Definition: CC112 [function]

The item [function] consists of four different parameter sequences, depending on which function is being initiated.

a. LI. Entry of LI lists currently stored sites and associated command criteria. Command is terminated after all stored site entries are printed. Listing is printed as follows:

ADDRESS	*CMD SRCE*	*FLY PU*	*LINK*
nnn	a	a	nn

NOTE

Under the FLY PU header, F indicates site is a flying PU and blank indicates site is not a flying PU. Under the LINK header, a ? indicates site is not active.

b. IN. Entry of IN will enter new values or modify existing TADIL B site and command criteria for items [n] [s] [g] [f].

(1) The item [n] is a three-digit octal number that identifies the site according to unit type and is preceded by the prompt T-B ADDRESS. Refer to (C) TM 9-1430-652-10-7.

(2) The item [s] consists of two characters that identify the service to which the specified site belongs and is preceded by the prompt SERVICE (AF, MC, NA, SS, AR) where:

s	*Service*
AF	Air Force
MC	Marine Corps
NA	Navy
SS	Security Service
AR	Army

(3) The item [g] is a single character that denotes whether commands originating from the TADIL B site are to be accepted or rejected and is preceded by the prompt CMD SRCE (A or R) where:

g	*Status*
A	Accept Command Messages
R	Reject Command Messages

(4) The item [f] designates a flying PU and is preceded by the prompt FLYING PU? (Y or N) where:

f	*Status*
Y	Site is a flying PU
N	Site is not a flying PU

Entering the null parameter (two REQUEST SENDs) for this prompt indicates site is not a flying PU.

c. DE. Entry of DE will result in deletion of the stored site in the PU/RU table and is preceded by the prompt T-B ADDRESS.

d. EX. Entry of EX causes the CC112 command to be terminated without saving previously entered data. EX may be entered at any prompt while in the prompt mode.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
112 (cont)	*Example*: CC112 IN 71 AF A N This command specifies that command messages from Air Force 71 are to be accepted and the site is not a flying PU. *Example*: CC112 DE 71 This command specifies that TADIL B site address 71 is deleted. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable.
113	*Nonfunctional*
114	*Name*: INITIALIZE DATA LINK *Functional Description*: This command is used to define a site that is linked to the system (tied site). The command must be preceded or followed by the assignment of a link to a modem (CC102). If the link is TADIL B, the command must be followed by a CC107 and CC112. If the link is ATDL-1, the command must be followed by a command activating the link. TADIL B sequence is CC102, CC114, CC107, CC112, CC100. ATDL-1 sequence is CC114, CC102, CC100. ATDL-1 SIM sequence is CC120, CC102, CC100. *Format Definition*: CC114 [1k] [n] [sa] [t] [alt] (TADIL B) CC114 [lk] [a] [x] [g] [alt] (ATDL-1) a. If configured as battalion (CC24-CC26) the item [lk]3'4 is an octal number, 0-37, that identifies the TADIL B or ATDL-1 data link. If [1k] is equal to or greater than 10 octal, HAWK FU is specified. b. If configured as brigade (CC20-CC22), the item [lk]3'4 is an octal number, 0-13, that identifies the TADIL B or ATDL-1 data link. c. For TADIL B data links, the item [n] is a three-digit octal number that defines the unit station address. The item [t] consists of up to three characters that identify the type of unit. Refer to (C) TM 9-1430-652-10-7. d. The item [sa] is the ATDL-1 site address for TADIL B tied site. e. The item [a] is used only for an ATDL-1 data link. The item [a] is the ATDL-1 station address and consists of two characters. The first character ranges A-N, P or Q, the second character ranges A-H (QH is ATDL-1 general address and cannot be used). For communication to take place, station addresses entered in the CC114 must be the same as the tied site station address. If this site is an ATDL-1 FU, the station address "CC" should be used with care because Data Recording and Playback may mistake the FU entry CCXXX for a CC command. This will cause incorrect data reduction. f. The item [x] is used to define the type of site as follows: *(x) Value* — *Description* — *Link no.* 1 or 2 — HAWK FUs — 10-378 P — PATRIOT Site — 1-78 X — Non-PATRIOT Site — 1-78 g. The item [g] is used only for ATDL-1 and consists of a single character A to specify acceptance or R to specify rejection of command messages. h. The optional item [alt] is a decimal number, 0-29,999, used to specify the altitude of the tied site in feet above MSL. The default altitude value is zero.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
114 (cont)	*Example*: CC114 0 71 FA FPU This command specifies that link 0 is to be initialized for FPU 71, with an ATDL-1 site address FA. *Example*: CC114 4 AC X A 1000 This command specifies that link 4 is to be initialized for ATDL-1 site AC. Commands from AC are to be accepted. The site is 1000 feet above MSL. *Example*: CC114 7 PC P R 1000 This command specifies that link 7 is to be initialized for Patriot site PC. Commands from PC are to be rejected. The site altitude is 1000 feet above MSL. *Example*: CC114 10 BC 2 R 1000 This command specifies that link 10 is to be initialized for Hawk fire unit BC which has two firing sections on the link. Commands from BC are to be rejected and the site altitude is 1000 feet above MSL. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. If an error is made in the entry of the CC114 command, the site must be hooked and dropped (TM 9-1430-652-10-3) prior to reentering corrected CC114 command. If a previously entered ATDL-1 station address is used in the parameters, the message DUP NAME ENTERED is output on the KPU or command console and the command is rejected. If an invalid TADIL-B address is entered, the message INPUT MESSAGE IN ERROR is output on the KPU or command console and the command is rejected.
115	*Name*: ENTER TRANSMITTABLE SITE *Functional Description*: This command is used to cause a point to be recognized as a site. (Except for ECM fixes. ECM fixes are entered using SITE INIT-IDENT TASK FUNCTION switch of TRACK DATA selections on display console.) *Format Definition*: CC115 [n] [pos] [alt] a. The item [n] defines the type of site, as follows: *n* — *Type of Site* AF — Air Field MH — Maritime Headquarters AS — Air Support Radar Team DA — Direct Air Support Center FA — Forward Air Control Post b. The item [pos] is the site location.1 c. The item [alt] is a decimal number, 0-29,999, specifying the site altitude above MSL.

See footnotes at end of table.

Table 12-I. Command Code Entries
-Continued

Command Code	Description
115 (cont)	*Example*: CC115 AF G 4218 00 N 120 35 00 W 2000 This command specifies entry of an airfield (transmittable site) whose location is 42 degrees 18 minutes 0 seconds North latitude, 120 degrees 35 minutes 0 seconds West longitude at an elevation of 2000 feet. *Special Response*: This command can only be executed in an operational configuration I (CC20-CC22, CC24-CC26) and is site adaptable.
116	*Name*: SELECT TRACK NUMBER FOR PPI DISPLAY *Functional Description*: This command is used to select the TADIL-B, ATDL-1, or NATO track number for display in line 1 of the PPI alphanumeric block and selected places in the ARO. *Format Definition*: CC116 [x] The item [x] may be TB to denote TADIL-B, Al to denote ATDL-1 or NA to denote NATO. *Example*: CC116 TB This command specifies that, if available, the TADIL-B track number is to be displayed in the alphanumeric block. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26). Track numbers will be displayed according to the following rules: a. NATO track number requested - (1) If available, displayed. (2) If not available, TADIL-B track number is displayed. (3) If TADIL-B track number not available, ATDL-1 track number is displayed. b. TADIL-B track number requested - (1) If available, displayed. (2) If not available, ATDL-1 track number is displayed. c. ATDL-1 track number requested - Since ATDL-1 track number is always available, ATDL-1 track number is displayed. The decision of which track number to display is done on a track-by-track (or site-by-site) basis.
117	*Name*: ENTER STATE OF ALERT/AIR RAID WARNING *Functional Description*: This command is used to enter the state of alert/air raid warning to be assumed by subordinate elements. When the state of alert is changed, the audible alarm on the SDP is activated for 10 seconds and the appropriate state of alert indicator on the DDG is illuminated. *Format Definition*: CC117 [w] The item [w] is a single character that identifies the state of alert/air raid warning to be assumed, as follows:

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code		Description
117 (cont)	*w*	*State of Alert/Air Raid Warning*
	W	White
	Y	Yellow
	R	Red

Example: CC117 Y
This command specifies that the unit is to assume a Yellow state of alert/air raid warning posture.

Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26). Defaults to White.

120 *Name*: IDENTIFY A SIMULATED ARMY SAM UNIT

Functional Description: This command is valid only in battalion configured systems (CC24-CC26). The command is used to enter simulated ATDL-1 Army SAM units.[4]

Format Definition: CC120 [t] [a] [pos] [alt] [Pk]

a. The item [t] defines the type of unit, as follows:

t	*Unit*
HAWK 1	Hawk (1 FU)
HAWK 2	Hawk (2 FUs)

b. The item [a] consists of two characters that denote the Army SAM unit ATDL-1 station address. The first character ranges A-N, P or Q and the second character ranges A-H. (QH is for ATDL-1 general address and cannot be used.) When possible, the address "CC" for any FU should be avoided because Data Recording and Playback functions may mistake the FU entry CCXXX for a CC command.
c. The item [pos] defines the unit location.[1]
d. The item alt is a decimal number, 0-29,999, that defines the FU altitude in feet above MSL.
e. The item [1k] is an octal number, 10-37, that defines the logical ATDL-1 link to be used by the simulated unit.

Example: CC120 HAWK 2 DB G 42 10 10 N 114 20 10 W 500 27
This command specifies a simulated ATDL-1 Hawk with two FUs, battery address DB, located at 42 degrees 10 minutes 10 seconds North latitude, 114 degrees 20 minutes 10 seconds West longitude at an altitude of 500 feet above MSL. ATDL-1 link 27 is designated for this simulated unit.

Special Response: This command can only be executed in an operational configuration (CC24-CC26). If a previously entered ATDL-1 station address is used in the parameters, the message DUP NAME ENTERED is output on the KPU or command console and the command is rejected. Defaults to no Army SAM unit entered. If a CC147 has been previously entered on the HAWK fire unit being initiated, the HAWK fire unit is activated for TEWA PADS and its record is updated with the Subordinate Priority/Missile Count Threshold values for HAWK units which have been stored in the corresponding record in the PADS Table. The fire unit reported over the same link, if present, is activated for TEWA PADS, and its record is updated with the same Subordinate Priority/Missile Count Threshold values as the first. If a CC147 has been previously entered on the own site (MBn only), the HAWK fire unit is activated for TEBA PADS. The second fire unit reported over the same link, if present, is activated for TEBA PADS.

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description
121	*Name*: ENTER DEFENDED POINT *Functional Description*: This command is used to define a defended point. *Format Definition*: CC121 [id] [r] [pri] [pos] [alt], or (if the defended point is a subordinate FU) CC121 [id] [r] [pri] [lk] a. If configured as brigade (CC20-CC22) the item [id] is a single character, A-V, that identifies the defended point. If configured as battalion (CC24-CC26), [id] is a single character, A-J, that identifies a nonfire unit point as a defended point or K-V if a subordinate FU is designated as a defended point. The [id] is used in CC122 to delete the defended point. b. The item [r] is a decimal number, 0-99, that specifies the radius of the defended point in data miles. c. The item [pri] is a decimal number, 1-5, that specifies the priority of the defended point (highest priority is 1). d. The item [pos] defines the defended point location.[1] This is a mandatory entry in a brigade configuration and for a defended point which is not a subordinate FU in a battalion configuration. e. The item [alt] is a decimal number, 0-29,999, that defines the altitude of the defended point, in feet, above MSL. This item is entered only if the defended point is not an FU. f. The item [lk] is an octal number, 10-37, that corresponds to the logical link number of a battalion subordinate FU. It is omitted from all other defended points. *Example*: CC121 F 5 3 G 43 37 56 N 114 19 30 W 1000 This command specifies defended point F, radius of 5 data miles, priority 3, located at 43 degrees 37 minutes 56 seconds North latitude, 114 degrees 19 minutes 30 seconds West longitude at an altitude of 1000 feet above MSL. *Example*: CC121 L 10 2 27 This command specifies defended point L as a battalion subordinate FU, which has a radius of 10 data miles, a priority of 2 and is on link 27. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Defaults to no defended points entered. Automatic weapon assignment does not occur if no defended point is entered.
122	*Name*: DELETE DEFENDED POINT *Functional Description*: This command is used to delete an existing defended point from the system internal tables entered by CC121. *Format Definition*: CC122 [id] The item [id] is a single character, A-V, as specified in CC121, that identifies the defended point to be deleted. *Example*: CC122 F This command specifies that all defended point data for site F is to be deleted from the system internal tables. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26).
123	Name: ENTER OR CHANGE POSITION OF SAFE CORRIDOR POINT

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
123 (cont)	*Functional Description*: This command is used to define the identity and points comprising a safe corridor. A safe corridor has two sides, referred to as A and B. Each side may consist of a minimum of one or a maximum of five segments, defined by an initial entry point and up to five additional points. Initially, the points must be entered in sequence, by pairs. The last pair of points are considered terminal points for the corridor. The points of entry must define successive segments as follows: a. CC123 Point A1 g. CC123 Point A4 b. CC123 Point B1 h. CC123 Point B4 c. CC123 Point A2 I. CC123 Point A5 d. CC123 Point B2 j. CC123 Point B5 e. CC123 Point A3 k. CC123 Point A6 f. CC123 Point B3 l. CC123 Point B6 Each entry is identified by point address, i.e., Al, B2, A5, etc. Therefore, the points may be independently entered or changed. A new entry for a point already defined will delete the existing point data and replace it with data in the new command. Under no circumstances should two or more points (ie, Al, B1, A2, B2, etc.), including terminal points, share the same coordinates. Also, the graphic corridor boundaries (A and B lines) should not cross one another at any point along the entire corridor boundary. For initial entry of a safe corridor, the last command point must be followed by a CC124. CC125 may be used to provide ON and OFF times to activate and deactivate the safe corridor. Entry of additional corridor points, after corridor activation, will require corridor deletion through entry of a CC124 [id] [DL]. *Format Definition*: CC123 [id] [a] [pos] a. The item [id] is one character, A-R, that identifies the safe corridor being defined. This [id] is referred to in CC124 and CC125. b. The item [a] defines the point A1 thru B6. One point is input for each CC123 command. c. The item [pos] defines the location of the point.[1] *Example*: CC123 A B1 G 41 8 45 N 115 38 22 W This command specifies the entry of point B1 for safe corridor Alpha at 41 degrees 8 minutes 45 seconds North latitude, 115 degrees 38 minutes 22 seconds West longitude. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Up to 18 safe corridors may be entered. Defaults to no safe corridor entered.
124	*Name*: COMPLETE OR CHANGE SAFE CORRIDOR PARAMETERS *Functional Description*: This command is used to complete, activate, or change safe corridor parameters. The command specifies the corridor identity, lower and upper altitude limits, lower and upper speed limits, activate and deactivate status, and is also used to delete the safe corridor from system internal storage. The status (ON, OFF) and delete data fields are optional entries. CC123 entries must precede this command and CC125 may be used to further define operational considerations. For a track to be protected in a safe corridor, the track must be within the corridor, and within the altitude and speed parameters given in this command. *Format Definition*: CC124 [id] [kk] [nn] [kk] [nn].. .. .. [status] [delete] a. The item [id] is the corridor identity used in CC123 and consists of any single alpha character, A-R.

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description
124	b. The item [kk] consists of two alpha characters that represent the keyword defining a (cont) parameter, as follows:

kk	*Parameter*
LA	Lower Altitude
UA	Upper Altitude
LS	Lower Speed
US	Upper Speed

c. The item [nn] represents the parameter value and consists of up to three characters that define the value of [kk], as follows:

kk	*Value [nn]*
LA	0-126 in thousands of feet
UA	LA+1-127 in thousands of feet
LS	0-328 in 10s of DMH
US	LS+5-333 in 10s of DMH

NOTE

UA must be at least 1000 feet greater than LA; US must be at least 50 data MPH greater than LS. The corridor cannot be activated without altitude or speed limits. Limits may be individually changed on subsequent CC124 commands. Those not changed default to original entered values.

d. The optional item [status] is either ON or OFF. The ON status activates the corridor; the OFF designation deactivates the corridor. If not designated, default status is OFF. To specify exact time of day for activation/ON and deactivation/OFF, CC125 must be entered.

e. The optional item [delete] consists of two characters, DL, that specify deletion of the corridor from system internal tables. To input [delete], only the CC124, [id] and DL are required.

Example 1: CC124 A LA 21 UA 25 LS 20 US 50 ON
This command specifies activation of safe corridor Alpha with a lower altitude limit of 21,000 feet, upper altitude limit of 25,000 feet, lower speed limit of 200 data miles per hour, and an upper speed limit of 500 data miles per hour. The corridor remains active until a subsequent CC124, specifying Alpha OFF, is entered.

Example 2: CC124 A DL
This command specifies deletion of all data pertaining to safe corridor Alpha from system internal tables.

Example 3: CC124 A LS 30
This command changes the lower speed parameter of safe corridor Alpha to 300 DMH.

Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Only nine corridors may be active at one time. Defaults to no safe corridor entered.

125 *Name*: ACTIVATION AND DEACTIVATION TIMES FOR SAFE CORRIDORS

Functional Description: This command is used to specify the times at which safe corridors will become activated/displayed and deactivated/removed from display.
Format Definition: CC125 [id] Ih_1] [m_1] [s_1] [h_2] [m_2] [s_2]

See footnotes at end of table.

Table 12-1. Command Code Entries
- Continued

Command Code	Description
125 (cont)	a. The item [id] is the corridor identity used in CC123 and consists of any single alpha character, A-R. b. The items [hn] are decimal numbers 0-23 that specify hours. c. The items [mn] are decimal numbers 0-59 that specify minutes. d. The items [sn] are decimal numbers 0-59 that specify seconds. **NOTE** The subscript 1 entries are activation/display times and the subscript 2 entries are deactivation/removal from display times. *Example*: CC125 A 9 15 0 13 5 30 This command specifies that safe corridor A become active and is displayed every day at 9:15 AM and is deactivated and removed from the display at 1:05:30 PM as specified by the system time displayed on the DDG. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Safe corridors activation/deactivation times must be separated by at least 1 second. Only nine corridors may be active at one time. Failure to enter a CC125 for a safe corridor will cause a default to manual ON and OFF control using the CC124.
126	Name: ENTER HEIGHT FINDER *Functional Description*: This command is used to enter and define a height finder radar. *Format Definition*: CC126 [n] [pos] [alt] a. The item [n] is a decimal number, 1 or 2, that identifies the height finder. b. The item [pos] defines the height finder location.1 The item [alt] is a decimal number, 0-29,999, that defines the altitude of the height finder radar in feet above MSL. *Example*: CC126 2 G 43 37 20 N 119 18 32 W 1000 This command specifies the entry of height finder radar 2, located at 43 degrees 37 minutes 20 seconds North latitude, 119 degrees 18 minutes 32 seconds West longitude at an elevation of 1000 feet above MSL. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Defaults to no height finder entered. At present, there is no procedure for deleting a height finder radar.
127	Name: SET SYSTEM FAKER MODE *Functional Description*: This command sets the system faker mode ON for the required period of time, allowing AN/TSQ-73 brigades and battalions to process participating friendly aircraft as faker hostile tracks during tactical exercises. *Format Definition*: CC127 [m] [t] a. The item [m] is either ON or OFF. b. The item [t] is a number, 1-240, that specifies time in minutes that the faker mode will remain ON. *Example 1*: CC127 ON 120 This command specifies that the faker mode will remain ON for 120 minutes. *Example 2*: CC127 OFF

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
127 (cont)	This command specifies that the faker mode is turned OFF. Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26). When the faker mode is ON, TASK FUNCTIONS switches IDENT-IFF TBM OR HOST will generate the appropriate faker category. Initiating an air track with an "E" entered at the AN KEYBOARD will generate a RAMIT with a faker hostile EW ID. Any hostile track received over an ATDL-1 FU data link will be converted and transmitted over ATDL-1 data links as an equivalent faker category ID and transmitted over TADIL-B as an appropriate friend special mission category ID. When turning ON the faker mode, time in minutes must be specified; otherwise, the CC127 is invalid. When turning OFF the faker mode, the time field is not required. Reference Unit SOPs when using this command. Defaults to OFF. NOTE Upon termination of faker exercise, clear all faker tracks and resolve all ID conflicts.
130	*Name*: ENTER TIME OF DAY OR DATE *Functional Description*: This command is used to change the system clock time or date. System time is displayed on the DDG and in the Status Data Field of the ARO. This time is used by the system for various time-oriented processes (SIF code validation, safe corridor activation/deactivation, etc.) All time-dependent functions are adjusted with respect to system clock times and, if applicable, data. Default time zone correction is zero hours; therefore, system time is expressed in Greenwich Mean Time (GMT). The command code (CC130) alone is entered by using the string entry. If automatic SIF code validation (CC151) is active (ON), the CC130 command code will automatically deactivate the CC151 process for the new system date or time change. Then the CC130 command code will automatically reactivate CC 151 processing if a valid IFF table exists for the new system date/time. If the system date/time does not match the date/time of the two IFF tables, the automatic SIF code validation process shall not be reactivated. Before the CC130 acknowledge message (Message 40), the information message <SIF VALIDATION DEACTIVATED> prints out on the KPU. *Format Definition*: CC130 [T] [hi [m] [s] CC130 [D] [mo] [d] [y] CC130 [LI] a. The item [T] is the header for time of day. b. The item [h] is a decimal number, 0-23, that specifies hours. c. The item [ml is a decimal number, 0-59, that specifies minutes. d. The item [is] is a decimal number, 0-59, that specifies seconds. e. The item [D] is the header for date. f. The item [mo] is a decimal number, 1-12, that specifies month. g. The item [d] is a decimal number, 1-31, that specifies day. h. The item [y] is a decimal number, 0-99, that specifies year. I. The item [LI] specifies that the current system date will be printed out. The printout shall be in the following format: mo/d/y. *Example*: CC130 T 18 45 20 This command specifies that the system clock is to be changed to time 18 hours, 45 minutes, and 20 seconds. *Example*: CC130 D 3 9 90 This command specifies that the system date is to be changed to date March 9, 1990. *Special Response*: System clock start during bootstrap load. If system time is not expressed in GMT, a delta time must be specified in the CC01 command. When the newly entered system time falls within a SIF code time period with no code(s) established for the mode(s),

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
130 (cont)	the automatic SIF code validation process will not be reactivated and an information message (< SIF VALIDATION DEACTIVATED >) printed, followed by the CC130 acknowledge message (Message 40) on the KPU (or console). Conversely, if the system time matches the SIF code period with code(s) established for the mode(s), the automatic SIF code validation process for that table shall be reactivated followed by the CC 130 acknowledge message (Message 40) output to the KPU (or console). When a date-oriented routine (e.g., SIF code validation [CC151] or CC130 LI) is activated and no date has been entered, the error message <77 130 73 NO CURRENT DATE> is printed on the KPU or command console. When an invalid header designation (not T, D, nor LI) is entered, the following error message is printed: < 77 130 60 INVALID ENTRY TYPE>. When an invalid date/time subparameter is entered, the following error message is printed: <77 130 35 INPUT MESSAGE IN ERROR>.
131	*Name*: SET OPEN/NOISY ALERT THRESHOLD *Functional Description*: This command is used to specify the threshold value for determination of data link open/noisy status. If the number of messages with an error equals or exceeds the specified value on the last 32 messages received, the link is considered to be in an open/noisy status. An alert is generated to reflect this status. *Format Definition*: CC 131 [llk] [n] a. The item [1k] is an octal number, 0-37, that specifies the data link. b. The item in] is a decimal number, 0-32, that specifies the threshold value for open/noisy status determination. *Example*: CC131 5 20 This command specifies a threshold value of 20 for determining the open/noisy status for link 5. If 20 or more of the last 32 messages received have an error, the link is in open/noisy status. The data on the link is considered unreliable. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Default threshold value is 16. A CC100 command may be used to reset an active link with an open/noisy status condition.
132	*Name*: SET PARITY ERROR ALERT THRESHOLD *Functional Description*: This command is used to specify the threshold value for determination of link parity error status. If the number of messages with an invalid checksum or parity equals or exceeds the specified value on the last 512 messages received, the link is considered to be in a parity error status. An alert is generated to reflect this status. **NOTE** The maximum useful value of the threshold is 255 as this is the largest parity error count that can be maintained by the system. *Format Definition*: C132 [1k] [n] a. The item [lk] is an octal number, 0-37, that specifies the data link. b. The item [n] is a decimal number, 0-255, that specifies the threshold value for parity error status determination. *Example*: CC132 10 128 This command specifies a threshold value of 128 for parity error status determination for link 10. If 128 or more of the last 512 messages received have an invalid checksum or parity, the link is in parity error status. The data on the link is considered unreliable. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Default threshold value is 2. A CC100 command may be used to reset an active link with a parity error status condition.
133	Nonfunctional

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
134	*Name*: SET MANUAL TRACK UPDATE TIME *Functional Description*. This command is used to specify manual track update time. If a RAMIT track is not updated within the specified time, the tracking status code will change to "L" in row 2, column 5 of the track AN block. If a RAMIT track is not updated within twice the specified time, the track is dropped. *Format Definition*: C134 [t] The item [t] is a decimal number, 30-600, that specifies (in seconds) half the time interval during which manual track update must occur. *Example*: CC134 500 This command specifies a time interval of 1000 seconds for manual track update. The tracking status code changes if 500 seconds have passed since a RAMIT track was updated. If the track is not updated for an additional 500 seconds, the track is dropped. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Defaults to 300 seconds.
135	*Name*: AUTOMATIC TRACK INITIATE CONTROL PARAMETERS *Functional Description*: This command is valid only in battalion configured systems (CC24-CC26). The command is used to specify the radar type in use, the maximum number of automatically initiated tracks (in the tentative category) that can be present in the system at a given time, the minimum acquire range limit, and the minimum and maximum speed limits for automatic track initiation. *Format Definition*: CC135 [kk] [nn] [kk] [nn] The item [kk] consists of two characters that represent a keyword defining a function, and the item [nn] consists of two thru four characters that identify the parameter value associated with the keyword [kk] as shown below. The command is entered by entering the two-character keyword followed by a space and a value [nn]. Brackets are not entered. Each field may be individually entered. The values entered are determined by local track conditions for the purpose of reducing false target initiation.

Keyword [kk]	*Value [nn]*	*Description/Comment*
RT		Radar Type
	35	AN/MPQ-35
	50	AN/MPQ-50
	HP	NIKE HIPAR
	43	AN/TPS-43
	32	AN/TPS-32
	00	Other pulsed radar
TL	0-64 Tracks	Auto Initiate Track Limit No more than the number of tracks given by TL can be auto initiated at one time. However, once a track is initiated automatically and is being displayed, the track is no longer considered in the TL count. Only tracks detected by the radar interface unit, but not yet displayed, are counted in TL.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description		
135 (cont)	*Keyword [kk]*	*Value [nn]*	*Description/Comment*
	AR	0-32 Data Miles	Minimum Auto Initiate Range No tracks within AR data miles will be auto-initiated. The purpose is to minimize tracks initiated from radar ground clutter close to the radar site.
	LV	0-3346 Data Miles per Hour	Lower Auto Initiate Speed/Limit The UV field must follow the LV field and these two fields must not be separated.
	UV	LV-3346 Data Miles per Hour	Upper Auto Initiate Speed Limit The [nn] value associated with UV cannot be less than the [nn] value associated with LV. Unless track speed is between LV and UV, not automatic track will be initiated.

Example: CC135 RT 50 TL 43 AR 17 LV 50 UV 200
This command specifies own radar as AN/MPQ-50. The maximum number of automatically initiated tracks that can be in the system at any one time is 43. The minimum auto initiate maneuver range limit is 17 data miles. The lower auto initiate speed limit is 50 days miles per hour and the upper auto initiate speed limit is 200 data miles per hour.

Special Response: This command can only be executed in an operational configuration (CC24-CC26) and is site adaptable. Defaults to RT = 00, TL = 64, AR = 10, LV = 100, UV = 1000

NOTE

Each field may be individually entered; however, the UV field must follow the LV field and these two fields must not be separated. The values entered are determined by local track conditions for the purpose of reducing false target initiation.

136 *Name*: ENTER SYSTEM PARAMETERS

Functional Description: This command is used to enter specified system parameters, allow periodic correlation checks and origination of correlation message to be enabled.

Format Definition: CC136 FU [f] ST [s] JS [j] LP [l] RP [r] CR [c]

The items FU, ST, JS, LP and RP are two-character keywords identifying the maximum number of fire units, sites, jam strobes, local tracks and remote tracks, respectively, to be entered into the system. The items [f], [s], [j], [1] and [r] are parameter values associated with the keywords as shown below. All items are optional except that, if a keyword is entered, a parameter value for the keyword must follow. The command is entered by entering a two-character keyword followed by a space and a data value. Brackets are not entered.

See footnotes at end of table.

Table 12-1. Command Code Entries -Continued

Command Code	Description		
136 (cont)	*Keyword and Item*	*Value*	*Description/Comment*
	FU [f]	1-48 (bn) 1-64 (Bde)	Fire Unit Maximum number of FUs that may be entered into the system.
	ST [s]	1-40	Sites Maximum number of sites for BN or Bde that may be entered into the system. Sites include transmittable sites (CC115), height finder radars (CC126), battalions, brigades, and TADIL B sources, and nontransmittable sites such as depots, fuel dumps, etc.
	JS [j]	0-20	Jam Strobes The maximum number of non-ESM, non-LASHE, Non-PTL, nonengagable jam strobes for Bn and Bde that may be held in the system. Jam strobes that are engagable are not included in this total.
	LP [l]	1-100	Local Track Capacity Percentage The system has a maximum track capacity for any configuration. The value of "1" gives the percentage of the total capacity that can be reserved for local tracks, either manually or auto-initiated.
	RP [r]	1-100	Remote Track Capacity Percentage The value of "r" is a percentage of the track capacity that can be reserved for remote tracks.
	CR [c]	ON/OFF	Correlation ON/OFF. ON allows periodic correlation checks and enables origination of Correlation Messages.

Example: CC136 FU 40 ST 20 JS 8 LP 70 RP 70 CR OFF
This command specifies system capacity of 40 fire units, 20 sites, 8 jam strobes, 70 percent local tracks, and 70 percent remote tracks. Automatic correlation is deactivated.
Enter CC136 CR OFF if KPU prints CPU OVERLOAD.

NOTE

The percent of local tracks plus the percent of remote given in LP and RP can add to more than 100 percent. The actual track capacity is always 100 percent, but tracks are initiated in a first come, first served basis until either there is no room for more tracks, or the percent of tracks allowed (either local or remote) has been met. The effect of an LP or RP limit of less than 100 percent is to reserve a certain percentage for the other type of tracks. For instance, in the example, since 70 percent of all tracks may be local, 30 percent of the capacity is reserved for remote tracks. In a similar manner, 20 percent of the track capacity is reserved for local tracks.

Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Defaults to FU = 32, sites = 24, jam strobes = 8, local tracks = 100 percent, remote tracks = 100 percent, correlation = OFF.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
137	*Name*: ENTER HAWK ASSIGNMENT ZONE (HAZ) RADIUS *Functional Description*: This command designates a radius within which a track is automatically assigned to Hawk fire units. This is a site-adaptable command. *Format Definition*: CC 137 [a] [r] a. The item [a] is an ATDL-1 fire unit number and consists of two alpha and three numeric characters. The first alpha character ranges A-N, P or Q; the second alpha character ranges A-H (QH is ATDL-1 general address and cannot be used). The numeric characters range 0-7. b. The item [r] is the HAZ radius. Range 0-20. *Example*: CC137 BA001 15 This command specifies that the Hawk fire unit BA001, provided it is eligible, will be recommended for assignment to any track within 15 miles. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. Radius defaults to 0.
140-142	*Nonfunctional*
143	*Name*: ACTIVATE/DEACTIVATE MASTER BATTALION *Functional Description*: This command is used to enable a battalion to combine the brigade and battalion functions in the event the brigade is out of action. The command is valid only in battalion configured systems (CC24-CC26). *Format Definition*: CC143 [a] The item [a] is defined as follows: M - This entry activates the master battalion. B - This entry deactivates the master battalion function so that normal battalion operations may resume. *Example*: CC143 M This command activates master battalion functions. *Special Response*: When a brigade system goes out of action, one or all battalions may activate the master battalion function and restructure the links accordingly. This command defaults to normal battalion operations. When changing from battalion to master battalion configuration (CC143 B to CC143 M), operator must enter a CC147 command for own site and all tied ATDL-1 sites to activate them for TEBA PADS processing. Reentry of CC147 for local subordinate fire units is not required unless a parameter is to be changed. When changing from master battalion to battalion configurations, PADS entries for all units active for TEBA PADS are deleted. TEBA PADS active local subordinate fire units remain TEWA PADS active. (This data must be reentered if the system is reconfigured as a master battalion, CC143 M).
144	*Name*: ENTER AUTOMATIC WEAPONS ASSIGNMENT PARAMETERS *Functional Description*: This command is used to enter items that are critical to automatic weapons/battalion assignment. If the command code CC144 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
144 (cont)	*Format Definition*: CC144 [function] The item [function] consists of five different parameter sequences, depending on which function is being initiated. a. LI. Entry of LI lists the status of automatic weapons/battalion assignment parameters, or default value if a previous CC144 has not been entered. Command is terminated after listing is printed. b. IN. Entry of IN will enter new values or modify existing automatic weapons/battalion assignment parameters. c. DFT. Entry of DFT sets all existing automatic weapons/battalion assignment parameters to their default values. d. EX. Entry of EX causes the CC144 command to be terminated without saving previously entered data. EX may be entered at any prompt while in the prompt mode. e. EN. Entry of EN following a valid entry will store what has been entered and terminate the CC144 command. *Example*: CC144 DFT This command changes the automatic weapons/battalion assignment parameters to their default values. CC144 IN 120 45 10 This command specifies that the new WAS processing azimuth is to be 120 degrees, the HAWK fire unit crew response time is 45 seconds, and the PATRIOT fire unit crew response time is 10 seconds. *Special Responses*. This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. An entry of EX in any field will abort the entire CC144 command line entry up to that point. Defaults to azimuth = 000, HAWK response time = 30 seconds, and PATRIOT response time = 10 seconds. Entering CC144 (alone) places the command in the prompt-driven mode where each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. In the string mode, the operator may enter REQ SEND at any point in the string to store the string contents; any remaining parameters will be prompted. Entering CC144 (alone) results in the following prompt: WAS PARM(IN,DFT,LI) This prompt represents the various possible inputs at this point. An operator entry of LI results in a listing of all automatic weapons/battalion assignment parameters and termination of the command. An operator entry of DFT results in changing of all automatic weapons/battalion assignment parameters to their default values and termination of the command. An operator entry of IN will result in the following prompt output: WAS AZIMUTH(DEG) This prompt requests a decimal number representing azimuth in degrees. This is the azimuth at which automatic weapon assignment processing is to begin for all tracks. Any azimuth from 000-359 (except for 037-054 and 307-324) in 1I increments is valid. **NOTE** It is best to choose the azimuth(s) to start processing at what is considered a non-busy section of the display. This will give the computer the time it requires to calculate automatic weapon assignments.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
144 (cont)	If the entry is valid, the new azimuth is temporarily stored and the next prompt displayed. If the operator enters a null parameter, the existing value will be retained and the next prompt displayed. The next prompt is: HAWK CRT(SEC) This prompt requests a decimal number in the range 0-100 (increments of 1) representing the HAWK Crew Response Time in seconds. The actions and responses are the same as above. The next prompt is: PAT CRT(SEC) This prompt requests a decimal number in the range 0-100 (increments of 1) representing the PATRIOT Crew Response Time in seconds. Entry of a valid parameter places all values into the data base and terminates the command. The null parameter is not a valid response for this prompt. If retention of the existing value for this parameter is desired, enter EN. *Listing output format*: _____DDDDD_____ WAS AZIMUTH ..... nnn DEC HAWK CRT.....nnn SEC PAT CRT.....nnn SEC _____DDDDD_____ DDDDD = Secret Page Header
145	*Name*: ENTER PADS PARAMETERS *Functional Description*: This command is used to enter items that are critical to automatic weapons assignment. If CC145 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. *Format Definition*: CC 145 [function] The item [function] consists of five different parameter sequences, depending on which function is being initiated. a. LI. Entry of LI lists the status of PADS parameters, or default values if a previous CC145 has not been entered. Command is terminated after listing is printed. b. IN. Entry of IN will enter new values or modify existing PADS parameters. c. DFT. Entry of DFT sets all existing PADS parameters to their default values. d. EX. Entry of EX causes the CC 145 command to be terminated without saving previously entered data. EX may be entered at any prompt while in the prompt mode. e. EN. Entry of EN following a valid entry will store what has been entered and terminate the CC145 command. *Example*: CC145 IN 0 20 10 1 15 40 40 This command specifies a Keep Out Boundary (KOB) of 0, a HAWK intercept for approaching targets of 20 dm, a HAWK intercept range for receding targets of 10 dm, the lowest threat priority to recommend engage ripple fire is 1, the maximum HAWK engagement altitude is 15,000 feet, the PATRIOT intercept range (approach and recede) is 40 dm, and the maximum PATRIOT engagement altitude is 40,000 feet.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
145	*Special Response*: This command can only be executed in an operational configuration (cont) (CC20-CC22, CC24-CC26) and is site adaptable. An entry of EX in any field will abort the entire CC145 command line entry up to that point. Defaults to Keep Out Boundary= 2.5, Maximum Threat Priority to allow HAWK engage Ripple = 1, Upper HAWK Approach Intercept Range= 16 dm, Upper HAWK Recede Intercept Range= 8 dm, Upper HAWK Intercept Altitude = 45,000 feet, Upper PATRIOT Intercept Range = 55 dm, and Upper PATRIOT Intercept Altitude = 80,000 feet. True values for the last five items are classified. Entering CC145 (alone) places the command in the prompt-driven mode and each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. In the string mode, the operator may enter REQ SEND at any point in the string to store the string contents; any remaining parameters will be prompted. Entering CC145 (alone) results in the following prompt: PADS PARM(IN,DFT,LI) This prompt represents the various possible inputs at this point. An operator entry of LI results in a listing of all PADS parameters and termination of the command. An operator entry of DFT results in changing all existing PADS parameters to their default values and termination of the command. An operator entry of IN will result in the following prompt: KOB(DM) This prompt requests a decimal number in the range 0-50 (increments of 1) representing the Keep Out Boundary in data miles (dm). If the entry is valid, the new KOB is temporarily stored and the next prompt displayed. If the operator enters a null parameter, the existing value will be retained and the next prompt displayed. The next prompt is: HAWK INTCP RNG(DM) This prompt requests a decimal number in the range 5-25 (increments of 1) representing the HAWK Approach Intercept Range in dm. The actions and responses are the same as above. The next prompts and their respective valid entries are as follows: *Prompt* *Valid Entries* HAWK RECD INTCP RNG(DM) *0-25 in 1 dm increments HAWK RIPPLE PRIORITY(N) 1-6 in increments of 1 HAWK ALT(K FT) *0-99 in 1000 ft increments PAT INTCP RNG(DM) *5-99 in 1 dm increments PAT ALT(K FT) *0-99 in 1000 ft increments *For absolute maximum range, refer to FM 44-1A. The actions and responses are the same as for the HAWK INTCP RNG(DM) prompt except that entry of a valid parameter for the last (PAT ALT(K FT)) prompt places all values into the data base and terminates the command. The null parameter is not a valid response for the final prompt. If retention of the existing value for this parameter is desired, enter EN. *Listing output format*: _____DDDDD_____ KOB .....nn DM HAWK INTCP RNG(DM) .....nn DM HAWK RECD INTCP RNG(DM).....nn DM HAWK RIPPLE PRIORITY(N) .....n HAWK ALT(K FT) .....nn DM PAT INTCP RNG(DM).....nn DM PAT ALT(K FT) nn DM _____DDDDD_____ DDDDD = Secret Page Header

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
146	*Name*: ENTER DEFENSE PRIORITY/MISSILE COUNT THRESHOLDS

Functional Description: This command is used to enter defense missile count/threat priority thresholds, by weapon type, necessary for automatic assignment. For the battalion configuration these are battalion thresholds. A track is not automatically assigned if the track threat priority is less than the thresholds entered unless a FU is threatened. If the command code CC146 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below.

Format Definition: CC 146 [function]

The item [function] consists of five different parameter sequences, depending on which function is being initiated.

a. LI. Entry of LI lists the status of the defense parameters, or default values if no previous CC146 has been entered. Command is terminated after all stored site entries are printed.
b. IN. Entry of IN will enter new values or modify existing defense parameters.
c. DFT. Entry of DFT sets all existing automatic defense parameters to their default values.
d. EX. Entry of EX causes the CC146 command to be terminated without saving previously entered data. EX may be entered at any prompt while in the prompt mode.
e. EN. Entry of EN following a valid entry will store what has been entered and terminate the CC146 command.

NOTE

For each weapon type, the second value (missile count threshold, threat priority) must be greater than or equal to the corresponding first value (missile count threshold, threat priority) or the error message, SECOND VALUE MUST BE GREATER THAN OR EQUAL TO ITS CORRESPONDING FIRST will be printed and the command will be aborted.

Example: CC146 IN 50 2 250 4 75 3 375 5
This command specifies that the first HAWK missile threshold will be 50, the first HAWK threat priority will be 2, the second HAWK missile threshold will be 250, and the second HAWK threat priority will be 4, the first PATRIOT missile threshold will be 75, the first PATRIOT threat priority will be 3, the second PATRIOT threshold will be 375, and the second PATRIOT threat priority will be 5. If the total HAWK hot missile count reported by PADS units is greater than 250, hostile tracks with a threat priority of 1-6 will be considered for engagement by HAWK units. If the total HAWK hot missile count reported by PADS units is less than 250, but greater than 50, hostile tracks with a threat priority of 1-4 will be considered for engagement by HAWK units. If the total HAWK missile count reported by PADS units is less than 50, only hostile tracks with a threat priority of 1-2 will be considered for engagement by HAWK units. If the total PATRIOT missile count reported by PADS units is greater than 375, hostile tracks with a threat priority of 1-6 will be considered for engagement by PATRIOT units. If the total PATRIOT hot missile count reported by PADS units is less than 375, but greater than 75, hostile tracks with a threat priority of 1-5 will be considered for engagement by PATRIOT units. If the total PATRIOT missile count reported by PADS units is less than 75, only hostile tracks with a threat priority of 1-3 will be considered for engagement by PATRIOT units.

This example is illustrated in figure 12-2.1.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description

146
(cont)

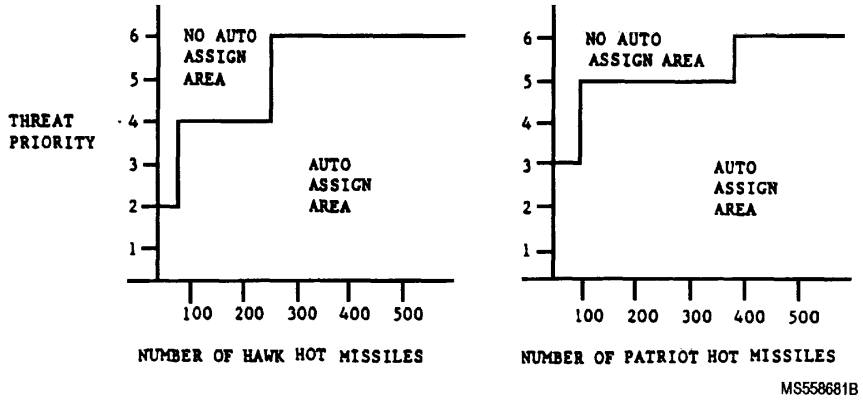

Figure 12-2.1. CC146 Defense Priority and Missile Count Thresholds

Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. An entry of EX in any field will abort the entire CC146 command line entry up to that point. Defaults to 1st HAWK missile count threshold=O, 1st HAWK threat priority threshold=6, 2d HAWK missile count threshold =O, 2d HAWK threat priority threshold=6, 1st PATRIOT missile count threshold =O, 1st PATRIOT threat priority threshold= 6, 2d PATRIOT missile count threshold = 0, 2d PATRIOT threat priority threshold=6. Entering CC 146 (alone) places the command in the prompt-driven mode and each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. In the string mode, operator may enter REQ SEND at any point in the string to store the string contents; any remaining parameters will be prompted. Entering CC 146 (alone) results in the following prompt:
DEF PARM(IN,DFT,LI)

This prompt represents the various possible inputs at this point. An operator entry of LI results in a listing of the status of the defense parameters and termination of the command. An operator entry of DFT results in the changing of all existing defense parameters to their default values and termination of the command. An operator entry of IN will result in the following prompt:
1ST HAWK MSL THRSHLD(NNN)

This prompt requests a decimal number in the range 0-511 (increments of 1) representing the First HAWK Missile Count Threshold. If the entry is valid, the new First HAWK Missile Threshold is temporarily stored and the next prompt displayed. If the operator enters a null parameter, the existing value will be retained and the next prompt displayed. The next prompts and their respective valid entries are as follows:

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description	
146 (cont)	Prompt	Valid Entries
	1ST HAWK PRIORITY (N)	1-6 in increments of 1
	2ND HAWK MSL THRSHLD(NNN)	0-511 in increments of 1
	2ND HAWK PRIORITY(N)	1-6 in increments of 1
	1ST PAT MSL THRSHLD(NNN)	0-511 in increments of 1
	1ST PAT PRIORITY(N)	1-6 in increments of 1
	2ND PAT MSL THRSHLD(NNN)	0-511 in increments of 1
	2ND PAT PRIORITY(N)	1-6 in increments of 1

The actions and responses are the same as for the 1ST HAWK MSL THRSHLD(NNN) prompt except that entry of a valid parameter for the last (2ND PAT PRIORITY (N)) prompt places all values into the data base and terminates the command. The null parameter is not a valid response for the final prompt. If retention of the existing value for this parameter is desired, enter EN.

Listing output format:

DDDDD
1ST HAWK MSL THRSHLD(NNN)..... nnn
1ST HAWK PRIORITY(N) ..... n
2ND HAWK MSL THRSHLD(NNN) ..... nnn
2ND HAWK PRIORITY(N) ..... n
1ST PATRIOT MSL THRSHLD(NNN)..... nnn
1ST PATRIOT PRIORITY(N) ..... n
2ND PATRIOT MSL THRSHLD(NNN) ..... nnn
2ND PATRIOT PRIORITY(N)..... n
DDDDD
DDDDD = Secret Page Header

147 *Name*: ENTER SUBORDINATE PRIORITY/MISSILE COUNT THRESHOLDS

Functional Description: This command is used to activate a subordinate unit for PADS and enter the subordinate unit's missile count/threat priority thresholds, by weapon type, necessary for automatic assignment. It is also used to delete units from consideration, or change the unit parameters to default values. For TEBA processing, subordinate remote fire units assume the parameters established for their parent battalion (the tied site belonging to the link over which the fire unit is being reported). A master battalion must enter its battalion parameters to have its own fire units evaluated by local TEBA processing. A track is not automatically assigned to a subordinate fire unit if the threat priority is less than the thresholds entered unless a FU is threatened. If CC147 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below.

Format Definition: CC 147 [function]

The item [function] consists of six different parameter sequences, depending on which function is being initiated.

a. LI. Entry of LI lists the current status of the subordinate priority/missile count threshold values of all units currently active for PADS. If a previous CC147 has not been entered, output will be blank.
b. IN. Entry of IN enters a subordinate unit or enters/changes existing parameters.
c. DFT. Entry of DFT enters a subordinate unit with default parameters or changes existing parameters for a subordinate unit to their default values.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
147	d. DL. Entry of DL deletes a subordinate unit from PADS activation. The site address [sa] (cont) of the subordinate unit or ALL must be specified. If ALL is specified, the active PADS of subordinate units are deleted. e. EX. Entry of EX causes the CC 147 command to be terminated without saving previously entered data. EX may be entered at any prompt while in the prompt mode. f. EN. Entry of EN following a valid entry will store what has been entered and terminate the CC147 command. **NOTE** When entering data, care must be taken not to exceed the 64-character string length allowed by the KPU. Press REQ SEND after entering an item and its variable, before the 64-character length is exceeded, will cause the line to be input. The next appropriate prompt will then be displayed. The operator has the option at that point to continue entering the command in string or prompt mode. **NOTE** For each weapon type, the second value (missile count threshold, threat priority) must be greater than or equal to the corresponding first value (missile count threshold, threat priority) or the error message SECOND VALUE MUST BE GREATER THAN OR EQUAL TO ITS CORRESPONDING FIRST will be printed and the command will be aborted. *Example*: CC147 DFT ALL This command specifies that the threat priority/missile count thresholds for identified PADS units be changed to their default values. CC147 IN AD 20 2 40 4 30 3 60 5 This command specifies that, for units reported over the data link to unit AD, the first HAWK missile threshold will be 20, the first HAWK threat priority will be 2, the second HAWK missile threshold will be 40, the second HAWK threat priority will be 4, the first PATRIOT missile threshold will be 30, the first PATRIOT threat priority will be 3, the second PATRIOT threshold will be 60, and the second PATRIOT threat priority will be 5. If the total HAWK hot missile count reported over the data link is greater than 40, hostile tracks with a threat priority of 1-6 will be considered for engagement by HAWK units reported on the link. If the total' HAWK hot missile count reported by PADS units is less than 40 but greater than 20, hostile tracks with a threat priority of 1-4 will be considered for engagement by HAWK units reported on the link. If the total HAWK hot missile count reported by PADS units on the link is less than 20, only hostile tracks with a threat priority of 1-2 will be considered for engagement by HAWK units reported on the link. If the total PATRIOT hot missile count reported by the PADS units on the link to AD is greater than 60, hostile tracks with a threat priority of 1-6 will be considered for engagement by PATRIOT units reported on the link. If the total PATRIOT hot missile count reported by PADS units on the link is less than 60, but greater than 30, hostile tracks with a threat priority of 1-5 will be considered for engagement by PATRIOT units reported on the link. If the total PATRIOT missile count reported by PADS units on the link is less than 30, only hostile tracks with a threat priority of 1-3 will be considered for engagement by PATRIOT units reported on the link to AD. This example is illustrated in figure 12-2.2.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
147 (cont)	

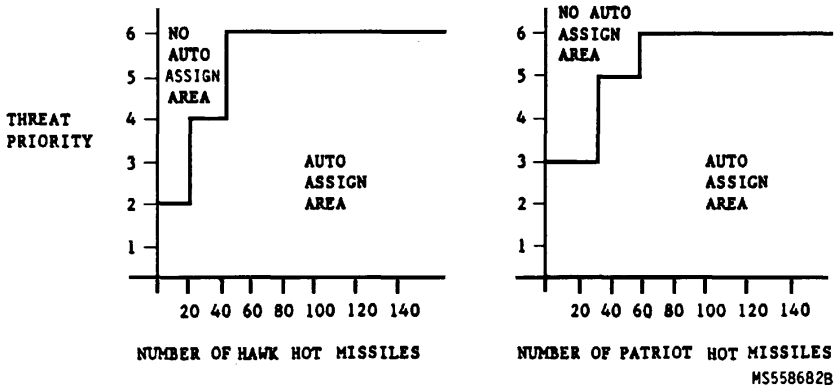

Figure 12-2.2. CC147 Individual Fire Unit Priority and Missile Count Thresholds

NOTE

PATRIOT missile count threshold and priority threshold values are unnecessary for local subordinate fire units and if entered are ignored.

Special Response: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. An entry of EX in any field will abort the entire CC147 command line entry up to that point. Defaults to 1st HAWK missile count threshold=O, 1st HAWK threat priority threshold=6, 2d HAWK missile count threshhold=O, 2d HAWK threat priority threshold=6, 1st PATRIOT missile count threshold=O, 1st PATRIOT threat priority threshold=6, 2d PATRIOT missile count threshold = 0, 2d PATRIOT threat priority threshold = 6. Entering CC147 (alone) places the command in the prompt-driven mode and each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. In the string mode, the operator may enter REQ SEND at any point in the string to store the string contents; any remaining parameters will be prompted. Entering CC147 (alone) results in a prompt output as follows:
DEF PARM(IN,DFT,DL,LI)

This prompt represents the various possible inputs at this point.

a. An operator entry of LI results in a listing of the status of the defense parameters and termination of the command.
b. An operator entry of DFT results in the following prompt:
UNIT ADDRESS(AA)

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
147 (cont)	This prompt requests a two-character alpha input (a1a2 where a, - A-Q, except 0, and $_{a2}$ = A-H) representing the unit ATDL-1 address (QH is invalid). If a non-ATDL-1 address is entered, the error message "TADIL-B ILLEGAL FOR PADS-aa" is printed. If the entry is valid, the new address is temporarily stored and the same prompt displayed for the next unit. Twenty-five ATDL-1 addresses may be entered (invalid addresses are ignored). An attempt to enter a valid address when the PADS table is full will result in the error message, PADS TABLE FULL UNIT ADDRESS NOT ACCEPTED-aa. If the operator enters ALL, the system will change the parameters of all previously entered active PADS units to the default values and terminate the command. (The ALL option does not activate any unit for PADS that is not already active.) In the brigade configuration (CC20-CC22), entry of the unit address alphas for an ATDL-1 tied site will activate all FUs reported over that link for TEBA PADS. Entries for own site, non-tied sites, or FU alphas are ignored. In battalion configuration (CC24-CC26), only entry of alphas associated with local subordinate FUs are allowed. Entered FUs are activated for TEWA PADS (if two FUs are present for the address, as in HAWK-2 FUs, both will be activated). Entries for any other site or non-local subordinate FUs are ignored. In Master Battalion configuration (CC143 M), both brigade and battalion options are available as well as entry of own-site unit address alphas which activate all local subordinate FUs for TEBA PADS. Entries of non-tied sites or non-local subordinate FUs are ignored. c. An entry of DL results in the following prompt: UNIT ADDRESS(AA) This prompt requests a two-character alpha input (a1a2 where al = A-Q, except 0, and $_{a2}$ = A-H) representing the unit ATDL-1 address (QH is invalid). If a non-ATDL-1 address is entered, the error message "TADIL-B ILLEGAL FOR PADS-aa" is printed. If the entry is valid, the address is temporarily stored and the same prompt displayed for the next unit. Twenty-five ATDL-1 addresses may be entered (invalid addresses are ignored). After all desired addresses have been input, entry of EN deactivates all entered units for PADS and terminates the command. If the operator enters ALL, the system will delete/deactivate all previously entered active PADS units and terminate the command. d. An entry of IN results in the following prompt: UNIT ADDRESS(AA) This prompt requests a two-character alpha input (a1a2 where at = A-Q, except 0, and $_{a2}$ = AH) representing the unit ATDL-1 address (QH is invalid). If a non-ATDL-1 address is entered, the error message "TADIL-B ILLEGAL FOR PADS-aa" is printed. If the entry is valid, the new address is temporarily stored and the same prompt displayed for the next unit. Twenty-five ATDL-1 addresses may be entered (invalid addresses are ignored). An attempt to enter a valid address when the PADS table is full will result in the error message, PADS TABLE FULL UNIT ADDRESS NOT ACCEPTED-aa. In the brigade configuration (CC20-CC22), entry of the unit address alphas for an ATDL-1 tied site will activate all FUs reported over that link for TEBA PADS. Entries for own site, non-tied sites, or FU alphas are ignored. In battalion configuration (CC24-CC26), only entry of alphas associated with local subordinate FUs are allowed. Entered FUs are activated for TEWA PADS (if two FUs are present for the address, as in HAWK-2 FUs, both will be activated). Entries for any other site or non-local subordinate FUs are ignored. In Master Battalion configuration (CC143 M), both brigade and battalion options are available as well as entry of own-site unit address alphas which activates all local subordinate FUs for TEBA PADS. Entries of non-tied sites or non-local subordinate FUs are ignored.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
147 (cont)	1ST HAWK MSL THRSHLD(NNN)

This prompt requests a decimal number in the range 0-127 (increments of 1) representing the First HAWK Missile Count Threshold. If the entry is valid, the new First HAWK Missile Threshold is temporarily stored and the next prompt displayed. The next prompts and their respective valid entries are as follows:

Prompt	*Valid Entries*
1ST HAWK PRIORITY(N)	1-6 in increments of 1
2ND HAWK MSL THRSHLD(NNN)	0-127 in increments of 1
2ND HAWK PRIORITY(N)	1-6 in increments of 1
1ST PAT MSL THRSHLD(NNN)	0-127 in increments of 1
1ST PAT PRIORITY(N)	1-6 in increments of 1
2ND PAT MSL THRSHLD(NNN)	0-127 in increments of 1
2ND PAT PRIORITY(N)	1-6 in increments of 1

The actions and responses are the same as for the 1ST HAWK MSL THRSHLD(NNN) prompt except that entry of a valid parameter for the last (2ND PAT PRIORITY (N)) prompt places all values into the data base and terminates the command. The null parameter is not a valid response for this command. If retention of the existing value for the last parameter is desired, enter EN.

Listing output format:

```
_____DDDDD_____
UNIT ADDRESS ..... aa
1ST HAWK MSL THRSHLD(NNN) ..... nnn
1ST HAWK PRIORITY(N) ..... n
2ND HAWK MSL THRSHLD(NNN) ..... nnn
2ND HAWK PRIORITY(N) ..... n
1ST PAT MSL THRSHLD(NNN) ..... nnn
1ST PAT PRIORITY(N) ..... n
2ND PAT MSL THRSHLD(NNN) ..... nnn
2ND PAT PRIORITY(N) ..... n
_____DDDDD_____
```

DDDDD = Secret Page Header

150 *Nonfunctional.*

151 *Name*: AUTOMATIC SIF CODE VALIDATION

Refer to (C) TM 9-1430-652-10-7.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
152	Refer to (C)TM 9-1430-652-10-7
153	Refer to (C)TM 9-1430-652-10-7
154	Refer to (C)TM 9-1430-652-10-7
155	*Name*: ENTER SYSTEM MODE *Functional Description*: This command is used to enter a system mode of Weapons Hold, Tight, or Free. The system mode applies to all the area outside active volumes. The system mode is determined by the defense commander and is dependent upon the local tactical situation. If the command code alone (CC155) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. *Format Definition*: CC 155 [m] The item [m] is an alpha entry of H, T, or F specifying Weapons Hold, Tight, or Free. *Example*: CC155 H This command specifies that the system mode is Weapons Hold.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
155 (cont)	*Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26). Defaults to Weapons Hold. Entering CC 155 (alone) places the command in the prompt driven mode where each field is prompted for operator entry. The following field and its associated prompt is: *Field* *Prompt* [m] ENTER SYSTEM MODE H, T OR F
156	*Name*: ENTER OR CHANGE POSITION OF VOLUME/LINE *Functional Description*: This command generates or changes the lateral boundaries of control volumes/lines which are used to evaluate target aircraft for weapon assignment. If the command code (CC 156) alone is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. *Format Definition*: CC156 [id] [nnn] [t] [pc] [list] a. The item [id] is a two alpha character entry: WF, WH, or WT for Weapons Control Zones (Free, Hold, Tight) or MF, MH, or MT for Missile Engagement Zones (Free, Hold, Tight) or FS for Forward Support Coordination Lines (FSCL). b. The item [nnn] is a three decimal number entry: 001 thru 999 for Weapons Control Zones (WCZ) or one decimal number 1 or 2 for Missile Engagement Zones (MEZ) and FSCLs. c. The item [t] is an alpha character: I = Initial entry, C = Change entry. d. The item [pc] is a one or two decimal number entry: 1 or 2 (1 = circle, 2= rectangle) for WCZs and MEZs or 1 thru 12 for FSCLs. e. The item [list] is an optional entry and consists of an alpha character: L = List all points in tabular form for volume/line identified, or N (or blank) = No List desired. f. Following valid entry of a CC156 command initializing a volume ([t] = I), the operator is prompted with ENTER RADIUS AND POSITION ([pc] field = 1) or ENTER POSITION OF POINT n([pc] field = 2 or greater), (n = 1 thru [pc] (up to 12}). The item RADIUS is a numeric entry in data miles (1 thru 511). The item POSITION or POINT is an entry in UTM (preceded by U), GEOREF (preceded by GR), or geographic (preceded by G) coordinates. *Example*: EXAMPLE-CYLINDRICAL CC156 WT 212 I 1 ENTER POSITION AND RADIUS 100 G 44 10 00 N 113 15 17 W This command specifies that a cylindrical Weapons Tight Zone, number 212, with a radius of 100 data miles, be initiated at geographic coordinates 44 10 00 North, 113 15 17 West. EXAMPLE-RECTANGULAR CC156 MT 11 2 ENTER POSITION OF POINT 1 G 43 00 00 N 125 00 00 W ENTER POSITION OF POINT 2 G 44 00 00 N 123 00 00 W This command specifies that a rectangular Missile Engagement Tight Zone, number 1, be initiated with the Southeast corner at geographic coordinates 43 00 00 North, 125 00 00 West, and the Northwest corner at geographic coordinates 44 00 00 North, 123 00 00 West.

See footnotes at end of table.

Table 12-1. Command Code Entries
Continued

Command Code	Description
156 (cont)	EXAMPLE-FSCL CC156 FS 1 I 4 ENTER POSITION OF POINT 1 G 43 10 10 N 110 50 50 W ENTER POSITION OF POINT 2 G 46 20 30 N 115 10 40 W ENTER POSITION OF POINT 3 G 46 50 50 N 122 10 40 W ENTER POSITION OF POINT 4 G 44 50 50 N 126 10 35 W This command specifies that a Forward Support Coordination Line of 4 points, number 1, be initiated. The line is to run through the coordinates listed above. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. When the abort (EX) parameter is used in a point entry, only the point being entered is aborted. To restart the volume entry, rather than use the change option, the operator must delete the volume. An error message will be output if CC156 processing parameters have been violated (see fig. 12-1 for error messages). Entering CC156 (alone) places the command in the prompt driven mode where each field is prompted for operator entry. The following fields and their associated prompts are: *Field Prompt* [id] ENTER VOLUME TYPE WC, MC, FS WHERE C = F,H,T [nnn]ENTER WCZ, MEZ, FSCL ZONE OR LINE NUMBER [t] ENTER ENTRY TYPE (I, C, OR L)* [pc] ENTER NUMBER OF INITIAL POINTS [list] ENTER LI OPTION (L OR N *When the entry is I, no request for list will be given. When the entry is L, no additional prompts are forthcoming. When the entry is C, the next prompt will be the fist]. Following entry of the command line, the operator is prompted with the following for radius and position (point): ENTER RADIUS AND POSITION ([pc] field = 1) ENTER POSITION OF POINT n (where n = number of point to be entered) ([pc] field = 2 or greater) (operator will be prompted to enter each point until number in [pc] has been entered) For change entries in the prompt mode, the operator presses the REQ SEND key (null entry mode) for all prompts (fields) following the [t] field prompt until prompted with ENTER POSITION OF POINT n (n = point number to be changed). For nonprompt driven changes (only a single point may be changed for each CC156 entry), the operator enters CC156 [id] [nnn] [t] [list] fields only ([list] field is optional). Following entry of these fields, the operator presses the REQ SEND key. The operator is then prompted with ENTER N AND POINT. Entry is [n] [point]. [n] = the number of the point being changed and [point] is the new point position in UTM (preceded by U), GEOREF (preceded by GR), or geographic (preceded by G) coordinates.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
157	*Name*: COMPLETE OR CHANGE PARAMETERS OF VOLUMES/LINES Functional Description: This command enters or changes the upper and lower altitudes for the volume and determines whether the volume/line is to be processed and/or displayed. It also determines if there is a nested volume and provides for volume deletion. If the command code (CC157) alone is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. *Format Definition*: CC157 [id] [nnn] [dell LA la] UA [ua] [pd] [s] OZ [ozid] a. The item [id] is a two alpha character entry: WF, WH, or WT for Weapons Control Zones (Free, Hold, Tight) or MF, MH, or MT for Missile Engagement Zones (Free, Hold, Tight) or FS for Forward Support Coordination Lines (FSCL), as specified in CC156. b. The item [nnn] is a three-decimal number entry: 001 thru 999 for Weapon Control Zones (WCZ) or one decimal number 1 or 2, for Missile Engagement Zones (MEZ) and FSCLs, as specified in CC156. c. The item [dell is a two alpha character entry (DL) and causes the volume/line, identified in the fields [id] and [nnn], to be deleted. d. The item LA is the header for Lower Altitude. The item [la] is a decimal number entry: 0 to maximum altitude minus one (classified; see TM 9-1430-652-10-7) in thousands of feet. Not applicable to FSCLs. e. The item UA is the header for Upper Altitude. The item [ua] is a decimal number entry: 1 to maximum altitude (classified; see TM 9-1430-652-10-7) in thousands of feet. Not applicable to FSCLs. f. The item [pd] is a three alpha entry defining the header for the next item. The entry is: *Entry* — *Definition* PPI — Display only PRO — Process only ALL — Both display and process g. The item [s] is an alpha entry (ON or OFF) and defines the state of the previous field, item [pd]. h. The item OZ is the header for the outer zone, defining the outer volume in which this volume is nested. Only weapon control zones may be nested. Two volumes are considered nested when the perimeter of the inner volume is totally enclosed within the perimeter of the outer volume and the vertical limits of the two volumes are coincident (occupy the same space). No more than two volumes may be nested. The item [ozid] is the [id] and [nnn] fields of the outer volume. The outer volume must have been previously entered. The nesting capability is an operator function, and no software checks are incorporated to ensure the volume is actually nested. *Example*: CC157 WT 212 LA 25 UA 50 ALL ON This command specifies that Weapons Tight Zone number 212 has a lower altitude of 25,000 feet and an upper altitude of 50,000 feet. It is to be processed and displayed. *Example*: CC157 MT 1 DL This command specifies that Missile Engagement Tight Zone number 1 is to be deleted from the data base.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
157 (cont)	*Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. The CC156 command for this volume/line must have been previously entered. An entry of EX in any field will abort the entire CC157 command line entry up to that point. An error message will be output if CC157 processing parameters have been violated (see fig. 12-1 or error messages). Entering CC157 (alone) places the command in the prompt driven mode where each field is prompted for operator entry. The following fields and their associated prompts are:

Field	*Prompt*
[id]	ENTER VOLUME TYPE WC, MC, FS WHERE C = F, H, T
[nnn]	ENTER WCZ, MEZ, FSCL ZONE OR LINE NUMBER
[dell	ENTER DL TO DELETE THE VOLUME OR LINE
P[a]	ENTER LOWER ALTITUDE
[ua]	ENTER UPPER ALTITUDE
[pd]	ENTER PROCESS DISPLAY HEADER TYPE PPI, PRO OR ALL
[s]	ENTER ON OR OFF
[ozid]	ENTER OUTER WCZ VOLUME ID AND ZONE NUMBER

For initial and change entries in the nonprompt driven mode, the operator enters CC157 [id] [nnn] followed by the header and associated field to be entered or changed. Only the field(s) desired or those requiring change are entered. Following entry of the last field to be entered or changed, the operator must press the REQ SEND switch to terminate entry. For change entries in the prompt driven mode, the operator must respond to the [id] and [nnn] field prompts. Following these fields, if no change is to be made to a prompted field, the operator responds by pressing REQ SEND (null entry) which calls the next prompt. The field(s) that require a change are entered the same as initial entry. Entry of the command is terminated when the last field has been processed. There are few restrictions: MEZ volumes may overlap in vertical limits (altitude) and perimeter, or superimposed but not overlap in altitude. WCZ volumes may be nested or superimposed but may not overlap in altitude. Two volumes are considered superimposed if their perimeters partially or totally overlap but they do not overlap in altitude. Defaults are as follows:

Lower Altitude = 0
Upper Altitude = maximum altitude (see TM 9-1430-652-10-7)
Process/display header = ALL
Process/display status = OFF

If no CC157 has been entered for this volume, defaults are in effect.

160 *Name*: ENTER START AND STOP TIMES FOR VOLUMES/LINES

Functional Description: This command is used to enter the start time for a volume/line (the time it will become active for processing and display), and the stop time (the time it will be deactivated for processing and display). If the command code (CC160) alone is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below.

Format Definition: CC160 [id] [nnn] STR [hh] [mm] [ss] STP [hh] [mm] [ss] a. The item [id] is a two alpha character entry: WF, WH, or WT for Weapons Control Zones (Free, Hold, Tight) or MF, MH, or MT for Missile Engagement Zones (Free, Hold, Tight) or FS for Forward Support Coordination Lines (FSCL) as specified in CC156.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
160 (cont)	b. The item [nnn] is a three decimal number entry: 001 999 for Weapon Control Zones (WCZ) or one decimal number 1 or 2 for Missile Engagement Zones (MEZ) and FSCLs as specified in CC156. c. The start time is specified in the format STR [hh] [mm] [ss], where STR is the keyword for start time. The stop time is specified in the format STP [hh] [mm] [ss], where STP is the keyword for stop time. (1) The item [hh] is a decimal number entry defining hours (O thru 23). (2) The item [mm] is a decimal number entry defining minutes (O thru 59). (3) The item [ss] is a decimal number entry defining seconds (O thru 59). *Example*: CC160 WT 212 STR 12 30 00 STP 15 30 00 This command specifies that Weapons Tight Zone number 212 is to become active at 12:30:00 and be deactivated at 15:30:00. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. The CC156 command for this volume/line must have been previously entered. An entry of EX in any field will abort the entire command up to that point. An error message will be output if CC160 processing parameters have been violated (see fig. 12-1 for error messages). Entering CC160 (alone) places the command in the prompt driven mode where each field is prompted for operator entry. The following fields and their associated prompts are: *Field* — *Prompt* [id] — ENTER VOLUME TYPE WC, MC, FS WHERE C = F, H, T [nnn] — ENTER WCZ, MEZ, FSCL ZONE OR LINE NUMBER [hhl mml ssl] — ENTER START TIME HH MM SS [hh2 mm2 ss2] — ENTER STOP TIME HH MM SS Start and stop times are valid only for the current 24-hour period and are not site adaptable. To change either the start or stop time, all fields of CC160 must be entered.
161	*Name*: LIST ALL VOLUME/LINES CURRENTLY IN MEMORY *Functional Description*: This command is used to list all volumes (Weapons Control Zones and Missile Engagement Zones) and lines (Forward Support Coordination Lines), both active and inactive, currently in memory. *Format Definition*: CC161 (no fields required) *Example*: CC161 This command specifies listing all volumes/lines in the data base to the KPU. Data listed includes: id (WCZ, MEZ or FSCL), status (active or inactive), and start and stop times. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26).
162	*Name*: ENTER ADL ENGAGE COMMAND PROCESSING MODE *Functional Description*: This command is used to enter the automatic or manual ADL Engage command processing mode, automatic or manual. If the command code CC162 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
162 (cont)	*Format Definition*: CC162 [function] The item [function] consists of four different parameter sequences, depending on which function is being initiated. a. LI. Entry of LI lists the status of the current ADL Engage Mode or ADL Engage Mode default (automatic) if a previous CC162 has not been entered. b. IN. Entry of IN changes the existing ADL Engage Mode. c. DFT. Entry of DFT sets the existing ADL Engage Mode to the default value (automatic). d. EX. Entry of EX causes the CC162 command to be terminated without saving previously entered data. *Example*: CC162 IN A This command changes the ADL Engage mode to automatic. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is site adaptable. An entry of EX in any field will abort the entire CC162 command line entry up to that point. Defaults to automatic processing mode. Entering CC162 (alone) places the command in the prompt-driven mode and each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. Entering CC162 (alone) results in the following prompt: ADL ENG MODE(IN,DFT,LI) This prompt represents the various possible inputs at this point. An operator entry of LI results in a listing of the current processing mode and termination of the command. An operator entry of DFT sets ADL processing mode to the default mode (automatic) and terminates the command. An operator entry of IN will result in the following prompt: ADL ENG MODE(A OR M) This prompt requests a response of A for Automatic or M for Manual. An invalid entry results in the prompt being repeated. *Listing output format*: _____DDDDD_____ CURRENT ENGAGE COMMAND PROCESSING MODE IS *. _____DDDDD_____ *MANUAL or AUTOMATIC as appropriate. DDDDD = Secret Page Header
163	*Name*: ENTER INTELLIGENCE/EW PROCESSING MODE *Functional Description*: This command is used to enter the automatic or manual modes for processing Intelligence/EW data in identification (ID) and threat evaluation (TEVAL). If CC163 (alone) is entered, the operator will be prompted for each command parameter. However, the operator has the option to enter the command as stated below. *Format Definition*: CC163 [function] The item [function] consists of five different parameter sequences, depending on which function is being initiated.

See footnotes at end of table.

Table 12-1. Command Code Entries
-Continued

Command Code	Description
163 (cont)	a. LI. Entry of LI lists the status of the current Intelligence/EW processing modes. b. IN. Entry of IN changes existing Intelligence/EW processing modes or enters new values. c. DFT. Entry of DFT sets the existing modes to the default values. d. EX. Entry of EX causes the CC163 command to be terminated without saving previously entered data. e. EN. Entry of EN following a valid entry will store what has been entered and terminate the CC163 command. *Example*: CC163 IN A M This command sets the Intelligence/EW processing mode for TEVAL is automatic and manual mode for ID. *Special Response*: This command can only be executed in an operational configuration (CC20-CC22, CC24-CC26) and is not site adaptable. An entry of EX in any field will abort the entire CC163 command line entry up to that point. Defaults to manual mode for both TEVAL and ID. Entering CC163 (alone) places the command in the prompt-driven mode and each field is prompted for operator entry. In the prompt-driven mode the operator may enter a null (two REQ SENDS) to bypass entry of a specific parameter. Entering CC163 (alone) results in the following prompt: INTEL/EW MODES(IN,DFT,LI) This prompt represents the various possible inputs at this point. An operator entry of LI results in a listing of the current modes and termination of the command. An operator entry of DFT will set both modes to their default value (manual for both TEVAL and ID) and terminates the command. An operator entry of IN will result in the following prompt: IN/EW TEVAL MODE(A OR M) This prompt requests a response of A for Automatic or M for Manual. An invalid entry results in the prompt being repeated. A valid entry is temporarily stored and the next prompt is printed. Entry of EN immediately following a response (i.e. A EN) results in the response being entered into the data base and the command is terminated. The next prompt is: IN/EW ID MODE(A OR M) This prompt requests a response of A for Automatic or M for Manual. An invalid entry results in the prompt being repeated. A valid entry is stored and the command is terminated. *Listing output format*: _____DDDDD_____ I/EW TEVAL MODE .....aaaa IIEW ID MODE .....aaaa _____DDDDD_____ aaaa = AUTO or MAN DDDDD = Secret page header

[1]Position (location) is specified by geographic location, UTM, or GEOREF, as follows:

a. Geographic locations are specified by the sequence G [latitude] [longitude]. Latitude and longitude are specified by the sequence [d] [ml [s] [h].

(1) The item [d] is a decimal number specifying degrees whose range is dependent upon [h], as follows:

Table 12-1. Command Code Entries
-Continued

Command Code	Description
h	Range of [d]
N	0-83 degrees
S	0-79 degrees
E	0-180 degrees
W	0-180 degrees

(2) The item [m] is a decimal number, O<m<59, specifying minutes. The value entered for [m] must be 00 if the value entered for [d] is 180.

(3) The item [s] is a decimal number, 0<s<59, specifying seconds. The value entered for [s] must be 00 if the value entered for [d] is 180.

(4) The item [h] is a single character indicating direction. If the item is latitude, [h] is N or S specifying North latitude or South latitude. If the item is longitude, [h] is E or W specifying East longitude or West longitude.

Example: G 34 13 00 N 118 29 30 W

b. UTM coordinates are specified by the sequence U [s] [g] [e] [n].

(1) The item [s] is a decimal number specifying a reference spheroid, as follows:

s	*Reference Spheroid*
1	CLARKE 1866
2	HAYFORD 1909 (INTERNATIONAL)
3	CLARKE 1880
4	EVERE 1847
5	BESSEL 1841
6	Not Used
7	KRASSOVSKY 1948

(2) The item [g] is a signed decimal number, -60 to +60, and not zero, specifying a grid zone (GZ). Positive/negative numbers specify grid zones in the Northern/Southern hemisphere.

(3) The item [E] is a decimal number specifying the easting (E) in meters (166,640,< Es 833,360).

(4) The item In] is a decimal number specifying the northing (N) in meters (0< N< 9,333,333 if GZ is positive; 1,111,111≤ N≤ 10,000,000 if GZ is negative).

Example: U 2 32 635000 5721000

The character U identifies the coordinate system (UTM), the character 2 identifies the reference spheroid, the character 32 identifies the grid zone (the alpha character associated with the grid zone is not entered), the characters 635000 represent the easting in meters and the characters 5721000 represent the northing in meters.

c. GEOREF locations are specified by the sequence GR [al a2 a3 a4 nn1 nn2].

a_1 = First division longitude (A-Z without I and 0) 15 degree units
a_2 = First division latitude (A-M without I) 15 degree units
a_3 = Second division longitude (A-Q without I and 0) 1 degree units
a_4 = Second division latitude (A-Q without I and 0) 1 degree units
nn_1 = Third division longitude (00-59) 1’ units
nn_2 = Third division latitude (00-59) 1’ units

Table 12-1. Command Code Entries -Continued

Command Code	Description
	Example: GR GJBC2345 L2

[2] Restart action is taken by pressing the RESTART L1 pushbutton on the ADP Status and Control Panel. If the Restart action is not taken within 30 seconds, the system will ignore the command unless the CC Command "Special Response" paragraph states an exception.

[3]Logical device number. In the AN/TSQ-73, a logical number is always given in the octal numbering system. There are two types of logical numbers. The number dialed in on the device itself (peripherals such as memories, DDG, MTU, and display consoles) is the least significant octal number (0-7) in the address the computer uses to talk to the peripheral. The second type of logical number is an octal designation given to each subsystem in order to identify the unit. These numbers are loosely associated with CC commands and are used in CC110, CC50-CC56, CC100, CC101, and control commands that specify links. Physical device numbers are decimal and are assigned to units for counting purposes; i.e., there are four memories in the system physically numbered 1-4, logically numbered 0-3, and logically numbered 62-65 for ID.

[4]To identify a link, the following sequence of commands is necessary:

Link Type	*Sequence*
TADIL-B	CC102, CC114, CC107, CC112, CC100
ATDL-1	CC114, CC102, CC100

In some commands (CC100 and CC101), the link number is indicated with an "n". In other commands (CC102, 114,120, 121), it is represented by 'lk". CC121 is used to make a site a defended point. CC144 and CC145 set up a primary air defense system (PADS) for automatic weapons assignment. CC146 and CC147 set threshold requirements for Defense and subordinate unit assignments. To display tracks from a link, the task selection switch Q73 REMOTE RADAR, located on the console, must be activated, and the links required must be activated with the task function lenticular switches. In addition, CC110 and CC111 may be used to filter links.

Table 12-1.1. Auxiliary Functions Available in Configurations

AUXILIARY CONFIGURATION	OPERATIONAL CONFIGURATION										
	BOOTLOAD	CC20	CC21 MEMORIES AVAILABLE		CC22 MEMORIES AVAILABLE		CC24	CC25 MEMORIES AVAILABLE		CC26 MEMORIES AVAILABLE	
			4	3	4	3		4	3	4	3
CC30 SIMULATION	NO	NO	NO	NO	NO	NO	YES	YES	NO	YES	YES
CC31 RAID DATA GENERATION	YES	YES	YES	NO	YES	NO	NO	YES	NO	YES	NO
CC32 DATA REDUCTION	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
CC33 SIMULATION PLAYBACK	NO	NO	NO	NO	NO	NO	YES	YES	NO	YES	YES
CC34 FIELD UTILITIES	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES
CC35 (NONFUNCTIONAL)											
CC36 MAP GENERATION	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES
CC37 SITE ADAPTATION	YES	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES

CC00-NONFUNCTIONAL
CC01-ENTER OWN SITE LOCATION●*
(REQUIRES RESTART)
ENTRIES-CC01 POS ALT GMT
CC02-ENTER DATA LINK REFERENCE POINT●*
(REQUIRES RESTART)
ENTRIES-CC02 POS
CC03-ENTER OWN STATION ADDRESS●*
ENTRIES-CC03 ADDRESS
CC04-DESIGNATE NUMBER OF ACTIVE CONSOLES●*
(REQUIRES RESTART)
ENTRIES-CC04 ACTIVE CONSOLES
CC05-SYSTEM PURGE (REQUIRES RESTART)
ENTRIES-CC05
CC06-FLUSH VOLATILE FILES (EXCEPT MAPS) AND RESTART (REQUIRES RESTART)
ENTRIES-CC06
CC07-ORDERLY SHUTDOWN (REQUIRES RESTART)
ENTRIES-CC07
CC10-DISPLAY DIAGNOSE QUEUE
ENTRIES-CC10
CC11-PRINT EQUIPMENT STATUS TABLE
ENTRIES-CC11 n
EXAMPLE-CC11 7
CC12-START DATA RECORDING
ENTRIES-CC12
CC13-STOP DATA RECORDING
ENTRIES-CC13
CC17-TERMINATE AUXILIARY FUNCTION
ENTRIES-CC17
CC20 THRU CC22 AND CC24 THRU CC26 LOAD OPERATIONAL CONFIGURATION (REQUIRES RESTART)
ENTRIES
CC20 BRIGADE SINGLE OR DUAL CPU, NORMAL OPERATIONS, AUX FUNCTION
CC21 BRIGADE; SINGLE OR DUAL CPU, ONE MEMORY DOWN, NORMAL OPERATIONS, BUT NO AUX FUNCTION (NOTES 3 AND 4)
CC22 BRIGADE; SINGLE OR DUAL CPU, ONE MEMORY DOWN, REDUCED TRACKS, AUX FUNCTION (NOTES 3 AND 4)
CC24 BATTALION, DUAL CPU, NORMAL OPERATIONS. AUX FUNCTION (EXCEPT RAID DATA GENERATION)
CC25 BATTALION, DUAL CPU, ONE MEMORY DOWN, NORMAL OPERATIONS, BUT NO AUX FUNCTION (NOTES 3 AND 4)
CC26 BATTALION; SINGLE OR DUAL CPU, ONE MEMORY DOWN, REDUCED TRACKS, AUX FUNCTION (NOTES 3 AND 4)
CC30 THRU CC37-LOAD AUXILIARY CONFIGURATION
ENTRIES-CC30-SIMULATION PROGRAM 4
CC31-RAID DATA GENERATION PROGRAM
CC32-DATA REDUCTION PRINTOUT PROGRAM (FROM BOOTLOAD ONLY)
CC33-SIMULATION PLAYBACK PROGRAM *
CC34-FIELD UTILITIES PROGRAM
CC35-NONFUNCTIONAL
CC36-MAP GENERATION PROGRAM
CC37-SITE ADAPTATION*
-TAPE-TO-TAPE COPY (FROM BOOTLOAD ONLY)
CC40-PURGE UNUSED MEMORIES*(NOTE 5)
ENTRIES-CC40
CC5O THRU CC56-LOAD FAULT ISOLATION CONFIGURATION
ENTRIES-CC5O-RIE FI
CC51-VSU FI
CC52-DDG FI
CC53-KPU FI
CC54-MTU FI
CC55-DATA COMM FI
CC56-DISPLAY CONSOLE FI
CC60-WORST CASE MEMORY TEST
ENTRIES-CC60
CC61-RIE TEST (MODE IV TEST)
ENTRIES-CC61
CC74-MEMORY TO TAPE DUMP (NOTE 2)
ENTRIES-CC74

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Figure 12-3. Abbreviated CC Definitions (Sheet 1 of 4)

CC100-ACTIVATE LOGICAL DEVICE OR DATA LINK

	BATTALION	BRIGADE
ENTRIES-CC100	0 THRU 7	CC100 0 THRU 13
	CC100 10 THRU 37	CC100 40 THRU 47●
	CC100 40 THRU 47●	CC100 52 THRU 55●
	CC100 50 THRU 51	CC100 61
	CC100 52 THRU 55●	CC100 72●
	CC 100 61	
	CC 72●	

CC101-DEACTIVATE LOGICAL DEVICE OR DATA LINK

ENTRIES-CC101 n

CC102-ASSIGN LINK NUMBER TO MODEM●

	BATTALION	BRIGADE
ENTRIES-CC102 n ·	CC102 0 THRU 37	CC102 0 THRU 13
	1 THRU 32	1 THRU 20

EXAMPLE-CC102 0 1

CC104-ASSIGN LOGICAL TAPE TO PHYSICAL TAPE UNIT

ENTRIES-CC104 n MLU a

EXAMPLE-CC104 5 MLU 1

CC105-CANCEL LOGICAL TAPE ASSIGNMENT

ENTRIES-CC105 n

CC106 - SET DATA LINK FILTER '* <

ENTRIES - CC106 lk Ss IN SM sim

EXAMPLE - CC106 3 5 OFF IN OFF SM OFF

CC107-ENTER OTHER SERVICE DATA ●

(REQUIRES RESTART)

ENTRIES-CC107 n a

EXAMPLE-CC107 103 2000 2777

CC110-CHANGE DATA LINK TRANSMISSION ZONE STATUS

ENTRIES-CC110 n a

EXAMPLE-CC110 1 ON

CC111-SET DATA LINK TRANSMISSION ZONE● (NOTE 6)

ENTRY-CYLINDRICAL

CC111 1t C pos H a 1 ID Id
LS 1S US us D d
ENTER RADIUS (ON) (prompt)

EXAMPLE-CYLINDRICAL

CC111 1 C G 42 20 00 N 112 ID 00 W H
·25 ID 0.2.4 LS 100 US 150 D ON
ENTER RADIUS (ON)

ENTRY-RECTANGULAR-

CC111 1K R pos 1 N a ID Id
LS 1s US us D d
ENTER P0S 2 (prompt)
pos 2

EXAMPLE-RECTANGULAR

CC111 2 R G 42 00 00 N 124 10 00
W H -271D 2.4 LS 10 US
150 D ON
ENTER POS 2
G 42 30 00 N 123 30 00 V

CC112-TADIL-B LINK COMMAND MESSAGE CRITERIA●

ENTRIES-CC112 s n g f function

EXAMPLE-CC112 IN 71 AFAN

CC114-INITIALIZE DATA LINK●

ENTRIES-CC114 lk n sa t alt (TADIL-B)
CC114 lk a x G alt (ATDL-1)

EXAMPLE-CC114 0 71 FA FPU (TADIL-B)
CC114 4 AC X A 1000 (ATDL-1 SITE)
CC114 7 PC P R 1000 (PATRIOT SITE)
CC114 10 BC 2 R 1000 (HANK FUs)

CC115-ENTER TRANSMITTABLE SITE●

ENTRIES-CC115 n p a

EXAMPLE-CC115 AF 0 42 18 00 N 120 35
00 W 2000

CC116-SELECT TRACK NUMBER FOR PPI DISPLAY

ENTRIES-CC116 x

EXAMPLE-CC116 TB

CC117-ENTER STATE OF ALERT/AIR RADIO WARNING

ENTRIES-CC117 ALERT

EXAMPLE-CC117 Y

CC120-IDENTIFY SIMULATED SAN UNIT

ENTRIES-CC120 t FU addr pos alt 1k

EXAMPLE-CC120 HAWK 2 DB G 42 10 10
N 114 20 10 u 500 27

CC121-ENTER DEFENDED POINT

ENTRIES-CC121 Id radius pri pos alt. OR
CC121 Id radius pri lint no. (FOR
FU)

EXAMPLE-CC121 F S 3 C 43 37 56 N 114
19 30 N 1000
CC121 L 10 2 27 (FOR FU)

CC122-DELETE DEFENDED POINT●

ENTRIES-CC122 Id

EXAMPLE-CC122 F

CC123-ENTER OR CHANGE SAFE CORRIDOR POINT●

ENTRIES-CC123 Id POINT LOCATION

EXAMPLE-CC123 A 8S G 41 8 45 N 115 38 22 W

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Figure 12-3. Abbreviated CC Definitions (Sheet 2 of 4)

CC124-COMPLETE OR CHANGE SAFE CORRIDOR PARAMETERS
ENTRIES-CC124 Id alt limits speed limits status delete
EXAMPLE-CC124 A LA 21 UA 25 LS 20 US 50 ON CC124 A DL (DELETE)
CC125-ACTIVATE AND DEACTIVATE TIMES FOR SAFE CORRIDORS●
ENTRIES-CC125 Id H1 M1 S‘ H2, M2 S2
EXAMPLE-CC125 A 9 15 D 13 5 30
CC126-ENTER HEIGHT FINDER●
ENTRIES-CC126 n p a
EXAMPLE-CC126 2 G 43 37 20 N 119 18 32 w 1000
CC127-SET SYSTEM FAKER MODE
ENTRIES-CC127 m t
EXAMPLE-CC127 ON 120 CC127 OFF
CC130-ENTER TIME OF DAY OR DATE
ENTRY-CC130 T h m s
EXAMPLE-CC130 T 11 45 20
ENTRY-CC130 0 mo d y
EXAMPLE-CC130 D 3 20 90
ENTRY-CC130 LI
CC131-SET OPEN/NOISY ALERT THRESHOLD●
ENTRIES-CC131 I n
EXAMPLE-CC131 S 20
CC132-SET PARITY ERROR ALERT THRESHOLD●
ENTRIES-CC132 1 n
EXAMPLE-CC132 10 125
CC134-SET MANUAL TRACK UPDATE TIME●
ENTRIES-CC134 t
EXAMPLE-CC134 500
CC135-AUTOMATIC TRACK INITIATE CONTROL PARAMETERS●
ENTRIES-CC135 kk nn kk nnn kk nn
EXAMPLE-CC135 RT 50 TL 43 .AR 17 LV 50 UV 200
CC136-ENTER SYSTEM PARAMETERS●
ENTRIES-CC136 f s j I r c
EXAMPLE-CC136 FU 40 ST 20 JS 8 LP 70 RP 70 CR OFF
CC137- ENTER HANK ASSIGNMENT ZONE (HAZ) RADIUS●
ENTRIES-CC137 FU address radius
EXAMPLE-CC137 BAD01 15
CC143-ACTIVATE/DEACTIVATE MASTER BATTALION●
ENTRIES-CC143 type of Bn
EXAMPLE-CC 143 m
CC144-ENTER AUTOMATIC WEAPONS ASSIGNMENT PARAMETERS●
ENTRIES-CC144 function
EXAMPLE-CC144 IN 1204510
CC145-ENTER PADS PARAMETERS●
ENTRIES-CC145 function
EXAMPLE-CC145 IN 0 20101 154040
CC146-ENTER DEFENSE PRIORITY/ MISSILE COUNT THRESHOLDS·<●
ENTRIES-CC 146 function
EXAMPLE-CC146 IN 50 2 250 4 75 3 375 5
CC 147-ENTER SUBORDINATE PRIORITY/MISSILE COUNT THRESHOLDS ·● * <
ENTRIES-CC147 function
EXAMPLE-CC147IN AD 20 2 40 4 30 3 60 5
CC151-AUTOMATIC SIF CODE VALIDATION<
(REFER TO (C) TM 9-1430-652-10-7)
CC152 - (REFER TO (C) TM 9-1430-652-10-7)●* <
CC 153-(REFER TO (C) TN 9-1430-652-10-7) ●* <
CC154 - (REFER TO (C) TM 9-1430-652-10-7) ●* <
CC155-ENTER SYSTEM MODE' <
ENTRY-CC155 a
EXAMPLE-CC155 H
CC156-ENTER OR CHANGE POSITION OF A VOLUME/LINE ·● <
ENTRY-CYLINDRICAL
CC158 id nnn t I list
ENTER RADIUS AND POSITION (prompt)
r pos
EXAMPLE-CYLINDRICAL
CC156 WT 212 1 1
ENTER RADIUS AND POSITION
100 G 44 10 00 N 113 15 17 W
ENTRY-RECTANGULAR
CC156 id nnn t 2 list
ENTER POSITION OF POINT 1 (prompt)
pos1,
ENTER POSITION OF POINT 2 (prompt)
pos2
EXAMPLE-RECTANGULAR
CC156 MT 1 I 2
ENTER POSITION OF POINT 1
G 43 00 00 N 125 00 00 w
ENTER POSITION OF POINT 2
G 44 00 00 N 123 00 00 W

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Figure 12-3. Abbreviated CC Definitions (Sheet 3 of 4)

ENTRY-FSCL
CC156 id nnn t n list
ENTER POSITION OF POINT 1 (prompt)
pos 1
ENTER POSITION OF POINT 2 (prompt)
pos2
etc. to point n
EXAMPLE-FSCL
CC156 FS 1 I 4
ENTER POSITION OF POINT 1
G 43 10 10 N 110 50 50 W
ENTER POSITION OF POINT 2
G 46 20 30 N 115 10 50 W
ENTER POSITION OF POINT 3
G 46 50 50 N 122 10 40 W
ENTER POSITION OF POINT 4
G 44 50 50 N 126 10 35 W

CC157-COMPLETE OR CHANGE PARAMETERS OF VOLUME/LINE● <
ENTRY-CC157 Id nnn del LA la UA ua pd S OZ ozId
EXAMPLE-CC157 WT 212 LA 25 UA 50 ALL ON
EXAMPLE-CC157 NT 1 DL (DELETE)

CC160-ENTER START STOP TIMES FOR VOLUME <
ENTRY-CC160 id nnn STR hr min sec STP hr min sec
EXAMPLE-CC160 WT 212 STR 12 30 00 STP 15 30 00

CC161-LIST ALL CONTROL VOLUMES/LINES
ENTRY-CC161 (no fields reqd)
EXAMPLE-CC161

CC162 - ENTER ADL ENGAGE COMMAND
PROCESSING MODE ● * <
ENTRY - CC162 function
EXAMPLE - CC162 IN A

CC163- ENTER INTELLIGENCE/EW PROCESSING MODE * <
ENTRY - CC163 function
EXAMPLE- CC163 LI

NOTES

1. ●INDICATES THAT CC IS SITE ADAPTABLE

- INDICATES THAT CC IS ONLY AVAILABLE IN AN OPERATIONAL CONFIGURATION (CC20 THRU CC22 AND CC24 THRU CC26) AND SYSTEM TAPE MUST BE ON LINE.

◆AVAILABLE ONLY IN BATTALION CONFIGURATIONS AND NOT APPROPRIATE FOR PATRIOT.

■INDICATES CC ONLY AVAILABLE IN BATTALION OPERATIONAL CONFIGURATIONS (CC24 THRU CC26)

<THIS COMMAND MAY ALSO BE ENTERED VIA PROMPTS.

2. MUST BE ENTERED AT ADP STATUS AND CONTROL PANEL FOLLOWED BY PRESSING RESTART AND THEN START SWITCHES.

3. ADDITIONAL AUXILIARY FUNCTIONS AVAILABLE IF FOURTH MEMORY BANK IS ON LINE (REFER TO TABLE 12-1.1).

4. IF RECONFIGURING BECAUSE OF LOSS OF LOGICAL MEMORY BANK 0 OR 1. A NEW BOOTLOAD IS REQUIRED BEFORE RECONFIGURATION.

5. ONLY LOGICAL MEMORY BANKS 2 AND 3 CAN BE PURGED.

6. KPU WILL ACCEPT ONLY 64 CHARACTERS. MORE THAN ONE CONTROL COMMAND MAY BE REQUIRED TO COMPLETE DESIRED ENTRY.

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Figure 12-3. Abbreviated CC Definitions (Sheet 4 of 4)

Section III. VALID CONSOLE MODES

12-4. General. This section identifies the controls and indicators that are valid in each display console mode. Figures 12-4 through 12-10 provide a quick visual validity check for both on-line (air defense operations) and off-line (monitor and test) console modes.

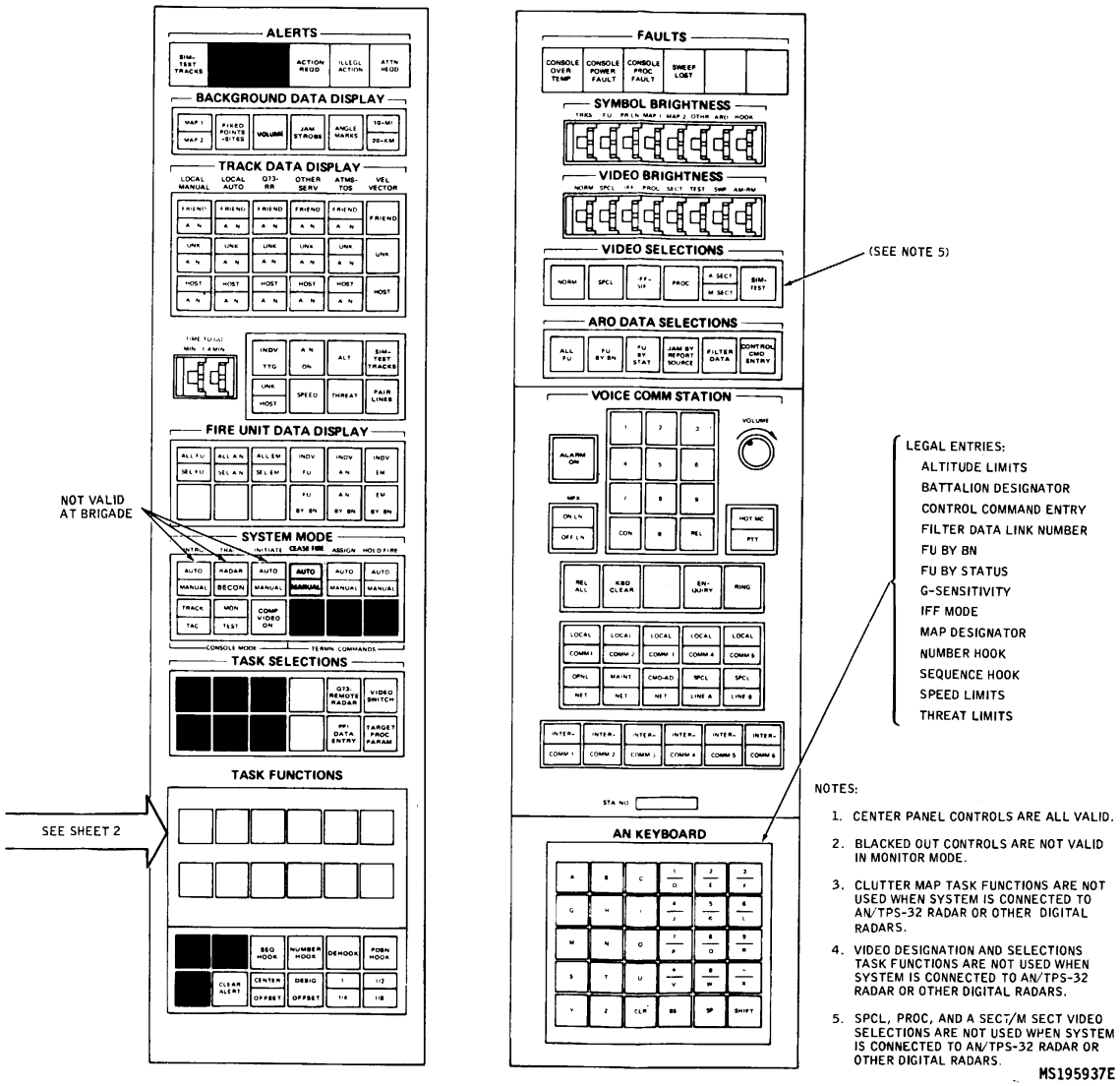


Figure 12-4. Valid Monitor Mode Controls
(Sheet 1 of 2)

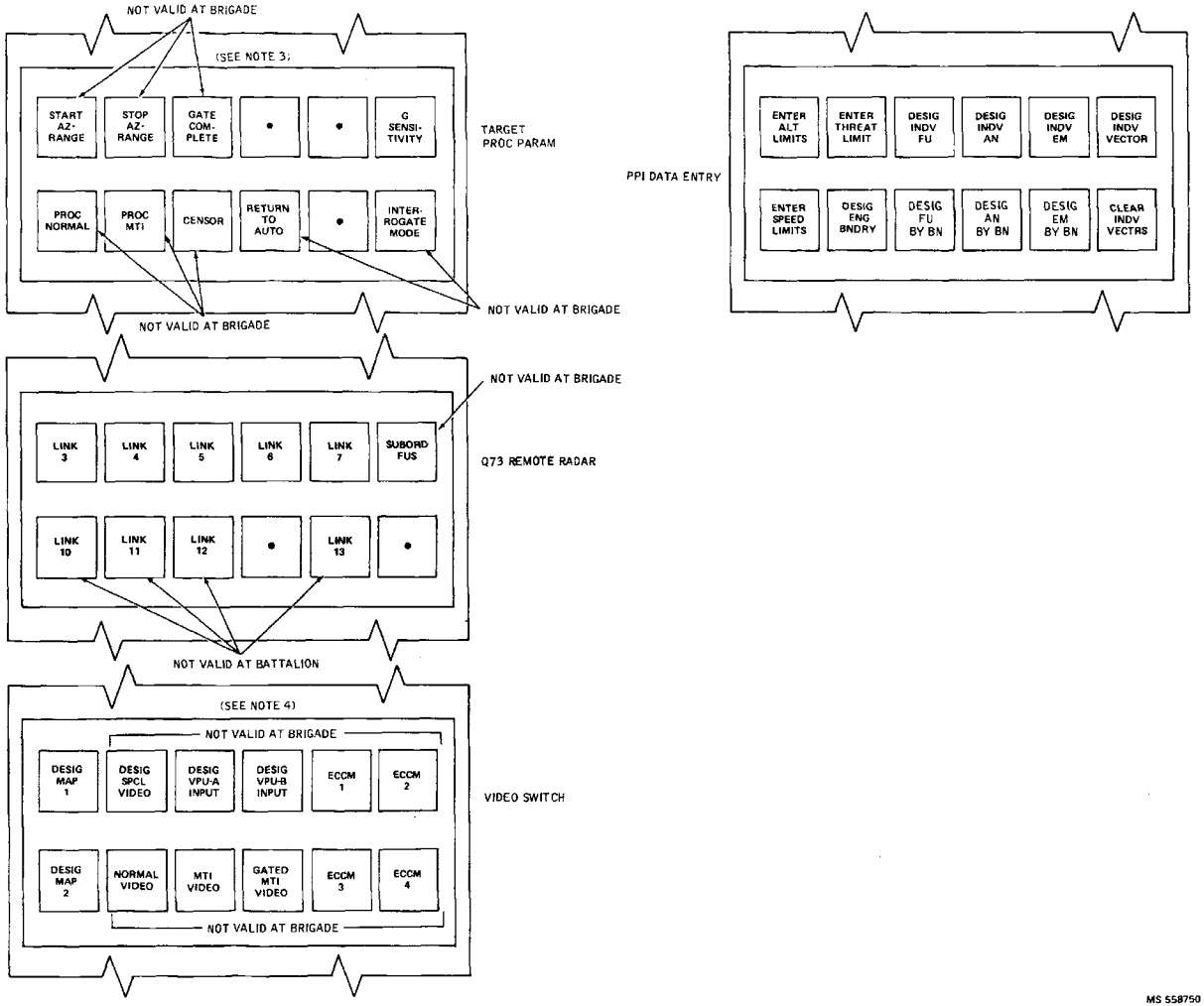


Figure 12-4. Valid Monitor Mode Controls
(Sheet 2 of 2)

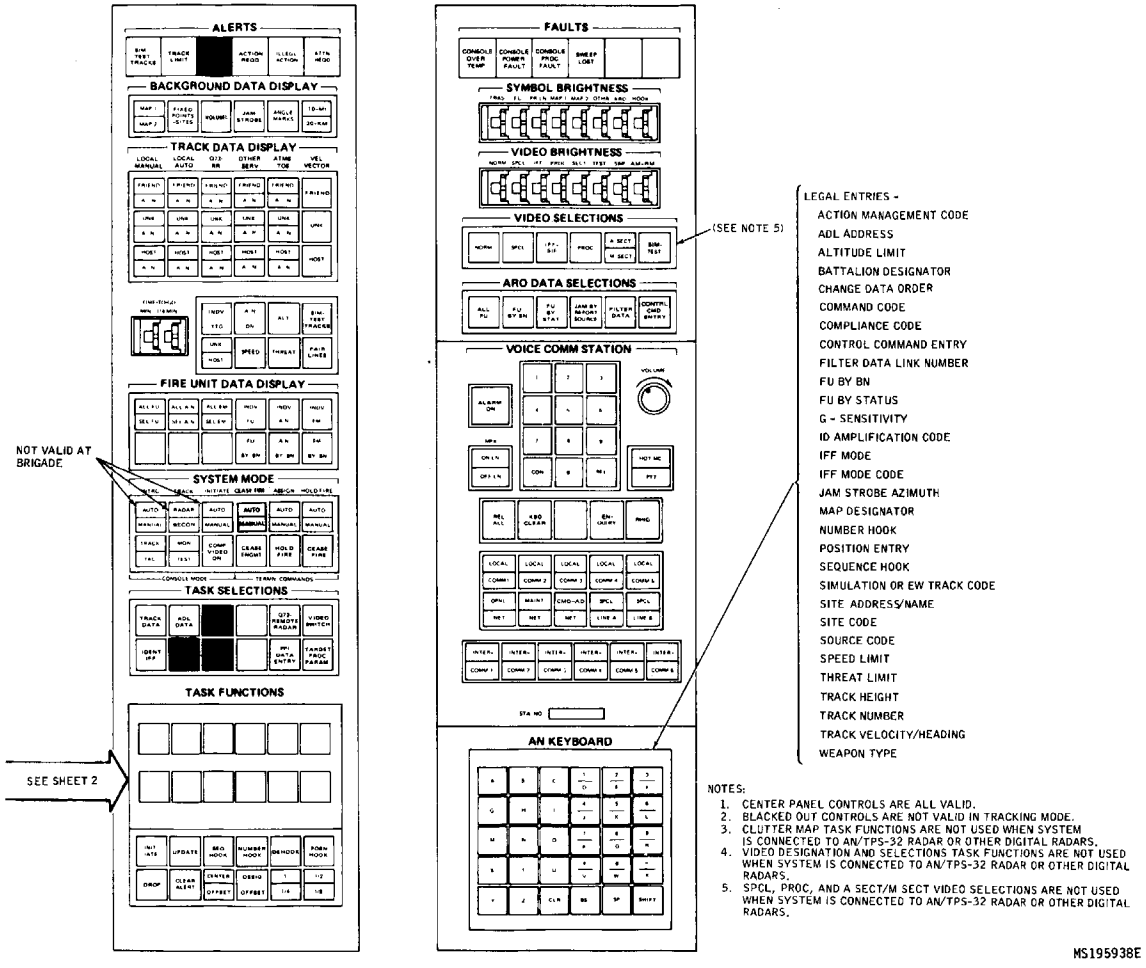


Figure 12-5. Valid Tracking Mode Controls
(Sheet 1 of 2)

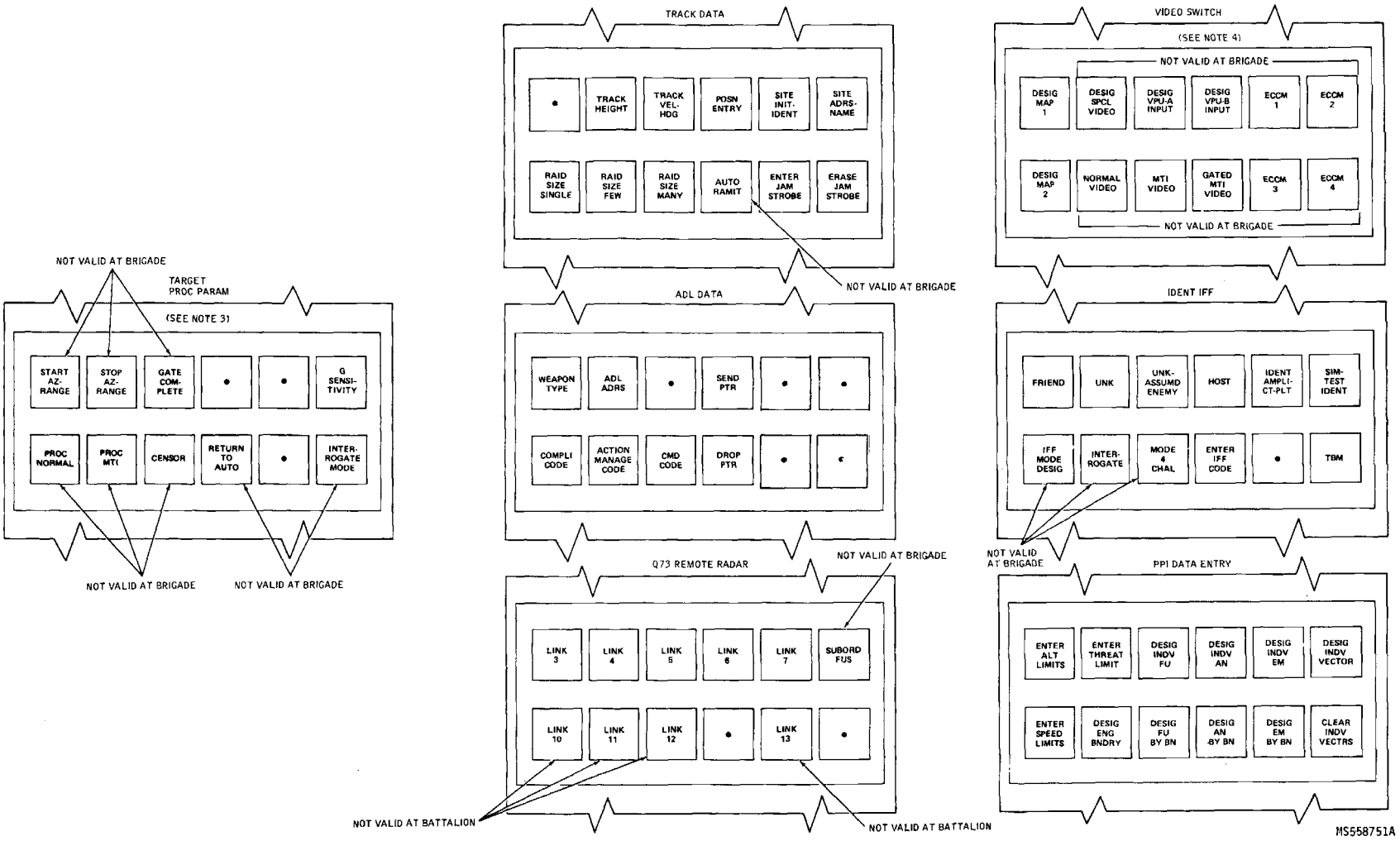


Figure 12-5. Valid Tracking Mode Controls
(Sheet 2 of 2)

Change 11 12-38.1/(12-38.2 blank)

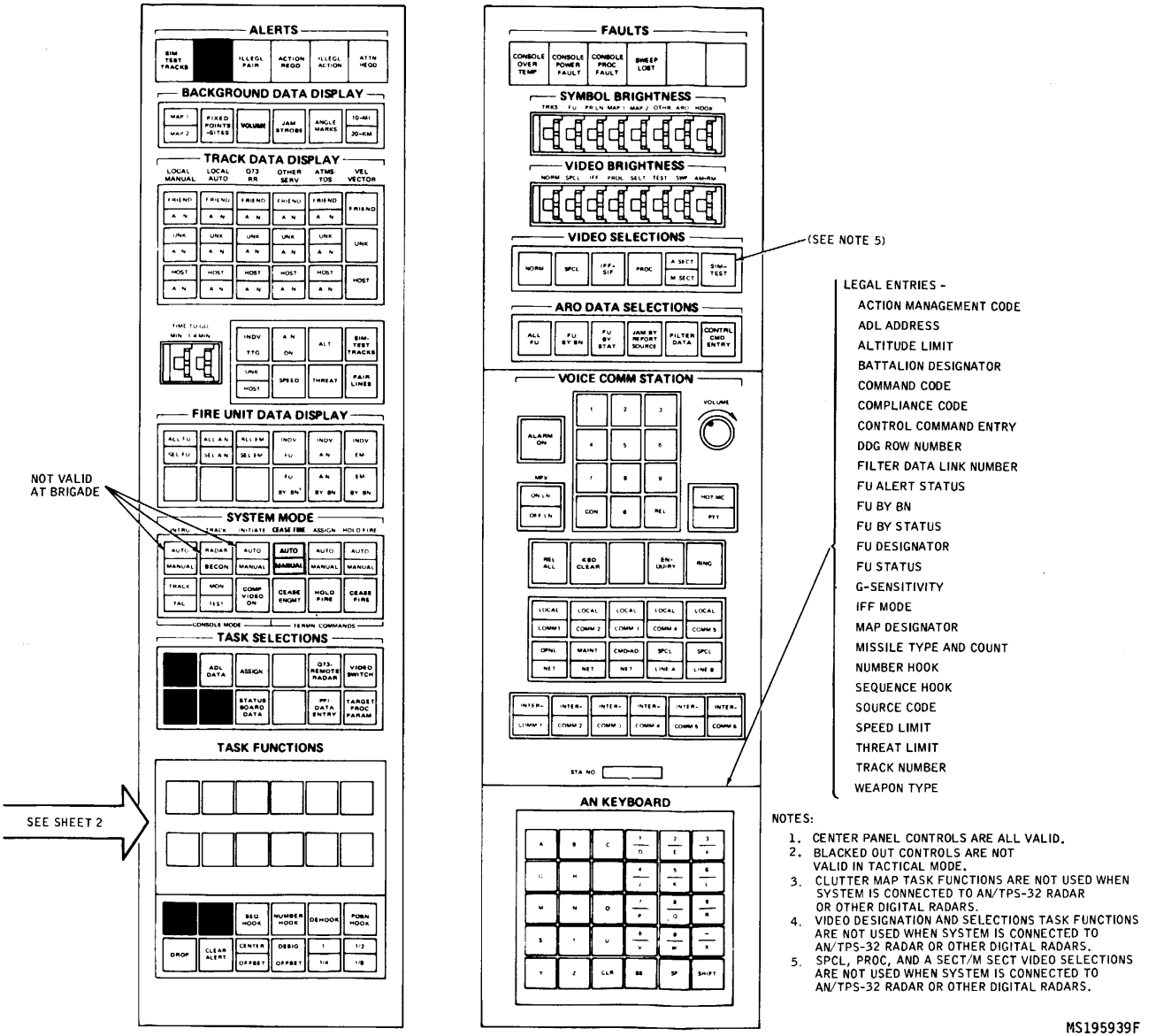


Figure 12-6. Valid Tactical Mode Controls
(Sheet 1 of 2)

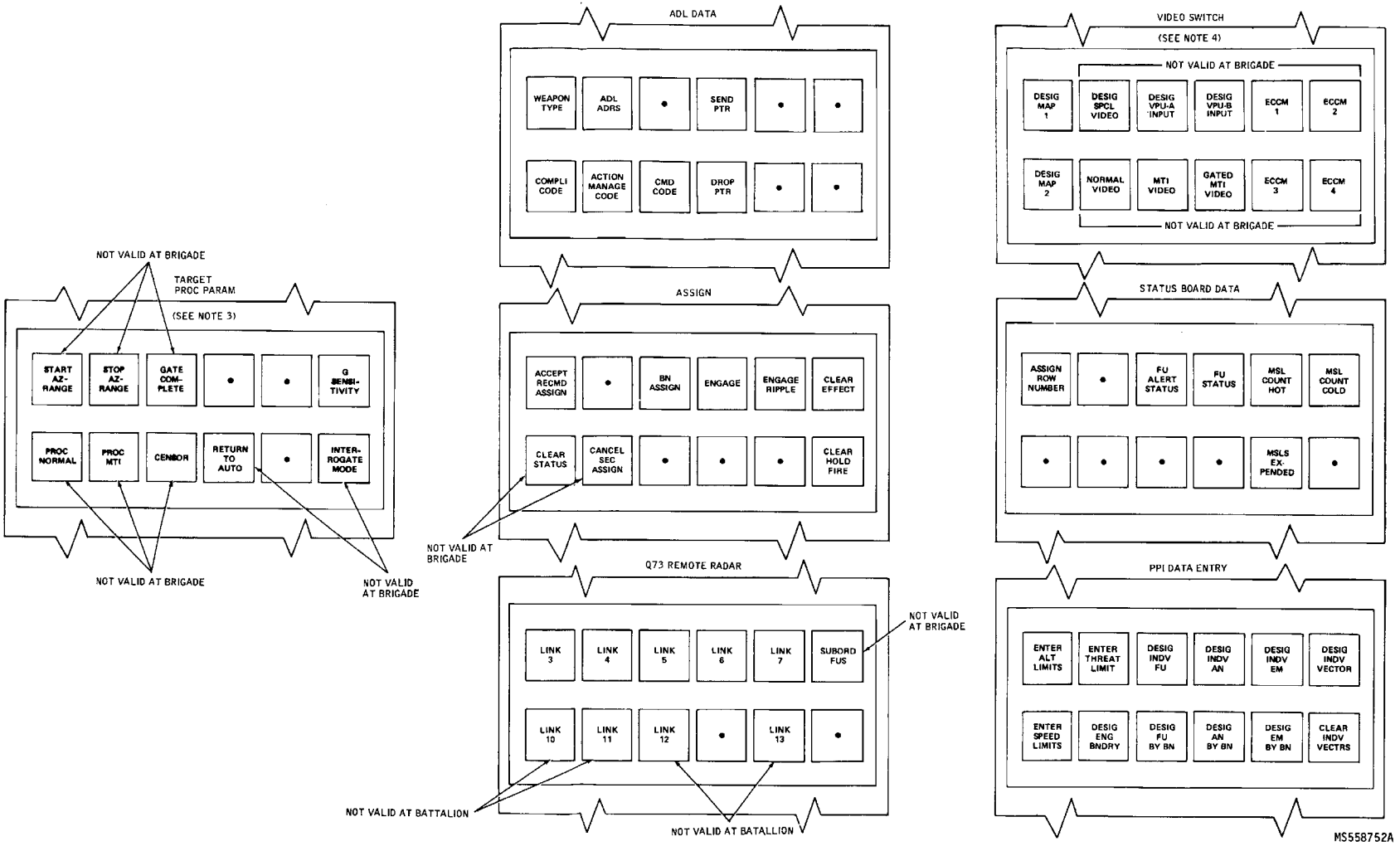


Figure 12-6. Valid Tactical Mode Controls
(Sheet 2 of 2)

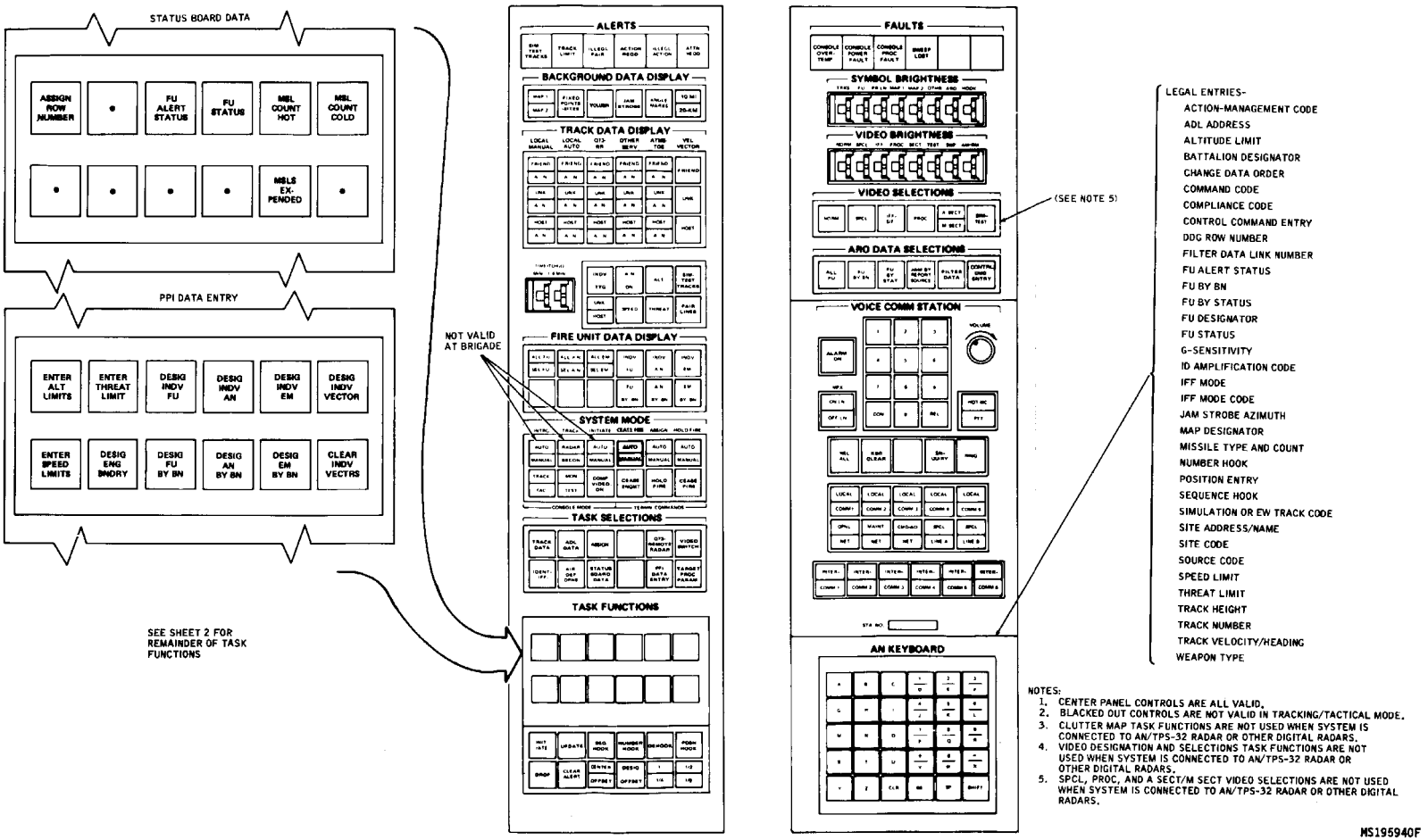


Figure 12-7. Valid Tracking/Tactical Mode Controls (Sheet 1 of 2)

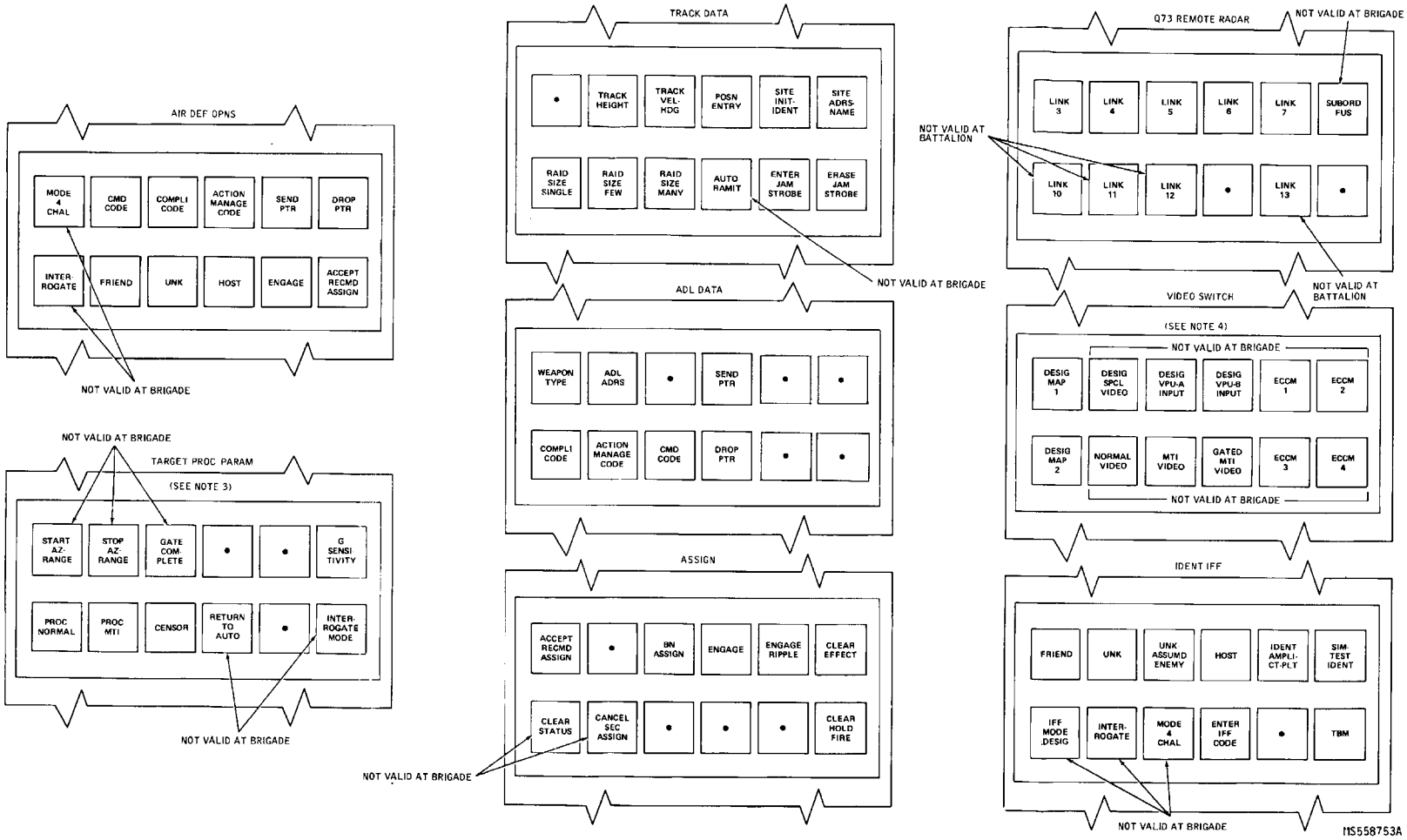


Figure 12-7. Valid Tracking/Tactical Mode Controls
(Sheet 2 of 2)

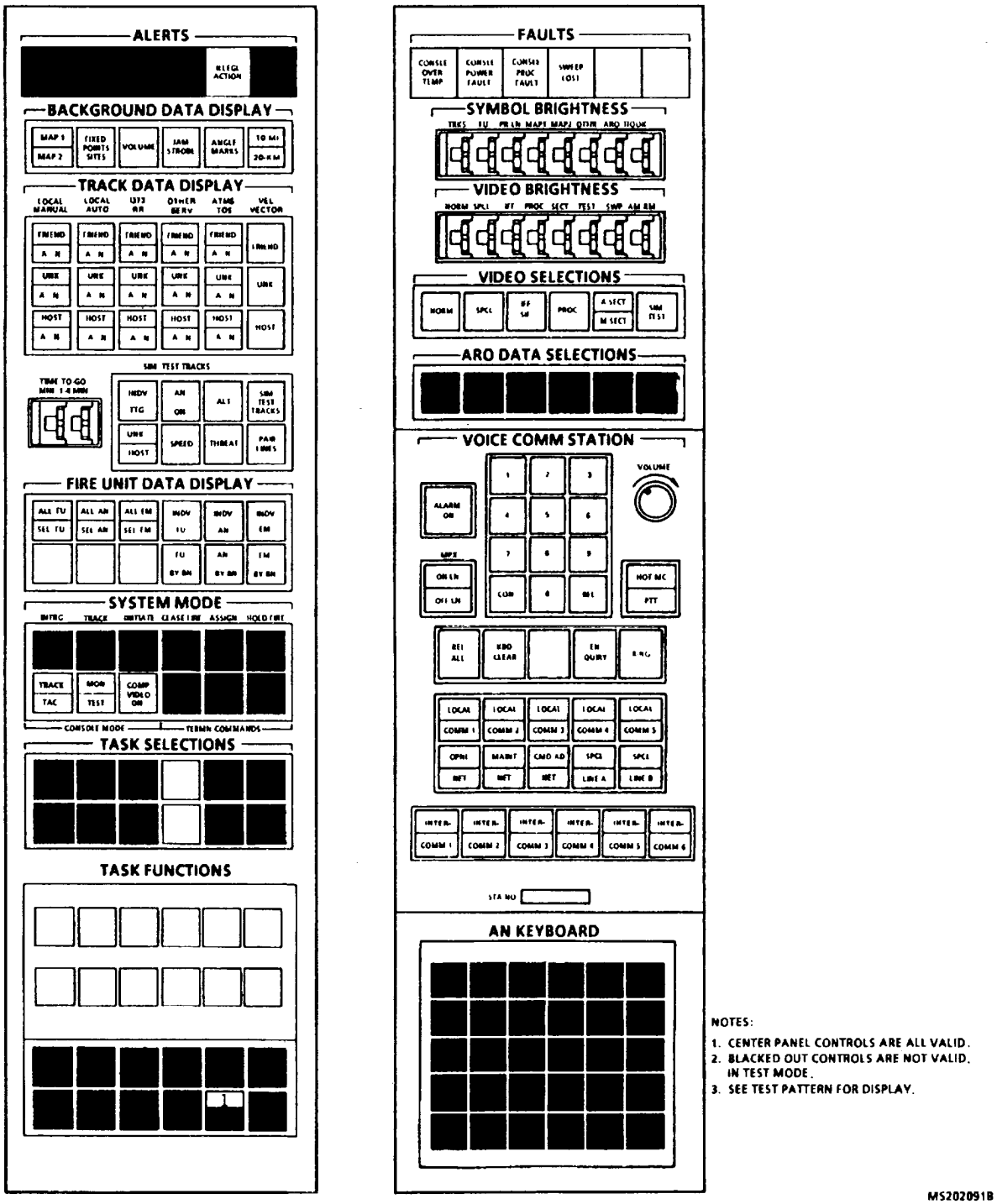


Figure 12-9. Valid Test Mode Controls

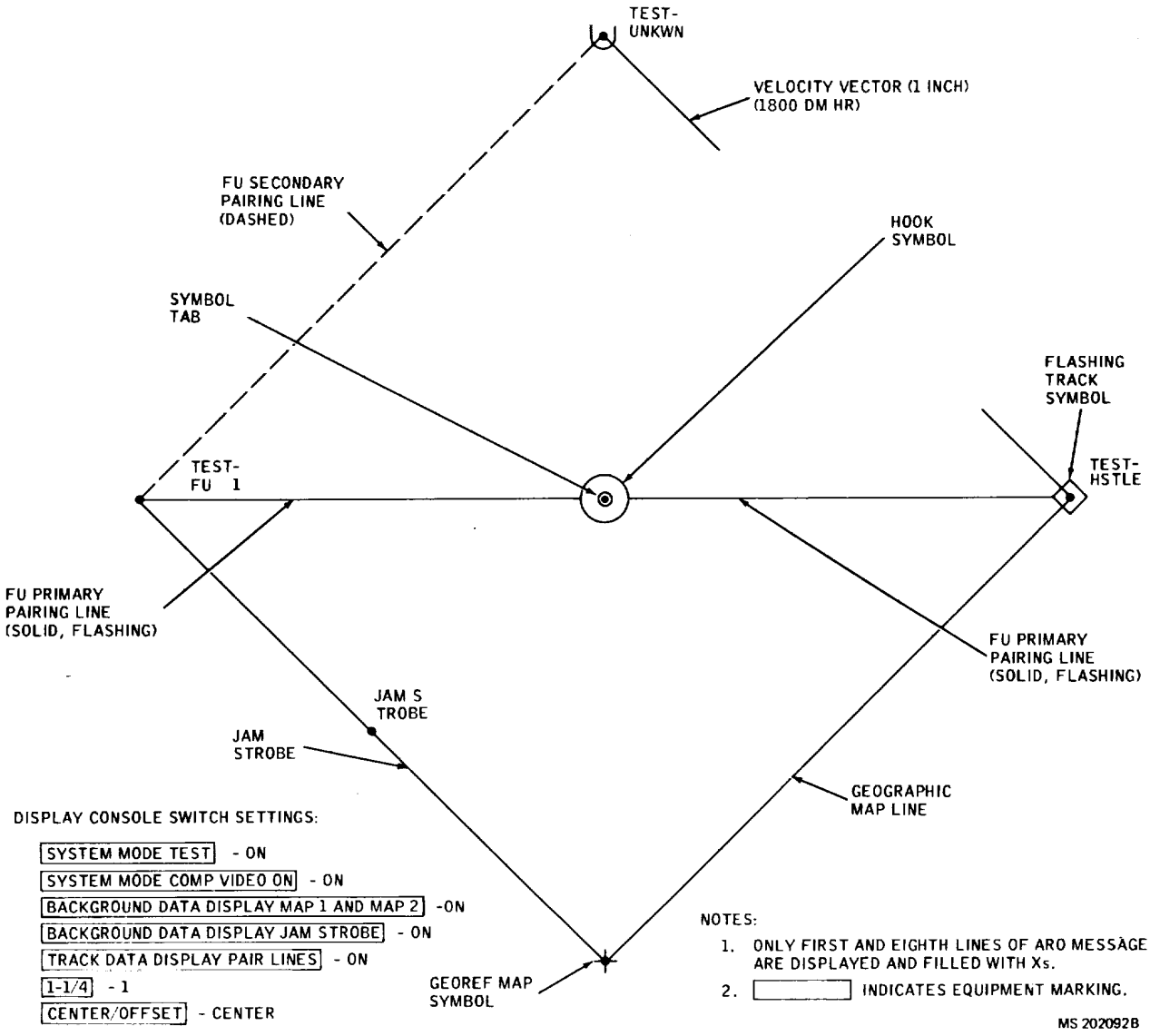


Figure 12-10. Test Pattern Display (Test Mode)

Section IV. LOGICAL DEVICE AND ADDRESSES

12-5. General. This section provides listings for logical device numbers and equipment address numbers. Refer to tables 12-2 through 12-7 for these requirements.

Table 12-2. System TMON and Logical Device Numbers

TMON fault code[1]	Logical device number[2]	Functional device identification[3]
700000	00	Modem Link 0
700001		IOE no. 1
700002		Upper modem power supply no. 1
700003		Modem clock
700004		IOM
700010	01	Link 1
700020	02	Link 2
700030	03	Link 3
700040	04	Link 4
700041		IOE no. 2
700042		Upper modem power supply no. 2
700043		Modem clock
700050	05	Link 5
700060	06	Link 6
700070	07	Link 7
700100	10	Link 10
700101		IOE no. 3
700102		Upper modem power supply no. 3
700103		Modem clock
700110	11	Link 11
700120	12	Link 12
700130	13	Link 13
700140	14	Link 14
700141		IOE no. 4
700142		Upper modem power supply no. 4
700143		Modem clock
700150	15	Link 15
700160	16	Link 16
700170	17	Link 17
700200	20	Link 20
700201		IOE no. 5
700202		Lower modem power supply no. 1
700210	21	Link 21
700220	22	Link 22
700230	23	Link 23

See footnotes at end of table.

Table 12-2. System TMON and Logical Device Numbers

TMON fault code[1]	Logical device number[2]	Functional device identifications[3]
700240	24	Link 24
700241		IOE no. 6
700242		Lower modem power supply no. 2
700250	25	Link 25
700260	26	Link 26
700270	27	Link 27
700300	30	Link 30
700301		IOE no. 7
700302		Lower modem power supply no. 3
700310	31	Link 31
700320	32	Link 32
700330	33	Link 33
700340	34	Link 34
700341		IOE no. 8
700342		Lower modem power supply no. 4
700350	35	Link 35
700360	36	Link 36
700370	37	Link 37
700400	40	Display console no. 0 (eft)
700410	41	Display console no. 1 (right)
700420	42	Display console no. 2 (remote)
thru	thru	thru
700470	47	Display console no. 7 (remote)
700500/ 701500	50	RIE
700510	51	VSU
700520	52	DDG no. 1
701530	53	KPU
700540	54	MTU (address 0)
700550	55	MTU (address 1)
700560	56	DOU
702570	57	IOU
700571		IOC
700572		IOX no. 1
700573		IOX no. 2
702600	60	CPU (prime)
702610	61	CPU (secondary)
702620	62	Memory bank 0
702630	63	Memory bank 1
702640	64	Memory bank 2

See footnotes at end of table.

Table 12-2. System TMON and Logical Device Numbers

TMON fault code[1]	Logical device number[2]	Functional device identification[3]
702650	65	Memory bank 3
701660	66	Memory bank 4 (nonfunctional)
701670	67	Memory bank 5 (nonfunctional)
701770	70	Memory bank 6 (nonfunctional)
701710	71	Memory bank 7 (nonfunctional)
700720	72	DDG no. 2
700740		Power cabinet
700750	75	ECU
700760	76	VCC
700770	77	MPU
7700024		Base memory

[1]A number other than zero in the third position indicates the severity of the fault. This indication does not vary except in the case of the RIE which can be 700500 or 701500. Codes are weighted as follows:

2 = operation cannot continue without reconfiguration or troubleshooting

1 = a degraded system mode will result unless troubleshooting is performed

[2]Blank indicates no logical device number assigned

[3]Physical modem number assigned to link during initialization. CC102 mm nn where mm = logical device number (link) and nn = physical modem number

[4]Appears in DIAGNOSE CODE readout on ADP status and control panel only. If error occurs, system shuts down.

Attempt CPU RESTART; if unsuccessful, proceed to ADP Fl flowchart in TM 9-1430-655-20-6

Table 12-3. Hexadecimal, Binary, Octal and Decimal Conversion

Hexadecimal	Binary	Octal	Decimal
0	0000	0	0
1	0001	1	1
2	0010	2	2
3	0011	3	3
4	0100	4	4
5	0101	5	5
6	0110	6	6
7	0111	7	7
8	1000	10	8
9	1001	11	9
A	1010	12	10
B	1011	13	11
C	1100	14	12
D	1101	15	13
E	1110	16	14
F	1111	17	15
10	10000	20	16
11	10001	21	17

Table 12-4. Operational Configuration Definitions

CC command	Definition
CC20	Brigade Army Air Defense Mission, normal operations, single or dual CPU, and one auxiliary function available (refer to table 12-1.1) (Raid Data Generation [CC31], Field Utilities [CC34], Map Generation [CC36], Site Adaption [CC37], or any one fault isolation program [CC50-CC56]).
CC21	Brigade Army Air Defense Mission, single or dual CPU, one memory down, normal operations, but no auxiliary function available. (Some auxiliary functions available if fourth memory bank is on line. Refer to table 12-1.1.)
CC22	Brigade Army Air Defense Mission, single or dual CPU, one memory down, reduced track capacity, and one auxiliary function available (refer to table 12-1.1) (Field Utilities [CC34], Map Generation [CC36], Site Adaption [CC37], or any one fault isolation program [CC50-CC56]).
CC23	Nonfunctional.
CC24	Battalion Army Air Defense Mission, normal operations, dual CPU only, and one auxiliary function available (refer to table 12-1.1) (Simulation [CC30], Simulation Playback [CC33], Field Utilities [CC34], Map Generation [CC36], Site Adaption [CC37], or any one fault isolation program [CC50-CC56]). (Raid Data Generation [CC31] is not available.)
CC25	Battalion Army Air Defense Mission, dual CPU only, one memory down, normal operations, but no auxiliary function available. (Some auxiliary functions available if fourth memory bank is on line. Refer to table 12-1.1.)
CC26	Battalion Army Air Defense Mission, single or dual CPU, one memory down, reduced track capacity, and one auxiliary function available (refer to table 12-1.1) (Simulation [CC30], Simulation Playback [CC33], Field Utilities [CC34], Map Generation [CC36], Site Adaption [CC37], or any one fault isolation program [CC50-CC56]).
CC27	Nonfunctional.

NOTES:

1. Entering Master Battalion (CC143) will enhance battalion (CC24-CC26) capabilities by including brigade functions. Refer to table 12-1 and Unit SOP.

2. A new bootload is required before entering a site adaptation configuration.

3. If the system is operating in CC24 or CC25 configuration upon receipt of TMON 702610 (secondary CPU), the system must be configured to CC26 if operations are to continue.

4. When reconfiguring from a single CPU to a dual CPU operational configuration, a CC100 61 must be entered prior to loading operational configuration. When reconfiguring from a dual CPU to a single CPU operational configuration, a CC101 61 must be entered prior to loading operational configuration.

5. If reconfiguring because of loss of logical memory bank 0 or 1, a new bootload is required before reconfiguration.

Table 12-5. Data Link Switch Settings - Battalion

Link number[2]	Description
0-7	TADIL-B/ATDL-1 Sites[1]
10-37	ATDL-1 Fire unit[1]

[1]Set modem FORMAT switch to IA/TB, BIT RATE BPS switch to 1200, and ATTEN (DB) to 00.

[2]Link to Modem assignment is optional and achieved with CC102.

Table 12-5.1. Data Link Switch Settings -- Master Battalion

Link Number[2]	Description
0-7	TADIL-B/ATDL-1 Sites[1]
10-37	ATDL-1 Fire unit[1]

[1]Set modem FORMAT switch to IA/TB BIT RATE BPS switch to 1200, and ATTEN (DB) to 00.

[2]Link to Modem assignment is optional and achieved with CC102.

Table 12-6. Data Link Switch Settings - Brigade

Link number[2]	Description
0-7	TADIL-B/ATDL-1 Sites[1]
10-13	ATDL-1 Sites[1]

[1]Set modem FORMAT switch to IA/TB, BIT RATE BPS switch to 1200, and ATTEN (DB) to 00.

[2]Link to Modem assignment is optional and achieved with CC102.

Table 12-7. Modem/Device/Connector Assignments[1]

Modem number[2]	Receiver demodulator physical device address	Transmitter modulator physical device address	Demarkation panel connection
1	100	101	J1
2	102	103	J2
3	104	105	J3
4	106	107	J4
5	110	111	J5
6	112	113	J6
7	114	115	J7
8	116	117	J8
9	120	121	J9
10	122	123	J10
11	124	125	J11
12	126	127	J12
13	130	131	J13
14	132	133	J14
15	134	135	J15
16	136	137	J16
17	140	141	J17
18	142	143	J18
19	144	145	J19
20	146	147	J20
21	150	151	J21
22	152	153	J22
23	154	155	J23
24	156	157	J24
25	160	161	J25
26	162	163	J26
27	164	165	J27
28	166	167	J28
29	170	171	J29
30	172	173	J30
31	174	175	J31
32	176	177	J32

[1]Refer to TM 9-1430-652-10-4 for detailed data link interface information.

[2]Link to Modem assignment is optional and achieved with CC102.

Section V. MESSAGE DEFINITIONS

12-6. RIE Switch Message. The RIE switch message (figure 12-I 1) is printed out when loading is completed or as a result of changing switch setting at the RIE panels. A 45-second delay is provided after the last switch setting change to allow time for additional switch setting changes. This message provides a hard copy record of 48 critical switch settings to aid in analyzing system operation with an active radar.

12-7. Messages. Five basic types of messages are generated. The format for all messages and all field definitions are provided in figure 12-12. For a more complete discussion of the M&D program and these messages, refer to TM 9-1430-655-20-1.

a. *Test Monitor Messages*. TMON messages are output when a definite hardware fault exists. Maintenance action may or may not be required, depending on the fault severity code. The system status program function outputs the TMON message on the KPU and posts the appropriate code in the DIAGNOSE CODE indicators on the ADP status and control panel. Table 12-2 lists possible system TMON fault numbers and equipment logical device numbers.

b. *Error Messages*. The system status function outputs an error message when the equipment status table (EST) indicates a software-related problem. Maintenance action may or may not be called for depending on the program level (11) field of the output message. If the II field varies with each message output, a true hardware fault probably exists and maintenance action should be initiated. However, if the II field remains constant, software problems are indicated and a record of the message data should be kept to aid in analysis of the software problem.

c. *Overload Messages*. An overload system status message is output when the CPU is overloaded to the extent that processing of low priority tasks, such as fault detection, is inhibited. Normally, this is a temporary condition and occurs only during peak processing periods. The overload message should be noted but ignored as far as maintenance action is concerned. However, if overload messages are repeatedly output (approximately three within a 30-second period), and input signals and internal switch settings are correct, maintenance action is indicated and should be initiated.

d. *Device Status Messages*. Each device has an interim and total error count maintained by the monitoring software. When an error is detected, these counters are incremented and the appropriate error bit in the equipment status table is set. The device status message is printed for one or all devices via the CC11 command, for all devices at midnight (GMT), or for any device whose total count reaches 256. The logical device numbers are listed in table 12-2.

e. *RIE Loop Test Messages*. These messages are output as a result of RIE Fault Detection. The messages consist of text amplifying text, message reference number, severity code, and error history.

f. *Error Count Clear*. Two error counts are provided for each logical device. One count indicates the total number of errors counted against that device. This count is cleared when a CC100 command is executed, when it reaches its limit (255), or at 2400 hours each day. The total count does not cause error messages, but if the count reaches its limit, the device number, equipment status table and total count are printed before the count is cleared. The interim count is used to indicate the number of errors in a given time frame (usually 10 seconds). For peripheral devices, the count is used to determine when to set flags which in turn trigger a TMON message. For IOU, CPU, or memories, the count is examined every 10 seconds and if the count is greater than nine a TMON is printed and the count is cleared after being added to the total count. The CC11 command causes printout of the Equipment Status table and total error count entries for a selected device or for all devices. The format is CC II DD where DD is the logical device number in octal. If DD is not entered, the entire table is printed. TMON messages indicate how serious the fault is affecting system operation. This indication is in the third MSD of the TMON number and is in the range 0 through 2, where 0 indicates the least serious fault while 2 indicates immediate action is required.

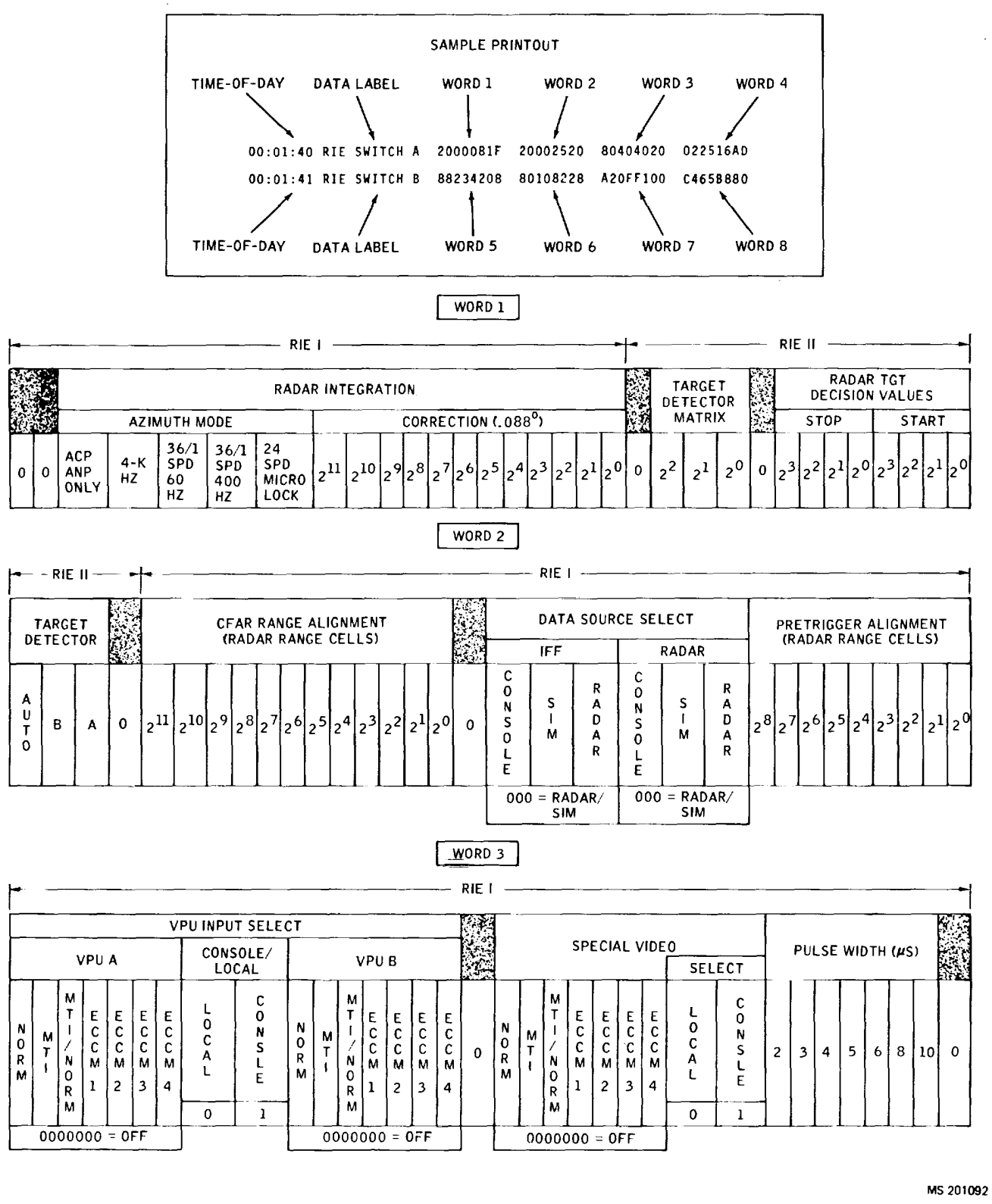


Figure 12-11. RIE Switch Message Conversion (Sheet 1 of 3)

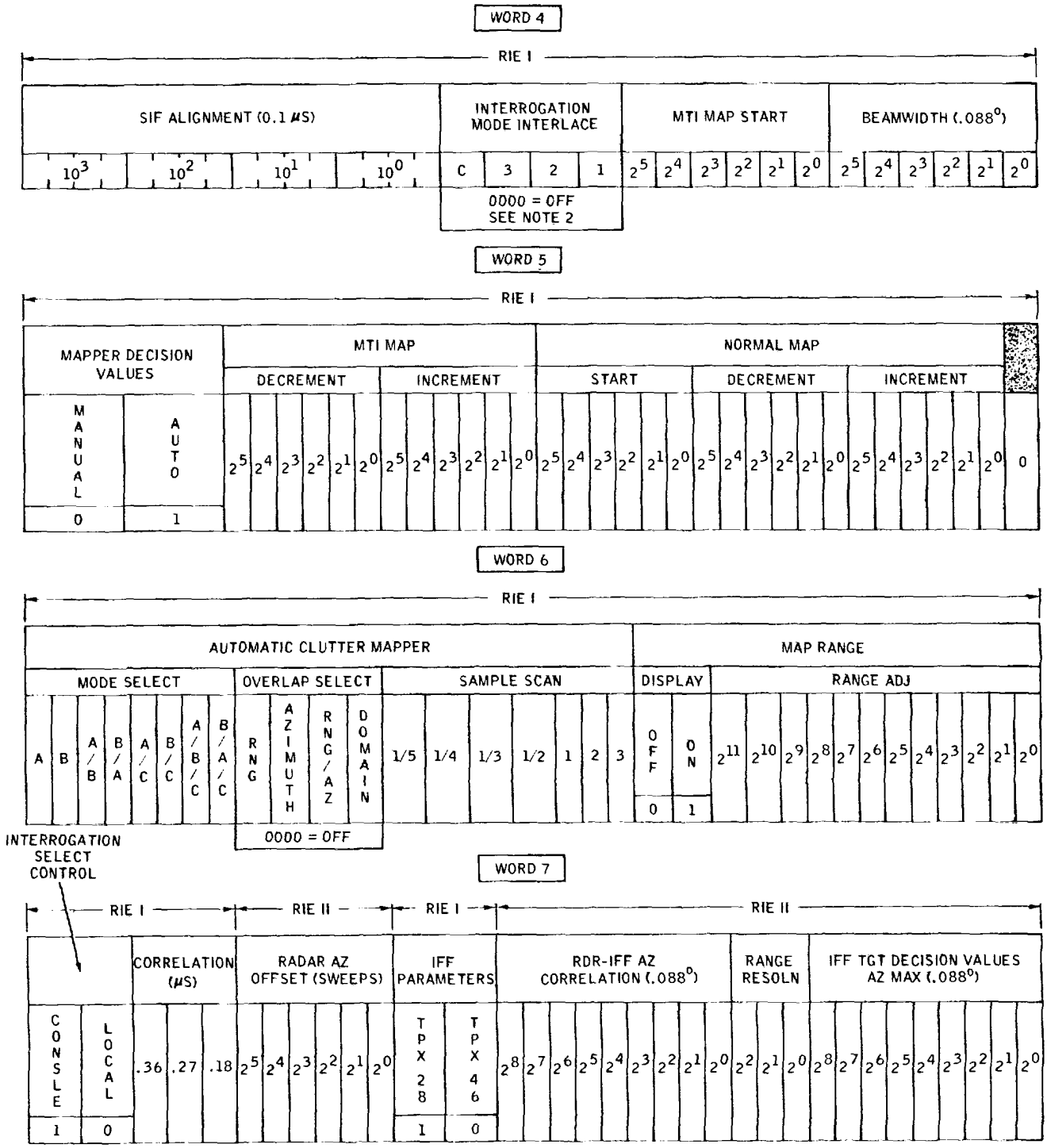
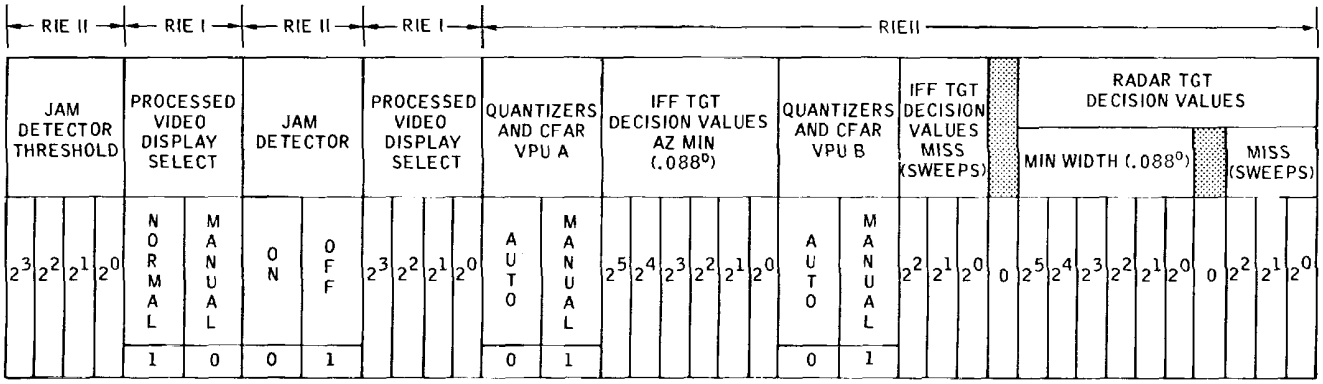


Figure 12-11. RIE Switch Message Conversion (Sheet 2 of 3)

WORD 8



EXAMPLE- WORD 4
5281AED2 - WHEN CONVERTED TO BINARY CORRESPONDS TO THE FOLLOWING SWITCH SETTINGS.
SIF ALIGNMENT (O.IUS) = 5281
MODE INTERLACE = 2, C
MTI MAP START = 73 (OCTAL)
BEAMWIDTH (.0880) = 22 (OCTAL)

NOTES:
1. UNLESS OTHERWISE SPECIFIED, A 1 APPEARING IN THE BIT POSITION INDICATES THE SWITCH IS SET TO THE CORRESPONDING VALUE APPEARING IN THE FORMAT.

2. THIS SWITCH CAN HAVE MORE THAN ONE BIT SET.

3. THIS MESSAGE IS IN HEXADECIMAL AND MUST BE CONVERTED TO BINARY IN ORDER TO DETERMINE SWITCH SETTINGS.

4. REFER TO TABLE 12-3 FOR HEXADECIMAL TO BINARY CONVERSION.

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Figure 12-11. RIE Switch Message Conversion (Sheet 3 of 3)

TMON MESSAGE

hh:mm:ss TMON - FAULT 7OSDDO : tttt : PPP TTT

ERROR MESSAGE

hh:mm:ss ERROR - CPU D : tttt : 11 iiii

OVERLOAD MESSAGE

hh:mm:ss OVERLOAD - - CPU D : tttt

DEVICE STATUS MESSAGE

hh:mm:ss	DEVICE	STATUS	ERROR	COUNT
	DD	tttt	TTT	

FIELD DEFINITIONS:

h h:mm: s s	= TIME OF DAY IN HOURS:MINUTES-SECONDS OF EVENT OCCURRENCE.
DD	= TWO DIGIT LOGICAL DEVICE NUMBER.
S	= FAULT SEVERITY
D	= 1 OR 2 TO INDICATE PRIMARY OR SECONDARY CPU RESPECTIVELY
tttt	= EQUIPMENT STATUS TABLE BITS (TRIGGERING EVENT) IN HEXADECIMAL.
11	= PROGRAM LEVEL AT WHICH ERROR OCCURRED (CPU ONLY).
i i i i	= INSTRUCTION LOCATION REGISTER (ILR) OF PROGRAM LEVEL WHERE ERROR OCCURRED (CPU ONLY)
PPP	= INTERIM ERROR COUNT FOR DEVICE.
TTT	= TOTAL ERROR COUNT FOR DEVICE.

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Figure 12-12. System Status Messages - Format and Field Definitions (Sheet 1 of 2)

RIE LOOP MESSAGE

hh:mm:ss <RIE LOOP> CCCC MN 'AMPLIFYING MESSAGE' HHHHHHHH

FIELD DEFINITIONS:

h h: mm: S s = TIME OF DAY IN HOURS MINUTES/SECONDS OF EVENT OCCURRENCE.

CCCC = THIS FOUR CHARACTER FIELD REPRESENTS THE ERROR SEVERITY CODE AS FOLLOWS.

- INFO = INFORMATION
- WARN = WARNING
- ERR = ERROR
- SEV = SEVERE ERROR

NOTE:
REFERENCE TM 9-1430-655-20-1 (TABLE 4-2)

MN = THIS FIELD IS THE MESSAGE NUMBER USED FOR REFERENCE PURPOSES.

AMPLIFYING MESSAGE AND CORRESPONDING MESSAGE NUMBER AS FOLLOWS:

- 01 RADAR TARGET MISSING
- 02 IFF TARGET MISSING
- 04 RADAR/IFF CORRELATION FAILURE
- 05 AZIMUTH DATA ERROR
- 06 RANGE DATA ERROR
- 07 IFF DATA ERROR
- 08 MODE C DATA ERROR
- 09 TPS-43 HEIGHT ERROR
- 10 TPS-43 AZIMUTH ERROR
- 11 TPS43 RANGE ERROR
- 12 RIE DEVICE TIMEOUT
- 13 TPS43 HEIGHT REPORT MISSING
- 14 SPURIOUS RADAR REPORTS
- 15 SPURIOUS IFF REPORTS
- 16 SPURIOUS HEIGHT REPORTS
- 20 VSU DEVICE TIMEOUT
- 21 VSU INTERNAL FAILURE
- 22 VSU INTERFACE FAILURE
- 23 VSU I/O ERROR
- 24 VSU AUTO OUTPUT INCOMPLETE
- 30 NO ANTENNA ROTATION
- 31 SLOW ANTENNA ROTATION
- 32 NO RADAR TRIGGER
- 33 NO IFF TRIGGER
- 34 RIE SWITCHES INCORRECT
- 40 COMMAND INHIBIT
- 41 TEST INHIBITED
- 42 VSU SWITCHES INCORRECT

HHHHHHHH THIS FIELD REPRESENTS AN EIGHT-DIGIT NUMBER GIVING A SCAN BY SCAN ERROR HISTORY; THE LEAST SIGNIFICANT DIGIT (RIGHTMOST) IS THE ONE WHICH OCCURRED ON THE MOST RECENT SCAN; THE ALPHA 'X' OCCURRING IN ANY COLUMN INDICATES THAT THERE ARE MORE THAN NINE ERRORS IN THE SCAN.

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Figure 12-12. System Status Messages-Format and Field Definition (Sheet 2 of 2)

Section VI. LEGAL ENTRIES

12-8. Legal Entries. Legal entries are provided in I table 12-8. These system variables are entered into the system using the display console AN Keyboard. Refer to TM 9-1430-652-10-7 for classified entries. Figures 12-15 and 12-16 provide link activation procedures for TADIL-B and ATDL-1 communications.

Figure 12-13. Deleted.

Table 12-8. AN/TSQ-73 Legal Entries

Parameter	Format	Legal entries
Track number		
ATDL-1	A1A2NNN	A1 = A thru N, P or Q
TADIL B	NNNN	A2 = A thru H
NATO	A3 A4A4NNN	A3 = N (N means NATO)
		A4 = A, E, G, H, J, thru M
		N = 0 thru 7
		(General address codes not valid)
Track height		Valid combinations: U-Alone, AA; IA; RH, R1, R2; EA
		(For source of U, type and height are not entered)
	AX NNN	A = A, E, R, U OR I (source)
		A = Aircraft
		E = Estimated
		R = Radar
		U = Unknown
		I = IFF
		X = A, H, 1 or 2 (type)
		A = Altitude (above or below MSL)
		H = Height above own site tangent plane
		1 = Height above height finder 1 tangent plane
		2 = Height above height finder 2 tangent plane
		± = Height sign
		NNN = Height, Classified (refer to (C)TM 9-1430-652-10-7)
Track velocity and heading	NNN#MMM	NNN = Classified (refer to (C)TM 9-1430-652-10-7)
		# = space
		MMM = 000-359 (heading in degrees)
Position entry (GEOREF)	A1A2A3A3NNNN	A1 = A thru Z except I and O
		A2 = A thru M except I
		A3 = A thru Q except I and O
		NN = 00 thru 59 (two groups)
Site initialization/ identification	A	A = C, T, O, P, A, R, or E identification
		C = Command Post
		T = Truck Park
		O = Ordnance Storage
		P = POL Storage
		A = Airfield
		R = Radar
		E = ECM Fix
Site address/name	XXXXYYYY	XXXX = Site address 0 thru 9 and/or A thru Z
		YYYY = Site name 0 thru 9 and/or A thru Z
Enter jam strobe	NNN	NNN = 000 thru 359 degrees

Table 12-8. AN/TSQ-73 Legal Entries

Parameter	Format	Legal entries	
Weapon type	N	N	= 0, 2 or 3
		0	= Not specified (all)
		2	= Missile
		3	Conventional
		(No entry, 0 is assumed)	
ADL address			
ATDL-1	A1A2	A1	= A thru N, P or Q
			A2 = A thru H
ATDL-1 FU	A1A2NNN	N	= 0 thru 7
ATDL-1 General address	AA	AA	= QH
TADIL B PU/RU number) address	NNN	N	= 0 thru 7 (last three digits of TADIL B track
TADIL B FU address	NNNN	N	= 0 thru 7
TADIL B General address	NNN	NNN	= 177
Send pointer			
ATDL-1 address	A1A2	A1	= A thru N, P or Q
			A2 = A thru H
ATDL-1 FU address	A1A2NNN	N	= 0 thru 7
ATDL-1 general address	AA	AA	= QH
TADIL B site address	NNN	N	= 0 thru 7
TADIL B FU address	NNNN	N	= 0 thru 7
Compliance code	AA	AA	= WC, HC, or CC
		WC	= Will comply
		HC	= Have complied
		CC	= Can't comply
Action-management code	A	A	= D, C, U, F, E, T, R, S, P, L, or I
		D	= Information difference
		C	= Change data order (ID)
		U	= Data update request
		F	= Force tell request
		E	= Emergency tell
		T	= Terminate force tell
		R	= Cease reporting
		S	= Special points processing update
		P	= Pair track number request
		L	= Terminate emergency
		I	= IFF update request
	Ax	A	=Z

Table 12-8. AN/TSQ-73 Legal Entries
-Continued

Parameter	Format	Legal entries
		Z = IFF Clear Message
		x = Code to be Cleared
		1 = Mode 1
		2 = Mode 2
		3 = Mode 3A
		A = All (Modes 1, 2, and 3A)
Command code	AA	AA = WT, WF, EN, CE, HF, CF, CX, SA, IN, or ER
		WT = Weapons tight
		WF = Weapons free
		EN = Engage
		CE = Cease engage
		HF = Hold fire
		CF = Cease fire
		CX = Cover
		SA = Salvo
		IN = Investigate/assign
		ER = Engage ripple
Designate Map 1 and/or Map 2	A	A = A thru J
IFF mode designate or interrogate mode (Battalion only)	X or XX	X = 1, 2, 3, or C
ID amplification code	C#NNN	C = Change data order
		# = space
		NNN = Classified (refer to TM 9-1430-652-10-7)
Enter IFF code		
Mode 1	1 NN	NN = 01 thru 73 (LSD not greater than 3)
Mode 2	2 NNNN	NNNN = 0001 thru 7777
Mode 3A	3 NNNN	
Mode 4	4 AA	AA = NI, NR, NF, IR, IF, TF
		NI = Not interrogated
		NR = No response
		NF = No response to a previously reported true friend
		IR = Invalid response
		IF = Invalid response to a previously reported true friend
		TF = True friend
Assign row number[1]		
	AXX#NN	AXX = FU designator
		A = A thru Z
		X = A thru Z or 0 thru 9
		# = Space
		NN = 01-48
		00 = Erase hooked FU data (with no designator)

See footnote at end of table.

Table 12-8. AN/TSQ-73 Legal Entries
--Continued

Parameter	Format	Legal entries
Fire unit alert	AA, NH, or NN	AA = RL or SM RL = released SM = simulated NH = OH thru 9H (hours) NN = 00 thru 99 (minutes) (Additional two character combinations may be used to define alert status)
Fire unit/site status	A	A = R, T, S, F, E, U, B, O, N, P, or W For non-PATRIOT FU R = Ready T = Tracking S = Silent tracking F = Firing E = Effective U = Heads up B = Broken engagement O = Out of action N = Not effective P = Partially effective W = Weapons assigned For PATRIOT FU or Site R = Ready O = Out of action (Valid only for subordinate FUs and sites. Entry of status other than U, B, N, or P is invalid if link is operational)
Missile count hot (PATRIOT)	NNN	NNN = 000 thru 511 (total long-range missiles reported by FUs known to be subordinate to the site)
Missile count hot (HAWK)	NN	NN = 00 thru 99 (total unknown, short- and medium-range missiles reported by FUs known to be subordinate to the site)
Missile count cold	NN	NN = 00 thru 31 (total missile count)
Enter altitude limits	NNN MMM	Classified (refer to TM 9-1430-652-10-7)
Enter threat limit	A	A = H, L, or N H = High L = Low N = No threat
Enter speed limits	NNN MMM	Classified (refer to TM 9-1430-652-10-7)

Table 12-8. AN/TSQ-73 Legal Entries
-Continued

Parameter	Format	Legal entries
Designate FU by battalion or PATRIOT ICC, FU alphanumerics by battalion or PATRIOT ICC, or FU engagement markers by battalion or PATRIOT ICC	A1A2	A1 = A thru N, P or Q A2 = A thru H
G-Sensitivity	N	N = 1 thru 8
Initiate track		
ATDL-1	A1A2NNN	A1 = A thru N, P or Q A2 = A thru H N = 0 thru 7
TADIL B	NNNN	N = 0 thru 7 (Track number is auto assigned if no entry is made)
Simulated or EW code	S or E	S = Simulated track E = EW track (Track is assumed live if S is not entered and nnon-EW if E is not entered)
Sequence hook	A	A = T, A, E, F, H, L, or P T = All central file items (default) A = Alerts (excludes SIM-TEST, PPI ONLY, and CAPACITY alerts) E = Jam strobes/EW tracks/ECM fixes /ESM fixes/Intel Data Tracks F = Fire units (excludes all non-Army FUs) H = High threat tracks L = Local tracks P = Poor tracking status tracks (BN only) **NOTE** Up to five of the above entries may be entered in any sequence. If no entry is made, the previously entered criterion/criteria is used; if there were none previously entered, hook all central file items is the assumed (default) entry. The order of sequence hook for those entered will be in the order listed above.
Number hook		
ATDL-1 track	A1A2NNN	A1 = A thru N, P or Q A2 =A thru H N = 0 thru 7
TADIL B track	NNNN	N = 0 thru 7

Table 12-8. AN/TSQ-73 Legal Entries
-Continued

Parameter	Format	Legal entries
Number hook (cont)		
NATO Track	$A_3A_4A_4NNN$	A_3 = N A_4 = A, E, G, H, J thru M N = 0 thru 7
Fire Unit	A1A2NNN, AXX, or NNNN	A1A2NNN is track number of FU A1 = A thru N, P or Q A2 = A thru H N = 0 thru 7 AXX is FU designator from assign row number A = A thru Z X = 0 thru 9 or A thru Z NNNN is TADIL B FU number N = 0 thru 7
Site	A1A2 or NNN	A1 = A thru N, P or Q A2 = A thru H N = 0 thru 7 (PU/RU address. Last 3 numbers or TADIL B track number.)
Volume/Line		
WCZ	V A3A4NNN	V = Volume/Line indicator A3 = W A4 = H, T or F N = 0-9
MEZ	V A5A4N	V = Volume/Line indicator A5 = -M A4 = H, T or F N = 1 or 2
FSCL	V A6A7N	V = Volume/Line indicator A6 = F A7 = S N = 1 or 2
Transmission Zone data link number	NN	00 thru 37 (TADIL B or ATDL-1 data link.)
Control command entry	CCnn(n)#RS	Refer to table 12-1.

[1]When information is to be erased for a hooked fire unit, row entry 00 is used and FU designator is not used.

Table 12-8. AN/TSQ-73 Legal Entries
-Continued

Parameter	Format	Legal entries
Site (cont)		(PU/RU address. Last 3 numbers or TADIL-B track number.)
Volume/Line		
WCZ	V A3A4NNN	V = Volume/Line indicator A3 = W A4 = H, T or F N = 0-9
MEZ	V A5A4N	V = Volume/Line indicator A5 = M A4 = H, T or F N = 1 or 2
FSCL	V A6A7N	V = Volume/Line indicator A6 = F A7 = S N = 1 or 2
Transmission Zone data link number	NN	00 thru 37 (TADIL-B or ATDL-1 data link.)
Control command entry	CCnn(n)#RS	Refer to table 12-1.

[1]When information is to be erased for a hooked fire unit, row entry 00 is used and FU designator is not used.

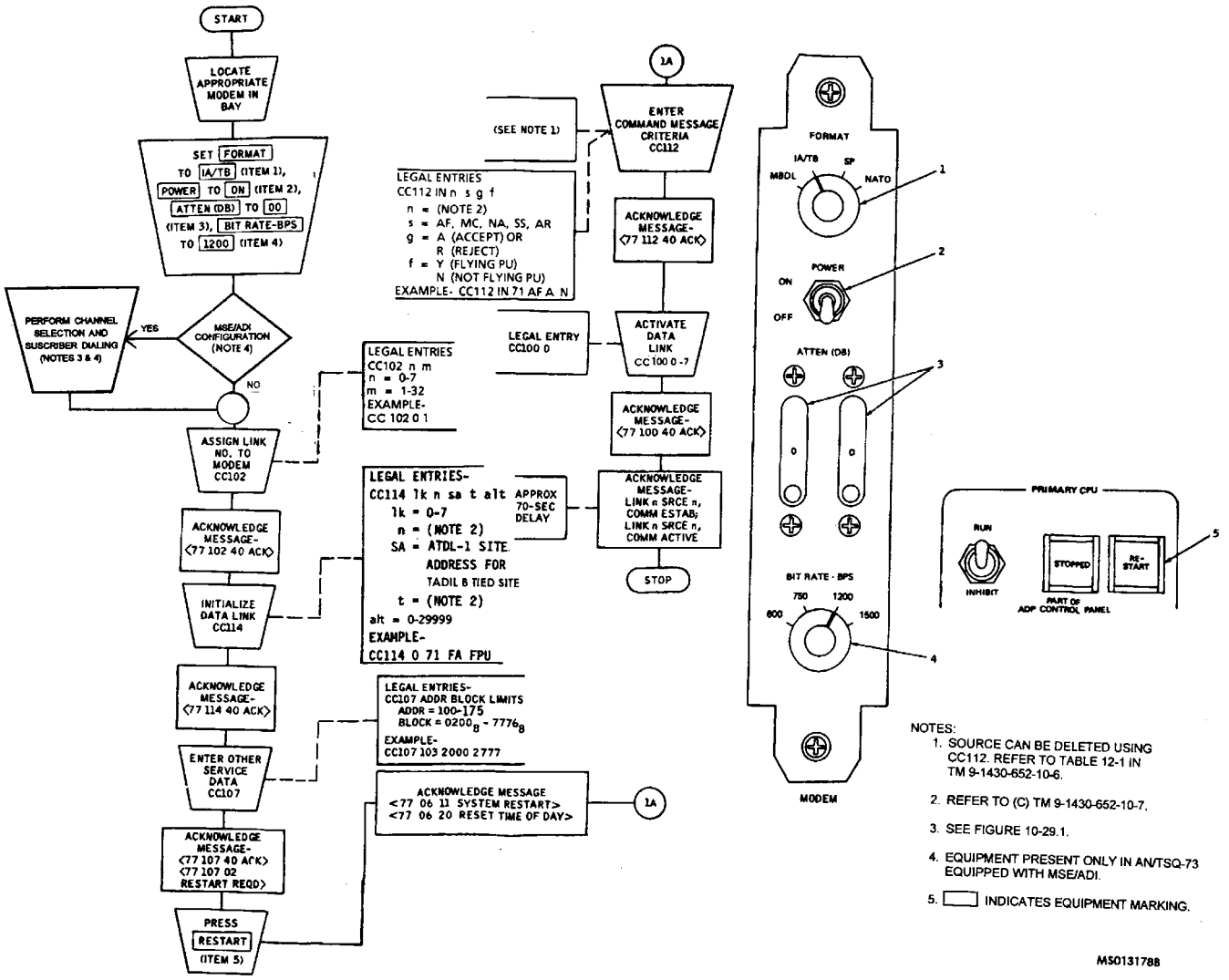


Figure 12-15. Activate TADIL B Link

Change 15 12-67/(12-68 blank)

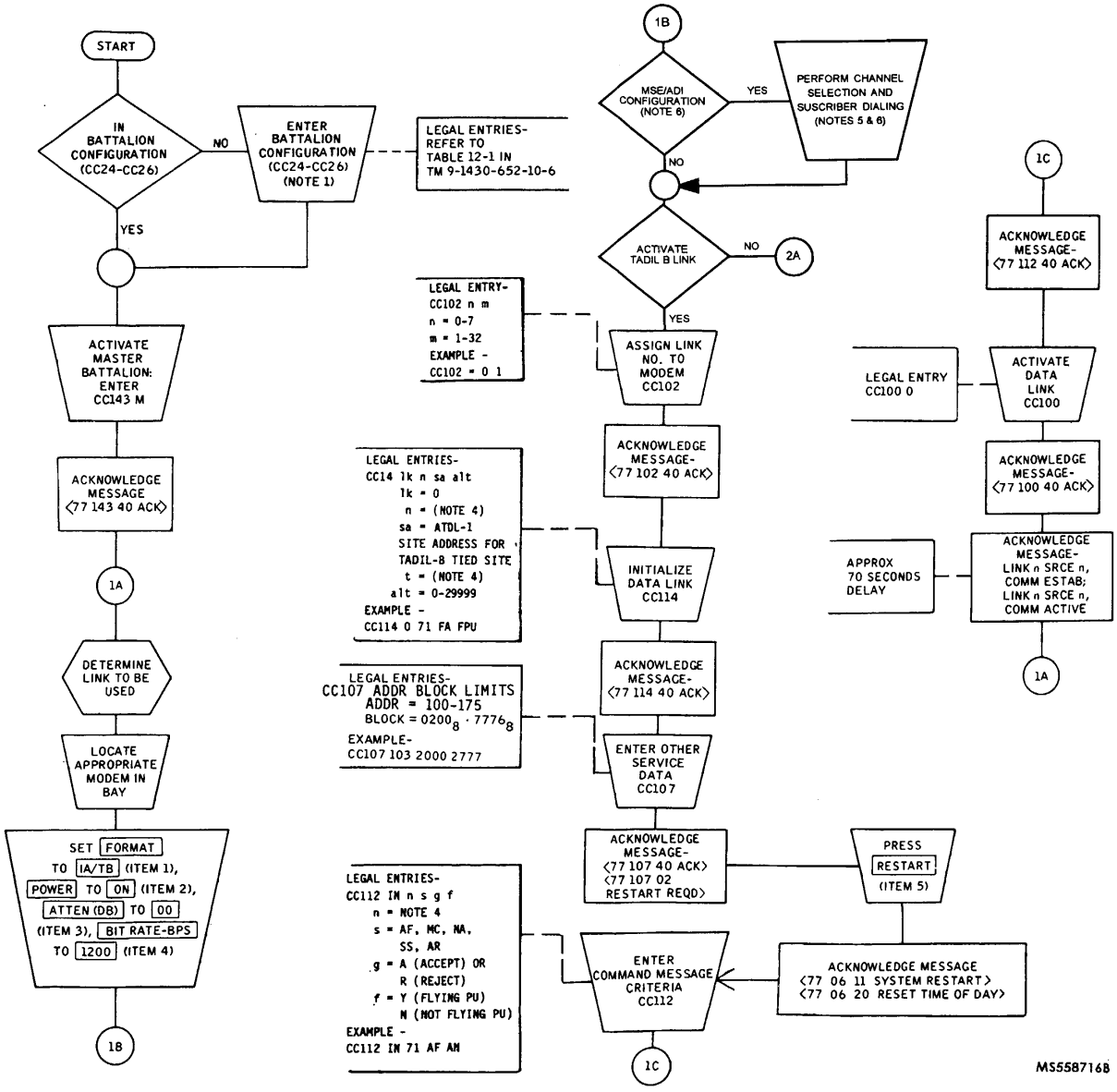
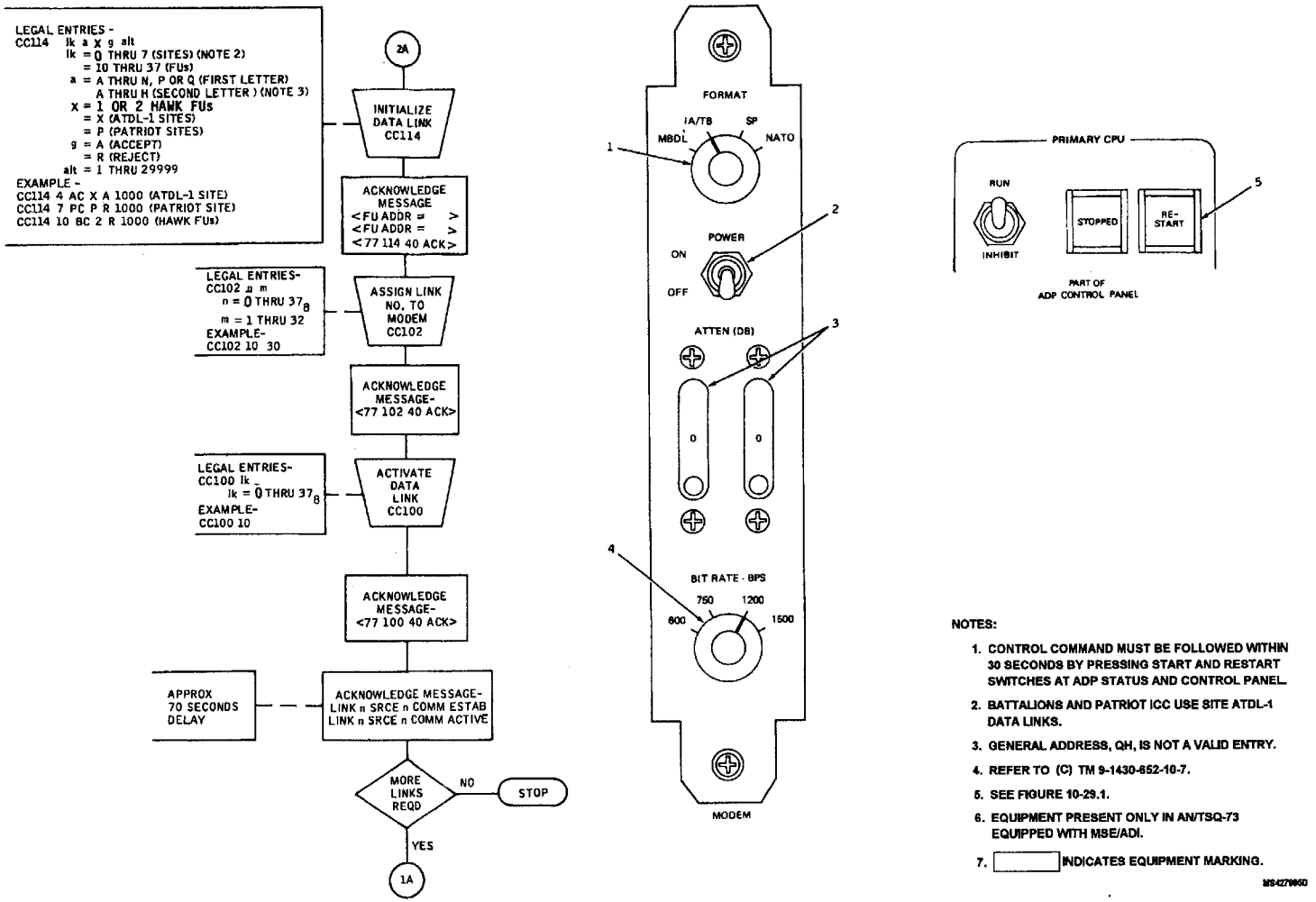


Figure 12-15. Activate Master Battalion Data Link (Sheet 1 of 2)



NOTES:

1. CONTROL COMMAND MUST BE FOLLOWED WITHIN 30 SECONDS BY PRESSING START AND RESTART SWITCHES AT ADP STATUS AND CONTROL PANEL.
2. BATTALIONS AND PATRIOT ICC USE SITE ATDL-1 DATA LINKS.
3. GENERAL ADDRESS, QH, IS NOT A VALID ENTRY.
4. REFER TO (C) TM 9-1430-652-10-7.
5. SEE FIGURE 10-29.1.
6. EQUIPMENT PRESENT ONLY IN AN/TSQ-73 EQUIPPED WITH MSE/ADI.
7. [ ] INDICATES EQUIPMENT MARKING.

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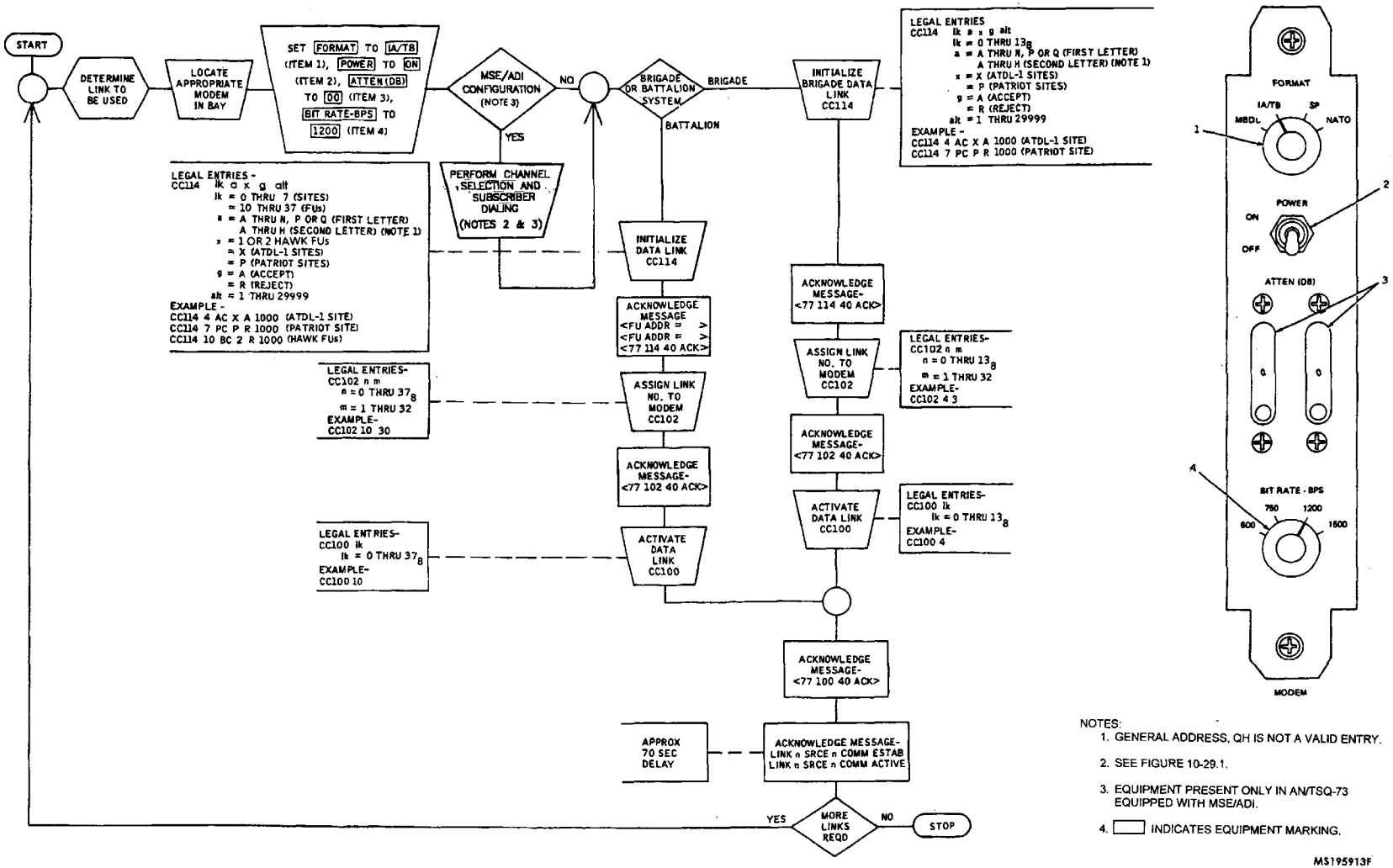
Figure 12-15. Activate Master Battalion Data Link (Sheet 2 of 2)



NOTES:
1. GENERAL ADDRESS, QH IS NOT A VALID ENTRY.
2. SEE FIGURE 10-29.1.
3. EQUIPMENT PRESENT ONLY IN AN/TSQ-73 EQUIPPED WITH MSE/ADI.
4. ☐ INDICATES EQUIPMENT MARKING.

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Figure 12-16. Activate ATDL-1 Link

Section VII. TERMS AND ABBREVIATIONS

12-9. Terms and Abbreviations. Table 12-9 provides a list of terms and abbreviations used throughout this series of operator volumes.

Table 12-9. List of Terms and Abbreviations

Term/abbreviation	Definition
AADCP	Army Air Defense Command Post
ACM	Automatic Clutter Mapper
ACP	Azimuth Change Pulse
ADA	Air Defense Artillery
ADC	Analog-to-Digital Converter
ADI	Air Defense Interface
ADIZ	Air Defense Identification Zone
ADL	Automatic Data Link
ADP	Automatic Data Processor
AEW	Airborne Early Warning
AF	Air Force
AFU	Assault Fire Unit
AN	Alphanumeric(s)
ARO	Auxiliary Read-Out
ASCVAL	Automatic SIF Code Validation
AT	Alter Tape
ATDL-1	Army Tactical Data Link-1
ATDS	Air Traffic Data System
ATMS	Air Traffic Management System
AUTO	Automatic
AUTO INITIATE	Automatic Initiation (initiation of tracks by the system)
BCC	Battery Control Center. The HAWK command post.
Bde	Brigade
BIT	Built-in-Test
BITE	Built-In Test Equipment
Bn	Battalion
BOT	Beginning-Of-Tape
BRL	Bomb Release Line
CANTCO	Can't Comply
CANTPRO	Can't Process
CBR	Chemical, Biological, Radiological
CC	(Computer) Control Command
Cease Engage	Used to terminate an engagement and normally assignment to a higher threat will follow.
Cease Fire	Used to prevent simultaneous engagement. The fire unit will continue to track the target.
Centralized Control	A method of control. A brigade or other level of command will assume responsibility for all engagements of hostile aircraft.
CFAR	Constant False Alarm Rate
CMD-AD	Command - Administration Net
CMOS	Complementary Metal Oxide Semiconductor

Table 12-9. List of Terms and Abbreviations
-Continued

Term/abbreviation	Definition
COMM	Communications
CPU	Central Processing Unit
CRC	Control and Reporting Center
CRT	Cathode Ray Tube
CWAR	Continuous Wave Acquisition Radar. (Low altitude coverage.)
DASC	Direct Air Support Center
DDG	Data Display Group (Status Board)
Decentralized Control	The higher levels of command will allow engagements to be initiated at levels down to the battery level.
DEV	Device Instruction
DIG	Diagnosis
DLRP	Data Link Reference Point
DM	Data Mile (1 data mile = 2000 yards)
DOU	Display Output Unit
DP	Display Processing
DRF	Display Refresh File
DRP	Data Recording Program
DRPP	Data Reduction and Printout Program
DTS	Data Terminal Set
ECCM	Electronic Counter Measure
ECM	Electronic Counter Measure
ECU	Environmental Control Unit
EOB	End-of-Block
EOF	End-of-File
EOM	End-of-Message
EOT	End-of-Tape
ERI	End-of-Reserved-Information
ESM	Electronic Support Measures
EST	Equipment Status Table
EW/ECCM	Electronic Warfare/Electronic Counter Measures
FACP	Forward Air Control Post
FAR	False Alarm Rate
FEBA	Forward Edge of Battle Area
FEC	Forward Error Correction
FI	Fault Isolation
FPU	Forward Participating Unit
FRU	Forwarding Reporting Unit
FSCL	Forward Support Coordination Line
FSK	Frequency Shift Keying
FU	Fire Unit
FUF	Field Utilities Function
FZ	Free Zone
GEOREF	World Geographic Reference System
GMT	Greenwich Mean Time

Table 12-9. List of Terms and Abbreviations
--Continued

Term/abbreviation	Definition
SEN	Small Extension Node
Shoot-Look-Shoot	This involves shooting a missile and evaluating target damage before shooting another
SIF or sif	Selective Identification Feature
SIM	Simulation Programs or Simulated
Site Adapted Tape	Tape containing master tape information and all individual site parameters.
SLTU	Secure Line Termination Unit
S/N	Signal-to-Noise
SOP	Standard Operating Procedure
SPI	Special Processing Indicator
SPP	Simulation Playback Program
SSP	Support Software Program
STN	Simulation Target Number
SU	Supporting Unit
TAC OPS	Tactical Operations
TACS/TADS	Tactical Air Control Systems/Tactical Air Defense Systems
TADIL B	Tactical Digital Information Link - Type B
TBM	Tactical Ballistic Missile
TDU	Target Detector Unit
TE	Threat Evaluation
TEBA	Threat Evaluation and Battalion Assignment
TED	Trunk Encryption Device
TEVAL	Threat Evaluation Program
TEWA	Threat Evaluation and Weapon Assignment
TMON	Test Monitor
TOS	Tactical Operations System
TP	Target Processor
TRB	Target Report Buffer
TTR	Target Tracking Radar
TZ	Tight Zone
UPS	Universal Power Supply
UTM	Universal Transverse Mercator
VCC	Voice Communications Central
VCS	Voice Communications Station
VDU	Video Distribution Unit
VPU	Video Processing Unit
VSU	Video Simulation Unit
WCZ	Weapons Control Zone
WFZ	Weapons Free Zone
WHZ	Weapons Hold Zone
WTZ	Weapons Tight Zone
Weapons Free	Engage all aircraft not identified friend.
Weapons Hold	Engage only aircraft that have been identified hostile and ADL engage command has been received.
Weapons Tight	Engage only aircraft that have been identified hostile.

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

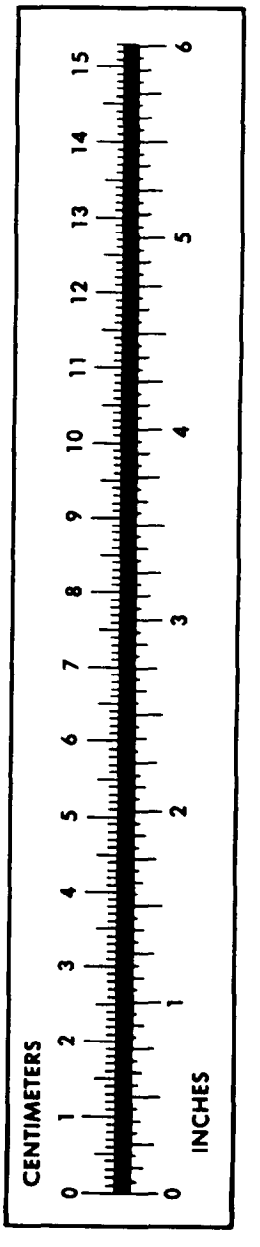
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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