TECHNICAL MANUAL

OPERATOR'S MANUAL: DISPLAYS, ARO, AND ALERT DEFINITIONS

GUIDED MISSILE

AIR DEFENSE SYSTEM

AN/TSQ-73

This copy is a reprint which includes current pages from Changes 1 through 14.

HEADQUARTERS, DEPARTMENT OF THE ARMY

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Change
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Operator's Manual: Displays, ARO, and Alert Definitions

GUIDED MISSILE AIR DEFENSE SYSTEM

AN/TSQ-73

Current to Tape Version 34.1

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

1. This change incorporates various minor changes and corrections.
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 suffix change letter added to the identification number.

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1-1 and 1-2	1-1 and 1-2
1-29 and 1-30	1-29 and 1-30
1-39 and 1-40	1-39 and 1-40
1-41 and 1-42	1-41 and 1-42
1-45 and 1-46	1-45 and 1-46
1-57 thru 1-60	1-57 thru 1-60
1-91 and 1-92	1-91 and 1-92

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DEPARTMENT OF THE ARMY
Washington, DC, *1 October 1978*

OPERATOR MANUAL: DISPLAYS, ARO, AND ALERT DEFINITIONS
GUIDED MISSILE AIR DEFENSE SYSTEM AN/TSQ-73
Current to Tape Version 34.1

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes, or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Missile Command, ATTN: AMSMI-MMC-LS-LP, Redstone Arsenal, AL 35898-5238. A reply will be furnished to you. 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.

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CHAPTER 1

INTRODUCTION

Section I. INTRODUCTION

1-1. Scope. This manual contains the necessary information to operate Air Defense System, Guided Missile AN/TSQ-73 (AN/TSQ-73 system). This manual is one of seven manuals comprising the AN/TSQ-73 system operator's manual listed in table 1-1 and is published for the use and guidance of personnel responsible for operation of the equipment. Refer to TM 9-1430652-10-6 for operational data including an index and a list of terms and abbreviations used in the operator's manual.

1-2. Maintenance Forms and Procedures Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750 as contained in the Maintenance Management Update.

1-3. Destruction of Army Materiel to Prevent Enemy Use. If capture of this equipment appears imminent, or if the equipment must be abandoned, it should be destroyed to prevent enemy use. Destruction procedures should be carried out only on orders from the cognizant authority. Refer to TM 43-0002-21 for procedures required for destruction of the equipment and related system materiel to prevent enemy use. Recorded tape transport cartridges and classified manuals are priority items requiring destruction.

1-4. Reporting Equipment Improvement Recommendations. If your AN/TSQ-73 needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to us at the address listed in DA PAM 738750. We will send you a reply.

1-5. References. Refer to List of Applicable Publications (LOAP) manual TM 9-1425-655-L for a list of related publications and reference documents.

1-6. Official Nomenclature. AN/TSQ-73 system nomenclatures associated with the equipment described herein are listed in table 1-2. For further identification, a cross-reference is provided for the common name used in this technical manual.

Table 1-1. AN/TSQ-73 Operator Manuals

TM number	Contents
TM 9-1430-652-10-1	Chapter 1--Introduction, Displays, ARO, and Alert Definitions
TM 9-1430-652-10-2	Chapter 2-Controls and Indicators
TM 9-1430-652-10-3	Chapter 3-Initialization
	Chapter 4-Operating Instructions
	Chapter 5--Map Generation
	Chapter 6-Raid Generation
	Chapter 7-Simulation Operation
	Chapter 8-Data Reduction and Recording
	Chapter 9-Field Utilities Function
TM 9-1430-652-10-4	Chapter 10-Data and Voice Communication Operating Procedures
TM 9-1430-652-10-5	Chapter 11--Radar Interface Equipment Alinement Procedures
TM 9-1430-652-10-6	Chapter 12-Operational Data and Index
TM 9-1430-652-10-7	Chapter 13--Electronic Warfare (Confidential)
	Chapter 14-Reference Data (Confidential)

Table 1-2. AN/TSQ-73 Official Nomenclature

Official nomenclature	Common name
Air Defense System, Guided Missile AN/TSQ-73(V)	AN/TSQ-73 system (battalion configuration) AN/TSQ-73 system (brigade configuration)
Shelter, Electrical Equipment S-529/TSQ-73(V)	System shelter (battalion configuration) System shelter (brigade configuration)
Console, Assault Fire Command, Guided Missile OJ-299/TSQ-73(V)	Display console
Data Display Group `OD-96`/TSQ-73(V)	Data display group (DDG)
Recorder-Reproducer, Guided Missile System, RD-449/TSQ-73(V)	Magnetic Tape Unit (MTU)
Test Set, Electronic Circuit Plug-In Unit TS-3317/TSQ-73(V)	Module test set (MTS)

Section II. DISPLAY DESCRIPTIONS

1-7. General. Operational displays for the AN/TSQ-73 system operator are provided by the display equipment consisting of Guided Missile Assault Fire Command Console OJ-299/TSQ-73 (V) (display console) and Data Display Group` OD-96`/TSQ-73(V) (data display group; also referred to as DDG). Depending on system configuration, up to eight display consoles and two DDGs may be used.

1-8. Operational Displays. The AN/TSQ-73 system operational displays consist of the cathode-ray tube (CRT) display, located in the center section of the display console, and the light emitting diode (LED) matrix displays, located in the center and lower portions of the DDG. The console CRT display surface is divided into two functionally different display areas: situation display (or PPI), and the auxiliary readout (ARO) display. The situation display presents a two dimensional representation of the surrounding air and ground space using symbol, straight line segments, and alphanumerics. The ARO display portion of the CRT contains summary data for fire units, jam strobes, filter data, amplifying data for operator designated symbols, system status information in fixed tabular formats, and Computer Command (CC) entries with computer responses. The DDG status board displays are comprised of a local time display and a fire unit data display. Figure 1-1 shows the relative location of the various system operational displays. Console CRT display content (except for ARO system status data) is under operator control, while status board displays are fixed.

1-9. Content Sections III and IV contain the symbols, straight lines, and alphanumerics used to display operational information on the situation display and ARO, respectively. Section V contains the DDG status board operational displays. Section VI contains the alert displays. In order to provide a complete treatment of system operational alerts in a single location, the console alert indicators are included in section VI.

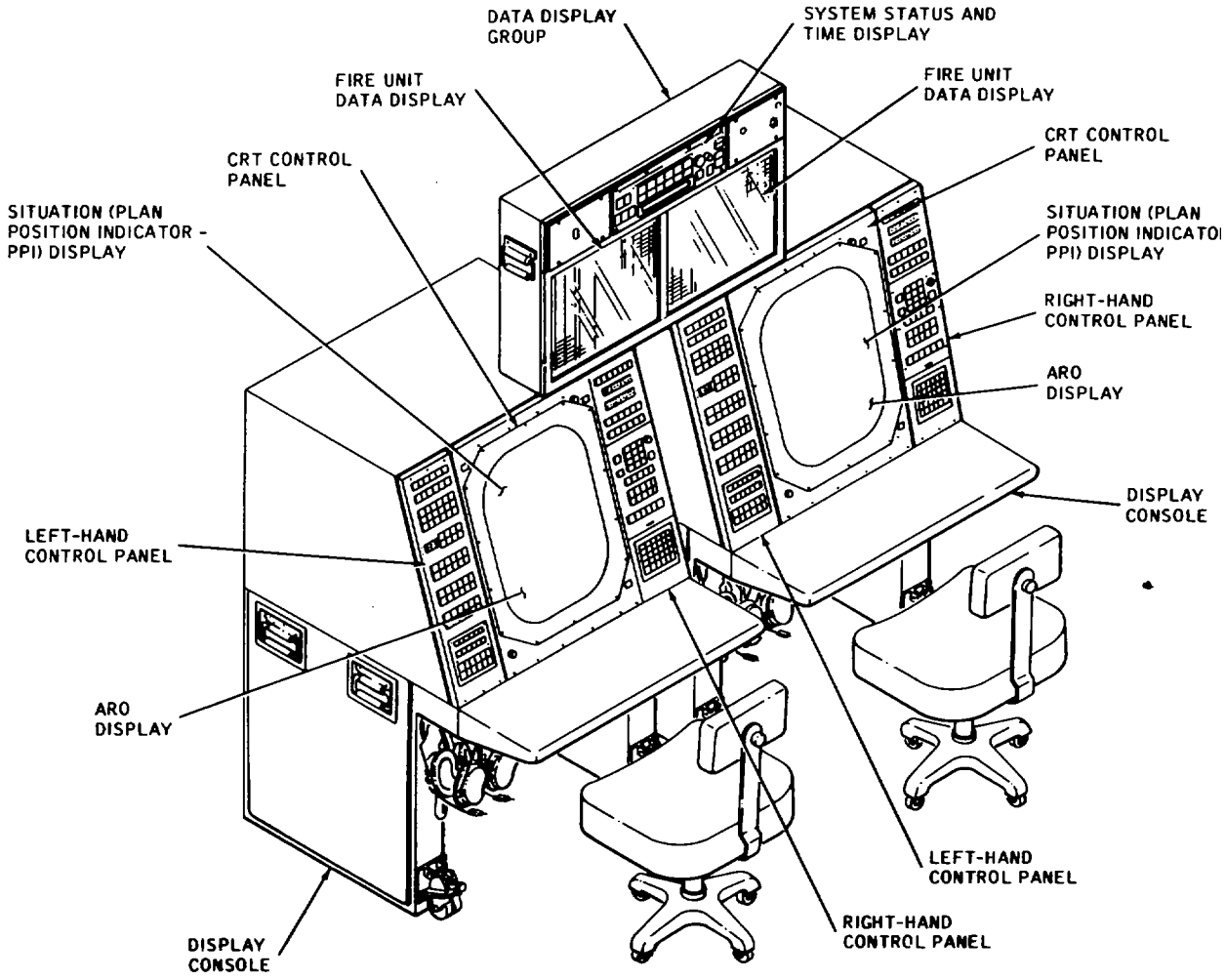

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Figure 1-1. System Operational Displays Physical relationships

Section III. SITUATION (PPI) DISPLAY

1-10. General. The situation display is a 15-inch square display located in the upper center portion of the console CRT display. This display takes use of a set of symbols, straight line segments, and associated alphanumeric to represent the air and ground situation. The following paragraphs describe these display elements and their relationships. It should be noted that situation display symbols and alphanumerics remain constant in size when the display range is changed by the console operator. Also, various types of symbols, lines, and alphanumerics may be selected or deselected for display and their relative brightness adjusted, as desired, by the console operator.

1-11. Symbols. The symbols which may appear on the situation display are shown in figures 1-2 thru 1-5. These figures contain the symbol type (name) and size, in addition to the symbol themselves, for each of the four symbol categories as follows:

a. Designation and control symbols (fig. 1-2).
b Air track symbols (fig. 1-3).
c. Air defense system symbols (fig. 1-4).
d. Fixed point, site, and map symbols (fig. 1-5).

1-12. Line Segments. Line segments (figs. 1-6 and 1-6.1) are used to display graphic information and are described in the following paragraphs.

a. Pairing Lines For a non-PATRIOT system, a pairing line is a straight line between a fire unit site symbol and an assigned air track symbol or jam strobe. A solid pairing line indicates a primary assignment; a dashed pairing line indicates a secondary assignment. Pairing lines appear (if selected for display) when an air track or jam strobe is Assigned to a fire unit for engagement and disappear when the engagement is terminated. When a Hawk FU enters Low Altitude Simultaneous Hawk Engagement (LASHE - a self-defense measure), any existing primary or secondary pairing lines are deleted and the primary engagement is terminated with a broken status. LASHE fire units use only engagement marker to report multiple engagements (see TM 9-1430-652-10-7). Upon receiving either ready or out-of-action status (including inactive data link), all displays revert to normal Hawk display.

b. PATRIOT Engagement Boundaries PATRIOT engagement boundaries are composed of two dashed lines that originate at a PATRIOT FU. These two lines enclose the area in which the FU may engage an air track. All engagement boundaries are displayed when the PAIR LINES switch is activated. Displaying PATRIOT engagement boundaries deletes two pairing lines per FU from system display capacity.

c. Sector Scan Line These lines project from an ATDL-1 HAWKPhase III FU. The dashed, 50 DM flashing line points in the direction of this ECM search mode. A FU in sector scan is eliminated from consideration for automatic or recommended assignment. Operator can send manual assignment command to FU. Activating the PAIR LINES switch enables the AN/TSQ-73 to display Sector Scan line.

d. Jam Strobes A jam strobe is a line originating from a site or fire unit symbol denoting that the site or fire unit is receiving jamming. The line passes through the jamming source to the edge of the situation display surface. The jam strobe appears (if selected for display) on receipt of a jam strobe message or by console operator action, and disappears when a terminate jam strobe message is received or is canceled by console operator action or by system-drop Two or more jam strobes intersecting may indicate the location of the jamming source (TM 9-1490-652-10-7).

e. Velocity Vectors A velocity vector is a straight line originating from the center of an air track symbol The line pants in the direction that the aircraft is traveling. The length of the line is proportional to the speed of the aircraft (a 1-inch velocity vector would equal airspeed of approximately 1800 data miles per hour). Velocity vectors appear (if selected for display) when an air track is provisionally established.

f. Time-To-Go Vectors A time-to-go vector is a straight line originating firm the center of an air track symbol. The line paints in the direction that the Aircraft is traveling. The line extends to that point which the aircraft will reach in an operator specified amount of time (if the aircraft maintains constant speed, heading, and altitude). Time-to-go vectors appear (if selected for display) when an air track is provisionally established. Velocity and time-to go vectors cannot be simultaneously displayed for the same air track symbol.

g. Safe corridors A safe corridor is a series of straight line segments which define a corridor with upper and lower altitude limits and upper and lower speeds in the air space which has one end closed. The safe corridor is normally used to define a safe approach and exit route to and from friendly air spaces, and as such, it is an aid to aircraft identification and friendly aircraft protection. Safe corridors appear (if selected for display) when previously entered via the keyboard printer unit (KPU) by use of CC entries. The system can display nine active corridors and store an additional nine corridors. Corridors are identified by letters A thru R.

h. Maps. A map may be composed of one or more straight line segments. Maps typically used include the area of responsibility (AOR), forward edge of battle area (FEBA), bomb release line (BRL), and GEOREF (world geographic reference system) grid, as well as geographic and political features. Maps appear (if elected for display) when previously entered via the KPU. Up to 10 maps may be stored on tape with any two designated as available for display on the console.

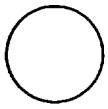
i. Range and Angle Marks. Range marks are concentric ring around the AN/TSQ-73 system location. The rings occur at either 10-mile or 20-kilometer interval The distance between the rings on the display will vary as a function of the display scale selected. Range marks may be used to estimate distances. Angle marks are straight lines emanating from the AN/TSQ-73 system location and extending to the edge of the situation display. These lines occur at 15-dgree intervals and may be used to estimate bearings. Range and angle marks appear (if selected for display) whenever the situation display is operating.

j. Data Link Transmission Zone. A transmission zone is a rectangular or cylindrical area with altitude limits which allows certain specified IDs and tracks within specified speed limits to be received and transmitted over a data link. A zone is entered and designated for display by entry of the CC111 control command and activated by a CC110. To display a transmission zone, VOLUME and FILTER DATA must be activated The transmission zone of only one link at a time can be displayed. It will be displayed on all consoles having VOLUME activated, even if that sole has a different link selected for displaying the ARO. The hooking of any item on the initiating console will remove transmission zone origin points from the hooked item data field.

k. Volume Lines. A Volume/Line is a series of straight line segment which define a volume or line as an aid in Threat Evaluation and Weapons Assignment (TEWA). Volumes enclose Weapons Control Zones (WCZ) and Missile Engagement Zones (ME), each with upper and lower altitude limits. The two types of volume are further categorized into Hold, Tight, and Free Zones. One paint and a radius generate a circular volume displayed as a twelve-sided polygon. Two points, defining the southwest and northeast corners, generate rectangular volumes. A line defines a Forward Support Coordination Line (FSCL). Two to twelve points generate an open-ended line used for display purposes only. The system can stare and display a maximum of twenty WCZ volumes and two MEZ volumes at both brigade and battalion levels A maximum of two FSCLs can be stored and one displayed at battalion and brigade. Volumes/lines are displayed, after entry via CC command, by activating VOLUME. For definition and use of volumes/lines, refer to local standard operating procedures.

1-13. Alphanumeric Blocks. Each symbol (except for the hook and tab symbols) on the situation display may have an associated alphanumeric block. These alphanumeric blocks consist of one or two rows of up to five characters each. The purpose of the alphanumeric blocks is to provide a limited amount of additional information concerning the associated symbol in order to facilitate console operator interpretation and decision making. Figures 1-7 thru 1-17.1 show the format of the alphanumeric block associated with each type of symbol and define the meaning of each character in the block.

1-14. Symbol Flash Characteristics. Various symbology used in the system will flash to call the attention of the operator to same specific condition. Table 1-3 provides this information.

TYPE	SYMBOL	SIZE (INCH)	
		LOCAL	REMOTE
TAB SYMBOL (SEE NOTES 1 AND 2)		1/8	N/A
HOOK SYMBOL (SEE NOTES 1, 2, AND 3)		1/2	N/A
POINTER (SEE NOTE 4)		N/A	1/4
VOLUME/LINE HOOKABLE POINT (SEE NOTE 5)		1/8	N/A

NOTES:

1. THE TAB AND HOOK SYMBOLS ARE UNDER THE OPERATOR'S CONTROL THROUGH USE OF THE CONSOLE POSITION TAB. THE OPERATOR POSITIONS THE TAB SYMBOL OVER THE OBJECT TO BE HOOKED AND THEN PUSHES THE POSN HOOK BUTTON IN THE TASK FUNCTIONS SECTION OF THE DISPLAY CONSOLE. SHOULD ANOTHER SITE, FU OR TRACK BE HOOKED, PRESSING THE DEHOOK BUTTON IN THE TASK FUNCTIONS SECTION OF THE DISPLAY CONSOLE CAUSES THE HOOK SYMBOL TO APPEAR AROUND OWN-SITE. OWN SITE IS ALWAYS HOOKED UNLESS OTHERWISE SPECIFIED.

2. THE TAB AND HOOK SYMBOLS ARE LOCAL FOR AN INDIVIDUAL CONSOLE AND ARE NOT TRANSMITTED. NO ALPHANUMERIC DATA BLOCK APPEARS WITH THEM.

3. THE OPERATOR USES THE HOOK ACTION TO REQUEST INFORMATION FROM THE COMPUTER ON THE SYMBOL HE HAS HOOKED. THE COMPUTER DISPLAYS THE APPROPRIATE DATA ON THE PPI AND THE HOOKED ITEM DATA FIELD OF THE ARO.

4. THE POINTER SYMBOL IS USED TO DESIGNATE A SPECIFIC LOCATION OR SYMBOL ON THE SITUATION DISPLAY. THE POINTER IS SENT BY ANY OTHER ATDL-1 SITE/FU OR TADIL-B SITE. ONLY ONE POINTER SYMBOL MAY BE DISPLAYED AT A TIME. THE POINTER IS DISPLAYED WITH ALPHANUMERICS REPRESENTING THE ATDL-1, TADIL-B OR NATO TRACK NUMBER/ADDRESS OF THE SENDING SITE. THE POINTER IS USED TO FACILITATE VOICE COORDINATION BETWEEN TWO SITES.

5. VOLUME/LINE HOOKABLE POINT ALPHANUMERICS ARE ENTERED USING CC156 AND ARE NOT TRANSMITTABLE. THEY ARE LOCATED AT THE CENTER OF CYLINDRICAL VOLUMES AND AT THE LOWER LEFT ON RECTANGULAR VOLUMES AND LINES.

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Figure 1-2. Designation and Control Symbols

TYPE	SYMBOL (NOTE 4)	SIZE (INCH) (SEE NOTE 2)	
		LOCAL	REMOTE
UNKNOWN		1/4	1/8
FRIEND		1/4	1/8
INTERCEPTOR		1/4	1/8
HOSTILE OR FAKER HOSTILE		1/4	1/8
PRIORITY/FLYING PU (ACTIVE)(NOTE 5)		1/4	1/8
SPECIAL		1/4	1/8
COMMAND TRANSMITTED (NOTE 3)		1/4	1/8
COMMAND RECEIVED (NOTE 3)		1/4	1/8

NOTES:

1. EACH AIR TRACK SYMBOL HAS AN ASSOCIATED ALPHANUMERIC DATA BLOCK CONSISTING OF TWO LINES OF FIVE CHARACTERS EACH.
2. SYMBOL SIZE MAY VARY SO THAT ALL SYMBOLS HAVE THE SAME APPARENT SIZE.
3. A SOLID COMMAND SYMBOL WILL BE DISPLAYED WHEN AN ACTION COMMAND HAS BEEN TRANSMITTED ON A TRACK TO OTHER THAN A FU. A DASHED COMMAND SYMBOL WILL BE DISPLAYED AFTER THE SPECIAL SYMBOL HAS BEEN CLEARED BY RECEIPT/COMPLIANCE OF AN ACTION COMMAND. ACTION COMMANDS ARE ENGAGE, ENGAGE RIPPLE, INVESTIGATE/ ASSIGN, AND COVER.
4. DASHED AIR TRACK SYMBOLOGY (EXCEPT FOR COMMAND RECEIVED SYMBOL) IS USED TO INDICATE INTELLIGENCE AND/OR SPECIAL PROCESSING TRACKS.
5. A PRIORITY SYMBOL WILL DESIGNATE A FLYING PU IN A NON-TADIL-B INTERFACING UNIT. A SITE SYMBOL WILL BE USED TO DESIGNATE AN ACTIVE FLYING PU IN THE TADIL-B INTERFACING UNIT.

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Figure 1-3. Air Track Symbols

TYPE (SEE NOTE 2)	SYMBOL	SIZE (INCH) (SEE NOTE 1)	
		LOCAL	REMOTE
HAWK UNIT (WITH TWO FIRE UNITS) SITE (SEE NOTE 3)	●	0.035	0.035
	●	0.035	0.035
PATRIOT FIRE UNIT OR HAWK UNIT (WITH ONE FIRE UNIT) SITE	●	0.035	0.035
ENGAGEMENT/TRACKING MARKER (SEE NOTE 4)	X	1/4	1/4
COMMAND POST SITE/ESM FIX/ FLYING FU (ACTIVE) (SEE NOTES 5, 7, 8)	□	1/8	1/8
AIR FIELD SITE (SEE NOTE 5)	⊔	1/8	1/8
ECM FIX (SITE) (SEE NOTE 6)	⊂	1/8	1/8

NOTES:

1. SYMBOL SIZE MAY VARY SO THAT ALL MARKERS HAVE THE SAME APPARENT SIZE.
2. EACH OF THE SYMBOLS HAS AN ASSOCIATED ALPHANUMERIC DATA BLOCK AND IS TRANSMITTABLE VIA ATDL-1 AND TADIL-B DATA LINKS.
3. HAWK UNITS WITH TWO FIRE UNITS HAVE TWO VERTICALLY ALIGNED DOTS SPACED 7 DATA MILES APART.
4. ENGAGEMENT/TRACKING MARKERS ARE DISPLAYED SUPERIMPOSED OVER THE ENGAGED TRACK SYMBOL, FOR FIRE UNIT ENGAGEMENTS REPORTED VIA ATDL-1. FOR JAM STROBE ENGAGEMENTS, THE ENGAGEMENT/TRACKING MARKERS WILL BE DISPLAYED AT THE JAM STROBE HOOK POSITION WHICH IS 50 DATA MILES FROM THE ORIGIN OF THE JAM STROBE.
5. THESE COMMAND POST AND AIR FIELD SITE SYMBOLS ARE FOR TRANSMITTABLE SITES ENTERED BY CONTROL COMMAND DURING INITIALIZATION.
6. THE ECM FIX SYMBOL REPRESENTS THE LOCATION OF A HOSTILE ECM SOURCE. THE SYMBOL MAY BE USED TO REPRESENT THE KNOWN LOCATION OF AN ECM SOURCE OR THE THEORETICAL LOCATION OF THE SOURCE BASED UPON TRIANGULATION, VERBAL REPORTS, ETC. ECM FIXES ARF THE ONLY TRANSMITTABLE SITES ENTERED AT THE DISPLAY CONSOLE INSTEAD OF THE KPU.
7. THE ESM FIX SYMBOL REPRESENTS THE LOCATION OF A JAMMER. THE LOCATION OF AN ESM FIX IS TRANSMITTED VIA DATA LINK.
8. A SITE SYMBOL WILL BE USED TO DESIGNATE AN ACTIVE FLYING FU AT THE TADIL-B INTERFACING UNIT.

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Figure 1-4. Air Defense System Symbols

TYPE (SEE NOTE 1)	SYMBOL/LINE	SIZE (INCH) (SEE NOTE 3)	
		LOCAL	REMOTE
DEFENDED POINT (SEE NOTE 4)		1/8	N/A
COMMAND POST SITE (SEE NOTE 2)		1/8	N/A
TRUCK PARK SITE (SEE NOTE 2)		1/8	N/A
ORDNANCE STORAGE SITE (SEE NOTE 2)		1/8	N/A
POL STORAGE SITE (SEE NOTE 2)		1/8	N/A
AIR FIELD SITE (SEE NOTE 2)		1/8	N/A
RADAR SITE (SEE NOTE 2)		1/8	N/A
ECM FIX (SITE)		1/8	N/A
GEOREF MARKER		1/4	N/A

NOTES:

1. THESE SYMBOLS AND LINES MAY BE ENTERED AT THE KPU AND DISPLAYED AS PART OF A MAP. SYMBOLS ENTERED AS PART OF A MAP ARE NEITHER HOOKABLE NOR TRANSMITTABLE OVER ADL. IF ENTERED DURING MAP GENERATION, ALL SYMBOLS MAY BE ACCOMPANIED BY A TWO-CHARACTER DISCRIPTOR.
2. THESE SYMBOLS MAY BE ENTERED FROM AND DISPLAYED AT THE DISPLAY CONSOLE. DISPLAY CONSOLE ENTERED SITE SYMBOLS ARE HOOKABLE BUT NOT TRANSMITTABLE OVER ADL (EXCEPT ECM FIX). DISPLAY CONSOLE ENTERED SITES ARE ACCOMPANIED BY ONE OR TWO ROWS OF UP TO FOUR ALPHANUMERIC CHARACTERS EACH, IF THE CHARACTERS ARE ENTERED AT THE DISPLAY CONSOLE.
3. SYMBOL SIZE MAY VARY SO THAT ALL MARKERS HAVE THE SAME APPARENT SIZE.
4. DEFENDED POINTS MAY BE ENTERED DURING MAPGEN OR BY A CC121. IF ENTERED DURING PROGRAM DATA ENTRY (CC121), DEFENDED POINTS ARE ACCOMPANIED BY TWO ROWS OF THREE ALPHANUMERICS EACH.

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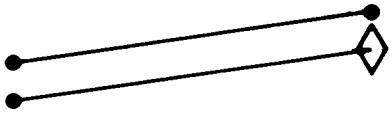
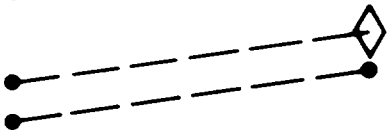
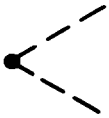
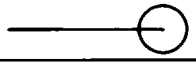
Figure 1-5. Fixed Point, Site and Map Symbols

TYPE	LINE	SIZE	
		LOCAL	REMOTE
JAM STROBE (SEE NOTE 1)		N/A	N/A
PAIRING LINES:			
PRIMARY ASSIGNMENT		N/A	N/A
SECONDARY ASSIGNMENT (SEE NOTE 2)		N/A	N/A
SECTOR SCAN LINES (SEE NOTE 5)		N/A	N/A
PATRIOT ENGAGEMENT BOUNDARIES (SEE NOTE 4)		N/A	N/A
VECTORS:			
VELOCITY		N/A	N/A
TIME-TO-GO (SEE NOTE 3)		N/A	N/A

NOTES:

1. A JAM STROBE IS A STRAIGHT LINE ORIGINATING AT THE SITE, FU, OR TRACK BEING JAMMED AND EXTENDING THROUGH THE JAMMING SOURCE TO THE EDGE OF THE DISPLAY.
2. PAIRING LINES ARE USED TO INDICATE ASSIGNMENTS TO AND ENGAGEMENTS BY FIRE UNITS. PRIMARY ASSIGNMENT PAIRING LINES INDICATE THAT AN ASSIGNMENT HAS BEEN MADE TO A FIRE UNIT. A SECONDARY ASSIGNMENT PAIRING LINE INDICATES THE NEXT ASSIGNMENT TO BE MADE TO THE FIRE UNIT WHEN THE CURRENT PRIMARY ASSIGNMENT IS COMPLETED. PAIRING LINES INDICATING ENGAGEMENTS AGAINST JAM STROBES TERMINATE AT THE HOOKABLE POINT. THIS HOOKABLE POINT EXPANDS AND BLINKS IF THERE IS AN OUTSTANDING ALERT TO THE JAM STROBE. SECONDARY ASSIGNMENT PAIRING LINES ARE DISPLAYED ONLY AT THE BATTALION LEVEL.
3. VECTORS ARE USED TO INDICATE AIRCRAFT SPEED AND DIRECTION OR THE DISTANCE TRAVELED BY AN AIRCRAFT IN A SPECIFIED TIME. A VELOCITY VECTOR IS A LINE EXTENDING OUTWARD FROM THE AIR TRACK SYMBOL IN THE DIRECTION OF FLIGHT, THE LENGTH OF WHICH INDICATES THE SPEED OF THE AIRCRAFT (1 INCH = 1800 DATA MILES PER HOUR). A TIME-TO-GO VECTOR IS A LINE EXTENDING OUTWARD FROM THE AIR TRACK SYMBOL IN THE DIRECTION OF FLIGHT. THE OUTWARD END OF THE LINE INDICATES THE EXPECTED POSITION OF THE AIRCRAFT AT A SPECIFIED FUTURE TIME, ASSUMING THE AIRCRAFT MAINTAINS ITS CURRENT SPEED AND HEADING.
4. PATRIOT ENGAGEMENT BOUNDARIES ENCLOSE THE AREA IN WHICH THE PATRIOT FU MAY ENGAGE AN AIR TRACK. ALL ENGAGEMENT BOUNDARIES ARE DISPLAYED WHEN THE PAIR LINE SWITCH IS ACTIVATED. DISPLAYING PATRIOT ENGAGEMENT BOUNDARIES DELETES TWO PAIRING LINES PER FU FROM SYSTEM DISPLAY CAPACITY.

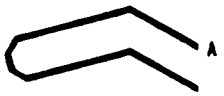
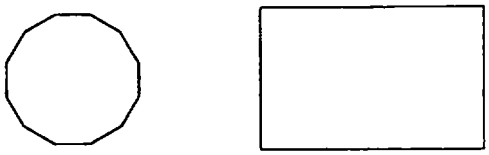
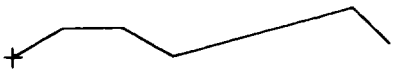
MS 195743C

Figure 1-6. Lines Used with Air Track and Defense System Symbols (Sheet 1 of 2)

5. SECTOR SCAN LINES ARE FLASHING; DASHED LINES INDICATE WHEN AND IN WHICH DIRECTION A HAWK PHASE III FU IS IN THIS SEARCH MODE. WHEN IN SECTOR SCAN, LINE; IS DISPLAYED. ONCE OUT OF SECTOR SCAN, OR IF THE LINK GOES DOWN, THE LINE DISAPPEARS. A FU IN SECTOR SCAN IS ELIMINATED FROM CONSIDERATION FOR AUTOMATIC OR RECOMMENDED ASSIGNMENT. OPERATOR CAN SEND MANUAL ASSIGNMENT COMMAND TO FU.

MS 013174

Figure 1-6. Lines Used with Air Track and Defense System Symbols (Sheet 2 of 2)

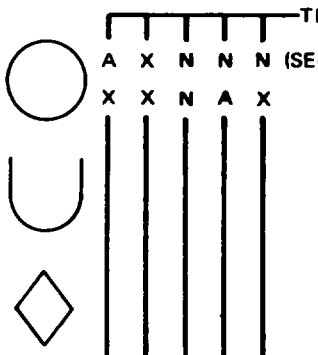
TYPE	LINES
SAFE CORRIDOR (LINES) (SEE NOTE 1)	
MAP LINES (SEE NOTE 2)	
RANGE CIRCLE AND ANGLE MARKS	
DATA LINK TRANSMISSION ZONE (SEE NOTE 3)	
VOLUME (SEE NOTE 4)	
LINE (FSCL) (SEE NOTE 4)	

NOTES:

1. THE LETTERS A THRU R, AS LABELED BY THE OPERATOR USING THE CC123 CONTROL COMMAND, IDENTIFY THE END POINT OF EACH SAFE CORRIDOR ENTERED BY A CC123.
2. THESE LINES ARE ENTERED DURING MAP GENERATION USING THE CC36 CONTROL COMMAND.
3. THESE LINES ARE ENTERED AND DESIGNATED FOR DISPLAY USING THE CC111 CONTROL COMMAND. [VOLUME] AND [FILTER DATA] MUST BE ACTIVATED TO DISPLAY A DATA LINK TRANSMISSION ZONE.
4. THESE LINES ARE ENTERED AND DISPLAYED USING CC156 THRU CC160. [VOLUME] MUST BE ACTIVATED TO DISPLAY VOLUMES/LINES.
5. [ ] INDICATES EQUIPMENT MARKING.

MS 558690A

Figure 1-6.1. Other PPI Lines



TRACK NUMBER/ADDRESS

A X N N N (SEE NOTE)

X X N A X

CODE	MEANING
a a n n n	ATDL-1 OR NATO TRACK NUMBER/ADDRESS, FOR ATDL-1, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H. FOR NATO, ALPHAS A, E, G, H, J-M. EACH NUMERIC 0 THRU 7. (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
n n n n	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

TRACKING STATUS

RAID SIZE

THREAT PRIORITY

TRACK HEIGHT

CODE	MEANING
E	EW TRACK (HOSTILE TRACKS ONLY)
L	POOR TRACKING STATUS TRACK
R	RAMIT TRACK (LOCAL TRACK)
T	TEST/SIM TRACK
D	DEFAULT TRACK NUMBER
F	FAKER HOSTILE TRACK
n	0 THRU 7 TRACK QUALITY (SUBORDINATE TO OTHER VALUES) TRACK QUALITY OF UNIT WITH REPORTING RESPONSIBILITY IS DISPLAYED
S	SINGLE
F	FEW
M	MANY
u	UNKNOWN
n	0 THRU 7
n n	00 TO 99K FEET
U K	UNKNOWN HEIGHT
A B	HEIGHTS ABOVE 99K FEET

NOTE:

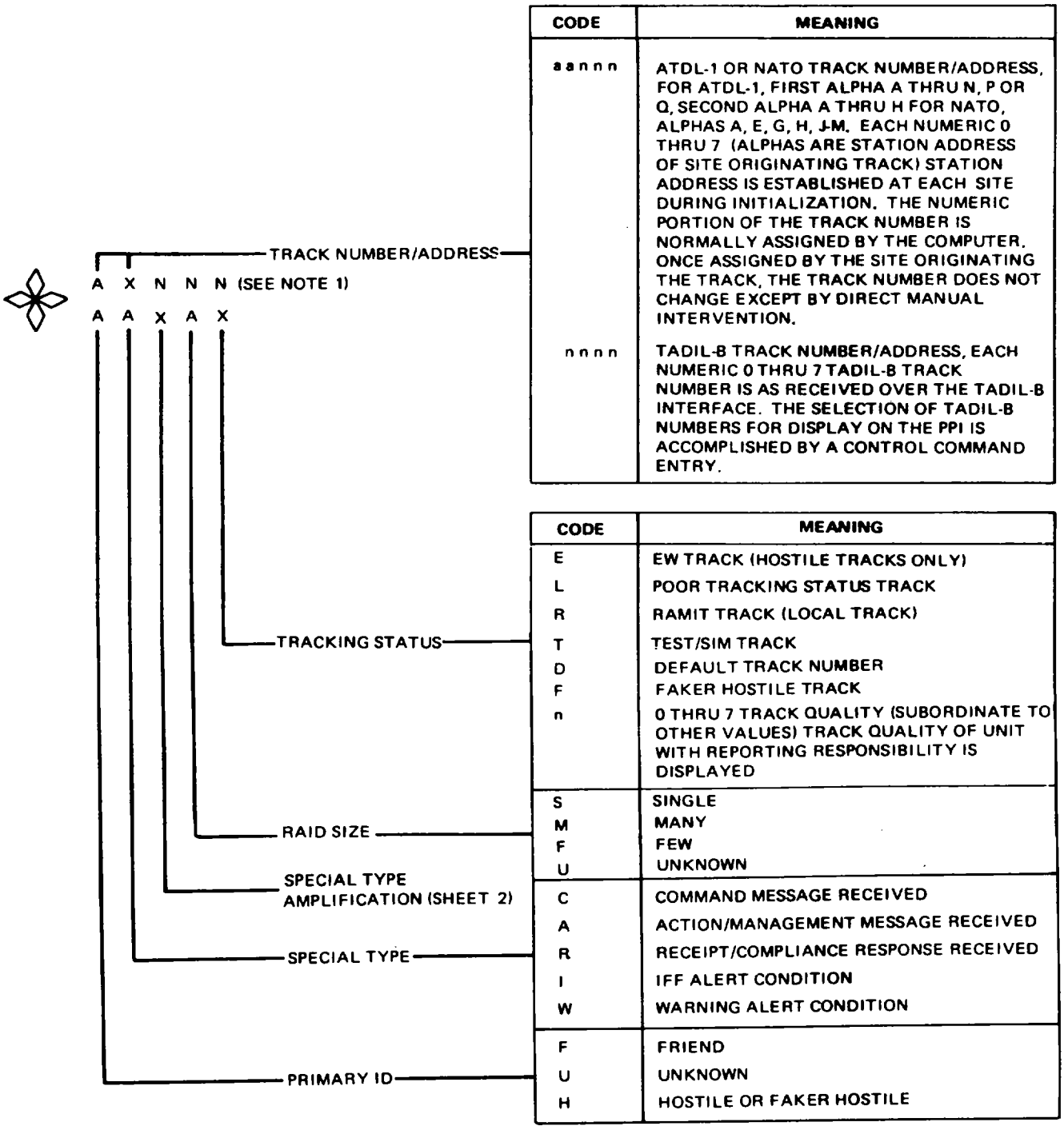
THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:

A = ALPHABETIC CHARACTER
N = NUMERIC CHARACTER
X = ALPHABETIC OR NUMERIC CHARACTER

WHEN INFORMATION IS NOT AVAILABLE, THE FIELD IS LEFT BLANK.

MS 195744E

Figure 1-7. Air Track Symbology (Friend, Unknown, or Hostile)

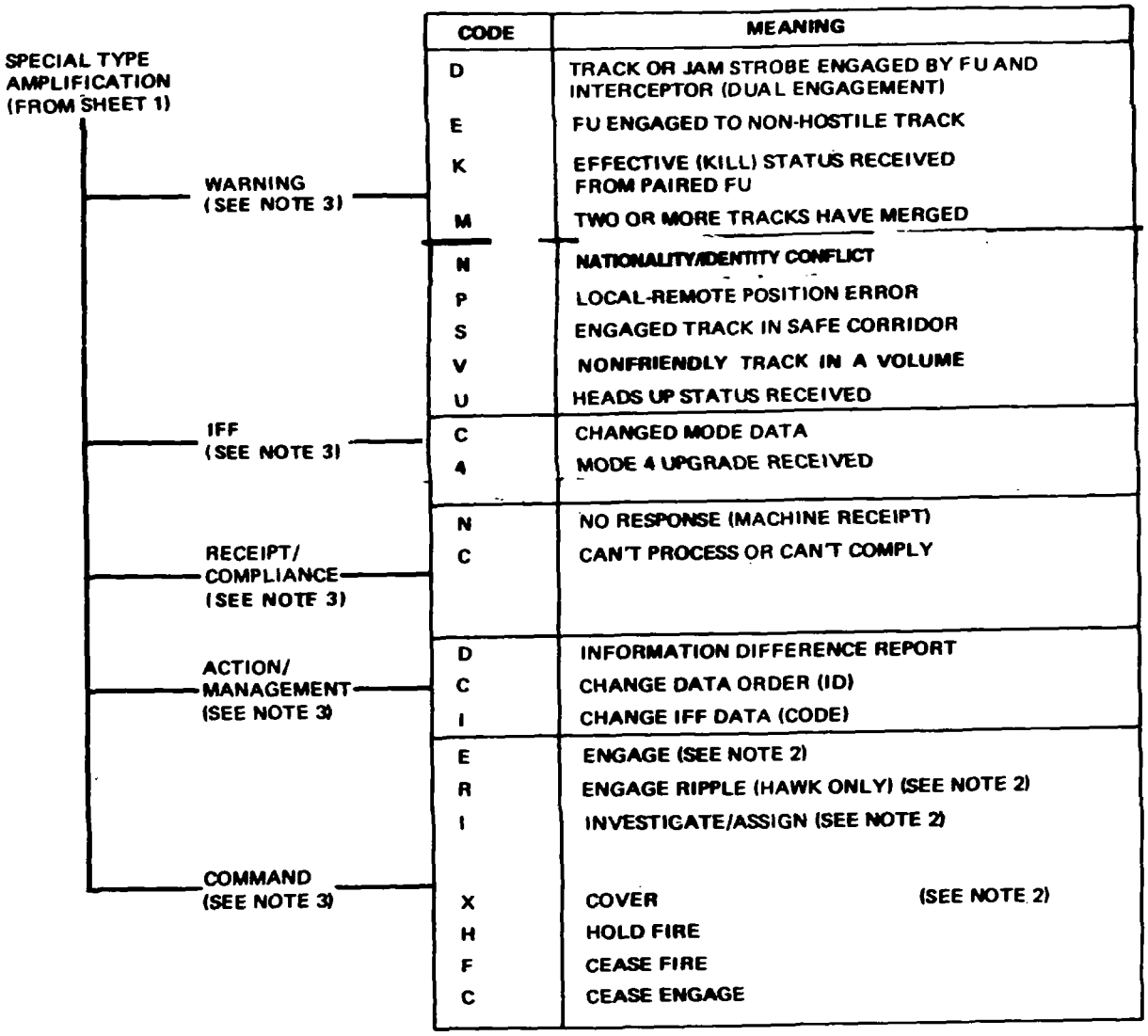


CODE	MEANING
aannn	ATDL-1 OR NATO TRACK NUMBER/ADDRESS, FOR ATDL-1, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H FOR NATO, ALPHAS A, E, G, H, J-M. EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

CODE	MEANING
E	EW TRACK (HOSTILE TRACKS ONLY)
L	POOR TRACKING STATUS TRACK
R	RAMIT TRACK (LOCAL TRACK)
T	TEST/SIM TRACK
D	DEFAULT TRACK NUMBER
F	FAKER HOSTILE TRACK
n	0 THRU 7 TRACK QUALITY (SUBORDINATE TO OTHER VALUES) TRACK QUALITY OF UNIT WITH REPORTING RESPONSIBILITY IS DISPLAYED
S	SINGLE
M	MANY
F	FEW
U	UNKNOWN
C	COMMAND MESSAGE RECEIVED
A	ACTION/MANAGEMENT MESSAGE RECEIVED
R	RECEIPT/COMPLIANCE RESPONSE RECEIVED
I	IFF ALERT CONDITION
W	WARNING ALERT CONDITION
F	FRIEND
U	UNKNOWN
H	HOSTILE OR FAKER HOSTILE

MS 195745E

Figure 1-8. Air Track Symbology (Special Purpose) (Sheet 1 of 2)



CODE	MEANING
D	TRACK OR JAM STROBE ENGAGED BY FU AND INTERCEPTOR (DUAL ENGAGEMENT)
E	FU ENGAGED TO NON-HOSTILE TRACK
K	EFFECTIVE (KILL) STATUS RECEIVED FROM PAIRED FU
M	TWO OR MORE TRACKS HAVE MERGED
N	NATIONALITY/IDENTITY CONFLICT
P	LOCAL-REMOTE POSITION ERROR
S	ENGAGED TRACK IN SAFE CORRIDOR
V	NONFRIENDLY TRACK IN A VOLUME
U	HEADS UP STATUS RECEIVED
C	CHANGED MODE DATA
4	MODE 4 UPGRADE RECEIVED
N	NO RESPONSE (MACHINE RECEIPT)
C	CAN'T PROCESS OR CAN'T COMPLY
D	INFORMATION DIFFERENCE REPORT
C	CHANGE DATA ORDER (ID)
I	CHANGE IFF DATA (CODE)
E	ENGAGE (SEE NOTE 2)
R	ENGAGE RIPPLE (HAWK ONLY) (SEE NOTE 2)
I	INVESTIGATE/ASSIGN (SEE NOTE 2)
X	COVER (SEE NOTE 2)
H	HOLD FIRE
F	CEASE FIRE
C	CEASE ENGAGE

NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. AFTER RESPONDING TO AN ENGAGE, ENGAGE RIPPLE, COVER, OR INVESTIGATE/ASSIGN COMMAND, THE SPECIAL SYMBOL CHANGES TO A COMMAND RECEIVED SYMBOL UNTIL AN FU HAS BEEN ASSIGNED. (BATTALION ONLY).
3. THE SPECIAL SYMBOL AND ALPHANUMERICS AUTOMATICALLY REVERT TO THE APPROPRIATE AIR TRACK SYMBOL AND ALPHANUMERICS WHEN THE CONDITION CAUSING THE SPECIAL SYMBOL AND ALPHANUMERICS TO APPEAR HAS BEEN ELIMINATED.

MS 195746C

Figure 1-8. Air Track Symbology (Special Purpose) (Sheet 2 of 2)

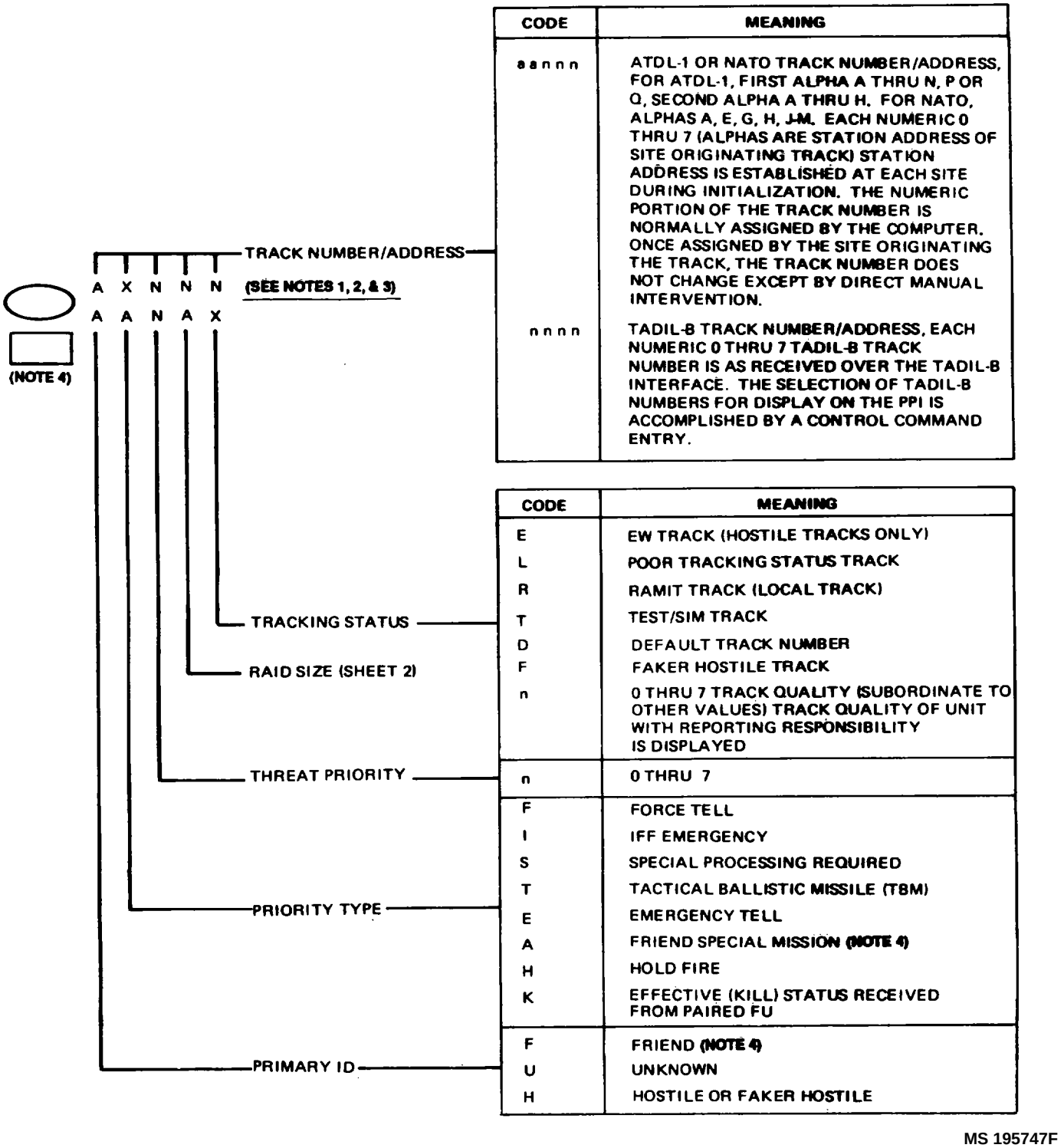
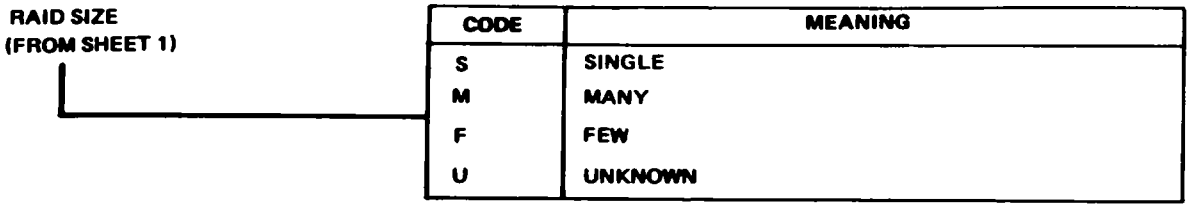


Figure 1-9. Air Track Symbology (Special Purpose Priority/Active Flying PU) (Sheet 1 of 2)



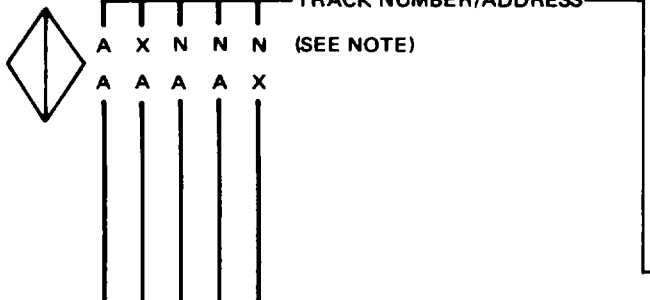
CODE	MEANING
S	SINGLE
M	MANY
F	FEW
U	UNKNOWN

NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. PRIORITY TRACKS ARE NOT CLEARED. PRIORITY SYMBOL CLEARS WHEN CONDITION NO LONGER EXISTS.
3. IF TRACK IS PRIORITY FOR MORE THAN 1 REASON, HIGHEST PRIORITY INDICATOR IS DISPLAYED.
4. THIS SYMBOL AND ALPHANUMERIC BLOCK APPEAR TOGETHER ONLY FOR AN ACTIVE FLYING PU AT THE TADIL-B INTERFACING UNIT.

MS 013175

Figure 1-9. Air Track Symbology (Special Purpose Priority/Active Flying PU) (Sheet 2 of 2).



CODE	MEANING
aannn	ATDL-1 OR NATO TRACK NUMBER/ ADDRESS, FOR ATDL-1, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H. FOR NATO, ALPHAS A, E, G, H, J-M. EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

CODE	MEANING
E	EW TRACK (HOSTILE TRACKS ONLY)
L	POOR TRACKING STATUS TRACK
R	RAMIT TRACK (LOCAL TRACK)
T	TEST/SIM TRACK
D	DEFAULT TRACK NUMBER
F	FAKER HOSTILE TRACK
n	0 THRU 7 TRACK QUALITY (SUBORDINATE TO OTHER VALUES) TRACK QUALITY OF UNIT WITH REPORTING RESPONSIBILITY IS DISPLAYED
aa	STATION ADDRESS OF FIRST BATTALION OR PATRIOT ICC ASSIGNED (FIRST CHARACTER A THRU N, P OR Q, SECOND CHARACTER A THRU H) - BLANK IF NO ASSIGNMENT
I	INVESTIGATE/ASSIGN
R	ENGAGE RIPPLE
E	ENGAGE
X	COVER
F	FRIEND
U	UNKNOWN
H	HOSTILE OR FAKER HOSTILE

NOTE:

THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
A = ALPHABETIC CHARACTER
N = NUMERIC CHARACTER
X = ALPHABETIC OR NUMERIC CHARACTER
WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.

MS 195749F

Figure 1-10. Air Track Symbology (Command Transmitted)

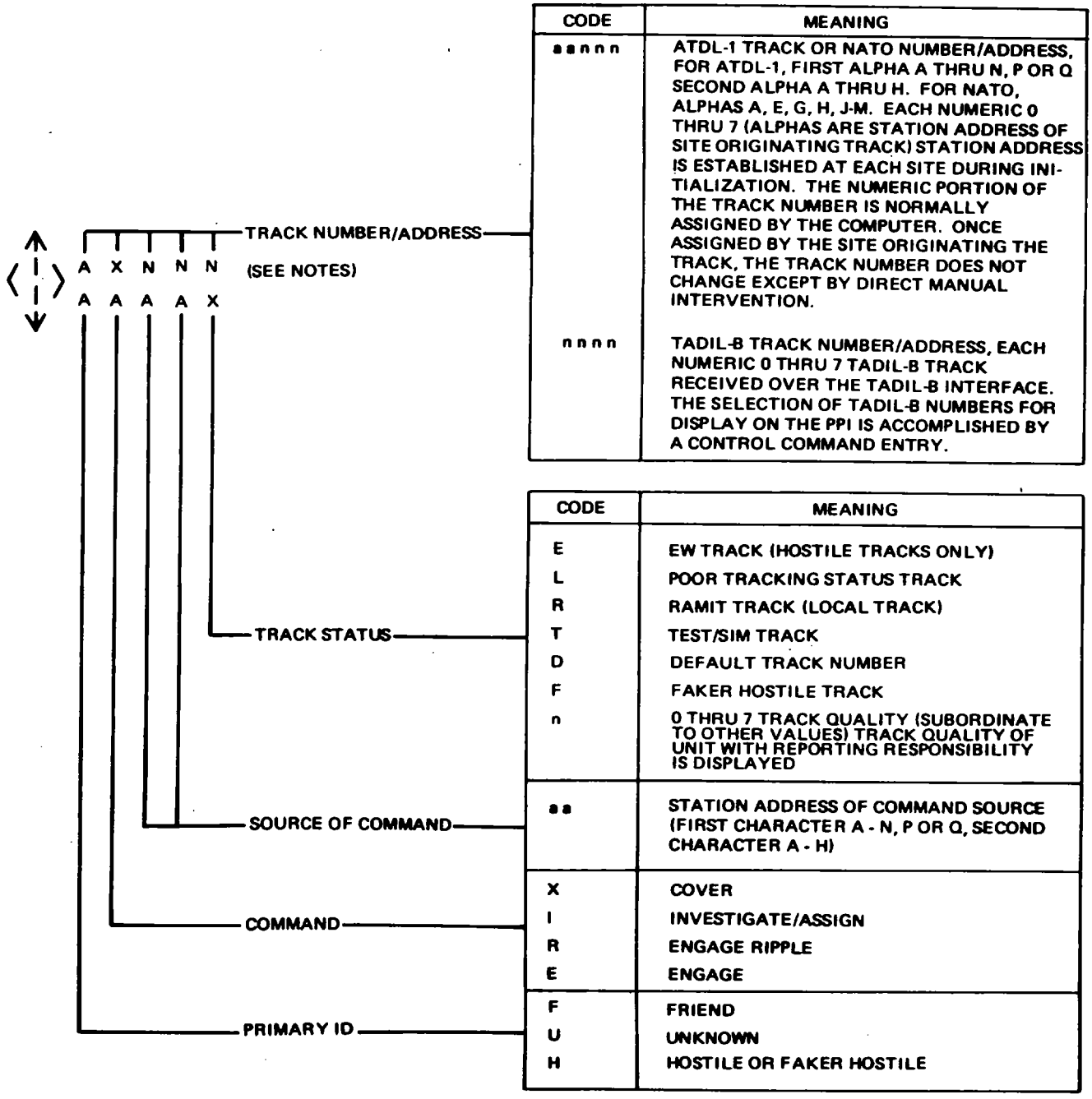
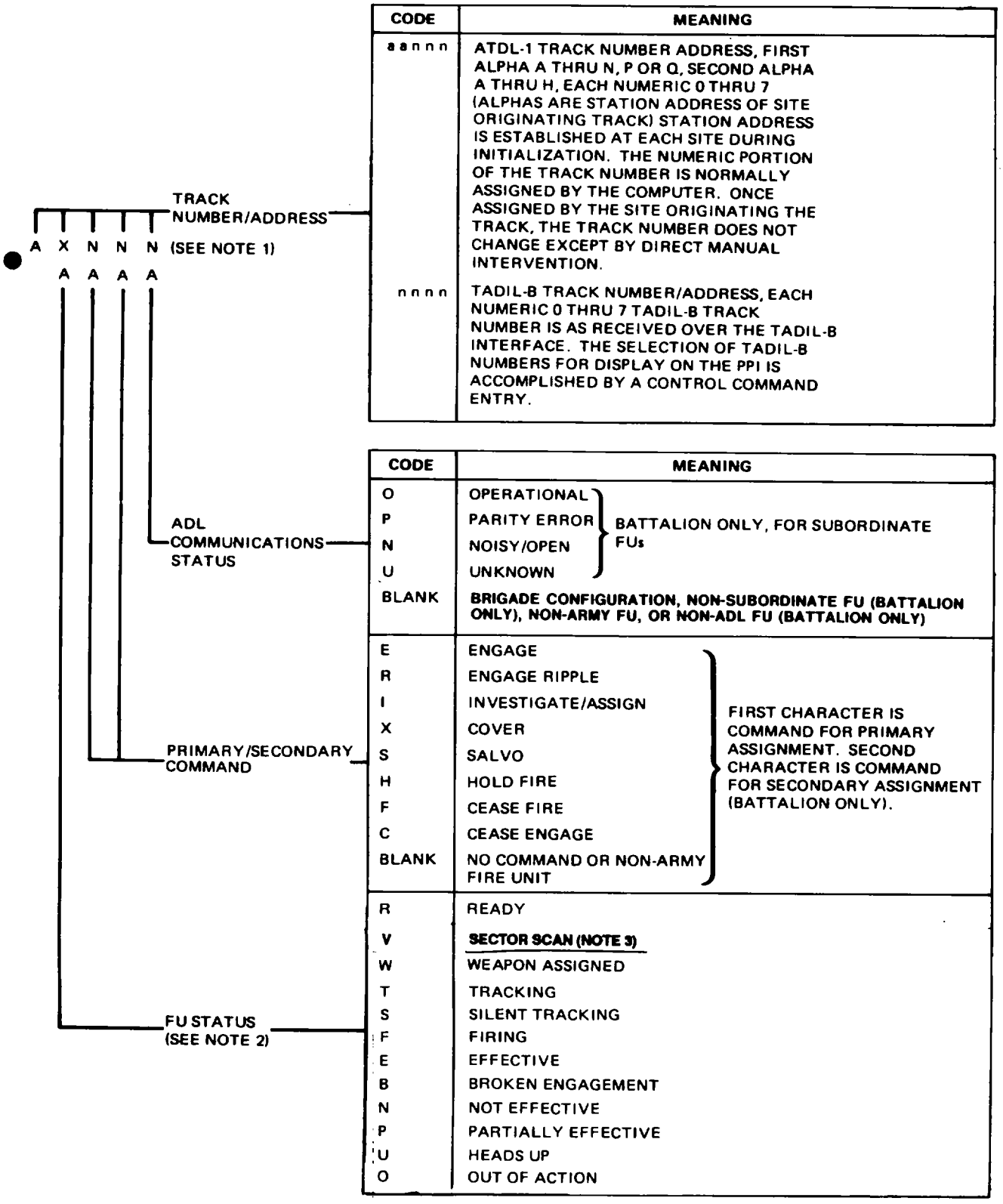


Figure 1-10.1. Air Track Symbology (Command Received)



MS 195751C

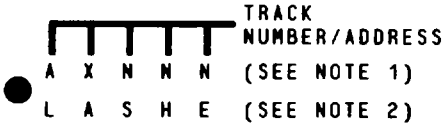
Figure 1-11. Defense System Symbology - Non-PATRIOT Fire Unit Site (Army and Non-Army) (Sheet 1 of 2)

NOTES

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. FU STATUS IS THE ONLY ITEM DISPLAYED IN THE SECOND ROW OF ALPHANUMERICS FOR NON-ARMY FUs.
3. A FU IN SECTOR SCAN IS ELIMINATED FROM CONSIDERATION FOR AUTOMATIC OR RECOMMENDED ASSIGNMENT. OPERATOR CAN SEND MANUAL ASSIGNMENT COMMAND TO FU.

MS195752C

Figure 1-11. Defense System Symbology - Non-PATRIOT Fire Unit Site (Army and Non-Army) (Sheet 2 of 2)



CODE	MEANING
aannn	ATDL-1 TRACK NUMBER ADDRESS, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H, EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

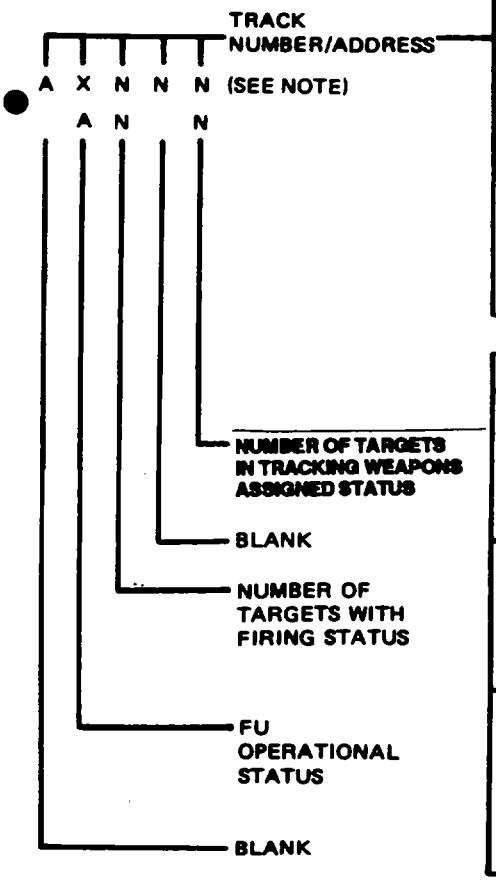
NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   - A - ALPHABETIC CHARACTER
   - N - NUMERIC CHARACTER
   - X - ALPHABETIC OR NUMERIC CHARACTER

   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. LOW ALTITUDE SIMULTANEOUS HAWK ENGAGEMENT - DATA LABEL.
3. UPON RECEIPT OF EITHER READY OR OUT OF ACTION STATUS (INCLUDING INACTIVE DATA LINK), SYMBOLOGY REVERTS TO NORMAL HAWK DISPLAY.

MS 558691

Figure 1-11.1. Defense System Symbology-LASHE Fire Unit Site



CODE	MEANING
aannn	ATDL-1 TRACK NUMBER ADDRESS, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H, EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

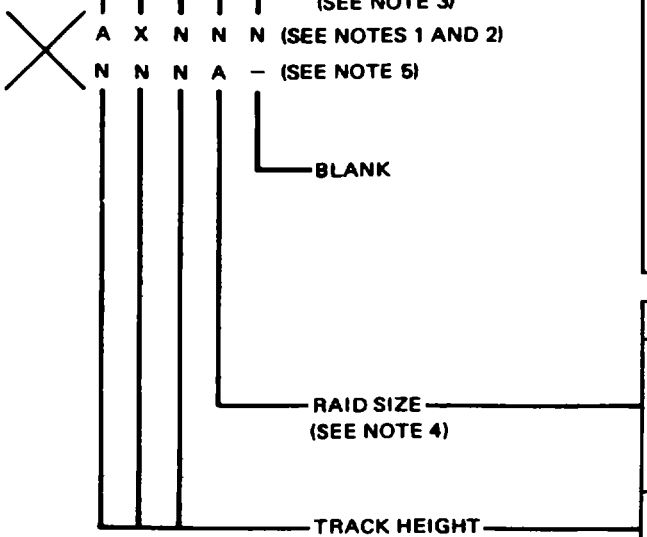
CODE	MEANING
n	NUMBER OF TARGETS WITH TRACKING/WEAPONS ASSIGNED STATUS (REFERENCE TM 9-1430-652-10-7)
n	NUMBER OF TARGETS WITH FIRING STATUS (REFERENCE TM 9-1430-652-10-7)
O	FU OUT OF ACTION
R	FU OPERATIONAL
BLANK	NO STATUS RECEIVED

NOTE:

THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
A = ALPHABETIC CHARACTER
N = NUMERIC CHARACTER
X = ALPHABETIC OR NUMERIC CHARACTER
WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.

MS 427998A

Figure 1-11.2. Defense System Symbology - PATRIOT Fire Unit Site



CODE	MEANING
aannn	ATDL-1 TRACK OR NATO NUMBER/ADDRESS, FOR ATDL-1, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H. FOR NATO, ALPHAS A, E, G, H, J-M. EACH NUMBERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMBERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

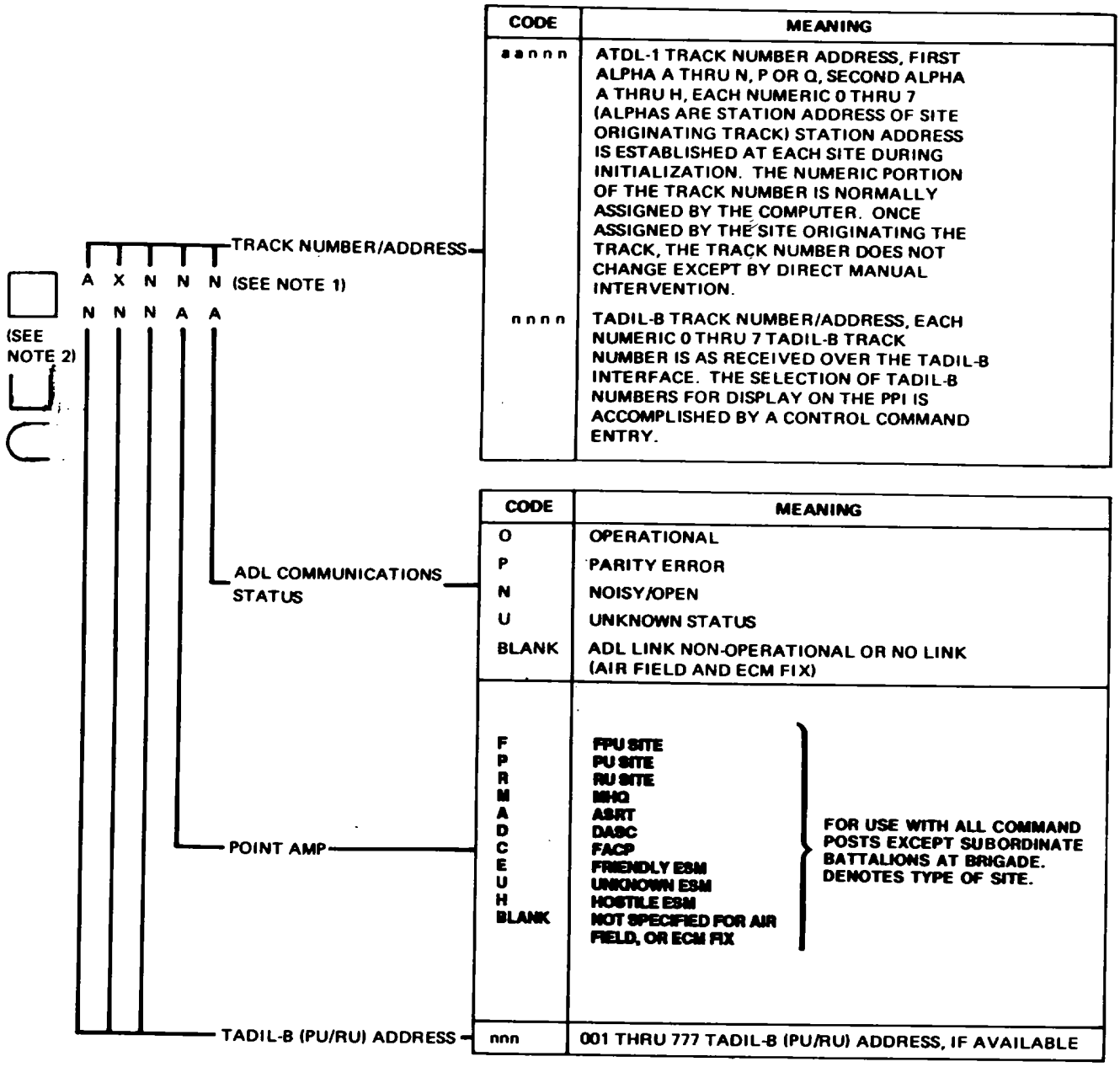
CODE	MEANING
S	SINGLE
F	FEW
M	MANY
U	UNKNOWN
000	TRACK HEIGHT UNKNOWN
nnn	001 THRU 132 TRACK HEIGHT-THOUSANDS OF FEET

NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. ALPHANUMERIC DATA ARE DISPLAYED WHEN THE ENGAGEMENT MARKER IS HOOKED.
3. TRACK NUMBER/ADDRESS IS FOR AIR TRACK BEING TRACKED/ ENGAGED BY FU.
4. RAID SIZE REPORTED BY FU.
5. SECOND ROW OF ALPHANUMERIC DATA IS BLANK IF ENGAGEMENT IS ON A JAM STROBE.

MS 195753C

Figure 1-12. Defense System Symbology- Engagement Marker



CODE	MEANING
aannn	ATDL-1 TRACK NUMBER ADDRESS, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H, EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

CODE	MEANING
O	OPERATIONAL
P	PARITY ERROR
N	NOISY/OPEN
U	UNKNOWN STATUS
BLANK	ADL LINK NON-OPERATIONAL OR NO LINK (AIR FIELD AND ECM FIX)

CODE	MEANING
F	FPU SITE
P	PU SITE
R	RU SITE
M	MHQ
A	ASRT
D	DASC
C	FACP
E	FRIENDLY ESM
U	UNKNOWN ESM
H	HOSTILE ESM
BLANK	NOT SPECIFIED FOR AIR FIELD, OR ECM FIX

FOR USE WITH ALL COMMAND POSTS EXCEPT SUBORDINATE BATTALIONS AT BRIGADE. DENOTES TYPE OF SITE.

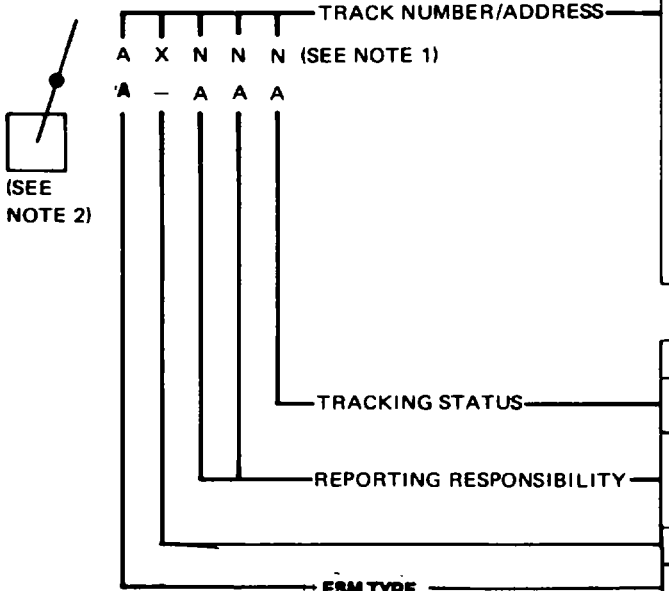
nnn	001 THRU 777 TADIL-B (PU/RU) ADDRESS, IF AVAILABLE

NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. THIS ALPHANUMERIC DATA BLOCK IS ALSO USED WITH ADL TRANSMITTABLE AIR FIELD AND ECM FIX SITES.

MS 1957540

Figure 1-13. Defense System Symbology - Transmittable Command Site (Command Post, Air Field, ESM Fix and ECM Fix)



CODE	MEANING
aannn	ATDL-1 TRACK NUMBER ADDRESS, FIRST ALPHA A THRU N, P OR Q, SECOND ALPHA A THRU H, EACH NUMERIC 0 THRU 7 (ALPHAS ARE STATION ADDRESS OF SITE ORIGINATING TRACK) STATION ADDRESS IS ESTABLISHED AT EACH SITE DURING INITIALIZATION. THE NUMERIC PORTION OF THE TRACK NUMBER IS NORMALLY ASSIGNED BY THE COMPUTER. ONCE ASSIGNED BY THE SITE ORIGINATING THE TRACK, THE TRACK NUMBER DOES NOT CHANGE EXCEPT BY DIRECT MANUAL INTERVENTION.
nnnn	TADIL-B TRACK NUMBER/ADDRESS, EACH NUMERIC 0 THRU 7 TADIL-B TRACK NUMBER IS AS RECEIVED OVER THE TADIL-B INTERFACE. THE SELECTION OF TADIL-B NUMBERS FOR DISPLAY ON THE PPI IS ACCOMPLISHED BY A CONTROL COMMAND ENTRY.

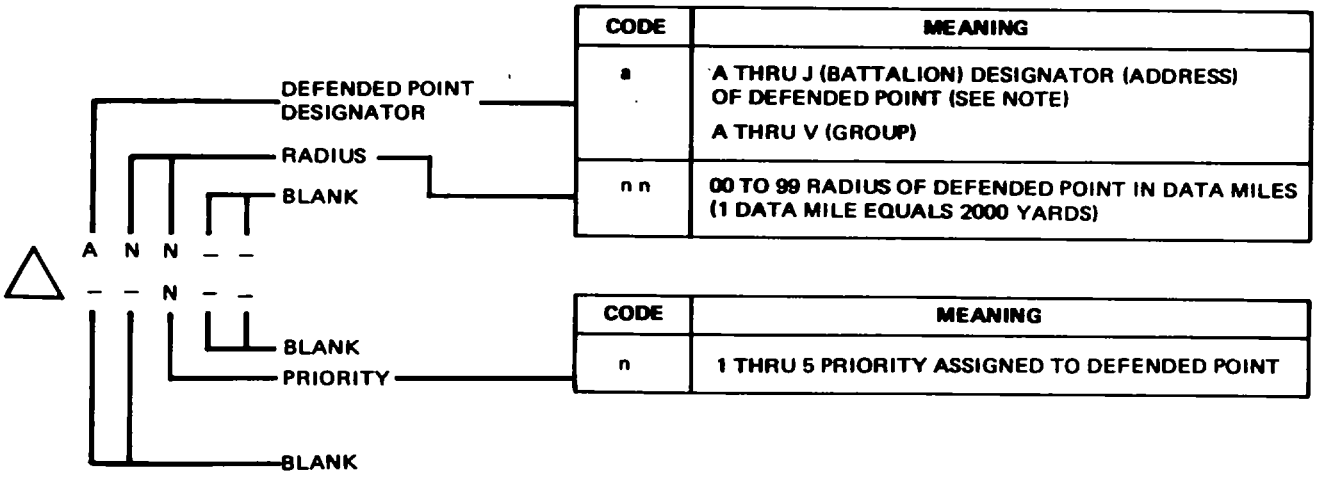
CODE	MEANING
J	JAM STROBE
aa	STATION ADDRESS OF UNIT HAVING REPORTING RESPONSIBILITY (BLANK FOR OWN SITE)
BLANK	
E U H	FRIENDLY ESM UNKNOWN ESM HOSTILE ESM
BLANK	

NOTES:

1. THE CHARACTERS USED IN THE DEFINITION OF ALPHANUMERIC DATA ARE AS FOLLOWS:
   A = ALPHABETIC CHARACTER
   N = NUMERIC CHARACTER
   X = ALPHABETIC OR NUMERIC CHARACTER
   WHEN INFORMATION IS NOT AVAILABLE THE FIELD IS LEFT BLANK.
2. THE JAM STROBE IS THE ONLY LINE HAVING AN ASSOCIATED ALPHANUMERIC DATA BLOCK. THE JAM STROBE ALPHANUMERICS ARE POSITIONED TO THE RIGHT OF A POINT ON THE JAM STROBE. THIS POINT ON THE STROBE LINE IS 50 DATA MILES FROM THE ORIGINATING SITE.

MS 202137B

Figure 1-14. Jam Strobe Symbology



CODE	MEANING
a	A THRU J (BATTALION) DESIGNATOR (ADDRESS) OF DEFENDED POINT (SEE NOTE) A THRU V (GROUP)
n n	00 TO 99 RADIUS OF DEFENDED POINT IN DATA MILES (1 DATA MILE EQUALS 2000 YARDS)

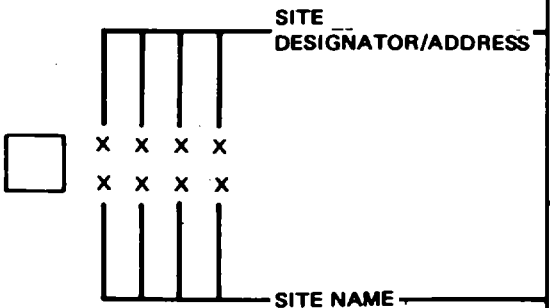
CODE	MEANING
n	1 THRU 5 PRIORITY ASSIGNED TO DEFENDED POINT

NOTE:

FUs MAY ALSO BE DESIGNATED AS DEFENDED POINTS (K THRU V) (BATTALION ONLY). DEFENDED POINT SYMBOLS ARE NOT DISPLAYED FOR FUs DESIGNATED AS DEFENDED POINTS. FU DEFENDED POINT DESIGNATORS ARE DISPLAYED IN THE ARO HOOKED FIRE UNIT DISPLAY.

MS 195756

Figure 1-15. Defending Point Symbology



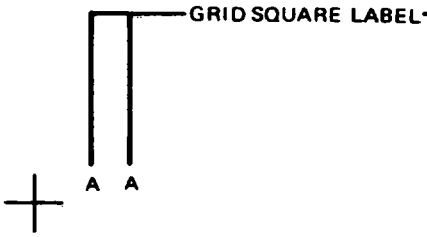
CODE	MEANING
XX	ONLY TWO ALPHANUMERIC CHARACTERS ARE USED IN ENTERING DESIGNATION FOR MAP FIXED POINTS (SEE NOTE 1)
XXXX	ANY FOUR ALPHANUMERIC CHARACTERS ENTERED MANUALLY AT THE DISPLAY CONSOLE FOR DISPLAY CONSOLE ENTERED SITES (SEE NOTE 2)
BLANK	NO SITE ADDRESS ENTERED AT THE DISPLAY CONSOLE OR DURING MAP ENTRY
XXXX	ANY FOUR ALPHANUMERIC CHARACTERS ENTERED MANUALLY AT THE DISPLAY CONSOLE FOR DISPLAY CONSOLE ENTERED SITES
BLANK	FOR DISPLAY CONSOLE ENTERED SITE, NO NAME ENTRY MADE – ALWAYS BLANK FOR MAP ENTERED SITES

NOTES:

1. THESE ALPHANUMERIC DATA ARE USED FOR ALL MAP FIXED POINTS: DEFENDED POINT, FIRE UNIT, COMMAND POST, POL STORAGE, AIR FIELD, ORDNANCE STORAGE, TRUCK PARK, RADAR, AND ECM SITE.
2. THESE ALPHANUMERIC DATA ARE ALSO USED WITH DISPLAY CONSOLE ENTERED NON-TRANSMITTABLE TRUCK PARK, ORDNANCE STORAGE, POL STORAGE, AIR FIELD, AND RADAR SITE SYMBOLS.

MS013176

Figure 1-16. Fixed Point, Site, Map Symbology and Non-Transmittable Site Symbology for Command Post, Truck Parks, Ordnance Storage, POL Storage, Radar, Air Field, and ECM Fix



CODE	MEANING
a a	A THRU Q (EXCEPT I AND O) FOR EACH CHARACTER-GEOREF GRID SQUARE LABEL (SEE NOTE)

NOTE:

A GEOREF MARKER OVERLAY WITH EACH GRID SQUARE IS NORMALLY AVAILABLE FOR DISPLAY. THE MAJOR GRID SQUARE (PRECEDING TWO ALPHA CHARACTERS) IS AVAILABLE FOR TRACKS AND HOOKABLE SITES IN THE HOOKED ITEM ARO DISPLAYS.

MS 202706

Figure 1-17. Fixed Point, Site, Map, for GEOREF Symbology

CODE	MEANING
aannn	WEAPONS CONTROL ZONE: FIRST ALPHA W, SECOND ALPHA H, T, OR F. NUMERICS 001 THRU 999
aan	MISSILE ENGAGEMENT ZONE: FIRST ALPHA M, SECOND ALPHA H, T, OR F. NUMERICS 1 OR 2
aan	FORWARD SUPPORT COORDINATION LINE: FIRST ALPHA F, SECOND ALPHA S. NUMERICS 1 OR 2

MS 558692

Figure 1-17.1. Volume Hook Point

Table 1-3. Symbol Flash Characteristics

Symbol type	Commence flashing	Discontinue flashing
Special		
	When a track alert exists (symbol becomes special and flashes)	When all the alerts for the track have been cleared (the symbol reverts to appropriate one for the track ID)
Command transmitted	When a brigade or battalion has sent a command message is (symbol flashes)	When an affirmative receipt/compliance transmitted message is sent by a battalion or PATRIOT information control central (ICC)
Command received	When a battalion sends an affirmative receipt/compliance message (symbol flashes)	When a fire unit acknowledges the received command message
Fire unit	When a non-PATRIOT fire unit acquires a track or jam strobe on a self-initiated basis (battalion only)	When a command message is sent on the self-initiated track or jam strobe to the FU or when engagement is terminated
	When a fire unit alert exists (symbol size expands to 1/8 inch circle)	When all alerts have been cleared (the symbol reverts to the standard fire unit symbol size)
	When a Hawk fire unit enters LASHE	When a Hawk fire unit goes to ready or out of action status (including inactive data link)
Site	When a site alert exists (symbol flashes)	When all the alerts for the site have been cleared
Own site	When SIF codes are not present for the next period (own site symbol flashes)	When automatic SIF code validation is deactivated (CC151 off) or SIF codes are entered next period (symbol stops flashing)
Primary pairing line	When a primary assignment (engage command) is sent to subordinate non-PATRIOT fire unit (battalion only)	When the non-PATRIOT fire unit acknowledges receipt of primary assignment or reports tracking or firing status
Jam strobe hookable point	When a jam strobe alert exists (symbol size expands to 1/8 inch circle)	When all the alerts for the jam strobe have been cleared (the symbol reverts to the standard fire unit symbol size)
Sector Scan line	When an ATDL-1 HAWK FU enters Sector Scan Mode	When an ATDL-1 HAWK FU reports out of Sector Scan or the link goes down

SECTION IV. AUXILIARY READOUT DISPLAY

1-15. General. The ARO display occupies the lower portion of the console CRT display. The ARO is capable of presenting a total of 512 characters of information in four primary types of formatted tabular display: summary data field, data separation fields, amplifying data (hooked volume/line data field and hooked item data field), and status data field. Figure 1-18 shows the general field layout of the ARO display. The following paragraphs discuss each primary ARO display type. The ARO and A Keyboard are also capable of serving as a backup to the Keyboard Printer Unit (KPU) for the entry of system control commands (CCs) and display of associated computer generated responses. In this mode, the entire ARO area is used H READOUT DUISPLAY for the display of CC entries and computer generated responses. The mode is entered by operator actuation of the 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 CONTRL CMD EN

TRY a second time. The CC entries can be in effect at only one display console at a given time.

1-16. Summary Data Field. The summary data field is displayed in the leftmost 24 columns of the ARO. This field may contain summary information for fire units (sorted according to operator-entered criteria), sites, jam strobes, data link transmission zones as selected by the ARO DATA SELECTIONS switches (blank if no ARO DATA SELECTIONS switch activated), intelligence data on hooked tracks and ESM data on hooked ESM fix sites or hooked ESM jam strobes. The format and content for each of these types of ARO summary data displays is shown in figures 1-19 thru 1-21 and in TM 9-1430-652-10-7.

1-17. Data Separation Fields. The ARO display contains two data separation fields (columns 25 and 26, and 50 and 51), each consisting of two columns of slashes (/). Data separation fields separate the amplifying or hooked item data field from the summary data field on the left, and from the status data field on the right. The format and content of the data separation fields are shown in figures 1-22 and 1-28.

1-17.1. Hooked Volume/Line Data Field. The hooked volume/line data field is displayed in the summary (columns 1 thru 24) and hooked item data fields (columns 27 thru 49) in the ARO. Display is accomplished by hooking the volume/line hookable point with BACKGROUND DATA DISPLAY VOLUME activated. The volume/line ARO is shown in figures 1-22.1 and 1-22.2.

1-18. Hooked Item Data Field. Detailed information concerning an individual track, fire unit, engagement marker, hookable site, own site or jam strobe symbol is provided in a hooked item data field in the center portion (columns 27 thru 49) of the ARO. To obtain this information, the operator designates (hooks) the concerned symbol. A formatted tabular display showing all available information on the hooked symbol then appears in the ARO. If intelligence data exists for a hooked track, that information will be displayed in the summary data field (columns 1 thru 24) (see TM 9-1430-652-10-7). If ESM data exists on hooked ESM fix sites or hooked ESM strobes, that information will be displayed in the summary data field (column 1 thru 24) (see TM 9-1430-652-10-7). Additionally, a portion of the transmission zone data information is provided in this area. To obtain detailed information on data link transmission zone origin points, ARO DATA SELECTIONS FILTER DATA is pressed instead of performing a hook. Own site information is provided if no item is hooked. Figures 1-23 thru 1-27.1 show the format and content of the hooked item data field portion of the ARO display.

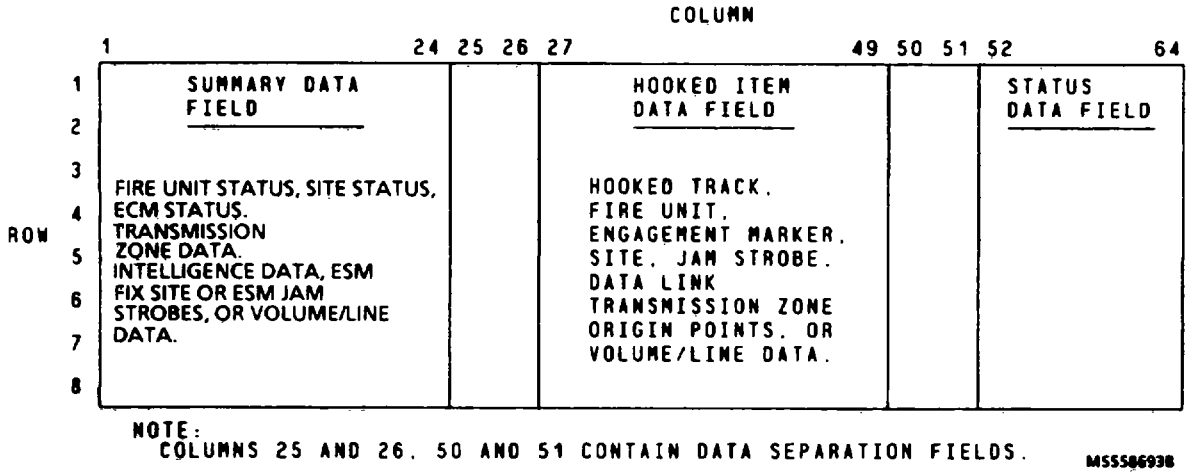


Figure 1-18. ARO Data Field Layout.

Rows \ Cols	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
2	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
3	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
4	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
5	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
6	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
7	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n
8	a	x	x	x	x	a	a	x	n	n	n	a	a	x	n	n	n	a	n	n	n	,	n	n

Column	Format	Definition
ROW 1		
1-3	axx	Fire Unit Designator - First character is an alpha, A-Z; second and third characters are alphanumerics, A-Z alphas and/or 0-9 numerics.
4-5	xx	Alert Status - One or two alphanumeric characters: *00-99 - Minutes *OH-9H - Hours *RL - Released *SM - Simulated **P - Parity Error **N - Noisy/Open Link **U - Unknown Link Status * Any two characters entered are displayed; only those listed have been defined. ** Displayed only for local FUs. These statuses have display priority over the other defined statuses.
6	a	Fire Unit Status - Single alpha character: R - Ready T - Tracking S - Silent Tracking F - Firing E - Effective N - Not Effective U - Heads Up W - Weapon Assigned B - Broken Engagement O - Out of Action P - Partially Effective V - Sector Scan
7-11	aannn or nnnn	Primary Assignment, ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL-B track number - four numeric characters 0-7. NATO track number - two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics.

MS 195760D

Figure 1-19. Non-PATRIOT Fire Unit Status Data ARO (Sheet 1 of 2)

Column	Format	Definition
12	a	Primary Assignment Command - Single alpha character: E - Engage R - Engage Ripple X - Cover S - Salvo H - Hold Fire F - Cease Fire C - Cease Engage I - Investigate/ Assign Blank - No Command
13-17	aannn or nnnn	Secondary Assignment, ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL-B track number - four numeric characters, 0-7. NATO track number - two alpha and three numeric characters, A, E, G, H, J-M for alphas, and 0-7 numerics.
18	a	Secondary Assignment Command - Single alpha character: E - Engage R - Engage Ripple X - Cover S - Salvo H - Hold Fire F - Cease Fire C - Cease Engage I - Investigate/ Assign Blank - No Command
19-21	nnn	Total Number of Hot Missiles - Three numeric characters, 0-9.
22	,	Comma.
23-24	nn	Total Number of Cold Missiles - Two numeric characters, 0-9.
ROWS 2-8		Rows 2 thru 8 are identical to Row 1 in Format and Definition.

MS 195761B

Figure 1-19. Non-PATRIOT Fire Unit Status Data ARO (Sheet 2 of 2)

Rows \ Cols	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	a	x	x	x	x		L	A	S	H	E													
2	a	x	x	x	x		L	A	S	H	E													
3	a	x	x	x	x		L	A	S	H	E													
4	a	x	x	x	x		L	A	S	H	E													
5	a	x	x	x	x		L	A	S	H	E													
6	a	x	x	x	x		L	A	S	H	E													
7	a	x	x	x	x		L	A	S	H	E													
8	a	x	x	x	x		L	A	S	H	E													

Column	Format	Definition
ROW 1		
1-3	axx	Fire Unit Designator - First character is an alpha, A-Z; second and third characters are alphanumerics, A-Z alphas and/or 0-9 numerics.
4-5	xx	Alert Status - One or two alphanumeric characters: *00-99 - Minutes *0H-9H - Hours *RL - Released *SM - Simulated **P - Parity Error **N - Noisy/Open Link **U - Unknown Link Status * Any two characters entered are displayed; only those listed have been defined. ** Displayed only for local FUs. These statuses have display priority over the other defined statuses.
6		Blank.
7-11	LASHE	Low Altitude Simultaneous Hawk Engagement - Data Label.
12-24		Blank.
ROWS		
2-8		Rows 2 through 8 are identical to Row 1 in Format and Definition for LASHE fire units.

MS 558694

Figure 1-19.1. LASHE Fire Unit Status Data ARO

Rows \ Cols	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
2	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
3	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
4	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
5	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
6	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
7	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n
8	a	x	x	x	x	a					n	F					n	T	n	n	n	,	n	n

Column	Format	Definition
ROW 1		
1-3	axx	Fire Unit Designator - First character is an alpha, A-Z; second and third characters are alphanumerics, A-Z alphas and/or 0-9 numerics.
4-5	xx	Alert Status - One or two alphanumeric characters: *00-99 - Minutes *0H-9H - Hours *RL - Released *SM - Simulated **P - Parity Error **N - Noisy/Open Link **U - Unknown Link Status * Any two characters entered are displayed; only those listed have been defined. ** Displayed only for local FUs. These statuses have display priority over the other defined statuses.
6	a	Fire Unit Status - Single alpha character: R - Ready O - Out of Action
7-10		Blank.
11	n	Number of missiles firing (TM 9-1430-652-10-7).
12	F	Missiles firing - Data Label.
13-16		Blank.
17	n	**Number of targets in tracking/weapons assigned status (TM 9-1430-652-10-7)**
18	T	**Tracking/Weapons Assigned - Data Label.**
19-21	nnn	Total Number of Hot Missiles - Three numeric characters, 0-9.
22	,	Comma.
23-24	nn	Total Number of Cold Missiles - Two numeric characters, 0-9.
ROWS 2-8		Rows 2 through 8 are identical to Row 1 in Format and Definition for PATRIOT fire units.

MS 428004B

Figure 1-19.2. PATRIOT Fire Unit Status Data ARO

Rows	Cols 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
2	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
3	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
4	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
5	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
6	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
7	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n
8	a	x	x	x	x	a			n	n	n	F			n	n	n	T	n	n	n	,	n	n

Column	Format	Definition
ROW 1		
1-3	axx	Site Designator - First character is an alpha, A-Z; second and third characters are alphanumerics, A-Z alphas and/or 0-9 numerics.
4-5	xx	Site Alert Status - One or two alphanumeric characters: *00-99 - Minutes *0H-9H - Hours *RL - Released *SM - Simulated **P - Parity Error **N - Noisy/Open Link **U - Unknown Link Status *Any two characters entered are displayed; only those listed have been defined. **Displayed only for local sites. These statuses have display priority over the other defined statuses.
6	a	Site Status - One alpha character: R - Ready O - Out of Action
7-8		Blank.
9-11	nnn	Total number of Engagements Reporting Firing Status - Three numeric characters, 0-511.
12	F	Firing Status - Data Label.
13-14		Blank.
15-17	nnn	Total number of Engagements Reportings Weapons Assigned, Tracking, or Silent Tracking Status - Three numeric characters, 0-511.
18	T	Tracking Status - Data Label.
19-21	nnn	Total number of PATRIOT (Hot, Long Range) Missiles Reported by Fire Units Known to be Subordinate to the Site - Three numeric characters, 0-511.

MS016187

Figure 1-19.3. Site Status Summary Data ARO (Sheet 1 of 2).

Column	*Format*	*Definition*
22	Comma.	
23-24	nn	Total number of HAWK (Hot, Unknown, Short and Medium Range) Missiles Reported by Fire Units Known to be Subordinate to the Site - Two numeric characters, 0-99.
ROWS		
2-8		Rows 2 through 8 are identical to Row 1 in Format and Definition.

MS018188

Figure 1-19.3. Site Status Summary Data ARO (Sheet 2 of 2)

Rows \ Cols	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	J	A	M		S	T	R	O	B	E	S		B	Y		R	E	P	O	R	T	I	N	G
2				S	O	U	R	C	E															
3	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		
4	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		
5	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		
6	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		
7	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		
8	x	x	x	,	a	a	a	a	n	n	n	n	,	n	n	n	,	a	x	n	n	n		

Column	Format	Definition
ROW 1		
1-24	JAM STROBES BY REPORTING	First Line of Strobe Data Display Title - Data Label.
ROW 2		
3-8	SOURCE	Second Line of Strobe Data Display Title - Data Label.
*ROW 3		
1-3	xxx	TADIL B (PU/RU) or ATDL-1 Station Address of Site Reporting Strobe - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. If own site is originating or reporting source, three alpha characters are displayed: OWN - Own site originating source LOC - Own site reporting source
4	,	Comma.
5-12	aaaannnn	Position of Originating Site (GEOREF) - Four alpha and four numeric characters, A-Z (except I and O) for first alpha, A-M (except I) for second alpha, A-Q (except I and O) for second pair of alphas, and two pairs numerics each 00-59.
13	,	Comma.
14-16	nnn	Azimuth of Jam Strobe from Originating Site - Three numeric characters, 0-9 (azimuth is in degrees - maximum is 359).
17	,	Comma.
18-22	aannn or nnnn	ATDL-1 Track Number for Jam Strobes - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL B Track Number - four numeric characters, 0-7. NATO Track Number - Two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics.
23-24		Blank.
ROWS 4-8		Rows 4-8 are identical to Row 3 in Format and Definition

*Sector Scan, LASHE, PTL, or engageable (those associated with a fire unit in the system) jam strobes will not be listed in this ARO.

MS 202152E

Figure 1-20. Jam Strobe Data ARO

Rows \ Cols	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	T	Z		D	A	T	A		L	K	:	n	n	,	a	x			M	0	D	:	n	n
2	S	I	T	E	:	a	a				.	n	n	n	n			S	I	M	:	a	a	a
3	S	T	:	a	a	a		T	H	L	D	S		N	:	n	n			P	:	n	n	n
4	T	Z		D	A	T	A					A	M	P		I	D		F	L	T	R	S	
5	R	A	D	:	n	n	n						a	,	n	n	n		a	,	n	n	n	
6	L	S	:	n	n	n							a	,	n	n	n		a	,	n	n	n	
7	U	S	:	n	n	n							a	,	n	n	n		a	,	n	n	n	
8	A	L	T	:	±	n	n	n				S	:	a	a	a			I	N	:	a	a	a

Column	Format	Definition
ROW 1		
1-11	TZ DATA LK:	Data Link Information - Data Label.
12-13	nn	Data Link Number - Two numeric (octal) characters, 00-37
14	,	Comma.
15-16	ax	Data Link Type - One alpha and one alphanumeric character. TB - TADIL B A1 - ATDL-1
17-18		Blank.
19-22	MOD:	Number of Modem Assigned - Data Label.
23-24	nn	Modem Number - Two numeric (decimal) characters, 01-32.
ROW 2		
1-5	SITE:	Remote Site Address - Data Label.
6-7	aa	Station Address - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha (first two characters of ATDL-1 track number).
8-10		Blank.
11	,	Comma.
12-15	nnnn	TADIL B (PU/RU) Address or Track Number - Two to four numeric characters, 0-7.
16-17		Blank.
18-21	SIM:	Simulated Track - Data Label.
22-24	aaa	Simulated Track Status - Up to three alpha characters: ON - Simulated tracks transmitted OFF - Simulated tracks not transmitted

MS 195762D

Figure 1-21. Transmission Zone Data ARO (Sheet 1 of 3).

Column	Format	Definition
ROW 3		
1-3	ST:	Data Link Transmission Zone Status - Data Label.
4-6	aaa	Transmission Zone Status - Up to three alpha characters: ON - Transmission Zone activated for link OFF - Transmission Zone deactivated for link
7		Blank.
8-12	THLDS	Noisy and Parity Error Thresholds - Data Label.
13		Blank.
14-15	N:	Noisy Threshold - Data Label.
16-17	nn	Noisy Threshold - Two numeric characters, 00-32.
18-19		Blank.
20-21	P:	Parity Error Threshold - Data Label.
22-24	nnn	Parity Error Threshold - Up to three numeric characters, 0-255.
ROW 4		
1-7	TZ DATA	Transmission Zone Data - Data Label.
8-11		Blank.
12-23	AMP ID FLTRS	Amp. ID Filters - Data Label.
24		Blank.
ROW 5		
1-4	RAD:	Radius of Cylindrical Transmission Zone - Data Label.
5-7	nnn	Radius Values - Up to three numeric characters, 1-511, in data miles (blank when the zone is not cylindrical).
8-12		Blank.
13	a	Primary ID of First ID Item - Single alpha character: F - Friend U - Unknown Blank - ID item not active
14		Comma.
15-16	nn	Primary ID, Primary ID Amplification Code of First ID Item - Two numeric characters, 0-9 (blank if item not active)
17	n	Amplification ID Code of First ID Item - Single numeric character, 0-7 (blank if item not active).
18		Blank.
19-23	a,nnn	Primary ID, Primary ID Amp. Code, and Amplification ID Code of Second ID Item - Same as columns 13-17.
24		Blank.

MS 558695A

Figure 1-21. Transmission Zone Data ARO (Sheet 2 of 3)

Column	Format	Definition
ROW 6		
1-3	LS:	Lower Speed Limit of Transmission Zone - Data Label.
4-6	nnn	Lower Speed Limit Value - Up to three numeric characters, 0-999, in tens of data miles per hour.
7-12		Blank.
13-23	a,nnn a,nnn	Primary ID, Primary ID Amp. Code, and Amplification ID Code of Third and Fourth ID Items - Same as columns 13-23, row 5.
24		Blank.
ROW 7		
1-3	US:	Upper Speed Limit of Transmission Zone - Data Label.
4-6	nnn	Upper Speed Limit Value - Up to three numeric characters, 5-999, in tens of data miles per hour.
7-12		Blank.
13-23	a,nnn a,nnn	Primary ID, Primary ID Amp. Code, and Amplification ID Code of Fifth and Sixth ID Items - Same as columns 13-23, row 5.
24		Blank.
Row 8		
1-4	ALT:	Altitude of Transmission Zone - Data Label.
5-8	±nnn	Altitude Item Value - Plus or minus and three numeric characters (if plus, tracks equal to or above altitude value will be accepted if height source is known: if minus, tracks equal to or below altitude value will be accepted if height source is known). Tracks with unknown/ estimated height source are automatically accepted.
9-11		Blank.
12-13	:	Security Filter - Data Label.
14-16	aaa	Security Filter Value - Up to three alpha characters: ON - Security Filter Set OFF - Security Filter Not Set
17-18		Blank.
19-21	IN:	Intelligence Filter - Data Label.
22-24	aaa	Intelligence Filter Value - Up to three alpha characters: ON - Intelligence Filter Set OFF - Intelligence Filter Not Set

NOTE:

Items are activated/deactivated by control command.

MS 195765C

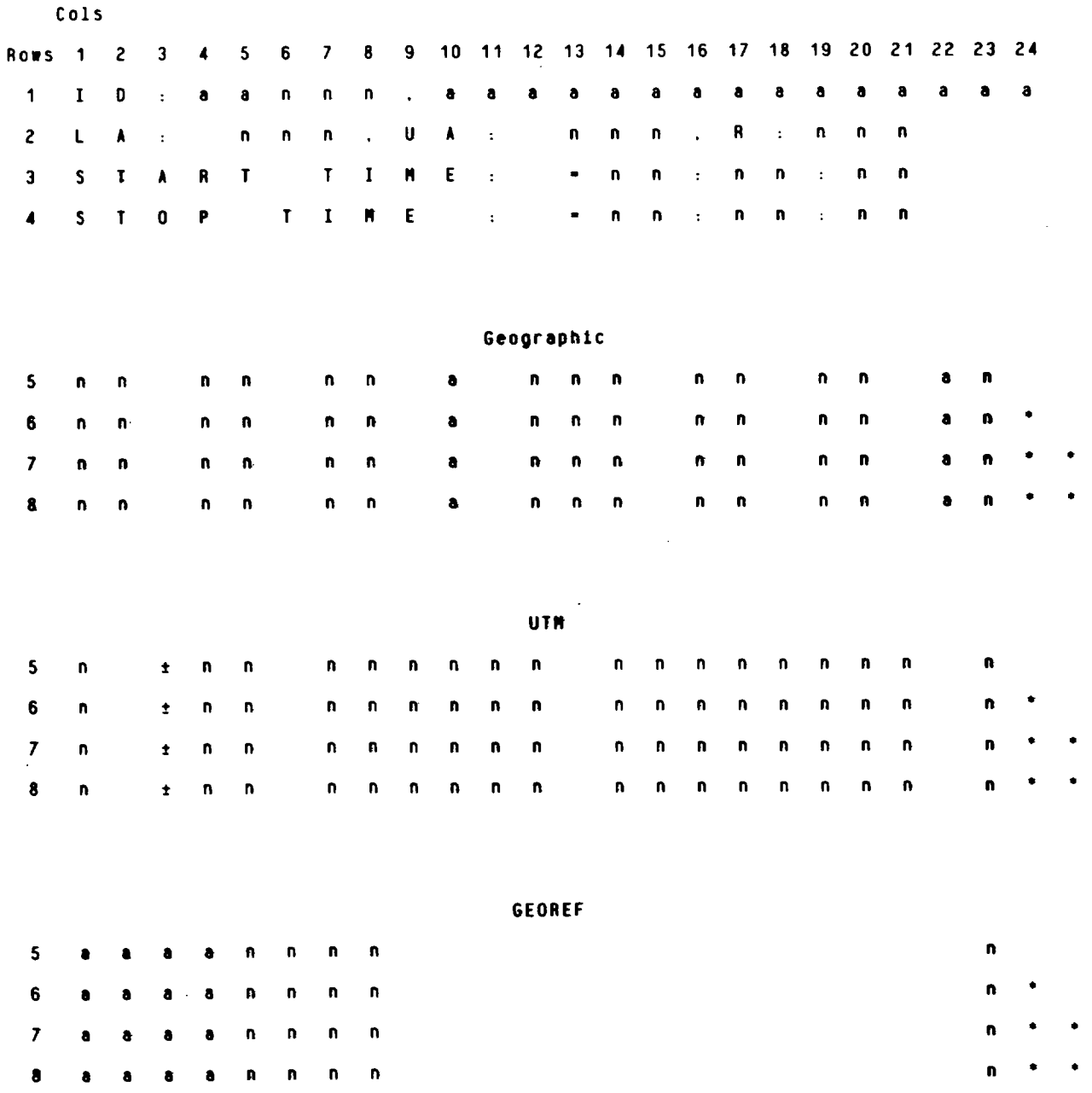
Figure 1-21. Transmission Zone Data ARO (Sheet 3 of 3).

Rows	Cols 25	26
1	/	/
2	/	/
3	/	/
4	/	/
5	/	/
6	/	/
7	/	/
8	/	/

Column	Format	Definition
ROW 1		
25-26	//	Field separation markers.
ROWS 2-8		Rows 2 through 8 are identical to Row 1 in Format and Definition.

MS 195766A

Figure 1-22. Field Separation Markers (Left)



MS 558696

Figure 1-22.1. Hooked Volume/Line Summary Field ARO (Sheet 1 of 5).

Column	Format	Definition
ROW 1		
1-3	ID:	Identification - Data Label.
4-8	aannn	Volume/Line Designator - Two alpha and three numeric characters. Alpha characters: WH - Weapons Control Zone - Hold WT - Weapons Control Zone - Tight WF - Weapons Control Zone - Free MH - Missile Engagement Zone - Hold MT - Missile Engagement Zone - Tight MF - Missile Engagement Zone - Free FS - Foward Support Coordination Line Numeric characters: 001-999 - WCZ 001-002 - MEZ or FSCL
9		Comma.
10-24	aaaaaaaaaaaaaaa	Site Adaptable - Up to 15 alpha characters: SITEADAPTED - if this volume/line is on site-adapted tape. NOT SITEADAPTED - if this volume/line is not on site-adapted tape.
ROW 2		
1-3	LA:	Lower Altitude - Data Label.
4		Blank.
5-7	nnn	Lower Altitude of Volume in thousands of feet - Up to three numeric characters, 000-999.
8	.	Comma.
9-11	UA:	Upper Altitude - Data Label.
12		Blank.
13-15	nnn	Upper Altitude of Volume in thousands of feet - Up to three numeric characters, 000-999.
16	.	Comma.
17-18	R:	Radius - Data Label.
19-21	nnn	Radius for cylindrical volume in data miles - Up to three numeric characters, 1-511.
22-24		Blank.

MS 558697

Figure 1-22.1. Hooked Volume/Line Summary Field ARO (Sheet 2 of 5).

Column	Format	Definition
ROW 3		
1-13	START TIME: -	Start Time - Data Label.
14-16	nn:	Hours - Two numeric characters, 00-23.
17-19	nn:	Minutes - Two numeric characters, 00-59.
20-21	nn	Seconds - Two numeric characters, 00-59.
22-24		Blank.
ROW 4		
1-13	STOP TIME: -	Stop Time - Data Label.
14-16	nn:	Hours - Two numeric characters, 00-23.
17-19	nn:	Minutes - Two numeric characters, 00-59.
20-21	nn	Seconds - Two numeric characters, 00-59.
22-24		Blank.
ROW 5 (Geographic)		
1-2	nn	Latitude Degrees - Two numeric characters, 00-83.
3		Blank.
4-5	nn	Latitude Minutes - Two numeric characters, 00-59.
6		Blank.
7-8	nn	Latitude Seconds - Two numeric characters, 00-59.
9		Blank.
10	a	Latitude North or South - One alpha character, N for North or S for South.
11		Blank.
12-14	nnn	Longitude Degrees - Three numeric characters, 000-180.
15		Blank.
16-17	nn	Longitude Minutes - Two numeric characters, 00-59.
18		Blank.
19-20	nn	Longitude Seconds - Two numeric characters, 00-59.
21		Blank.
22	a	Longitude East or West - One alpha character, E for East or W for West.
23	n	Origin Point Number - One numeric character, 1 thru 4.
24		Blank.

MS 558698

Figure 1-22.1. Hooked Volume/Line Summary Field ARO (Sheet 3 of 5).

Column	Format	Definition
ROW 5 (UTM)		
1	n	Reference Spheroid - One numeric character, 1-7.
2		Blank.
3-5	±nn	UTM Grid Zone - Plus or minus and two numeric characters, -60 to +60 (not zero - minus is Southern hemisphere and plus is Northern hemisphere).
6		Blank.
7-12	nnnnnn	UTM Meters Easting - Six numeric characters, 166640 thru 833360.
13		Blank.
14-21	nnnnnnnn	UTM Meters Northing - Eight numeric characters, 0 thru 10,000,000.
22		Blank.
23	n	Origin Point Number - One numeric character, 1 thru 4.
24		Blank.
ROW 5 (GEOREF)		
1	a	First Division Longitude - One alpha character, A-Z except I and O (15 degree units).
2	a	First Division Latitude - One alpha character, A-M except I (15 degree units).
3	a	Seccnd Division Longitude - One alpha character, A-Q except I and O (1 degree units).
4	a	Second Division Latitude - One alpha character, A-Q except I and O (1 degree units).
5-6	nn	Third Division Longitude - Two numeric characters, 00-59 (1 minute units).
7-8	nn	Third Division Latitude - Two numeric characters, 00-59 (1 minute units).
9-22		Blank.
23	n	Origin Point Number - One numeric character, 1 thru 4.
24		Blank.

MS 558699

Figure 1-22.1. Hooked Volume/Line Summary Field ARO (Sheet 4 of 5).

Column	Format	Definition
ROWS 6 THRU 8 (Geographic)		
	1-24	Columns 1-24 are identical in Format and Definition to Columns 1-24 in Row 5 (Geographic).
ROWS 6 THRU 8 (UTM)		
	1-24	Columns 1-24 are identical in Format and Definition to Columns 1-24 in Row 5 (UTM).
ROWS 6 THRU 8 (GEOREF)		
	1-24	Columns 1-24 are identical in Format and Definition to Columns 1-24 in Row 5 (GEOREF).

* For cylindrical volumes only one point is displayed. Rows 6-8 are blank.

** Rows 7 and 8 will be filled only for FSCL containing more than two points.

NOTE:

Volume/line coordinates will be displayed in the same format as they were entered (ie. Geographic, UTM or GEOREF).

MS 558700

Figure 1-22.1. Hooked Volume/Line Summary Field ARO (Sheet 5 of 5).

Geographic

Rows	Cols 27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
2	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
3	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
4	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
5	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
6	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
7	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n
8	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n

UTM

1	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
2	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
3	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
4	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
5	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
6	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
7	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n
8	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n

GEOREF

1	a	a	a	a	n	n	n	n															n
2	a	a	a	a	n	n	n	n															n
3	a	a	a	a	n	n	n	n															n
4	a	a	a	a	n	n	n	n															n
5	a	a	a	a	n	n	n	n															n
6	a	a	a	a	n	n	n	n															n
7	a	a	a	a	n	n	n	n															n
8	a	a	a	a	n	n	n	n															n

NOTE:

These rows will be filled in only for FSCLs containing more than four points.

MS 558701

Figure 1-22.2. Hooked Volume/Line Hooked Item Field ARO (Sheet 1 of 3).

Column	Format	Definition
ROW 1 (Geographic)		
27-28	nn	Latitude Degrees - Two numeric characters. 00-83.
29		Blank.
30-31	nn	Latitude Minutes - Two numeric characters. 00-59.
32		Blank.
33-34	nn	Latitude Seconds - Two numeric characters. 00-59.
35		Blank.
36	a	Latitude North or South - One alpha character. N for North or S for South.
37		Blank.
38-40	nnn	Longitude Degrees - Three numeric characters. 000-180.
41		Blank.
42-43	nn	Longitude Minutes - Two numeric characters. 00-59.
44		Blank.
45-46	nn	Longitude Seconds - Two numeric characters. 00-59.
47		Blank.
48	a	Longitude East or West - One alpha character. E for East or W for West.
49	n	Origin Point Number - One numeric character. 5 thru 9 and 0 thru 2.
ROWS 2-8 (Geographic)		Rows 2 thru 8 are identical to Row 1 in Format and Definition.
ROW 1 (UTM)		
27	n	Reference Spheroid - One numeric character. 1-7.
28		Blank.
29-31	±nn	UTM Grid Zone - Plus or minus and two numeric characters. -60 to +60 (not zero - minus is Southern hemisphere and plus is Northern hemisphere).
32		Blank.
33-38	nnnnnn	UTM Meters Easting - Six numeric characters. 166640 thru 833360.
39		Blank.
40-47	nnnnnnnn	UTM Meters Northing - Eight numeric characters. 0 thru 10.000.000.
48		Blank.

MS 558702

Figure 1-22.2. Hooked Volume/Line Hooked Item Field ARO (Sheet 2 of 3).

Column	Format	Definition
ROW 1 (UTM)		
49	n	Origin Point Number - One numeric character, 5 thru 9 and 0 thru 2.
ROWS 2-8 (UTM)		Rows 2 thru 8 are identical to Row 1 in Format and Definition.
ROW 1 (GEOREF)		
27	a	First Division Longitude - One alpha character, A-Z except I and O (15 degree units).
28	a	First Division Latitude - One alpha character, A-M except I (15 degree units).
29	a	Second Division Longitude - One alpha character, A-Q except I and O (1 degree units).
30	a	Second Division Latitude - One alpha character, A-Q except I and O (1 degree units).
31-32	nn	Third Division Longitude - Two numeric characters, 00-59 (1 minute units).
33-34	nn	Third Division Latitude - Two numeric characters, 00-59 (1 minute units).
35-48		Blank.
49	n	Origin Point Number - One numeric character, 5 thru 9 and 0 thru 2.
ROWS 2-8 (GEOREF)		Rows 2 thru 8 are identical to Row 1 in Format and Definition.

NOTE:

Line coordinates will be displayed in the same format as they were entered (ie, Geographic, UTM or GEOREF).

MS 558703

Figure 1-22.2. Hooked Volume/Line Hooked Item Field ARO (Sheet 3 of 3).

	Rows \ Cols	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
	1	a	a	n	n	n	,	n	n	n	n	,	a	a	n	n	n		x	n	,	a	,	a	
	2	C	:	n	n	n		I	D	:	a	x	n	n		T	R	T	:	n	a			a	
	3	S	R	C	:	x	x	n			V	L	:	a			P	a	a	a	a	n	n	n	n	
*	4	S	P	:	n	n	n			H	D	:	n	n	n		A	L	T	:	n	n	n	,	a	
**	5	H	F	1	:	R	n	n	n	,	A	n	n	n			P	:	a	x	n	n	n	,	a	***
**	6	H	F	2	:	R	n	n	n	,	A	n	n	n			S	:	a	x	n	n	n	,	a	***
	7	I	F	F	:	n	n	a	,	n	n	n	n	a	,	n	n	n	n	a	,	a	a	a		
	8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		

* For non-real-time tracks, Row 4 data are as follows:

	4	T	I	M	E	:	n	n	:	n	n					A	L	T	:	n	n	n	,	a		

** For Interceptors (data received over TADIL-B) the data of Rows 5 and 6 are as follows:

	5	H	F	1	:	R	n	n	n	,	A	n	n	n			I	:		a	a	a	a	a	a	
	6	H	F	2	:	R	n	n	n	,	A	n	n	n			T	G	T	:	a	x	n	n	n		

*** For Brigade, Rows 5 and 6 data are as follows:

	5	H	F	1	:	R	n	n	n	,	A	n	n	n			P	:	a	a		S	:	a	a	
	6	H	F	2	:	R	n	n	n	,	A	n	n	n			B	N	S	:	a	a	,	a	a	

Column	Format	Definition
ROW 1		
27–31	aannn	ATDL-1 Track Number – Two alpha and three numeric characters, A–N, P or Q for first alpha, A–H for second alpha, and 0–7 numerics.
32	,	Comma.
33–36	nnnn	TADIL-B Track Number – Four numeric characters, 0–7.
37		Comma.
38–42	aannn	Nato Track Number – Two alpha and three numeric characters, A, E, G, H, J–M for alphas and 0–7 numerics.
43		Blank
44	x	Tracking Type – Single alpha or numeric character: A – Local Auto Track R – Local RAMIT Track T – Local or Remote SIM or Test Track

MS 195767E

Figure 1-23. Hooked Track Data ARO (Sheet 1 of 10).

Column	Format	Definition
44 (cont.)		E - EW Track 0-7 - Remote Track Quality
45	n	Local Track Quality - Single numeric character, 0-7.
46	,	Comma.
47	a	Priority Indicator - Single alpha character: F - Force Tell (7) E - Emergency Tell (4) A - Friend Special Mission (5) T - TBM (6) I - IFF Emergency (3) H - Hold Fire (1) K - Effective Status (Kill) From Paired FU (2) NOTE: Priority of alerts is shown in parentheses. If a track falls into more than one of the above categories, the category having the lowest number is displayed. Cancelling a higher priority alert permits a lower priority alert to be displayed.
48	,	Comma.
49	a	Special Processing Indicator (SPI) - Single alpha character: S - SPI bit is set Blank - SPI bit not set
ROW 2		
27-28	C:	Controlling Unit Address - Data Label.
29-31	nnn	Controlling Unit RU Address - Three numeric characters, 0-7 (address is unit controlling airborne command post or interceptor aircraft).
32		Blank.
33-35	ID:	Identification - Data Label (track identification data contains only PU in columns 36 and 37 if a flying PU is hooked at the TADIL-B interfacing unit
36	a	Primary Identification: F - Friend U - Unknown H - Hostile or Faker Hostile
37-38	xn	Primary ID, Primary ID Amplification Code - Two numeric characters, 0-9.
39	n	Amplification ID Code - Single numeric character, 0-7.
40		Blank.
41-44	TRT:	Track Threat Data - Data Label.
45	n	Threat Priority - Single numeric character, 0-7.
46	a	Raid Size - Single alpha character: M - Many S - Single F - Few U - Unknown
47-48		Blank.

MS 195768B

Figure 1-23. Hooked Track Data ARO (Sheet 2 of 10).

Column	Format	Definition
49	a	Engagement Status - Single alpha character: A - Assigned (when engage command sent) E - Engaged by FU (when tracking status received) N - Not Engaged I - Engaged by Interceptor or by Interceptor and FU L - LASHE Engagement
ROW 3		
27-30	SRC:	Track Data Source - Data Label.
31-33	xxn	TADIL-B (PU/RU) or ATDL-1 Station Address of Agency with Reporting Responsibility - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics.
34		Blank.
35-37	VL:	Volume - Data Label.
38	a	Volume Label Identifier - One alpha character: H - Hold Zone T - Tight Zone F - Free Zone
39-40		Blank.
41	P	Position of Track (GEOREF) - Data Label.
42-49	aaaannnn	Position - Four alpha and four numeric characters, A-Z (except I and O) for first alpha, A-M (except I) for second alpha, A-Q (except I and O) for second pair of alphas, and two pairs numerics each 00-59.
ROW 4	(For Real-Time Tracks)	
27-29	SP:	Track Speed - Data Label.
30-32	nnn	Speed - Three numeric characters, 0-9 (speed is in tens of data miles per hour).
33		Blank.
34-36	HD:	Track Heading - Data Label.
37-39	nnn	Heading - Three numeric characters, 0-9 (heading is in degrees).
40		Blank.
41-44	ALT:	Track Altitude - Data Label.
45-47	nnn	Altitude - Three numeric characters, 0-9 (altitude is in thousands of feet).
48		Comma.

MS 558704

Figure 1-23. Hooked Track Data ARO (Sheet 3 of 10).

Column	Format	Definition
49	a	Altitude Source - Single alpha character: A - Aircraft (voice) U - Unknown E - Estimated I - IFF R - Radar
ROW 4	(For Non-Real-Time Tracks)	
27-31	TIME:	Time when Last Report was Valid - Data Label.
32-36	nn:nn	Time - Four numeric characters, 0-9. Colon separates time into two character blocks for hours and minutes (maximum hours is 23, maximum minutes is 59).
37-40		Blank.
41-44	ALT:	Track Altitude - Data Label.
45-47	nnn	Altitude - Three numeric characters, 0-9 (altitude is in thousands of feet).
48	,	Comma.
49	a	Altitude Source - Single alpha character: A - Aircraft (voice) U - Unknown E - Estimated I - IFF R - Radar
ROW 5	(For Air Tracks)	
27-30	HF1:	Range and Azimuth to Track for Height Finder 1 - Data Label. (Blank if no height finder initialized.)
31-34	Rnnn	Range - Data Label and three numeric characters, R for Data Label and 0-9 numerics (range is in data miles). (Blank if no height finder initialized.)
35	,	Comma.
36-39	Annn	Azimuth - Data Label and three numeric characters, A for Data Label and 0-9 numerics (azimuth is in degrees). (Blank if no height finder initialized.)
40		Blank.
41-42	P:	Recommended Primary Fire Unit, Battalion or PATRIOT ICC Pairing - Data Label.
43-47	aannn or nnnn	Fire Unit, Battalion or PATRIOT ICC Address - ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL-B Track Number - Four numeric characters, 0-7. NATO Track Number - Two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics. (Blank if no recommendation.)
48	,	Comma.
49	a	Recommended Firing Mode - Single alpha character: E - Engage R - Engage Ripple Fire (Hawk only) Blank - No Recommendation, or if Battalion or PATRIOT ICC selected in 43-47 above.

MS 195770B

Figure 1-23. Hooked Track Data ARO (Sheet 4 of 10).

Column	Format	Definition
ROW 5	(For Interceptors)	
27-39	HF1:Rnnn,Annn	Columns 27 thru 39 are identical in Format and Definition to Columns 27-39 for Air Tracks.
40		Blank.
41-42	I:	Interceptor - Data Label.
43		Blank.
44-47	aaaa	Weapon Range - Up to four alpha characters: SHRT - Short MED - Medium LONG - Long Blank - No statement
48	a	Warhead Type - Single alpha character: N - Nuclear Blank - Other cases
49	a	Interceptor Engagement Status - Single alpha character: F - Firing E - Effective P - Partially effective N - Not effective U - Heads up W - Weapon(s) assigned B - Broken engagement
ROW 5	(For Brigade)	
27-39	HF1:Rnnn,Annn	Columns 27-39 are identical in Format and Definition to Columns 27-39 for Air Tracks.
40		Blank.
41-42	P:	Recommended Primary Battalion or PATRIOT ICC Pairing - Data Label.
43-44	aa	Station Address of Primary Recommended Battalion or PATRIOT ICC - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha. (Blank if no recommendation.)
45		Blank.
46-47	S:	Recommended Secondary Battalion or PATRIOT ICC Pairing - Data Label.
48-49	aa	Station Address of Secondary Recommended Battalion or PATRIOT ICC - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha. (Blank if no secondary recommendation.)
ROW 6	(For Air Tracks)	
27-30	HF2:	Range and Azimuth to Track for Height Finder 2 - Data Label. (Blank if no height finder initialized.)
31-39	Rnnn,Annn	Columns 31-39 in Row 6 are identical in Format and Definition to Columns 31-39 in Row 5.
40		Blank.
41-42	S:	Recommended Secondary Fire Unit, Battalion or PATRIOT ICC Pairing - Data Label.
43-49	aannn,a or nnnn,a	Columns 43-49 in Row 6 are identical to Columns 43-49 in Row 5 in Format and Definition.

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Figure 1-23. Hooked Track Data ARO (Sheet 5 of 10).

Column	Format	Definition
ROW 6	(For Interceptors)	
27-39	HF2:Rnnn,Annn	Columns 27-39 are identical in Format and Definition to Columns 27-39 for Air Tracks
40	Blank.	
41-44	TGT:	Target - Data Label.
45-49	aannn or nnnn	First Target Reported Engaged by Interceptor - ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL B Track Number - Four numeric characters, 0-7. NATO Track Number - Two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics.
ROW 6	(For Brigade)	
27-39	HF2:Rnnn, Annn	Columns 27-39 are identical in Format and Definition to Columns 27-39 for Air Tracks.
40		Blank.
41-44	BNS:	First Two Battalions or PATRIOT ICC Assigned - Data Label.
45-46	aa	Station Address of First Battalion or PATRIOT ICC Assigned - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha. (Blank if no assignment.)
47		Comma.
48-49	aa	Station Address of Second Battalion or PATRIOT ICC Assigned - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha. (Blank if no second assignment.)
ROW 7		
27-30	IFF:	IFF Track Information - Data Label.
31-32	nn	Mode 1 IFF - Two numeric characters, 0-7.
33	a	Mode 1 validity suffix - One alpha character: Blank - Automatic SIF code validation not performed I – Invalid C – Clear (IFF clear message received for that mode) V – Valid
34	,	Comma.
35-38	nnnn	Mode 2 IFF - Four numeric characters, 0-7.
39	a	Mode 2 suffix - One alpha character: Blank - Automatic SIF code validation not performed C - Clear (IFF clear message received for mode 2)
40	,	Comma.
41-44	nnnn	Mode 3/A IFF - Four numeric characters, 0-7.
45	a	Mode 3 validity suffix (same as Row 7, Column 33).
46	,	Comma.

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Figure 1-23. Hooked Track Data ARO (Sheet 6 of 10).

Column	Format	Definition
47-48	aa	Mode 4 IFF - Two alpha characters: NI – Not Interrogated NR – No Response IF – Invalid Response to a Previously Reported True Friend IR – Invalid Response NF – No Response to a Previously Reported True Friend TF – Valid Response (True Friend)
49	a	Mode 4 Jamming Indicator - One alpha character (local Mode 4 data only): J – Jamming Blank – No Jamming
Row 8		
27-32	ALERT:	Hooked Track Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxxx	Alert - Up to 17 alphanumeric characters, A-Z alphas and 0-9 numerics. (Table 1-4)
33-49	CHG ID: annn,xnn INFO DIF:annn,xxn	CHG ID: or INFO DIF: - Change data or information difference action-management message - Data Label and: a - Primary Identification - Single alpha character: F – Friend U – Unknown H – Hostile nn - Primary ID, Primary ID Amplification Code - Two numeric characters, 0-9. n, - Amplification ID Code - Single numeric character, 0-7. xxn - TADIL B (PU/RU) or ATDL-1 Station Address of Sending Unit - Two alpha or three numeric characters A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics.
33-49	IFF EMER	IFF EMER: Mode 3 code of 7500, 7600 or 7700 was received. If a non-zero mode 3 was held, an IFFWAS: alert will follow.
33-49	IFFWAS: nxxnna,xxn	IFFWAS: Change IFF data message, remote IFF data accepted, old data presented for reference-Data Label and: n - Changed IFF Mode - Single numeric character: 1 – Mode 1 2 – Mode 2 3 – Mode 3/A 4 – Mode 4 xxnn - Old IFF Code - Up to four alphanumeric characters: nn – Mode 1 Code nnnn – Mode 2 or 3/A Code aa – Mode 4 Response Blank – No previous Mode 1 or 3/A Code, new Mode 1 or 3/A Code received is invalid.

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Figure 1-23. Hooked Track Data ARO (Sheet 7 of 10)

Column	Format	Definition
		a - Validity indicator - Single alpha character: I – Invalid V – Valid Blank – Mode 2, Validation not active, or Mode 4 xxn - TADIL B (PU/RU) or ATDL-1 Station Address of Sending Unit - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. (Note: Alert generation is dependent on SIF validation mode. See tables 1-6 and 1-7.)
33-49	IFFWAS: nnnnna,xxn	IFFWAS: Receipt of IFF Clear Message, old data presented for reference - Data Label and: n - IFF mode cleared - Single numeric character: 1 – Mode 1 2 – Mode 2 3 – Mode 3A nnnn - Old IFF code - Up to four numeric characters: nn – Mode 1 Code nnnn – Mode 2 or 3/A Code a - Validity indicator - Single alpha character: I – Invalid V – Valid Blank – Mode 2, validation not active, or Mode 4 xxn - TADIL B (PU/RU) or ATDL-1 Station Address of Sending Unit - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics.
33-49	IFFDIF: nxxnna,xxn	IFFDIF: Conflict IFF data message, old data retained, new data presented for reference - Data Label and: n - IFF mode conflicted - Single numeric character: 2 – Mode 2 4 – Mode 4 xxnn - New IFF data - Up to four alphanumeric characters: nnnn – Mode 2 Code aa – Mode 4 Response a - Validity indicator - Single alpha character: I – Invalid V – Valid Blank – Mode 2, validation not active, or Mode 4 xxn - TADIL B (PU/RU) or ATDL-1 Station Address of Sending Unit - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics.

MS013124A

Figure 1-23. Hooked Track Data ARO (Sheet 8 of 10).

Column	Format	Definition
33-49	HOST NAT aa	HOST NAT - Hostile Nationality received for non-hostile ID track or for any track while the system FAKER mode is on. Also when ID changes to non-hostile for a track with hostile nationality - Data Label. aa - Nationality abbreviation - Two alpha characters: Refer to TM 9-1430-652-10-7.
33-49	NON HOST NAT aa	NON-HOST NAT - Non-Hostile Nationality received for hostile ID track or for any engaged track. Also when ID changes to hostile for a track with non-hostile nationality - Data Label. aa - Nationality abbreviation - Two alpha characters: Refer to TM 9-1430-652-10-7.

MS013125A

Figure 1-23. Hooked Track Data ARO (Sheet 9 of 10).

Column	Format	Definition
33-49	aa:R.R. "aZ":xnn	aa: - Command Message Code - Two alpha characters: EN – Engage ER – Engage Ripple IN – Investigate/Assign CX – Cover R.R. – Original Order - Response Required "aZ:" – One alpha character and Z Command is on a track in a zone: HZ - Hold Zone TZ - Tight Zone xxn - TADIL B (PU/RU) or ATDL-1 Station Address of Sending Unit - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics.
33-49	aa:aaaaaaaaaa,xxn	aa: - Command Message Code - Two alpha characters: EN – Engage ER – Engage Ripple IN – Investigate/Assign CX – Cover HF – Hold Fire CF – Cease Fire CE – Cease Engage aaaaaaaaaa, - Receipt/Compliance Code - Up to ten alpha characters: RESP REQD – Original Order, Response Required NOT REQD – Original Order, No Response Required NONE RECVD – None Received CANTCO – Can't Comply CANTPRO – Can't Process xxn - TADIL B (PU/RU) or ATDL-1 Station Address - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. (If a command is being received, the sender's address is shown. If a Receipt/Compliance code is being received, the command recipient's address is shown.)
33-49	ENG NON HOST TK	Engaged nonhostile track
33-49	SAFE CORRID WARN	Track engaged by subordinate unit is in safe corridor.
33-49	FU/INT ENGAGED	Dual engagement of track or jam strobe by FU and Interceptor.
33-49	FU EFFECTIVE	Receipt of Effective/Kill status from paired FU (Bn only).
33-49	TRACK MERGE	Two or more auto tracks of differing ID have merged (Bn only).
33-49	HEADS UP	Heads Up status received on a track or jam strobe.
33-49	ENG TRK IN VOL	Engaged track has entered a zone where engagement is illegal for that track ID.

MS 195774D

Figure 1-23. Hooked Track Data ARO (Sheet 10 of 10)

	Cols 27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
Rows 1	F	U	:	a	a	n	n	n	,	n	n	n	n	,	a	a	a	a	,	a		,	a	**
* 2			H	A	Z	:	n	n		a	a	a												
3	S	T	:	x	x	,	a		S	I	M													
4	L	n	n	:	a	a	a	a	a	a	a													
*** 5	W	P	:	n	,	a	,	a	a	a	a		W	T	:	H	n	n	n	,	C	n	n	
*** 6	a	a	n	n	n	,	n	n	n	n	,	a	a	n	n	n	,	a		a		P	n	
*** 7	a	a	n	n	n	,	n	n	n	n	,	a	a	n	n	n	,	a			R	n	n	
8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

**For LASHE Fire Units, Row 2 is as follows:

2			H	A	Z	:	n	n					L	A	S	H	E		a	a	a	n	n	

*For PATRIOT Fire Units, Row 2 is as follows:

2		P	T	L	:	n	n	n		a	a	a												

***For PATRIOT and LASHE Fire Units, Rows 5, 6 and 7 are as follows:

5	a	a	n	n	n		a	/	a	a	n	n	n		a	/	a	a	n	n	n		a	
6	a	a	n	n	n		a	/	a	a	n	n	n		a	/	a	a	n	n	n		a	
7	a	a	n	n	n		a	/	a	a	n	n	n		a	/	a	a	n	n	n		a	

Column	Format	Definition
ROW 1		
27-29	FU:	Fire Unit Data - Data Label.
30-34	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, 0-7 numerics.
35	,	Comma.
36-39	nnnn	TADIL B Track Number - Four numeric characters, 0-7.
40	,	Comma
41-44	aaaa	Fire Unit Type - Up to four alpha charaacters: T-B – TADIL B FU HAWK – HAWK Missile PAT – PATRIOT Missile
45	,	Comma.
46	a	Primary Air Defense System (PADS) Status - Single alpha character: A – PADS Active I – PADS Non-active

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Figure 1-24. Hooked Fire Unit Data ARO (Sheet 1 of 7)

Column	Format	Definition
47		Blank.
48	,	Comma.
49	a	Special Processing Indicator (SPI) - Single alpha character: S – SPI bit is set Blank – API bit not set
ROW 2	Non-PATRIOT	
27-28		Blank.
29-32	HAZ:	Hawk Assigment Zone - Data Label.
33-34	nn	Hawk Assignment Zone (HAZ) Value - Two numeric characters, 0-20.
35		Blank
36-38	aaa	Own System Configuration - Up to three alpha characters: BDE – Brigade BN – Battalion MBN – Master Battalion
39-49		Blank.
ROW 2	(LASHE)	
27-28		Blank.
29-32	HAZ:	Hawk Assignment Zone - Data Label.
33-34	nn	Hawk Assignment Zone (HAZ) Value - Two numeric characters, 0-20.
35-38		Blank.
39-43	LASHE	Low Altitude Simultaneous HAWK Engagement - Data Label.
44		Blank.
45-47	aaa	Own System Configuration - Up to three alpha characters: BDE – Brigade BN – Battalion MBN – Master Battalion

MS 202139C

Figure 1-24. Hooked Fire Unit Data ARO (Sheet 2 of 7).

Column	Format	Definition
48-49	nn	Own System Operational Configuration - Two numeric characters: 20 24 21 25 22 26
ROW 2	(PATRIOT)	
27		Blank.
28-31	PTL:	Primary Target Line - Data Label.
32-34	nnn	Primary Target Line Value - Three numeric characters, 0 - 359
35		Blank.
36-38	aaa	Own System Configuration - Up to three alpha characters: BDE - Brigade BN - Battalion MBN - Master Battalion
39-49		Blank.
ROW 3		
27-29	ST:	Fire Unit Status Data - Data Level.
30-31	xx	Alert Status - Two alphanumeric characters: 00-99 - Minute 0H-9H - Hours RL - Released SM - Simulated (Any two characters entered are displayed; only those listed have been defined.)
32	,	Comma.
33	a	Fire Unit Status - One alpha character: For non-PATRIOT FU R - Ready T - Tracking S - Silent Tracking F - Firing E - Effective N - Not Effective U - Heads Up W - Weapons Assigned B - Broken Engagement O - Out of Action P - Partially Effective V - Section Scan For PATRIOT FU R - Ready O - Out of Action For LASHE FU L - LASHE
34		Blank.

MS 195777H

Figure 1-24. Hooked Fire Unit Data ARO (Sheet 3 of 7).

Column	Format	Definition
35-37	SIM	Simulation Indicator (present only when FU is simulated).
38-49		Blank.
ROW 4		
27-30	Lnn:	Data Link Status - Data Label and two numeric characters, L for link Data Label and 0-7 numerics for logical link number.
31-37	aaaaaaa	Status - Up to seven alpha characters: PARITY - Parity Errors NOISY - Noisy/Open UNKNOWN - Unknown Status OPER - Operational Blank - Remote (No data link)
38-49		Blank.
ROW 5	(non-PATRIOT)	
27-29	WP:	Weapon Information - Data Label.
30	n	Weapon Type Code - Single numeric character: 0 - No Statement 1 - Missile (SAM) 4 - Conventional Blank - Invalid Type
31	,	Comma.
32	a	Nuclear Capable - Single alpha character, N for nuclear capable, blank for not nuclear capable.
33	,	Comma.
34-37	aaaa	Weapon Range - Up to four alpha characters: SHRT - Short MED - Medium LONG - Long Blank - No Statement
38		Blank.
39-41	WT:	Total Missile Count - Data Label. (Only total missile counts are transmitted over ATDL-1 and TADIL-B.)
42-45	Hnnn	Total Hot Missile Count - Data Label and three numeric characters, H for Data Label and 0-9 numerics.

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Figure 1-24. Hooked Fire Unit Data ARO (Sheet 4 of 7).

Column	Format	Definition
46		Comma.
47-49	Cnn	Total Cold Missile Count - Data Label and two numeric characters, C for Data Label and 0-9 numerics.
ROW 5	**(PATRIOT and LASHE)**	
27-31	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P, or Q for first alpha, A-H for second alpha, and 0-7 numerics.
32		Blank.
33	a	Fire Unit Status - One alpha character: **For PATRIOT FU** **T - Tracking/Weapon Assigned** **F - Firing** **E - Effective** **B - Broken Engagement** **For LASHE FU** **W - Weapon Assigned** **F - Firing** **B - Broken Engagement**
34	**/**	**Slash.**
35-41	**aannn a**	**Columns 35-41 are identical in Format and Definition to Columns 27-33 in Row 5 (PATRIOT and LASHE).**
42	**/**	**Slash.**
43-49	**aannn a**	**Columns 43-49 are identical in Format and Definition to Columns 27-33 in Row 5 (PATRIOT and LASHE).**
ROW 6	(non-PATRIOT)	Primary Assignment Information - (Columns 27-44 - blank if no assignment).
27-31	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
32	,	Comma.
33-36	nnnn	TADIL-B Track Number - Four numeric characters, 0-7.
37	,	Comma.
38-42	aannn	NATO Track Number - Two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numeric.
43	,	Comma.

MS 428008B

Figure 1-24. Hooked Fire Unit Data ARO (Sheet 5 of 7).

Column	Format	Definition
44	a	Command - Single alpha character: E - Engage R - Engage Ripple X - Cover S - Salvo H - Hold Fire F - Cease Fire C - Cease Engage I - Investigate/Assign Blank - No Command
45		Blank.
46	a	Defended Point - Single alpha character, K-V. (Blank if FU is not a defended point.)
47		Blank.
48	P	Defended Point Priority - Data Label.
49	n	Defended Point Priority - Single numeric character, 1-5. (Blank if fire unit is not a defended point.)
ROW 6	**(PATRIOT and LASHE)**	
27-49	**aannn a/aannn a/aannn a**	Columns 27-49 are identical in Format and Definition to Columns 27-49 in Row 5 **(PATRIOT and LASHE).**
ROW 7	(non-PATRIOT)	Secondary Assignment Information
27-44	**aannn, nnnn, aannn, a**	Columns 27-44 in Row 7 are identical to Columns 27-44 in Row 6 in Format and Definition. (Secondary assignment data only displayed at battalion for subordinate FUs.)
45-46		Blank.
47	R	Defended Point Radius - Data Label.
48-49	nn	Defended Point Radius - Two numeric characters, 0-9. (Blank if fire unit is not a defended point.) (Radius is in data miles.)
ROW 7	**(PATRIOT and LASHE)**	
27-49	**aannn a/aannn a/aannn a**	Columns 27-49 are identical in Format and Definition to Columns 27-49 in Row 5 **(PATRIOT and LASHE).**
ROW 8		
27-32	ALERT:	Hooked FU Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxx	Alert - Up to 17 alphanumeric characters, A-Z alphas and 0-9 numerics. (See table 1-4.)
33-49	FU OUT OF ACTION	Engaged fire unit is out of action.

MS 428011A

MS 428011A

Figure 1-24. Hooked Fire Unit Data ARO (Sheet 6 of 7).

Column	Format	Definition
33-49	PAIRED SIM - LIVE	Paired fire unit is live and assigned track is simulated.
33-49	FU SELF INIT ENG	Subordinate fire unit has self-initiated an engagement (Bn only).
33-49	COMM-UNKNOWN STAT	Fire unit has unknown data link status (Bn only). This alert will be followed by FU OUT OF ACTION.
33-49	COMM-NOISY/OPEN	Fire unit has noisy or open data link (Bn only).
33-49	COMM-PARITY ERROR	Fire unit has data link parity errors (Bn only).
33-49	aaaaaaaaaa:aa,xxn	aaaaaaaaaa: - Command/state of Alert Code - Up to 10 alpha characters: TIGHT- -RED: Weapons Tight, State of Alert Red TIGHT- -YEL: Weapons Tight, State of Alert Yellow TIGHT- -WHI: Weapons Tight, State of Alert White FREE- -RED: Weapons Free, State of Alert Red FREE- -YEL: Weapons Free, State of Alert Yellow FREE- -WHI: Weapons Free, State of Alert White aa, - Receipt/Compliance Code - Two alpha characters: NR = No Response Received C = CANTCO (Can't Comply) CP = CANTPRO (Can't Process) xxn - TADIL B (PU/RU) or ATDL-1 Station Address - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. (The command recipient's address is shown.)

MS 428038B

Figure 1-24. Hooked Fire Unit Data ARO (Sheet 7 of 7).

Rows \ Cols	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1	E	N	G	A	G	E	M	E	N	T		M	A	R	K	E	R						
2	W	S	:	a	a	n	n	n	,			T	K	:	a	x	n	n	n	,			
3		n	n	n	n	,	x	x	,	a			n	n	n	n	,	a	a	n	n	n	
4		a	a	a	a	a	a	n	n	n		I	D	:	a	n	n	n					
5	S	I	Z	E	:	a						S	I	Z	E	:	a		T	R	T	:	n
6	A	L	T	:	n	n	n					S	n	n	n	H	n	n	n	A	n	n	n
7	P	R	I	:	a		S	E	C	:	a		T	I	M	E	:	n	n	:	n	n	
8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Column	Format	Definition
ROW 1		
27-43	ENGAGEMENT MARKER	Engagement Marker - Data Label.
44-49		Blank.
ROW 2		
27-29	ws:	Fire Unit Identification - Data Label.
30-34	aannn	Fire Unit Address - ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
35	,	Comma.
36-37		Blank
38-40	TK:	Track Number - Data Label (all track data are for correlated track).
41-45	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL B track number - four numeric characters 0-7. NATO track number - two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics.
46	,	Comma.
47-49		Blank.
ROW 3		
27	Blank.	
28-31	nnnn	Fire Unit TADIL B Track Number - Four numeric characters, 0-7.
32	,	Comma.

MS195779C

Figure 1-25. Hooked Engagement Marker ARO (Sheet 1 of 4).

Column	Format	Definition
33-34	xx	Alert Status - Two alphanumeric characters: 00-99 - Minutes 0H-9H - Hours RL - Released SM - Simulated (Any two characters entered are displayed; only those listed have been defined.)
35	,	Comma.
36	a	Fire Unit Status - One alpha character: For non-PATRIOT FU T - Tracking W - Weapon Assigned F - Firing P - Partially Effective N - Not Effective S - Silent Tracking U - Heads Up For PATRIOT FU W - Weapon Assigned F - Firing E - Effective B - Broken Engagement For LASHE FU W - Weapon Assigned F - Firing B - Broken Engagement
37-38		Blank.
39-42	nnnn	TADIL-B Track Number - Four numeric characters, 0-7.
43	,	Comma.
44-48	aannn	Nato Track Number - Two alpha and three numeric characters, A, E, G, H, J-M for alphas, and 0-7 numerics.
49		Blank.
ROW 4		
27		Blank.
28-36	aaaaaannn	Weapon System Type - Up to nine alphanumeric characters: HAWK - Hawk Missile T-B - TADIL-B Fire Unit INT C:nnn - Interceptor and TADIL-B (PU/RU) Address of Controlling Unit (0-7 numerics) PAT - PATRIOT Missile
37		Blank.
38-40	ID:	Assigned Track Identification Data - Data Label.
41	a	Primary ID - One alpha character: F - Friend U - Unknown H - Hostile or Faker Hostile (Track identification is blank if EM is on a jam strobe).
42-43	nn	Primary ID, Primary ID Amplification Code - Two numeric characters, 0-9.
44	n	Amplification ID Code - Single numeric character, 0-7.
45-49		Blank.

MS 195780H

Figure 1-25. Hooked Engagement Marker ARO (Sheet 2 of 4).

Column	Format	Definition
ROW 5		(Row 5 entries are blank if EM is on a jam strobe).
27-31	SIZE:	Raid Size of Engaged Track as Reported by Fire Unit - Data Label.
32	a	Size - Single alpha character: S - Single F - Few M - Many U - Unknown BLANK if remote FU
33-37		Blank.
38-42	SIZE:	Raid Size of Track as Contained in Track File - Data Label.
43	a	Size - Single alpha character: S - Single F - Few M - Many U - Unknown
44		Blank.
45-48	TRT:	Track Threat Data - Data Label.
49	n	Threat Priority - Single numeric character, 0-7.
ROW 6		(Row 6 entries are blank if EM is on a jam strobe).
27-30	ALT:	Altitude of Engaged Track as Reported by Fire Unit - Data Label.
31-33	nnn	Altitude - Three numeric characters, 0-9 (altitude is in thousands of feet). BLANK if remote FU.
34-37		Blank.
38-41	Snnn	Speed - Data Label and three numeric characters, S for Data Label and 0-9 numerics (speed is in tens of data miles per hour).
42-45	Hnnn	Heading - Data Label and three numeric characters, H for Data Label and 0-9 numerics (heading is in degrees, maximum heading is 359 degrees).
46-49	Annn	Altitude of Track as Contained in Track File - Data Label and three numeric characters, A for Data Label and 0-9 numerics (altitude is in thousands of feet).
ROW 7		
27-30	PRI:	Primary Command - Data Label.
31	a	Command - Single alpha character: E - Engage R - Engage Ripple X - Cover S - Salvo H - Hold Fire F - Cease Fire C - Cease Engage I - Investigate/Assign Blank - No Command

MS 195781E

Figure 1-25. Hooked Engagement Marker ARO (Sheet 3 of 4).

Column	Format	Definition
32		Blank.
33-36	SEC:	Secondary Command - Data Label.
37	a	Secondary Command. Column 37, Row 7 is identical to Column 31, Row 7 in Format and Definition. No secondary command data are presented for remote fire units.
38		Blank.
39-43	TIME:	Time of Last Report - Data Label. (Applies only to engaged non-real-time tracks.)
44-48	nn:nn	Time - Four numeric characters, 0-9. Colon separates time into two character blocks for hours and minutes (maximum hours is 23, Maximum minutes is 59).
49		Blank.
ROW 8		
27-32	ALERT:	Hooked Engagement Marker Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxxx	Alerts - Up to 17 alphanumeric characters, A-Z alphas and 0-9 numerics (currently there are no engagement marker alerts.)

MS 428013

Figure 1-25. Hooked Engagement Marker ARO (Sheet 4 of 4)

Rows \ Cols	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1	S	T	:	a	a	n	n	n	,	n	n	n	n	,	a	a	a	a	a	a	a	,	a
2	N	A	M	E	:	x	x	x	x	,	L	K	:	a	n	n	a	x					
3			a	a	a	a	a	a	a	a													
4	I	D	:	n	n	,	n													W	1	:	a
5	P	:	a	a	a	a	n	n	n	n										W	2	:	a
6	M	S	L		C	N	T			P	A	T	:	n	n	n			H	K	:	n	n
7	E	N	G	A	G	E	M	E	N	T	S				n	n	n	F	,	n	n	n	T
8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Column	Format	Definition
ROW 1		
27-29	ST:	Site Information - Data Label.
30-34	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
35	,	Comma.
36-39	nnnn	TADIL B Track Number - Four numeric characters, 0-7.
40	,	Comma.
41-47	aaaaaaa	Data Line Status - Up to seven alpha characters: PARITY - Parity errors NOISY - Noisy/Open UNKNOWN - Unknown status OPER - Operational NO XMIT - Not transmittable/ deactivated Blank - No data link
48	,	Comma.
49	a	Special Processing Indicator (SPI) - Single alpha character: S - SPI bit is set Blank - SPI bit not set
ROW 2		
27-31	NAME:	Site Name - Data Label.
32-35	xxxx	Non-Transmittable Sites - Up to four alphanumeric characters, A-Z alphas and 0-9 numerics (blank if no entry has been made via SITE ADRS-NAME switch). Transmittable Sites - Up to four alpha characters: SITE - SITE, N.S. FPU - FPU PU - PU RU - RU SU - SU, N.S./AIR FIELD MHQ - MHQ ASRT - ASRT DASC - DASC FACP - FACP

MS 195783D

Figure 1-26. Hooked Site Data ARO (Sheet 1 of 4).

Column	Format	Definition
36	,	Comma.
37-39	LK:	Logical Link Number - Data Label.
40-41	nn	Data Link Number - Two numeric (octal) characters, 00-37.
42	,	Comma.
43-44	ax	Data Link Type - One alpha and one alphanumeric character: TB - TADIL-B A1 - ATDL-1
45-49		Blank.
ROW 3		
27-28		Blank.
29-36	aaaaaaaa	Type - Up to eight alpha characters: CMD POST - Command Post TRK PARK - Truck Park ORD STOR - Ordnance Storage POL STOR - POL Storage AIR FLD - Air Field RADAR - Radar ECM FIX - ECM Fix
37-49		Blank.
ROW 4		
27-29	ID:	Site ID and Amplification Data - Data Label. (Blank if non-transmittable site.)
30-31	nn	Point (Primary Site ID) - Two numeric characters, 0-9.
32	,	Comma.
33	n	Point Amp (Secondary Site ID) - One numeric character 0-9.
34-45		Blank.
46-48	W1:	Weapon System Warhead Type - Data Label
49	a	Warhead Type - Single Alpha Character N - Nuclear Capable Blank - Not Nuclear Capable
ROW 5		
27-28	P:	Site Position (GEOREF) - Data Label.
29-36	aaaannnn	Position - Four alpha and four numeric characters, A-Z (except I and O) for first alpha, A-M (except I) for second alpha, A-Q (except I and O) for third and fourth alphas and two pairs of numerics, each 00-59.
37-45		Blank.
46-48	W2:	Weapon System Warhead Type - Data Label
49	a	Identical to Row 4, Column 49

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Figure 1-26. Hooked Site Data ARO (Sheet 2 of 4).

Column	Format	Definition
ROW 6		
27-33	MSL CNT	Missile Count - Data Label
34-35		Blank
36-39	PAT:	PATRIOT Hot Missile Count - Data Label.
40-42	nnn	PATRIOT Hot Missile Count - Three numeric characters, 0-511.
43-44		Blank
45-47	HK:	HAWK Hot Missile Count - Data Label.
48-49	nn	HAWK Hot Missile Count - Two numeric characters, 0-99.
ROW 7		
27-37	ENGAGEMENTS	Reported Engagements - Data Label.
38-40		Blank.
41-43	nnn	Total number of Engagements in Firing Status - Three numeric characters, 0-511.
44	F	Firing Status - Data Label.
45	,	Comma.
46-48	nnn	Total number of Engagements in Tracking Status - Three numeric characters, 0-511.
49	T	Tracking Status - Data Label.
ROW 8		
27-32	ALERT:	Hooked Site Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxxx	Alerts - Up to 17 alphanumeric characters, A-Z alphas and 0-9 numerics (table 1-4).
33-49	COMM-UNKNOWN STAT	Site has unknown data link status.
33-49	COMM-NOISY/OPEN	Site has open or noisy data link.
33-49	COMM-PARITY ERROR	Site has data link parity errors.

MS 195785E

Figure 1-26. Hooked Site Data ARO (Sheet 3 of 4).

Column	Format	Definition
33-49	aaaaaaaaaa:aa,xxn	aaaaaaaaaa: - Command/State of Alert Code - Up to 10 alpha characters: TIGHT- -Red: Weapons Tight, State of Alert Red TIGHT- -YEL: Weapons Tight, State of Alert Yellow TIGHT- -WHT: Weapons Tight, State of Alert White FREE- -RED: Weapons Free, State of Alert Red FREE- -YEL: Weapons Free, State of Alert Yellow FREE- -WHT: Weapons Free, State of Alert White aa, - Receipt/Compliance Code - Two alpha characters: NO = Original Order, No Response Required NR = No Response Received CC = CANTCO (Can't Comply) CP = CANTPRO (Can't Process) (Code NO is part of the command message. The remaining codes are used in acknowledging command messages.) xxn - TADIL-B (PU/RU) or ATDL-1 Station Address - Two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. (If a command is being received, the originator's address is shown. If a Receipt/Compliance code is being received, the command recipient's address is shown.)

MS 195786D

Figure 1-26. Hooked Site Data ARO (Sheet 4 of 4).

Rows \ Cols	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1	F	D	C	:	a	a	,	n	n	n													
2	a	a	a		n	n		a	a	a				P	:	a	a	a	a	n	n	n	n
3															F	A	K	E	R	:	a	a	a
4																							
5															A	D	L		E	N	G	:	a
6	I	N	T	E	L		I	D	:	a			T	E	V	A	L	:	a				
7	I	F	F		V	A	L	:	n	n	,	n	n	n	n				a	a	a	n	n
8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Column	Format	Definition
ROW 1		
27-30	FDC:	Fire Direction Center - Data Label.
31-32	aa	ATDL-1 Site Address of FDC - Two alpha characters, A-N, P or Q for first alpha and A-H for second alpha.
33	,	Comma.
34-36	nnn	TADIL B Site Address of FDC - Three numeric characters, 0-7.
37-49		Blank.
ROW 2		
27-29	aaa	System Configuration - Up to three alpha characters: BDE – Brigade BN – Battalion MBN – Master Battalion
20		Blank.
31-32	nn	System Operational Configuration - Two numeric characters: 20 24 21 25 22 26
33		Blank.
34-36	aaa	TADIL B Unit Designator - Up to three alpha characters: FRU – Forwarding Reporting Unit RU – Reporting Unit
37-39		Blank.
40-41	P:	Own Site Position (GEOREF) - Data Label.

MS 55870B

Figure 1-26.1. Hooked Own-Site Data ARO (Sheet 1 of 3).

Column	Format	Definition
42-49	aaaannnn	Position - Four alpha and four numeric characters, A-Z (except I and O) for first alpha, A-M (except I) for second alpha, A-Q (except I and O) for third and fourth alpha, and two pairs numerics each 00-59.
ROW 3		
27-40		Blank.
41-46	FAKER:	FAKER Mode - Data Label.
47-49	aaa	Status of FAKER Mode - Up to three alpha characters: ON – FAKER processing on OFF – FAKER processing off
ROW 4		Blank.
ROW 5		
27-40		Blank.
41-48	ADL ENG:	ADL Engage Command Processing Mode - Data Label.
49	a	Status of ADL ENGAGE Command Processing Mode - single alpha character. A – Automatic M – Manual
ROW 6		
27-35	INTEL ID:	Intelligence Processing Mode for Identification - Data Label.
36	a	Intelligence Processing Mode for Identification - single alpha character: A – Automatic M – Manual
37-38		Blank.
39-44	TEVAL:	Intelligence Processing Mode for Threat Evaluation - Data Label.
45	a	Intelligence Processing Mode for Threat Evaluation - single alpha character: A – Automatic M – Manual
46-49		Blank.
ROW 7		
27-34	IFF VAL:	Automatic SIF Validation - Data Label.
35-36	nn	*Valid Mode 1 for Time Period - Two numeric characters, 0-7. Blank if SIF Validation inactive.
37	,	Comma.
38-41	nnnn	*Valid Mode 3A Code for Time Period - Up to four numeric characters: Blank – SIF Validation inactive nnnn – 0-7 nn – Two numeric characters, 0-7, followed by two blanks *If, during overlap period, no current mode code is defined, the adjacent mode code will be displayed.
42-44		Blank.

MS 013085A

Figure 1-26.1. Hooked Own-Site Data ARO (Sheet 2 of 3).

Column	Format	Definition
45-47	aaa	Automatic SIF Code Validation Status - Up to three alpha characters: OFF – SIF Validation Inactive ON – SIF Validation Active
48-49	nn	SIF Validation Period - Two numeric characters (see TM 9-1430-652-10-7 for values).
ROW 8		
27-32	ALERT:	Hooked Own-Site Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxx	Alerts - Up to 17 alphanumeric characters. A-Z alphas and 0-9 numerics (table 1-4).
33-49	NO NEXT SIF CODES	No valid SIF codes are defined for the next SIF code period. (Refer to TM 9-1430-652-10-7 for description of SIF code period and timing of this alert.)

Figure 1-26.1. Hooked Own-Site Data ARO (Sheet 3 of 3).

Rows \ Cols	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
1	J	S	:	a	a	n	n	n	,	n	n	n	n									,	a
2	O	R	I	G	I	N																	
3			A	D	R	S	:	a	a	n	n	n	,	n	n	n	n	,					
4				P	:	a	a	a	a	n	n	n	n										
5	S	T	R	O	B	E		A	Z	:	n	n	n		A	C	C	:	a	a	a	a	
6	R	E	P	O	R	T	I	N	G		S	O	U	R	C	E							
7					a	a	n	n	n	,	n	n	n	n	,	a	a	n	n	n			
8	A	L	E	R	T	:	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Column	Format	Definition
ROW 1		
27-29	JS:	Jam Strobe Data - Data Label.
30-34	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
35	,	Comma.
36-39	nnnn	TADIL B Track Number - Four numeric characters, 0-7.
40-47		Blank.
48	,	Comma.
49	a	Special Processing Indicator (SPI) - Single alpha character: S – SPI bit is set Blank – SPI bit is not set
ROW 2		
27-32	ORIGIN	Address and Position of Originating Site - Data Label.
33-49		Blank.
ROW 3		
27-28		Blank.
29-33	ADRS:	Originating Site Address - Data Label. When no site is designated, own site (system center) is assumed and Columns 34-41 contain: OWN SITE.
34-38	aannn	ATDL-1 Track Number - Two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
39	,	Comma.
40-43	nnnn	TADIL B Track Number - Four numeric characters, 0-7.
44	,	Comma.
45-59		Blank.

MS 195787D

Figure 1-27. Hooked Jam Strobe ARO (Sheet 1 of 3).

Column	Format	Definition
ROW 4		
27-29		Blank.
30-31	P:	Originating Site Position - Data Label.
32-39	aaaannnn	Position (GEOREF) - Four alpha and four numeric characters, A-Z (except I and O) for first alpha, A-M (except I) for second alpha, A-Q (except I and O) for third and fourth alphas, and two pairs of numerics, each 00-59. (Position is blank if site is located at system center.)
40-49		Blank.
ROW 5		
27-36	STROBE AZ:	Azimuth of Jam Strobe from Originating Site - Data Label.
37-39	nnn	Azimuth - Three numeric characters, 0-9 (azimuth is in degrees - maximum is 359).
40		Blank.
41-44	ACC:	Jam Strobe Azimuth Accuracy - Data Label.
45-48	aaaa	Accuracy - Up to four alpha characters: HIGH - High MED - Medium LOW - Low UNK - Unknown
49		Blank.
ROW 6		
27-42	REPORTING SOURCE	Reporting Source Address - Data Label.
43-49		Blank
ROW 7		
27-30		Blank
31-35	aannn	ATDL-1 Track Number of Site Reporting Jam Strobe - Two alpha and three numeric characaters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics.
36		Blank.
37-40	nnnn	TADIL B Track Number of Site Reporting Jam Strobe - Four numeric characters, 0-7
41	,	Comma.
42-46	aannn	NATO Track Number of Site Reporting Jam Strobe - Two alphas and three numeric. Alphas A, E, G, H, J-M and 0-7 numerics.
47-49		Blank.
ROW 8		
27-32	ALERT:	Hooked Jam Strobe Alert Information - Data Label.
33-49	xxxxxxxxxxxxxxxx	Alert - Up to 17 alphanumeric characters, A-Z alphas and 0-9 numerics (table 1-4).
33-49	aa:aaaaaaaaaa,xxn	aa: Command Message Code - Two alpha characters:

MS 195789H

Figure 1-27. Hooked Jam Strobe ARO (Sheet 2 of 3).

Column	Format	Definition
		EN - Engage ER - Engage Ripple IN - Investigate/Assign CX - Cover HF - Hold Fire CF - Cease Fire CE - Cease Engage aaaaaaaaaa - Receipt/Compliance Code - up to 10 alpha characters: RESP REQD = Original Order, Response Required. NOT REQD = Original Order, No response Required. NONE RECVD = None Received. CANTCO = Can't Comply CANTPRO = Can't Process. xxn - TADIL B (PU/RU) or ATDL-1. Station Address - two alpha or three numeric characters, A-N, P or Q for first alpha and A-H for second alpha, or 0-7 numerics. (If command is being received, the sender's address is shown. If a Receipt/Compliance code is being received, the command recipient's address is shown.
33-49	FU/INT ENGAGED	Dual engagement of a track or jam strobe by FU and interceptor.
33-49	FU EFFECTIVE	Receipt of Effective/Kill status from paired FU (Bn only).
33-49	HEADS UP	Heads Up status received on a track or jam strobe.

MS 202441C

Figure 1-27. Hooked Jam Strobe ARO (Sheet 3 of 3).

Cols / Rows	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
Geographic																								
1	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n	
2	n	n		n	n		n	n		a		n	n	n		n	n		n	n		a	n	*
UTM																								
1	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n	
2	n		±	n	n		n	n	n	n	n	n		n	n	n	n	n	n	n	n		n	*
GEOREF																								
1	a	a	a	a	n	n	n	n															n	
2	a	a	a	a	n	n	n	n															n	*

Column	Format	Definition
ROW 1 (Geographic)		
27-28	nn	Latitude Degrees - Two numeric characters, 00-83.
29		Blank.
30-31	nn	Latitude Minutes - Two numeric characters, 00-59.
32		Blank.
33-34	nn	Latitude Seconds - Two numeric characters, 00-59.
35		Blank.
36	a	Latitude North or South - One alpha character, N for North or S for South.
37		Blank.
38-40	nnn	Longitude Degrees - Three numeric characters, 000-180.
41		Blank.
42-43	nn	Longitude Minutes - Two numeric characters, 00-59.
44		Blank.
45-46	nn	Longitude Seconds - Two numeric characters, 00-59.
47		Blank.
48	a	Longitude East or West - One alpha character, E for East or W for West.
49	n	Origin Point Number - One numeric character, 1 or 2.

MS 558708

Figure 1-27.1. Data Link Transmission Zone Origin Points ARO (Sheet 1 of 3).

Column	Format	Definition
ROW 1 (UTM)		
27	n	Reference Spheroid - One numeric character, 1-7.
28		Blank.
29-31	±nn	UTM Grid Zone - Plus or minus and two numeric characters, -60 to +60 (not zero - minus is Southern hemisphere and plus is Northern hemisphere).
32		Blank.
33-38	nnnnnn	UTM Meters Easting - Six numeric characters, 166640 thru 833360.
39		Blank.
40-47	nnnnnnnn	UTM Meters Northing - Eight numeric characters, 0-10,000,000.
48		Blank.
49	n	Origin Point Number - One numeric character, 1 or 2.
ROW 1 (GEOREF)		
27	a	First Division Longitude - One alpha character, A-Z except I and O (15-degree units).
28	a	First Division Latitude - One alpha character, A-M except I (15-degree units).
29	a	Second Division Longitude - One alpha character, A-Q except I and O (1-degree units).
30	a	Second Division Latitude - One alpha character, A-Q except I and O (1-degree units).
31-32	nn	Third Division Longitude - Two numeric characters, 00-59 (1-minute units).
33-34	nn	Third Division Latitude - Two numeric characters, 00-59 (1-minute units).
35-48		Blank.
49	n	Origin Point Number - One numeric character, 1 or 2.

MS 558709

Figure 1-27.1. Data Link Transmission Zone Origin Points ARO (Sheet 2 of 3).

Column	Format	Definition
ROW 2 (Geographic)		
27-49		Columns 27-49 are identical in Format and Definition to Columns 27-49 in Row 1 (Geographic). Row 2 is blank for cylindrical transmission zones.
ROW 2 (UTM)		
27-49		Columns 27-49 are identical in Format and Definition to Columns 27-49 in Row 1 (UTM). Row 2 is blank for cylindrical transmission zones.
ROW 2 (GEOREF)		
27-49		Columns 27-49 are identical in Format and Definition to Columns 27-49 in Row 1 (GEOREF). Row 2 is blank for cylindrical transmission zones.

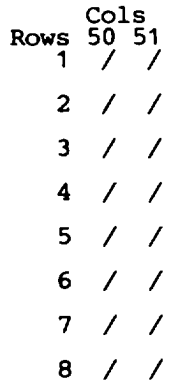
* For cylindrical transmission zone, only one point is displayed. Row 2 is blank.

NOTE:

Data Link Transmission Zone coordinates will be displayed in the same format as they were entered in CC111 (ie. Geographic, UTM or GEOREF).

MS 558710

Figure 1-27.1. Data Link Transmission Zone Origin Points ARO (Sheet 3 of 3).



Column	Format	Definition
ROW 1		
50–51	//	Field separation markers.
ROWS 2–8		Rows 2 through 8 are identical to Row 1 in Format and Definition.

MS 195789A

Figure 1-28. Field Separation Markers (Right)

1-19. Status Data Field. The right-hand portion status and operational information. The status data field portion of the ARO display is designed to provide a summary of system data of a nonvolatile nature. This data is always displayed. Figure 1029 shows the content and format of the status data field portion of the ARO. The information contained in the status data field portion of the ARO includes the following:

a. Automatically initiated, local, remote and total track, and jam strobe counts.

b. Number of alert conditions existing.

c. Number of high threat and poor quality tracks.

d. Highest priority unassigned hostile track.

e. Label (address) and priority of defended point against which highest unassigned track is targeted.

f. System (local) time.

g. Codes of the two maps available for display.

h. G-sensitivity, automatic track initiation limit, and system interrogation modes entered.

i. Track number indicator for type of track displayed in PPI.

j. Keyboard entry data and illegal AN Keyboard entry message.

k. Sequence hook criteria.

Rows \ Cols	52	53	54	55	56	57	58	59	60	61	62	63	64
1	A	n	n	n		n	n	:	n	n	:	n	n
2	L	n	n	n		U	T	:	a	x	n	n	n
3	R	n	n	n		D	P	:	a		P	:	n
4	T	n	n	n		I	x	,	x	M	a	,	a
5	J	S	n	n		S	H	:	a	a	a	a	a
6	H	T	n	n		G	n			T	N	:	a
7	P	Q	n	n		x	x	x	x	x	x	x	x
8	A	L	n	n		x	x	x	x	x	x	x	x

Column	Format	Definition
ROW 1		
52-55	Annn	Number of Local Auto Initiated Tracks - Data Label and three numeric characters, A for Data Label and 0-9 numerics (this count includes only auto initiated tracks in the Tentative track category). Only the Data Label is displayed in brigade configuration.
56		Blank.
57-64	nn:nn:nn	Time of Day - Six numeric characters, 0-9. Colons separate time into blocks of two characters for hours, minutes and seconds (maximum is 23 for hours and 59 for minutes and seconds).
ROW 2	52-55	Lnnn Number of Local Tracks - Data Label and three numeric characters, L for Data Label and 0-9 numerics.
56		Blank.
57-59	UT:	Highest Priority Unassigned Hostile Threat - Data Label.
60-64	aannn or nnnn	Highest Priority Unassigned Hostile Threat - ATDL-1 Track Number - two alpha and three numeric characters, A-N, P or Q for first alpha, A-H for second alpha, and 0-7 numerics. TADIL B Track Number - four numeric characters, 0-7. NATO Track Number - two alpha and three numeric characters, A, E, G, H, J-M for alphas and 0-7 numerics.
ROW 3		
52-55	Rnnn	Number of Remote Tracks - Data Label and three numeric characters, R for Data Label and 0-9 numerics.
56		Blank.
57-59	DP:	Defended Point Threatened by Highest Priority Unassigned Hostile-Data Label.
60	a	Defended Point Designator - Single alpha character: A-J - Non-FU defended points K-V - Defended points associated with FUs Blank - Highest unassigned threat determined from Intelligence Data

MS 195790C

Figure 1-29. Status Data ARO (Sheet 1 of 6).

Column	Format	Definition
61		Blank.
62-63	P:	Threat Priority - Data Label.
64	n	Threat Priority Value - Single numeric character, 1-5
ROW 4		
52-55	Tnnn	Total Number of Central File Slots in Use - Data Label and three numeric characters, T for Data Label and 0-9 numerics. (This total includes tracks, FUs, sites, and jam strobes.)
56		Blank.
57	I	System IFF Modes Selected - Data Label.
58	x	First Mode - Single alphanumeric character (blank if no first mode selected): 1 - Mode 1 2 - Mode 2 3 - Mode 3/A C - Mode C
59	,	Comma.
60	x	Second Mode - Single alphanumeric character (blank if no second mode selected): 1 - Mode 1 2 - Mode 2 3 - Mode 3/A C - Mode C
61	M	Codes for Maps Selected - Data Label.
62	a	Map Code Selected for Map 1 - Single alpha character, A-J (blank if none selected).
63	,	Comma.
64	a	Map Code Selected for Map 2 - Single alpha character, A-J (blank if none selected).
ROW 5		
52-55	JSnn	Number of Jam Strobes - Data Label and two numeric characters, JS for Data Label and 0-9 numerics. [This total does not include Sector Scan, LASHE, PTL, or engageable (those associated with a fire unit in the system) jam strobes.]
56		Blank.
57-59	SH:	Sequence Hook Criteria Selected - Data Label.
60	a	First Sequence Hook Criteria - single alpha character: L - Local Tracks T - All Central File Items E - Jam Strobes/EW Tracks/ ECM Fixes/ESM Fixes/ Intelligence Tracks H - High Threat Tracks P - Poor Tracking Status Tracks A - Alerts F - Fire Units NOTE: If no entry is made, T-All Central File Items is the default entry and is displayed.
61-64	aaaa	Second thru Fifth Sequence Hook Criteria - Single alpha character, as defined in Column 60.
ROW 6		
52-55	HTnn	Number of High Threat Tracks in the System - Data Label and two numeric characters, HT for Data Label and 0-9 numerics (99 = 99 or more).

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Figure 1-29. Status Data ARO (Sheet 2 of 6).

Column	Format	Definition
56		Blank.
57	G	G-Sensitivity Value Selected - Data Label.
58	n	G-Sensitivity Value - Single numeric character, 1-8.
59-60		Blank.
61-63	TN:	Track number indicator for PPI display - Data Label.
64	a	Type of Track number requested to be displayed in PPI for air tracks. A – ATDL-1 track numbers N – NATO track numbers Blank – TADIL B track numbers
ROW 7		
52-55	PQnn	Number of Poor Tracking Status Tracks in the System - Data Label and two numeric characters, PQ for Data Label and 0-9 numerics (99 = 99 or more).
56		Blank.
57-64	xxxxxxxx	Illegal Action Display - Up to eight alphanumeric characters, A-Z alphas and 0-9 numerics (table 1-4).
57-64	ADL CODE	Attempt to enter invalid Command, Action-Management, Receipt/Compliance, or Weapon Type code.
57-64	A1 UNIT	Attempt to send IFF Update Request on a track when the reporting responsibility (R^2) unit is not TADIL B.
57-64	CC MODE	Attempt to perform another action that requires an ARO update or an AN keyboard entry when console is in CC entry mode.
57-64	CMD FULL	Attempt to send command on a track if the command and alert queue is full (brigade only): attempt to send command or Action-Management when there is no available queue entry (Bn only).
57-64	CORRL IP	Attempt to drop or send Cease Reporting on a track currently undergoing automatic correlation.
57-64	CSL MODE	Action attempted is invalid for console mode.
57-64	DEHOOK	Attempt to press ADL ADRS while currently hooked item is site/FU.
57-64	DROP IP	Attempt to take an action on an item that is in drop cycle. (The exceptions to this are the Hook action, Clear Alert action, entry of valid Receipt/Compliance code in response to an outstanding command, and a Hold Fire action.)
57-64	DUPE TN	Duplicate track number assignment attempted.
57-64	EM DROP	Attempted drop of engagement marker.
57-64	ENG FULL	Attempted to send Primary assignment or to make Secondary assignment when the Engagement Table is full.
57-64	ESM FIX	Attempt to send a command message (ENGAGE, ENGAGE RIPPLE or COVER) to a subordinate FU on an ESM Fix.
57-64	ESM JS	Attempt to send a command message (ENGAGE, ENGAGE RIPPLE or Cover) to a subordinate FU on an ESM Jam Strobe.
57-64	FU DROP	FU drop attempted.
57-64	FU ENG	Attempt to drop an engaged FU or (Bn only) to assign a track or jam strobe to an FU that has both primary and secondary assignments.
57-64	FU LASHE	Attempt to send engage, engage ripple, investigate/assign, or cover command to a Hawk FU in LASHE mode.

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Figure 1-29. Status Data ARO (Sheet 3 of 6).

Column	Format	Definition
57-64	FU N/ENG	Attempt to send Cease Fire or Cease Engagement command to a FU which has no current assignment (Bn only).
57-64	FU O/ACT	Attempted pairing of out-of-action fire unit (Bn only).
57-64	HOLDFIRE	Attempt to send Engage, Engage Ripple, Assign or Cover command when the hooked track or jam strobe has a Hold Fire Status.
57-64	HOOK FU	Action attempted requires fire unit to be hooked.
57-64	HOOK JS	Action attempted requires jam strobe to be hooked.
57-64	HOOK RQD	Attempted action with nothing hooked.
57-64	HOOK ST	Action attempted requires site to be hooked.
57-64	HOOK TK	Action attempted requires track to be hooked.
57-64	HOOKSTFU	Attempted entry onto the DDG requires site (battalion) or fire unit to be hooked.
57-64	HOOKTKJS	Action attempted requires a track or jam strobe to be hooked.
57-64	ILL SECT	Invalid manual clutter sector data entered (Bn only).
57-64	ILL SRCE	Attempt to select data for display from illegal source or to change tracking mode of remote track.
57-64	INT CAP	Interrogation queue full (Bn only).
57-64	JS CAP	Jam strobe capacity exceeded.
57-64	KBD CAP	Keyboard capacity exceeded.
57-64	KBD ERR	Keyboard entry format error or keyboard entry required but none made.
57-64	LIM ERR	Entry or action attempted is out of tolerance, entry of an invalid code for mode 1, or attempted to drop volume.
57-64	LINK ACT	Attempt to drop or change a site of ATDL-1 FU whose data link is active or (Bn only) to enter FU status other than Partially Effective, Not Effective, Broken Engagement, or Heads Up when link is operational.
57-64	LOCAL JS	Attempt to send a command on a local jam strobe.
57-64	MAP LOAD	Attempt to load a map before the previously requested map load is completed.
57-64	NO ITEM	Sequence hook attempted (no items meet sequence criteria in effect).
57-64	NO LINK	Attempt to send a message to a site/FU whose data link is inactive, or attempt to enter the ATDL-1 station address of a brigade/battalion that is not in Central File and activating FU BY BN switchcap.
57-64	NONE REC	Accept recommended assignment attempted but no recommended FUs (Bn only) or no recommended battalions or PATRIOT ICC (Brigade or master battalion only).

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Figure 1-29. Status Data ARO (Sheet 4 of 6).

Column	Format	Definition
57-64	OFF GRID	Off grid position entry attempted.
57-64	ORDER IP	Previous order sequence still in progress.
57-64	OTHER CSL	Attempt to enter control commands at console when another console is in control command entry mode.
57-64	RC RQD	Attempt a Clear Alert action on track or jam strobe which requires a response to an original order.
57-64	RIE MODE	RIE is in local mode when video or IFF processing change is attempted at console (Bn only).
57-64	SB ROW	Attempt to assign fire unit or site to occupied or non-existent Status Board row.
57-64	SECT CAP	Attempt to enter more than nine manual clutter sectors without a Gate Complete action, or attempt to enter sectors at a rate in excess of one per scan (Bn only).
57-64	SEQ ERR	Wrong sequence of actions.
57-64	SIM FU	Attempt to assign a live track or jam strobe to a simulated FU (BN only).
57-64	ST CAP	Site capacity exceeded.
47-64	SYS CONF	Attempted action not valid in current system configuration.
57-64	TEST TGT	Attempt to manipulate the system test target.
57-64	TK AUTO	Attempt to enter velocity and heading for track in auto-tracking mode (Bn only).
57-64	TK CAP	Track capacity exceeded.
57-64	TK ENG	Engaged track or jam strobe drop attempted.
57-64	TK H TRT	High threat track drop attempted.
57-64	TK IN HZ	Attempt to send an Engage or Engage Ripple on a track in Hold Zone.
57-64	TK IN TZ	Attempt to send an Engage or Engage Ripple on an unknown track in Tight Zone.
57-64	TK N/HST	Non-hostile track assignment attempted.
57-64	TK RAMIT	Attempt to change track to RAMIT to AUTO tracking (RAMIT to AUTO tracking changes are made automatically) (Bn only).
57064	TK RMT	Attempt to enter velocity and/or heading on remote track, or to update a remote track, remote jam strobe or remote ECM fix.
57-64	TK SIM	Attempt to send a command on simulated track or site to a TADIL B source.

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Figure 1-20. Status Data ARO (Sheet 5 of 6).

Column	Format	Definition
57-64	UNIT RMT	Attempt to assign onto the DDG a remote site or ATDL-1 station address of a non-tied Bn/Bde.
ROW 8		
52-55	ALnn	Number of Entities (Tracks, Sites, FUs) with Alert Conditions Present - Data Label and two numeric characters, AL for Data Label and 0-9 numerics (99 = 99 or more). (Multiple alerts for a single entity generate only a single count.) (Alert counts exclude SIM-TEST, PPI ONLY, CAPACITY, and own site alerts.)
56		Blank.
57-64	xxxxxxxx	Operator entered AN Keyboard Display - Up to eight alphanumeric characters, A-Z alphas, 0-9 numerics, space, and + and - symbols.

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Figure 1-29. Status Data ARO (Sheet 6 of 6).

Section V. DDG STATUS BOARD DISPLAYS

1-20. General. The DDG is usually mounted above and centered over the two display consoles as shown in figure 1-1. The DDG displays present system time and summary data for all fire units and sites assigned a row number. The location and format of the DDG operation displays are shown in figure 1-30.

1-21. DDG Time Display. The DDG contains a six-digit system (local) time display with the pairs of digits separated by a colon (:). The time display is located in the bottom center of the top portion of the DDG. The time display provides a convenient and easy-to-read source for time-of-day information which is always displayed.

1-22. DDG Status Board Fire Unit/Site Data Display. The fire unit/site data display occupies the entire lower portion of the DDG. This display is capable of presenting summary information on up to 48 (using two DDGs) assigned fire units and sites simultaneously. The fire unit/site data display presents information in the same format as that used to display fire unit/site data in the summary data portion of the ARO (fig. 1-19 thru 1-19.3). The primary purpose of the fire unit/site data display is to provide display redundancy, ready access to fire unit/site data for command and operations personnel, and to simultaneously display data for all assigned fire units/sites. The data presented on the fire unit/site data display is always displayed and may be updated either automatically or manually.

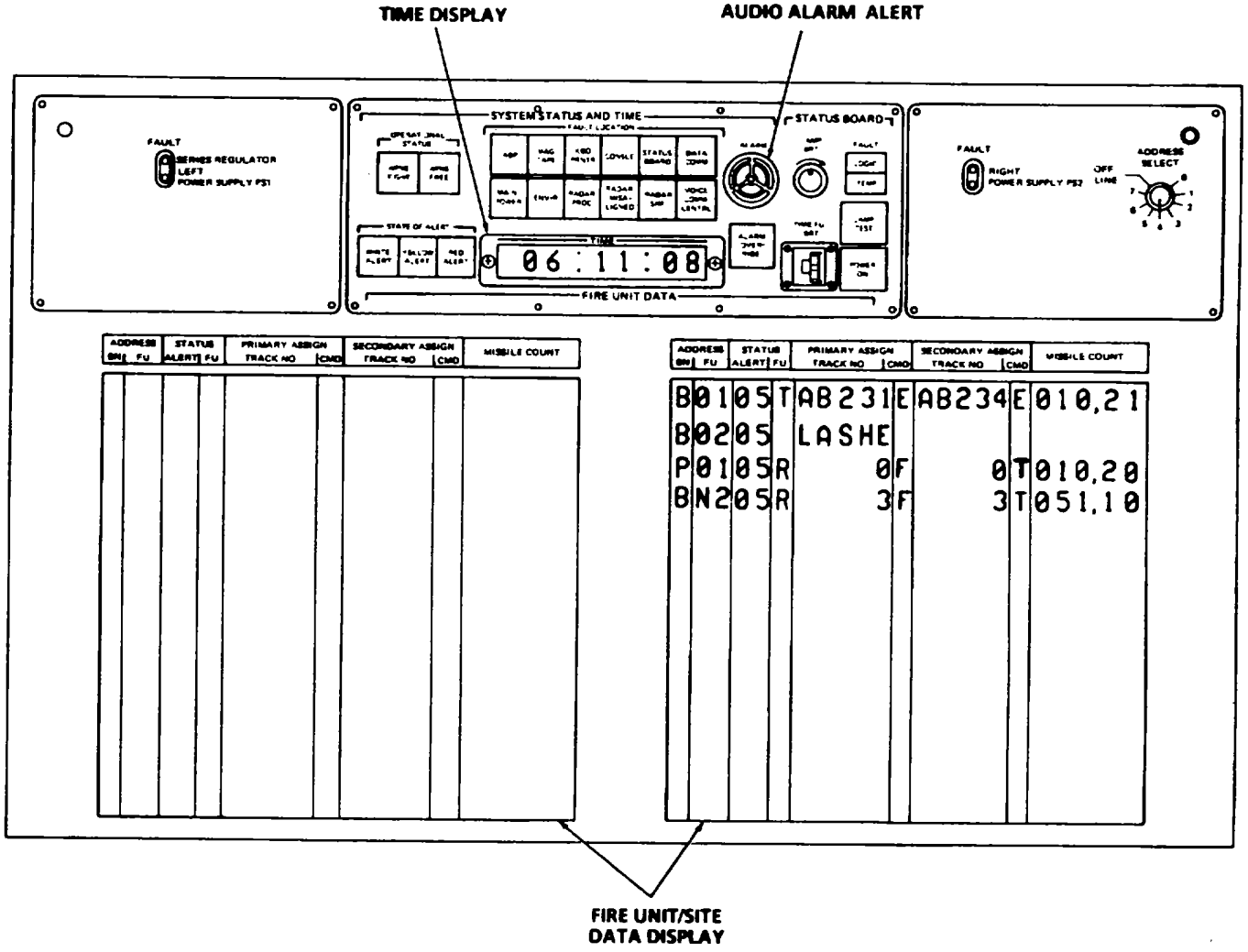

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Figure 1-30. Data Display Group Operational Displays

Section VI. SYSTEM OPERATIONAL ALERTS

1-23. General. System operational alerts are described in the following paragraphs.

a. The AN/TSQ-73 system contains a variety of alerting devices to inform the operator of existing or pending conditions which may degrade system performance. These alerting devices are related to the system displays in such a manner that a definition of the alert condition is rapidly available to the console operator. The types of alerting devices (and their locations) are as follows:

(1) Alert indicators (display console alert indicators).

(2) Flashing symbols and line segments (display console situation display).

(3) Air track symbol changes to priority or special symbol (display console situation display).

(4) Fire unit symbol expands and flashes (display console situation display).

(5) Jam strobe point expands and flashes (display console situation display).

(6) Alert messages (display console ARO display).

(7) Illegal action messages (display console ARO display).

(8) Audible alarm (DDG).

b. The locations of these alerting devices are shown in figure 1-1. Table 1-4 summarizes the alerts and other related data associated with each condition causing an alert and provides a reference (Condition no.) to table 1-5 for detailed data about the alert. These alerts are organized in relation to the following alert categories.

(1) PPI (situation display) only alerts.
(2) Simulated/test data alerts.
(3) Deleted.
(4) Engagement alerts.
(5) High priority action alerts.
(6) Illegal action alerts.
(7) Potential priority action alerts.

c. Table 1-5 identifies the conditions creating that category of alert, any other amplifying data related to the alert and the means of extinguishing the alerts, in addition to the specific alert devices used to define the alert condition. Where alerts are specific to a subset of consoles, the type of console (console mode) on which the alert appears is also noted.

Table 1-4. Alert Index

Condition no.	Console indication/ alert indicator on	ARO display	Remarks
		-PPI ALERTS-	
1	Solid flashing pairing line	None	Battalion only (Not valid for PATRIOT/ LASHE)
2	Dashed pairing line	None	Battalion only (Not valid for PATRIOT/ LASHE)
2.1	Flashing dashed pairing line	None	Sector Scan (ATDL-1 HAWK Phase III only)
3	Flashing command trans-mitted symbol		
3.1	Flashing command received symbol	None	
4	Dashed track symbols	None	Intelligence/EW, Special Processing or Non-Real-Time Tracks with Special Processing
5	Deleted		
6	Priority track symbol	None	
7	Flashing LASHE FU symbol	None	

Table 1-4. Alert Index
-Continued

Condition no.	Console indication/ alert indicator on	ARO display	Remarks
8	Deleted		
		-SIMULATION TEST TRACK ALERTS-	
9	SIM TEST TRACKS	None	
		-STORAGE CAPACITY ALERTS-	
10 thru 13	Deleted		
		ENGAGEMENT HIGH PRIORITY ACTION ALERTS-	
14	ILLEGL PAIR	ALERT:ENG NON HOST TK	
15	ILLEGL PAIR	ALERT:PAIRED SIM-LIVE	
16	ILLEGL PAIR	ALERT:FU OUT OF ACTION	
17	ILLEGL PAIR	ALERT:ENG TRK IN VOL	
		-GENERAL HIGH PRIORITY ACTION ALERTS-	
18	ACTION REQD	ALERT:INFO DIF:annn, xxn	
19	ACTION REQD	ALERT:CHG ID:annn, xxn	
20	ACTION REQD	ALERT:IFFDIF:nxxnna, xxn	a = I, V or Blank
20.1	ACTION REQD	ALERT:HOST NAT aa	aa = (refer to TM 9-1430-652-10-7)
21	ACTION REQD	ALERT:EN:RESP REQD, xxn	
21.1	ACTION REQD	ALERT:EN:R.R. "aZ":xxn	a = H or T
22	ACTION REQD	ALERT:CX:RESP REQD, xxn	
22.1	ACTION REQD	ALERT:CX:R.R. "aZ":xxn	a = H or T
23	ACTION REQD	ALERT:IN:RESP REQD, xxn	
23.1	ACTION REQD	ALERT:IN:R.R. "aZ":xxn	a = H or T
24	ACTION REQD	ALERT:TIGHT:aaa:NO, xxn	
25	ACTION REQD	ALERT:FREE:aaa:NO, xxn	
26	ACTION REQD	ALERT:aa:NONE RECVD, xxn	
27	ACTION REQD	ALERT:aa:CANTCO, xxn	
28	ACTION REQD	ALERT:aa:CANTPRO, xxn	
29	ACTION REQD	ALERT:FU EFFECTIVE	
30	ACTION REQD	ALERT:ER:RESP REQD, xxn	
30.1	ACTION REQD	ALERT:ER:R.R. "aZ":xxn	a = H or T
31	ACTION REQD	ALERT:TIGHT:aaa:aa, xxn or ALERT:FREE:aaa:aa, xxn	aa = NR, CC, or CP
		-ILLEGAL ACTION ALERTS-	
32	ILLEGL ACTION	HOOK RQD	
33	ILLEGL ACTION	HOOK TK	
34	ILLEGL ACTION	HOOK FU	
35	ILLEGL ACTION	HOOK ST	

Table 1-4. Alert Index
-Continued

Condition no.	Console indication/ alert indicator on	ARO display	Remarks
36	ILLEGL ACTION	HOOK JS	
37	ILLEGL ACTION	TK CAP	
38	ILLEGL ACTION	ST CAP	
39	ILLEGL ACTION	JS CAP	
40	ILLEGL ACTION	SB ROW	
41	ILLEGL ACTION	KBD CAP	
42	ILLEGL ACTION	KBD ERR	
43	ILLEGL ACTION	LIM ERR	
44	ILLEGL ACTION	DUPE TN	
44.1	Deleted		
45	ILLEGL ACTION	CSL MODE	
46	ILLEGL ACTION	SEQ ERR	
47	ILLEGL ACTION	ILL SRCE	
48	ILLEGL ACTION	ORDER IP	
49	ILLEGL ACTION	OFF GRID	
50	ILLEGL ACTION	ADL CODE	
51	ILLEGL ACTION	NO ITEM	
52	ILLEGL ACTION	EM DROP	
53	ILLEGL ACTION	FU DROP	
54	ILLEGL ACTION	TK ENG	
55	ILLEGL ACTION	TK H TRT	
56	ILLEGL ACTION	TK N/HST	
57	ILLEGL ACTION	TK RAMIT	
58	ILLEGL ACTION	SIM FU	Battalion only
59	ILLEGL ACTION	ILL SECT	Battalion only
60	ILLEGL ACTION	RIE MODE	Battalion only
61	ILLEGL ACTION	SECT CAP	Battalion only
62	ILLEGL ACTION	TK AUTO	Battalion only
63	ILLEGL ACTION	NONE REC	
64	ILLEGL ACTION	CORRL IP	
65	ILLEGL ACTION	UNIT RMT	
66	ILLEGL ACTION	FU O/ACT	Battalion only
67	ILLEGL ACTION	TEST TGT	
68	ILLEGL ACTION	RC RQD	
69	ILLEGL ACTION	FU ENG	Not valid for PATRIOT

Table 1-4. Alert Index
-Continued

Condition no.	Console indication/ alert indicator on	ARO display	Remarks
70	ILLEGL ACTION	LINK ACT	
71	ILLEGL ACTION	NO LINK	
72	ILLEGL ACTION	TK RMT	
73	ILLEGL ACTION	HOLDFIRE	
74	ILLEGL ACTION	TK SIM	
74.1	ILLEGL ACTION	Al UNIT	
75	ILLEGL ACTION	SYS CONF	
76	ILLEGL ACTION	DROP IP	
77	ILLEGL ACTION	OTHR CSL	
78	ILLEGL ACTION	CC MODE	
79	ILLEGL ACTION	FU NIENG	Battalion only (Not valid for PATRIOT/LASHE)
80	ILLEGL ACTION	FU LASHE	Battalion only
81	ILLEGL ACTION	CMD FULL	
82	ILLEGL ACTION	INT CAP	Battalion only
82.1	Deleted		
82.2	ILLEGL ACTION	ENG FULL	
82.3	ILLEGL ACTION	TK IN aZ	a = H or T
82.4	ILLEGL ACTION	HOOKTKJS	
82.5	ILLEGL ACTION	LOCALJS	
82.6	ILLEGL ACTION	MAP LOAD	
82.7	ILLEGL ACTION	DEHOOK	
82.8	ILLEGL ACTION	HOOKSTFU	
82.9	ILLEGL ACTION	ESM JS	
82.10	ILLEGL ACTION	ESM FIX	
	-POTENTIAL	PRIORITY ACTION ALERTS-	
83	ATTN REQD	ALERT:IFFWAS:nxxnna, xxn	Remote source change a = I, V or Blank
84	ATTN REQD	ALERT:IFFWAS:nxxnna, xxn	Clear message a = I, V or Blank
84.1	ATTN REQD	ALERT:IFF EMER	
84.2	ATTN REQD	ALERT:HOST NAT aa	aa = refer to TM 9-1430-652-10-7
84.3	ATTN REQD	ALERT:NON HOST NAT aa	aa = refer to TM 9-1430-652-10-7
84.4	Deleted		
85	ATTN REQD	ALERT:SAFE CORRID WARN	
86	ATTN REQD	ALERT:COMM-UNKNOWN STAT	

Table 1-4. Alert Index
-Continued

Condition no.	Console indication/ alert indicator on	ARO display	Remarks
87	ATTN REQD	ALERT:COMM-PARITY ERROR	
88	ATTN REQD	ALERT:COMM-NOISY/OPEN	
89	ATTN REQD	ALERT:FU/INT ENGAGED	
90	ATTN REQD	ALERT:CE:NOT REQD, xxn	
91	ATTN REQD	ALERT:HF:NOT REQD, xxn	
92	ATTN REQD	ALERT.CF:NOTREQD, xxn	
93	ATTN REQD	ALERT:FU SELF INIT ENG	Battalion only (Not valid for PATRIOT/LASHE)
94	ATTN REQD	ALERT:LOCALREMOTE POSN	Battalion only
95	ATTN REQD	ALERT:NONEXT SIF CODES	Battalion only
96	ATTN REQD	ALERTRTRACK MERGE	Battalion only
97	Deleted		
98	ATTN REQD	ALERT:HEADS UP	

Table 1-5. AN/TSQ-73 System Alerts

Condition no.	Alert description
	-PPI ALERTS-
1	PRIMARY COMMAND SENT TO FU (BATTALION ONLY) (NOT VALID FOR PATRIOT) Alert light-none PPI alert - solid flashing pairing line (all consoles) ARO message alert - none Related data- PP-row 2, column 3, FU alphanumeric block displays command other than blank DDG status board - columns 7 thru 12 display assigned track or jam strobe number and command other than blank ARO--columns 7 thru 12, FU status data displays assigned track or jam strobe number and command other than blank. Row 6, columns 27 thru 44, hooked FU message displays assigned track or jam strobe number and command other than blank Clear-alert cleared by engagement termination, FU acknowledgement of assignment, or receipt of tracking or firing status Remarks-engagement termination removes pairing line when FU transmits a terminal status. FU acknowledgement of assignment causes pairing line to stop flashing. Receipt of tracking or firing status also causes pairing line to stop flashing
2	SECONDARY COMMAND FOR FU (BATTALION ONLY) (NOT VALID FOR PATRIOT) Alert light - none PPI alert - dashed pairing line (all consoles) ARO message alert-one Related data-- PP-row 2, column 4, FU alphanumeric block displays command other than blank DDG status board columns 13 thru 18 display assigned track or jam strobe number and command other than blank ARO - columns 13 thru 18, FU status displays assigned track or jam strobe number and command other than blank. Row 7, columns 27 thru 44, hooked FU message displays assigned track or jam strobe number and command other than blank Clear - alert cleared by engagement termination or promotion Remark: secondary assignments are valid only at battalion and are not transmitted to FUs. Completion of primary assignment will promote a secondary assignment at which time pairing line will become solid and flashing. Secondary assignments may be cancelled using CANCEL SEC ASSIGN switch
2.1	SECTOR SCAN FOR ATDI-1 HAWK PHASE III FU Alert light - none PPI alert - flashing dashed pairing line (all consoles) ARO message alert-none Related data- PPI-row 2, column 2, FU alphanumeric block displays 'V (all consoles) DDG status board column 6 displays 'V' for that FU ARO - row 3, column 33, displays v for Hooked FU Data ARO. Row 1-8, column 6, displays 'V' for FU Summary Data ARO.

Table 1-5. AN/TSQ-73System Alert
--Continued

Condition no.	Alert description
2.1 (cont)	Clear - when ATDL-1 HAWK FU exits Sector Scan Remark-FU in Sector Scan cannot be auto-assigned by ANfSQ-73, but can be manually assigned.
3	ACTION COMMAND (ENGAGE, ENGAGE RIPPLE, ASSIGN/INVESTIGATE, OR COVER) SENT TO A SITE Alert light-none PPI alert - flashing command transmitted symbol (all tactical consoles) ARO message alert - none Related data- PP - row 2, column 2 track alphanumeric block displays E, R, I;, or X Columns 3 and 4 contain the station address of the first unit assigned ARO-row 6, columns 41 thru 49, hooked track message displays battalion or PATRIOT ICC to which command has been sent Clear - alert cleared by engagement termination or site acknowledgement Remark - flashing stops when affirmative reply has been received from the site which was sent an action command on the track. The symbol reverts to the appropriate symbol for the track type when at least one fire unit reports an engagement to the track, when a CANTCO or CANTPRO is received from the site which was sent an action command on the track, or when a termination command is sent or received on the track. Alert is displayed if command passes volume test.
3.1	AFFIRMATIVE RECEIPT/COMPLIANCE CODE SENT TO BRIGADE OR ANOTHER BATTALION IN RESPONSE TO COMMAND MESSAGE (BATTALION ONLY) Alert light - none PPI alert - flashing command received symbol (all tactical consoles) ARO message alert - none Related data- PPI - row 2, column 2 track alphanumeric block displays E, R, I, or X Columns 3 and 4 contain station address of command source Clear - alert cleared by FU acknowledgement Remarks - flashing stops when an FU acknowledges the command message. The symbol reverts to the appropriate symbol for the track
4	INTELLIGENCE AND/OR SPECIAL PROCESSING OR NON-REAL-TIME TRACKS WITH SPECIAL PROCESSING Alert light - none PPI alert - tack symbols are dashed (all consoles) ARO message alert- none Related data - none Clear - when non-real-time tracks become real-time tracks, Intelligence/EW information cannot be cleared Remarks - Dashed track symbols are valid only for Intelligence/EW data or non-real-time tracks with special processing
5	Deleted

Table 1-5. AN/TSQ-73 System Alert
--Continued

Condition no.	Alert description
6	TRACK HAS PRIORITY DESIGNATION Alert light - none PPI alert - track symbol becomes priority (all consoles) ARO message alert - none Related data PPI - row 2, column 2, track alphanumeric block displays priority type ARO - row 1, column 49, track message displays special processing indicator Row 1, column 47 displays all other priority types Clear-alert cleared when priority designation is removed Remarks - priority tracks are forced for display on all consoles
7	HAWK FU HAS ENTRED LASHE MODE Alert light - none PPI alert - FU symbol expand and flashes (all consoles) ARO message alert - none Related data PP -row 2 of FU alphanumeric displays LASHE Clear - receipt of a ready or out of action FU status or inactive data link message Remarks - attempt to send engage, engage ripple, investigate/assign or cover command to a LASHE PU will result in FU LASHE illegal action Other commands will be sent normally
8	Deleted
	SIM TEST TRACKS ALERTS--
9	SIMULATED OR TEST TRACKS PRESENT IN DATA BASE Alert light - SIM TEST TRACKS (all consoles) PPI alert - none ARO message alert - none Related data - PPI 2, column 5, tack alphanumeric block displays T ARO - row 1, column 44, hooked track message displays T Clear - alert cleared when all simulated and test tracks are removed from data base Remarks - this alert condition does not apply to the test target always present in the system
	-STORAGE CAPACITY ALERTS-
10	Deleted
11	Deleted
12	Deleted
13	Deleted

Table 1-5. AN/TSQ-73 System Alerts
-Continued

Condition no.	Alert description
	-HIGH PRIORITY ENGAGEMENT ACTION ALERTS-
14	NONHOSTILE TRACK ENGAGED Alert light - ILLEGL PAIR (all tactical mode consoles) PPI alert - track symbol becomes special and flashes (all tactical mode consoles) ARO message alert-row 8, columns 27 thru 49, hooked track message displays ALERT:ENG NON HOST TK (all tactical mode consoles when hooked to track) Related data - PPI-track ID is not hostile and for non-PATRIOT FU pairing line is shown. Row 2, columns 2 and 3, alphanumeric block displays WE. Row 2, column 1, track alphanumeric block does not display H ARO-row 2, columns 33 thru 39, hooked track message displays ID data. Row 4, columns 38 thru 44, hooked engagement marker message displays track ID data Clear - press CLEAR ALERT Remarks - alert is the result of an ID change, FU self-initiated engagement against a nonhostile track, or an ADL message showing a remote FU engaged to a nonhostile track When alert condition is eliminated, track symbol reverts to one appropriate for the track ID unless other alerts exist for the same track. This alert is generated in accordance with weapons free/tight doctrine
15	SIMULATED TRACK ENGAGED BY LIVE FU Alert light-ILLEGL PAIR (all tactical mode consoles) PPI alert - FU symbol expands and flashes (all tactical mode consoles) ARO message alert-row 8, columns 27 thru 49, hooked FU message displays ALERT:PAIRED SIM-LIVE (all tactical mode consoles when hooked to FU) Related data- Alert light - SIM-TEST TRACKS indicator is lighted PPI - row 2, column 5, track alphanumeric displays T ARO - row 1, column 44, hooked track message displays T Clear-press CLEAR ALERT Remarks-engage message is transmitted to FU. SIM-TEST TRACKS alert remains on as long as simulated tracks are present in the system
16	ENGAGED FU IS OUT OF ACTION Alert light - ILLEGL PAIR (all tactical mode consoles) PPI alert - FU symbol expands and flashes (all tactical consoles) ARO message alert - row 8, columns 27 thru 49, hooked FU message displays ALERT:FU OUT OF ACTION (all tactical mode consoles when hooked to FU) Related data-

Table 1-5. ANT/SQ-73 System Alerts
-Continued

Condition no.	Alert description
16	PPI - row 2, column 2, FU alphanumeric block displays 0, and for non-PATRIOT FU pairing line
(cont)	is present ARO - column 6, FU status data displays 0, and for non-PATRIOT FU columns 7 thru 12 display assigned track or jam strobe number and command. Row 3, column 33, hooked FU message displays O DDG status body-column 6 displays 0, and for non-PATRIOT FU columns 7 thru 12 display assigned track or jam strobe number and command Clear - resign track to another FU and press CLEAR ALERT Remark - alert is the result of a FU status change after engagement begins or an unknown data link status on a link that the FUs status is being reported.
17	ENGAGED TRACK IN VOLUME Alert light - ILLGL PAIR (all tactical mode consoles) PPI alert - track symbol becomes special and flashes (all tactical mode consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT.ENG TRK IN VOL (all tactical mode consoles when hooked to track) Related data- PPI track - ID is hostile and the track is engaged in a Hold Zone or track ID is unknown and track is engaged in a Hold or Tight Zone Row 2, columns 2 and 3, track alphanumeric block displays WV ARO - row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear-press CLEAR ALERT Remark - alert is the result of an engaged track entering zone restricting engagement, or the result of a FU self-initiated engagement of a hostile track in a Hold Zone or on an unknown track in a Hold or Tight Zone and the FU status is Tracking or Firing Operator should take appropriate action as specified in SOP. When alert condition is eliminated, track symbol reverts to appropriate one for the track ID unless other alerts exist for the same track. This alert is generated in accordance with the Hold/Tight Zone doctrine. An automatic cease fire is sent on the track if no action command was received from higher echelon, and if CEASE Fire switch is in AUTO mode. Operator must send command if in manual mode.
	-GENERAL HIGH PRIORITY ACTION ALERTS--
18	RECEIPT OF INFORMATION DIFFERENCE ACTION-MANAGEMENT MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:INFO DIF: anrn, xxn (all Consoles when hooked to track) Related data- PP-row 2, columns 2 and 3, track alphanumeric block displays AD Clear - press CLEAR ALERT and enter new ID Remarks - occurs whenever there is a change within the unknown ID category or the primary ID changes. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. ID is changed to agree with input from ADL message by entering new ID using display console IDENT AMPLI CT PLT switch

Table 1-5. AN/TSQ-73 System Alerts
-Continued

Condition no.	Alert description
19	RECEIPT OF CHANGE DATA ACTION-MANAGEMENT MESSAGE OR INTELLIGENCE MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:CHG ID:annn, xxn (all consoles when hooked to track) Related data- PPI - row 2, columns 2 and 3, track alphanumeric block displays AC Clear - press CLEAR ALERT Remark - occurs whenever there is a change within the unknown ID category or the primary ID changes or whenever a hostile nationality is received for a non-hostile track when in AUTO ID mode and not in System FAKER mode. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track
20	RECEIPT OF IFF DIFFERENCE DATA ACTION-MANAGEMENT MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT IFFDIF: nxxrnna, xxn (all consoles when hooked to track) Related data- PP - row 2, columns 2 and 3, track alphanumerics block displays AI Clear- - enter IFF mode and new code on A/N keyboard, press TASK SELECTION IDENT-IFF, TASK FUNCTION 'ENTER IFF CODE' to accept new IFF data - press CLEAR ALERT to reject new IFF data Remarks - new IFF data appears in row 8, columns 33 thru 49 hooked track message. If new IFF data is rejected, old IFF data remains in row 7, columns 27 thru 49 hooked track message, and remains subject to validation. If new IFF data is accepted, new IFF data is displayed in row 7, columns 27 thru 49 hooked track message, and remains subject to validation. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. This alert is not used simultaneously with the IFFWAS alert. If SIF code validation is not active, validity indicator is not displayed.
20.1	RECEIPT OF HOSTILE NATIONALITY WHEN IN FAKER MODE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays 'ALERT:HOST NAT aa' where aa =nationality abbreviation (refer to TM 9-1430-652-10-7) (all consoles when hooked to track) Related data PPI - row 2 columns 2 and 3, track alphanumeric block displays WN Clear - press CLEAR ALERT after taking one of the following actions: - deactivate FAKER Mode

Table 1-5. AN/TSQ-73 Stem Alerts
- Continued

Condition no.	Alert description
20.1 (cont)	--delete nationality as a hostile nationality Remarks - occurs whenever a hostile nationality is received while the system Faker mode is on. When alert condition in eliminated, track symbol reverts to previous symbology unless other alerts exist for track
21	RECEIPT OF ENGAGEMENT COMMAND MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) - jam strobe point expands and blinks ARO message alert - 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT EN:RESP REQD, xxn (all consoles when hooked to track or jam strobe) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays CE Clear - end receipt compliance code or retransmit this command to an eligible unit Retransmission automatically sends a WILCO to the message originator. Remarks - alert is result of proposed engagement on track that is in Free Zone or a jam strobe and ADL Engage Mode is MANUAL or automatic alignment is not possible. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol, unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
21.1	RECEIPT OF ENGAGEMENT COMMAND M SSAGE WITH TRACK IN A HOLD OR TIGHT ZONE Alert light - ACTION REQD (all consoles) Alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:EN: R.R. "aZ"-xxn' where RR indicates Response Required, and aZ is either HZ for Hold Zone or TZ for Tight Zone (all tactical mode consoles when hooked to track) Related data- PPI - track ID is hostile and the track is in a Hold Zone or ID is unknown and track is in a Hold or Tight Zone. Row 2, columns 2 and 3, track alphanumeric block displays WV ARO - row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear - end receipt compliance code Remarks - alert is result of proposed engagement on a hostile track in a Hold Zone or an unknown rack in a Hold or Tight Zone. Alert is generated when one or more of the following conditions is not met: C162 processing mode is Automatic (A); no hold fire condition exists on track; primary assignment recommended by WAS processing, or no volume restrictions. Operator should take appropriate action as specified in SOP. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track If affirmative receipt/compliance code is sent, track symbol becomes command received symbol unless other alerts exist for same track
22	RECEIPT OF COVER COMMAND MESSAGE Alert light - ACTION REQD (all consoles)

Table 1-5. AN/TSQ-73 System Alerts
-Continued

Condition no.	Alert description
22 (cont)	PPI alert-track symbol becomes special (all consoles) - jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:CX:RESP REQD, xxn (all consoles when hooked to track or jam strobe) Related data- PPI - row 2, columns 2 and 3, track alphanumeric block displays CX Clear - send receipt compliance code or retransmit this command to an eligible unit. Retransmission automatically sends a WILCO to the message originator. Remarks - alert is result of proposed engagement on track that is in Free Zone or a jam strobe. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol, unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
22.1	RECEIPT OF COVER COMMAND MESSAGE WITH TRACK IN A HOLD OR TIGHT ZONE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:CX:R.R."aZ":xxn where RR indicates Response Required, and aZ is either HZ for Hold Zone or TZ for Tight Zone (all consoles when hooked to track) Related data - PPI - track ID is hostile and the track is in a Hold Zone or ID is unknown and track is in a Hold or Tight Zone. Row 2, columns 2 and 3, track alphanumeric block displays WV ARO - row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear-send receipt compliance code Remarks - alert is result of proposed engagement on a hostile track in a Hold Zone or an unknown track in a Hold or Tight Zone. Operator should take appropriate action as specified in SOP. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol unless other alerts exist for same track
23	RECEIPT OF INVESTIGATE/ASSIGN COMMAND MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) - jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:IN:RESP REQD, xxn (all consoles when hooked to track or jam strobe) Related data- PPI - row 2, columns 2 and 3, track alphanumeric block displays CI Clear - end receipt compliance code or retransmit this command to an eligible unit. Retransmission automatically sends a WILCO to the message originator.

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
23(cont)_	Remark - alert is result of proposed engagement on track that is in Free Zone or a jam strobe. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol, unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
23.1	RECEIPT OF INVESTIGATE/ASSIGN COMMAND MESSAGE WITH TRACK IN A HOLD OR TIGHT ZONE Alert light - ACTICN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT IN:RR. "aZ":xxn where RR indicates Response Required, and aZ is either HZ for Hold Zone or TZ for Tight Zone (all consoles when hooked to track) Related data- PPI-track ID is hostile and the track is in a Hold Zone or ID is unknown and track is in a Hold or Tight Zone. Row 2, columns 2 and 3, track alphanumeric block displays WV ARO - row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear - send receipt compliance code Remarks - alert is result of proposed engagement on a hostile track in a Hold Zone or an unknown track in a Hold or Tight Zone. Operator should take appropriate action as specified in SOP. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track If affirmative receipt/compliance code is sent, track symbol becomes command received symbol unless other alerts exist for same track
24	RECEIPT OF WEAPONS TIGHT COMMAND MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - transmitting site flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked site message displays ALERT TIGHT: aaa: NO, xxn when aaa is RED, YEL, or WHI and NO is no response required (all consoles hooked to site) Related data- DDG - audio alarm sounds for 10 seconds if either WT or state of alert is changed Clear - clear alert action Remark - the DDG indicator(s) may be changed by CC155 entry. Consult local SOP.
25	RECEIPT OF WEAPONS FREE COMMAND MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - transmitting site flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked site message displays ALERT FREE:aaa:NO, xxn when aaa is RED, YEL or WHI and NO is no response required (all consoles when hooked to site) Related data- DDG - audio alarm sounds for 10 seconds if either WF or state of alert is changed

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
25 (cont)	Clear-press CLEAR ALERT Remarks - the DDG indicator(s) may be changed by CC155 entry. Consult local SOP.
26	NO VALID RESPONSE TO COMMAND Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:aa:NONE RECVD, xxn (all consoles when hooked to track or jam strobe) Related data PPI - row 2, columns 2 and 3, track alphanumeric block displays RN Clear - press CLEAR ALERT Remarks - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
27	RECEIPT OF CANNOT COMPLY RECEIPT-COMPLIANCE MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:aa:CANTCO, xxn (all consoles when hooked to track or jam strobe) Related data PPI - row 2, columns 2 and 3, track alphanumeric block displays RC Clear - press CLEAR ALERT Remarks - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
28	RECEIPT OF CANNOT PROCESS RECEIPT-COMPLIANCE MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:aa:CANTPRO, xxn (all consoles when hooked to track or jam strobe) Related data- PPI - row 2, columns 2 and 3, track alphanumeric block displays RC Clear - press CLEAR ALERT Remarks - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
29	RECEIPT OF EFFECTIVE STATUS FROM PAIRED FU Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT: FU EFFECTIVE (all consoles when hooked to track or jam strobe) Related data- PPI - row 2, columns 2 and 3 track alphanumeric block displays WK Clear - press CLEAR ALERT Remarks - when alert is cleared, track symbol becomes priority unless other alerts exist for same track. Priority is cleared by pressing CLEAR EFFECT; track symbol reverts to appropriate one for track ID. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
30	RECEIPT OF ENGAGE RIPPLE COMMAND MESSAGE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:ER:RESP REQD, xxn (all consoles when hooked to track or jam strobe) Related data- PPI - row 2, columns 2 and 3 track alphanumeric block displays CR Clear - send receipt compliance message code or retransmit this command to an eligible unit. Retransmission automatically sends a WILCO to the message originator. Remarks - alert is result of proposed engagement on track that is in Free Zone or a jam strobe and ADL Engage Mode is MANUAL or automatic assignment is not possible. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol, unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist or the same jam strobe, the point stops blinking and returns to normal size
30.1	RECEIPT OF ENGAGE RIPPLE COMMAND MESSAGE WITH TRACK IN A HOLD OR TIGHT ZONE Alert light - ACTION REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:ER:R.R. "aZ":xxn where RR indicates Response Required, and aZ is either HZ for Hold Zone or TZ for Tight Zone (all consoles when hooked to track) Related data- PPI - track ID is hostile and the track is in a Hold Zone or ID is unknown and track is in a Hold or Tight Zone. Row 2, columns 2 and 3, track alphanumeric block displays WV ARO-row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear - send receipt compliance code

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
30.1(cont)	Remarks - alert is result of proposed engagement on a hostile track in a Hold Zone or an unknown track in a Hold or Tight Zone. Alert is generated when one or more of the following conditions is not met: CC162 processing mode is Automatic (A); no hold fire condition exists on track; primary assignment recommended by WAS processing; or no volume restrictions. Operator should take appropriate action as specified in SOP. When alert condition is eliminated, if negative receipt/compliance code is sent, track symbol reverts to appropriate one for track. If affirmative receipt/compliance code is sent, track symbol becomes command received symbol unless other alerts exist for same track
31	RECEIPT OF NEGATIVE RESPONSE TO ORIGINAL WT/WF ORDER Alert light - ACTION REQD (all consoles) PPI alert - site subordinate ATDL-1 FU symbol flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked site or subordinate ATDL-1 FU message displays ALERT:TIGHT:aaa:aa, xxn where aaa is either RED, YEL, or WHI and aa is either NR, CC, or CP (all consoles when hooked to site/FU) or ALERT:FREE:aaa:aa, xxn where aaa is either RED, YEL, or WHI and aa is either NR, CC, or CP (all consoles when hooked to site/FU) Related data - none Clear - press CLEAR ALERT Remarks - none
	-ILLEGAL ACTION ALERTS-
32	ATTEMPTED ACTION REQUIRES HOOK OPERATION NO HOOK OPERATION PERFORMED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOOK RQD (initiating console) Related data - PPI - hook symbol not displayed Clear - hook desired item or press CLEAR ALERT Remarks - item must be hooked before attempted action can be completed
33	ATTEMPTED ACTION REQUIRES TRACK TO BE HOOKED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOOK TK (initiating console) Related data - PPI - hook symbol not displayed or nontrack hooked Clear - hook track or press CLEAR ALERT Remarks - track must be hooked before attempted action can be completed
34	ATTEMPTED ACTION REQUIRES FU TO BE HOOKED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64 status data displays HOOK FU (initiating console) Related data - PPI - hook symbol not displayed or non-FU hooked

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
34 (cont)	Clear-hook FU or press CLEAR ALERT (cont) Remarks-FU must be hooked before attempted action can be completed
35	ATTEMPTED ACTION REQUIRES SITE TO BE HOOKED Alert light - ILLEFGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOOK ST (initiating console) Related data- PPI - hook symbol not displayed or non-site hooked Clear - hook site or press CLEAR ALERT Remarks - site must be hooked before attempted action can be completed
36	ATTEMPTED ACTION REQUIRES JAM STROBE TO BE HOOKED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOOK JS (initiating console) Related data - PPI - hook symbol not displayed or non-jam strobe hooked Clear - hook jam strobe or press CLEAR ALERT Remarks - jam strobe must be hooked before attempted drop action can be completed
37	ATTEMPT TO MANUALLY INITIATE TRACK WHEN TRACK STORAGE IS FULL Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK CAP (initiating console) Related data - ARO - rows 1 and 2, columns 52 thru 55, status data displays track tallies Clear - press CLEAR ALERT Remarks - new tracks cannot be entered until number of tracks in data base is reduced or maximum number of local tracks is increased (CC136)
38	ATTEMPT TO MANUALLY ENTER A SITE WHEN SITE STORAGE IS FULL Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64 status data displays ST CAP (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - new sites may not be entered until numbers of sites is reduced in data base or the maximum number of sites is increased (CC136)
39	ATTEMPT TO MANUALLY ENTER JAM STROBE WHEN JAM STROBE STORAGE IS FULL Alert light - ILLEGL ACTION (initiating console)

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
39 (cont)	PPI alert-none ARO message alert-row 7, columns 57 thru 64, status data displays JS CAP (initiating console) Related data - ARO - row 5, columns 52 thru 55, status data displays jam strobe tally Clear - press CLEAR ALERT Remarks - new jam strobes may not be entered until number of strobes in data base is reduced or the maximum number of jam strobes is increased (CC 136)
40	ATTEMPT TO ASSIGN FU OR SITE TO ROW ON DDG STATUS BOARD THAT IS OCCUPIED OR GREATER THAN AVAILABLE ROW NUMBER Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays SB ROW (initiating console) Related data - DDG - row is occupied or non-existent Clear - enter correct row number or press CLEAR ALERT Remarks - if all DDG rows are occupied, FU or site must be removed from DDG or row number is changed before additional FUs or sites may be displayed
41	ATTEMPT TO ENTER MORE THAN EIGHT CHARACTERS ON AN KEYBOARD (When Not In CC MODE) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays KBD CAP (initiating console) Related data - ARO - row 8, columns 57 thru 64, status data displays eight characters Clear - enter correct data or press CLEAR ALERT Remarks - none
42	AN KEYBOARD ENTRY NOT IN CORRECT FORMAT FOR ACTION REQUESTED OR REQUESTED ACTION REQUIRES AN KEYBOARD ENTRY Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays KBD ERR (initiating console) Related data - ARO - row 8, columns 57 thru 64, status data displays incorrectly formatted data or is blank Clear - press AN keyboard CLR switch, then CLEAR ALERT Remarks - legal format for each entry control is defined in TM 9-1430-652-10-3 and 10-6. Keyboard entries not in legal format generate this alert when associated entry control is actuated. If keyboard entry is required, proper entry must be accomplished before requested action may be completed. KBD ERR and LIM ERR alerts have priority over any other alerts associated with keyboard entries

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
43	AN KEYBOARD ENTRY OUT OF TOLERANCE FOR ACTION REQUESTED, UPDATE ATTEMPT OF MORE THAN 64 MILES REQUESTED, ENTER AN INVALID CODE FOR MODE 1, OR ATTEMPT TO DROP VOLUME/LINE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays LIM ERR (initiating console) Related data - ARO - row 8, columns 57 thru 64 status data displays out of tolerance data Clear - press AN keyboard CLR switch and then CLEAR ALERT Remarks - legal content for each entry control is defined in TM 9-1430-652-10-3 and 10-6. Keyboard entries outside legal ranges generate this alert when associated entry control is actuated. KBD ERR and LIM ERR alerts have priority over any other alerts associated with keyboard entries
44	ATTEMPT TO MANUALLY ASSIGN ATDL-1, NATO, OR TADIL-B TRACK NUMBER ALREADY IN USE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays DUPE TN (initiating console) Related data - PPI and ARO - number hook causes display of item already assigned that track number Clear - enter correct number or press CLEAR ALERT Remarks - item already assigned to track number must be dropped or a new track number must be assigned to new item
44.1	Deleted
45	ATTEMPT TO PERFORM ACTION NOT VALIID FOR CONSOLE MODE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays CSL MODE (initiating console) Related data - console mode controls display current console mode Clear - press CLEAR ALERT Remarks - requested action may not be completed until correct console mode is selected
46	ATTEMPT TO PERFORM ACTIONS IN WRONG SEQUENCE Alert light - ILLEGL ACTION (initiating console)

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
46	PPI alert-none
(cont)	ARO message alert-row 7, columns 57 thru 64, status data displays SEQ ERR (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - requested action may not be completed until performed in correct sequence
47	ATTEMPT TO SELECT DATA FOR DISPLAY FROM INVALID SOURCE OR TO CHANGE TRACKING MODE OF REMOTE TRACK Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ILL SRCE (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - all consoles contain source selection controls for both battalion and brigade. Program defines valid controls for each
48	ATTEMPT TO SEND DROP MESSAGE ON TRACK HAVING COMMAND, ACTION-MANAGEMENT, OR TERMINAL ENGAGEMENT MESSAGE IN PROGRESS Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ORDER IP (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - current command, action-management, or termination engagement message in progress for track must be completed before new message can be sent
49	ATTEMPT TO ENTER POSITION OFF THE SYSTEM GRID Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert -row 7, columns 57 thru 64, status data displays OFF GRID (initiating console) Related data - none Clear - press AN keyboard CLR switch and then CLEAR ALERT Remarks - all height and position entries must be within defined system grid
50	ATTEMPT TO SEND COMMAND OR ACTION-MANAGEMENT MESSAGE THAT DOES NOT MEET RULES OF TRANSMISSION Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ADL CODE (initiating console) Related data - none

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
50 (cont)	Clear-press AN keyboard CLR switch and then CLEAR ALERT Remarks - certain values for weapon type and ADL address, and certain command and action-management codes are not transmittable, depending upon link and message type . This alert is generated only when CMD CODE or ACTION MANAGE CODE control is actuated
51	ATTEMPT TO SEQUENCE HOOK WHEN NO ITEMS MEET SEQUENCE CRITERIA Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays NO ITEM (initiating console) Related data - ARO - row 5, columns 57 thru 64, status data displays sequence hook criteria Clear - press CLEAR ALERT Remark - "sequence criteria are established by operator entry at each console
52	ATTEMPT TO DROP ENGAGEMENT MARKER Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays EM DROP (initiating console) Related data - PPI - hook symbol appears around engagement marker Clear - press CLEAR ALERT Remark - engagement markers are displayed as long as FU is in tracking or firing status
53	ATTEMPT TO DROP FU Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays FU DROP (initiating console) Related data - PPI - hook symbol appears around FU Clear - second drop action or press CLEAR ALERT Remark - in order to drop FU, second drop action must be completed before hooking another item
54	ATTEMPT TO DROP ENGAGED TRACK OR JAM STROBE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK ENG (initiating console) Related data - PPI - hook symbol appears around track or jam strobe and it has pairing line ARO - row 2, column 49, hooked track message displays A, E, or I Clear - second drop action or press CLEAR ALERT

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
54(cont)	Remarks - In order to drop engaged track or jam strobe, second drop action must be completed before hooking another item
55	ATTEMPT TO DROP HIGH THREAT TRACK Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK H TRT (initiating console) Related data - PPI - track symbol is hooked and flashing ARO - row 2, column 45, hooked track message displays threat priority value (I thru 5) Clear - second drop action or press CLEAR ALERT Remarks - in order to drop high threat track, second drop action must be completed before hooking another item
56	ATTEMPT TO ASSIGN UNKNOWN OR FRIENDLY IDENTITY TRACK TO FU (BATTALION ONLY) OR TO A BATTALION OR PATRIOT ICC (BRIGADE OR MASTER BATTALION ONLY) ALERT LIGHT - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK N/HST (initiating console) Related data - PPI - unknown or friendly track is hooked or was last track hooked Clear - Press CLEAR ALERT Remarks - alert is generated in accordance with Weapons Free/Tight Doctrine
57	ATTEMPT TO MANUALLY CHANGE A RAMIT TRACK TO AN AUTO TRACK (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64 displays TK RAMIT (initiating console) Related data - PPI - row 2, column 5 track alphanumeric block displays R ARO - row 1 column 44 hooked track message displays R Clear - press CLEAR ALERT Remarks - RAMIT tracks are automatically changed to Auto Tracking when eligible
58	ATTEMPT TO ASSIGN A LIVE TRACK OR JAM STROBE TO A SIMULATED FIRE UNIT (BATTALION ONLY) ALERT LIGHT - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays SIM FU (initiating console) Related data - ARO - row 3, columns 35 thru 37, hooked FU message displays SIM

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
58 (cont)	Clear-press CLEAR ALERT Remarks-none
59	ATTEMPT TO ENTER AN INVALID MANUAL CLUTTER SECTOR (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ILL SECT (initiating console) Related data - none Clear - enter correct sector or press CLEAR ALERT Remarks - sector entry must start at inner counterclockwise most corner of sector to be defined and stop at outer clockwise most corner. The included angle of radials comprising sector must be less than 90 degrees
60	ATTEMPT TO CHANGE VIDEO PROCESSING OR IFF MODES AT CONSOLE WHEN RIE IS IN LOCAL MODE (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays RIE MODE (initiating console) Related data - none Clear - change RIE mode or press CLEAR ALERT Remarks - to shift from RIE local to console mode, a system restart, RIE reset, or CC command is required Console selection of video processing and system interrogation modes can be accomplished in all modes except test
61	ATTEMPT TO ENTER MORE THAN NINE MANUAL CLUTTER SECTORS PRIOR TO TAKING A GATE COMPLETE ACTION OR ATTEMPT TO ENTER MANUAL CLUTTER SECTORS IN EXCESS OF ONE PER SCAN (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays SECT CAP (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - GATE COMPLETE switch must be pressed before additional sectors may be defined or last sector before alert must be reentered
62	ATTEMPT TO ENTER VELOCITY AND HEADING FOR TRACK BEING AUTOMATICALLY TRACKED (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK AUTO (initiating console) Related data - ARO - row 1, column 44, hooked track message displays A Clear - press AN keyboard CLR switch and then CLEAR ALERT

Table 1-5. AN/TSQ-73 System Alerts - Continued

Condition no.	Alert description
62 (cont)	Remarks - track must be in RAMIT tracking mode for velocity and heading to be entered. If track is simulated, related data reflects simulated status instead of tracking mode
63	ATTEMPT TO ACCEPT A RECOMMENDED FU OR BATTALION/PATRIOT ICC ASSIGNMENT WHEN NONE HAS BEEN MADE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays NONE REC (initiating console) Related data - ARO - row 5, columns 41 thru 49, hooked track message is blank (battalion or master battalion) - row 5, columns 41 thru 44, hooked track message is blank (brigade) Clear - press CLEAR ALERT Remarks - alert results from actuation of ACCEPT RECMD ASSIGN switch when no computer recommendation has been made
64	ATTEMPT TO DROP OR SEND CEASE REPORTING ON TRACK UNDERGOING CORRELATION Alert light - ILLEGL ACTION PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays CORRL IP (initiating console) Related data - none Clear - press CLEAR ALERT or to drop track, press DROP a second time Remarks - alert is result of an attempt to drop or send a Cease Reporting Action/Management message on a track currently undergoing correlation processing. In order to drop track, second drop action must be completed before hooking another item. Track will either drop as a result of correlation or be established as authentic
65	ATTEMPT TO ASSIGN A NONSUBORDINATE FU; OR TO ENTER FU STATUS FOR NONSUBORDINATE FU; OR TO ENTER REMOTE SITE ONTO THE DDG Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays UNIT RMT (initiating console) Related data - PPI - row 1, FU alphanumeric block displays nonsubordinate ATDL-1 or TADIL B address ARO - row 1, columns 27 thru 39, hooked FU message displays nonsubordinate ATDL-1 and TADIL B address - row 7, columns 57-64, status data displays UNIT RMT Clear - press CLEAR ALERT (clears rows 7 and 8), or any AN Keyboard entry (clears row 7 only) Remarks - assignment can be performed only to subordinate FUs. Entry of FU status can be performed only to subordinate FUs
66	ATTEMPT TO ASSIGN TRACK OR JAM STROBE TO OUT OF ACTION FU (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays FU O/ACT (initiating console)

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
66 (cont)	Related data- PPI - row 2, column 2, FU alphanumeric block displays O DDG status board - column 6 displays O ARO - column 6, FU status data displays O. Row 3, column 33, hooked FU message displays O Clear - press CLEAR ALERT Remarks - tracks or jam strobes may be assigned to operational FUs only.
67	ATTEMPT TO MANIPULATE SYSTEM TEST TARGET Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TEST TGT (initiating console) Clear - press CLEAR ALERT Remarks - none
68	CLEAR ALERT ACTION ATTEMPT ON TRACK OR JAM STROBE REQUIRING RESPONSE TO ORIGINAL ORDER Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays RC RQD (initiating console) Related data - PPI - track symbol that is hooked is special ARO - row 8, columns 36 thru 44, hooked track message displays RESP REQD Clear - enter response code Remarks - receipt/compliance messages with a response required indication must be answered with a valid compliance code
69	ATTEMPT TO DROP ENGAGED FU OR (BATTALION ONLY) ASSIGN TRACK OR JAM STROBE TO FU WITH PRIMARY AND SECONDARY ASSIGNMENTS (NOT VALID FOR PATRIOT) Alert light - ILLEGL ACTION (initiating console) PPI - alert-none ARO message alert - row 7, columns 57 thru 64, status data displays FU ENG (initiating console) Related data - PPI - engagement marker appears with engaged track or jam strobe; or FU has primary and secondary pairing lines ARO - rows 6 and 7, columns 27 thru 44, hooked FU message displays primary and secondary assignment Clear - second drop action (to drop FU) or press CLEAR ALERT Remarks - to drop an engaged FU, the second drop action must be completed before hooking another item. To assign track or jam strobe to currently engaged FU, all outstanding engagements for FU must first be terminated

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
70	ATTEMPT TO DROP OR CHANGE SITE OR ATDL-1 FU WITH ACTIVE DATA LINK; OR (BATTALION ONLY) ENTER FU STATUS OTHER THAN PARTIALLY EFFECTIVE, NOT EFFECTIVE, BROKEN ENGAGEMENT OR HEADS UP WHEN LINK IS OPERATIONAL Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays LINK ACT (initiating console) Related data - PPI - row 2, column 5, site/non-PATRIOT FU alphanumeric displays other than O Clear - press CLEAR ALERT Remarks - data link must be taken offline before site or ATDL-1 FU can be dropped or changed
71	ATTEMPT TO SEND MESSAGE TO A SITE/FU WHOSE DATA LINK IS INACTIVE OR ATTEMPT TO ENTER THE ATDL-1 STATION ADDRESS OF A BRIGADE/BATTALION THAT IS NOT IN CENTRAL FILE AND ACTIVATING FU BY BN SWITCHCAP Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays NO LINK (initiating console) Related data - PPI - row 2, column 5, site/non-PATRIOT FU alphanumeric displays other than 0 Clear - initiate link or press CLEAR ALERT Remarks - none
72	ATTEMPT TO ENTER VELOCITY AND/OR HEADING OR UPDATE ON A REMOTE TRACK, JAM STROBE OR ECM FIX Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK RMT (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - none
73	ATTEMPT TO SEND ACTION COMMAND WHEN A HOOKED TRACK OR JAM STROBE HAS A HOLD FIRE STATUS Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOLDFIRE (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - action commands are engage, engage ripple, assign/investigate and cover
74	ATTEMPT TO SEND COMMAND ON SIMULATED TRACK OR SITE TO TADIL B SOURCE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays TK SIM (initiating console)

Table 1-5. AN/TSQ-73 System Alerts - Continued

Condition no.	Alert description
74 (cont)	Related data-none Clear - press CLEAR ALERT Remark - simulated tracks, or sites may be sent over TADILB links with the SIM filter off.
74.1	ATTEMPT TO SEND IFF UPDATE REQUEST WHEN R2 UNIT IS ATDL-1 Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays A1 UNIT (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - alert is the result of attempting to transmit an IFF Update Request on a track when the R^2 unit is not TADIL-B
75	ATTEMPT TO TAKE ACTION NOT VALID FOR CURRENT SYSTEM CONFIGURATION Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays SYS CONF (initiating console) Related data - system initialization printout on KPU shows current configuration Clear - press CLEAR ALERT Remarks - none
76	ATTEMPT TO TAKE AN ACTION ON AN ITEM THAT IS IN DROP CYCLE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays DROP IP (initiating console) Clear - press CLEAR ALERT Remark - alert does not apply to Hook, Clear Alert, and Hold Fire actions, or to the entry of a valid receipt compliance code in response to an outstanding command
77	ATTEMPT TO ENTER CONTROL COMMANDS AT A CONSOLE WHEN ANOTHER CONSOLE IS IN CONTROL COMMAND ENTRY MODE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays OTHR CSL (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - none
78	ATTEMPT TO PERFORM ANOTHER ACTION THAT REQUIRES AN ARO UPDATE OR AN KEYBOARD ENTRY WHEN CONSOLE IS IN CONTROL COMMAND ENTRY MODE Alert light-ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status displays CC MODE (initiating console)

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
78 (cont)	Related data - none Clear - press CLEAR ALERT or CONTROL CMD ENTRY Remarks - none
79	ATTEMPT TO SEND A CEASE FIRE OR CEASE ENGAGEMENT COMMAND TO A FIRE UNIT WHICH HAS NO CURRENT ASSIGNMENT (BATTALION ONLY) (NOT VALID FOR PATRIOT/LASHE) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays FU N/ENG (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - FU must be directly tied to own site via ATDL-1 data link
80	ATTEMPT TO SEND AN ACTION COMMAND TO A HAWK FU IN LASHE MODE (BATTALION ONLY) Alert Light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64 status data displays FU LASHE (initiating console) Related data - PPI - FU is flashing and row 2 displays LASHE Clear - assign to another FU or press CLEAR ALERT Remarks - action commands are engage, engage ripple, investigate/assign, and cover. Other commands will be sent normally
81	ATTEMPT TO SEND COMMAND OR ACTION-MANAGEMENT WHEN THERE IS NO AVAILABLE QUEUE ENTRY (BATTALION ONLY) OR TO SEND COMMAND ON A TRACK OR JAM STROBE WHEN COMMAND AND ALERT QUEUE IS FULL (BRIGADE ONLY) ALERT LIGHT - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64 status data displays CMD FULL (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - none
82	ATTEMPT TO REQUEST AN INTERROGATION WHEN INTERROGATION QUEUE IS FULL (BATTALION ONLY) Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays INT CAP (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - current interrogation must be completed before additional interrogations can be requested

Table 1-5. AN/TSQ-73 System Alerts - Continued

Condition no.	Alert description
82.1	Deleted
82.2	A PRIMARY ASSIGNMENT COULD NOT BE TRANSMITTED OR A SECONDARY ASSIGNMENT COULD NOT BE MADE BECAUSE THE ENGAGEMENT TABLE IS FULL Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ENG FULL (initiating console) Related data - none Clear - press CLEAR ALERT
82.3	ATTEMPT TO SEND ENGAGE OR ENGAGE RIPPLE ON A TRACK THAT IS WITHIN A HOLD OR TIGHT ZONE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status displays: TK IN aZ where aZ is either HZ for Hold Zone or TZ for Tight Zone (initiating console) Related data - ARO - row 2, columns 33 thru 39, hooked track message displays ID data. Row 3, columns 35 thru 38, displays volume data Clear - press CLEAR ALERT Remarks - alert (TK IN HZ) is result of attempting to send Engage or Engage Ripple on a hostile or unknown track in a Hold Zone. If the track is hostile and the command was originally received via ADL, a manual assign will send the command. If the track is unknown, the command cannot be sent. If the track is hostile, and the command did not originate from ADL, the command cannot be sent. Alert (TK IN TZ) is result of attempting to send command on an unknown track in a Tight Zone if the command was originally received via ADL
82.4	ATTEMPTED ACTION REQUIRES A TRACK OR JAM STROBE TO BE HOOKED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status displays HOOKTKJS (initiating console) Related data - PPI - hooked symbol not displayed or wrong item hooked Clear - hook item or press CLEAR ALERT Remarks - track or jam strobe must be hooked before attempted action may be completed

Table 1-5. AN/TSQ-73 System Alerts - Continued

Condition no.	Alert description
82.5	ATTEMPT TO SEND COMMAND ON A LOCAL JAM STROBE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays LOCAL JS (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - none
82.6	ATTEMPT TO LOAD A MAP BEFORE THE PREVIOUSLY REQUESTED MAP LOAD IS COMPLETED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays MAP LOAD (initiating console) Related data - previously requested map is being loaded from system tape Clear - press CLEAR ALERT Remarks - wait for code of previously requested map to appear in row 4, column 62 or 64, status data before attempting to request another map load
82.7	PRESS ADL ADRS WHEN THE CURRENTLY HOOKED ITEM IS A SITE OR FU Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays DEHOOK (initiating console) Related data - PPI - hooked symbol displayed on site or FU Clear - press AN keyboard CLR switch and DEHOOK or CLEAR ALERT Remarks - site/FU must be dehooked before ADL ADRS can be pressed
82.8	ATTEMPTED ENTRY ONTO THE DDG REQUIRES SITE (BATTALION) OR FIRE UNIT TO BE HOOKED Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays HOOKSTFU (initiating console) Related data - PPI - hook symbol not displayed, or non-site or non-FU hooked Clear - hook site or FU, or press CLEAR ALERT Remarks - Site (battalion) or FU must be hooked before attempted entry onto the DDG can be completed
82.9	ATTEMPT TO ENGAGE ESM JAM STROBE Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ESM JS (initiating console) Related data - none

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
82.9 (cont)	Clear-press CLEAR ALERT Remarks-ESM Jam Strobes are not engageable
82.10	ATTEMPT TO ENGAGE ESM FIX Alert light - ILLEGL ACTION (initiating console) PPI alert - none ARO message alert - row 7, columns 57 thru 64, status data displays ESM FIX (initiating console) Related data - none Clear - press CLEAR ALERT Remarks - ESM FIXes are not engageable
	POTENTIAL PRIORITY ACTION ALERTS-
83	CHANGE IFF DATA MESSAGE, ACCEPTANCE OF REMOTE IFF DATA Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT: IFFWAS: nxxnna, xxn (all consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays either IC or 14 depending on mode received Symbols used with existing IFF WAS alert (dependent on mode received) Clear - press CLEAR ALERT Remarks - accepted IFF code appears in the proper place in row 7 (hooked track message) and is subject to validation. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. This alert is not used simultaneously with the IFFDIF alert. For Modes 1 and 3A, when SIF Validation is active, alerts are generated as shown in table 1-6. If SIF Validation is inactive, alerts are generated when old and new codes differ. For Mode 2, alert generated when old and new codes differ, regardless of SIF Validation mode. (Initial code receipt does not generate alert). For Mode 4 IFF, alerts are generated as shown in table 1-7. Validity indicator is not displayed
84	RECEIPT OF IFF CLEAR MESSAGE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT: IFFWAS: nnnnna, xxn (all consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays IC ARO - row 7, columns 31 thru 42, hooked track message displays IFF mode data Clear - press CLEAR ALERT Remarks - if multiple IFF modes are cleared, a separate alert is generated for each mode. Row 7 (hooked track message) displays 'C' for each mode cleared: Mode 1, column 33; Mode 2, column 39; and Mode 3, column 45. 'C' display disappears when valid code is received for that mode. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. This alert is not used simultaneously with the IFFDIF alert. If SIF code validation is not active, validity indicator is not displayed

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
84.1	RECEIPT OF EMERGENCY MODE 3 IFF CODE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:IFF EMER (all consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumerics block displays IC ARO - row 7, columns 41 thru 44, hooked track message displays mode 3 emergency code Clear - press CLEAR ALERT Remarks - when alert condition is cleared, track symbol changes to priority unless other alerts exist for this track
84.2	RECEIPT OF HOSTILE NATIONALITY WHEN IN MANUAL ID MODE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:HOST NAT aa' where aa= nationality abbreviation (refer to TM 9-1430-652-10-7) (all consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays WN Clear - press CLEAR ALERT Remarks - occurs upon receipt of, or operator initiation of, an ID change to non-hostile on a track which has a hostile nationality or upon receipt of a hostile nationality for a non-hostile track, when not in AUTO ID or FAKER mode When alert condition is eliminated, track symbol reverts to previous symbology unless other alerts exist for track
84.3	RECEIPT OF NON-HOSTILE NATIONALITY (TRACK HAS OUTSTANDING ENGAGEMENT COMMAND OR NATIONALITY ID CHANGE) Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:NON HOST NAT aa' where aa = nationality abbreviation (refer to TM 9-1430-652-10-7) (all consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays WN Clear - Press CLEAR ALERT Remarks - occurs upon receipt of, or operator initiation of, an ID change to hostile on a track which has a non-hostile nationality, or upon receipt of, or operator initiation of, an engagement command on a track which has a non-hostile nationality, or upon receipt of a nationality change to non-hostile on a track which is under engagement or has a hostile ID. When alert condition is eliminated, track symbol reverts to previous symbology unless other alerts exist for track
84.4	Deleted

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
85	TRACK IN SAFE CORRIDOR ENGAGED BY SUBORDINATE UNIT Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:SAFE CORRID WARN (all consoles when hooked to track) Related data - PPI - track symbol is inside safe corridor and has pairing line. Row 2, columns 2 and 3, track alphanumeric block displays WS ARO - row 2, column 49, hooked track message displays E or I Clear - press CLEAR ALERT Remarks - alert occurs only once for a given track. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track
86	SITE OR LOCAL FU HAS UNKNOWN DATA LINK STATUS Alert light - ATTN REQD (all consoles) PPI alert-non - PATRIOT FU symbol expands and flashes or site symbol flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked FU or site message displays ALERT:COMM-UNKNOWN STAT (all consoles when hooked to FU or site) Related data - PPI - row 2, column 5, non-PATRIOT FU or site alphanumeric block displays U DDG status board - column 5 displays U for non-PATRIOT FU ARO - column 5, non-PATRIOT FU status data displays U. For FUs, row 4, columns 31 thru 37, hooked FU message displays UNKNOWN. For sites, row 1, columns 41 thru 47, hooked site message displays UNKNOWN Clear - press CLEAR ALERT or reestablish ADL Remarks - related data remains until next communications status change is received. For FUs or sites with unknown (missed message status) link status, test messages are sent until communications are reestablished. To set link back to active status, a data update request must be sent. A KPU message will further define communications problems. For a FU link, this alert will be followed by FU OUT OF ACTION

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
87	SITE OR LOCAL FU HAS DATA LINK PARITY ERRORS Alert light - ATTN REQD (all consoles) PPI alert-non - PATRIOT FU symbol expands and flashes or site symbol flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked FU or site message displays ALERT:COMM - PARITY ERROR (all consoles when hooked to FU or site) Related data - PPI - row 2, column 5, non-PATRIOT FU or site alphanumeric block displays P DDG status board - column 5 displays P for non-PATRIOT FU ARO - For FUs, row 4, columns 31 thru 37, hooked FU message displays PARITY and row 4, columns 27 thru 29, the link number. Column 5, non-PATRIOT FU status data displays P. For sites, row 1, columns 41 thru 47, hooked site message displays PARITY and row 2, columns 40 thru 42, the link number. Clear - enter CC100 nn (nn = link number) and then press CLEAR ALERT Remarks - related data remains until next communications status change is received
88	SITE OR LOCAL FU HAS NOISY OR OPEN DATA LINK Alert light - ATTN REQD (all consoles) PPI alert-non - PATRIOT FU symbol expands and flashes or site symbol flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked FU or site message displays ALERT:COMM - NOISY/OPEN (all consoles when hooked to FU or site) Related data - PPI - row 2, column 5, non-PATRIOT FU or site alphanumeric block displays N DDG status board - column 5, displays N for non-PATRIOT FU ARO - for FUs, row 4, columns 31 thru 37, hooked FU message displays NOISY and row 4, columns 27 thru 29, the link number. Column 5, non-PATRIOT FU status data displays N. For sites, row 1, columns 41 thru 47, hooked site message displays NOISY and row 2, columns 40 thru 42 the link number Clear - enter CC100 nn (nn = link number) and then press CLEAR ALERT Remarks - related data remains until next communications status change is received
89	DUAL ENGAGEMENT OF TRACK OR JAM STROBE BY FU AND INTERCEPTOR Alert light - ATTN REQD (all tactical mode consoles) PPI alert - track symbol becomes special (all tactical mode consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT: FU/INT ENGAGED (all tactical consoles when hooked to track or jam strobe) Related data PPI - row 2, columns 2 and 3, track alphanumeric block displays WD Clear - press CLEAR ALERT Remarks - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. When a jam strobe alert condition is eliminated and if no other alert exists for the same jam strobe, the point stops blinking and returns to normal size

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
90	RECEIPT AND AUTOMATIC RETRANSMISSION OF CEASE ENGAGE COMMAND MESSAGE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT: CE NOT REQD, xxn (all consoles when hooked to track or jam strobe) Related data - PP - row 2, columns 2 and 3, track alphanumeric block displays CC Clear - press CLEAR ALERT Remark - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. Cease Engage is automatically retransmitted to all ATDL-1 interfaces reporting engagement on the track except the source. A reply is automatically returned to the originator if required When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
91	RECEIPT AND AUTOMATIC RETRANSMISSION OF HOLD FIRE COMMAND MESSAGE Alert light - AN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) -jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT:HF:NOT REQD, xxn (all consoles when hooked to track or jam strobe) Related data - PP - row 2, columns 2 and 3, track alphanumeric block displays CH Clear - press CLEAR ALERT Remarks - when alert condition is eliminated, track symbol becomes priority with the track alphanumeric block indicating ID unless other alerts exist for same track. Priority is cleared by pressing CLEAR HOLD FIRE; the track symbol reverts to the appropriate one for the track ID. Hold fire command is automatically forwarded to all ATDL-1 interfaces except the source. A reply is automatically returned to originator if required. When a jam strobe alert condition is eliminated and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
92	RECEIPT AND AUTOMATIC RETRANSMISSION OF CEASE FIRE COMMAND MESSAGE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) jam strobe point expands and blinks ARO message alert - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT CF:NOT REQD, xxn (all consoles when hooked to track or jam strobe) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays CF Clear - press CLEAR ALERT

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
92 (cont)	Remarks-when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. Cease Fire is automatically retransmitted to all ATDL-1 interfaces except the source. A reply is automatically returned to the originator if required. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size
93	SUBORDINATE FU HAS SELF-INITIATED AN ENGAGEMENT (BATTALION ONLY) (NOT VALID FOR PATRIOT/LASHE) Alert light - ATTN REQD (all tactical mode consoles) PPI alert - FU site symbol expands and flashes (all tactical mode consoles) ARO message alert - row 8, columns 27 thru 49, hooked FU message displays ALERT:FU SELF INIT ENG (all tactical mode consoles when hooked to FU) Related data - PPI - FU has pairing line. Row 2, column 2, FU alphanumeric block displays status other than O DDG status board - columns 7 thru 11 display track number of engaged track or jam strobe Column. 12 is blank. Column 6 displays FU status other than O ARO - column 6. FU status displays status other than O. Columns 7 thru 11 display track or jam strobe number being engaged. Column 12 is blank. Row 3, column 33, hooked FU message displays FU status other than O. Row 6, columns 27 thru 42 display track number or track being engaged. Column 44 is blank Clear - reassignment of track or jam strobe to FU or press CLEAR ALERT Remarks - FU status will probably be S, T or F and, if so, the PPI displays an engagement marker. FU is considered to have self-initiated an engagement when it is not correlated with an assigned track or jam strobe
94	REMOTE AUTOMATIC TRACK HAS POSITION VALIDATION ERROR BETWEEN REMOTE REPORT AND LOCAL SENSOR DATA (BATTALION ONLY) Alert light - ATTN REQD (all tracking mode consoles) PPI alert - track symbol becomes special (all tracking mode consoles) ARO message alert - row 8, columns 27 thru 49, hooked track message displays ALERT:LOCAL-REMOTE POSN (all tracking mode consoles when hooked to track) Related data - PPI - row 2, columns 2 and 3, track alphanumeric block displays WP Clear - press CLEAR ALERT Remarks - establish voice communications with remote source (ARO, row 3, columns 27 thru 39) and determine correct position; update track position, if necessary. When alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track
95	NO SIF CODES AVAILABLE FOR AUTOMATIC SIF CODE VALIDATION DURING NEXT PERIOD (BATTALION ONLY) Alert light - ATTN REQD (all consoles) PPI alert - own-site symbol flashes (all consoles) ARO message alert - row 8, columns 27 thru 49, hooked own-site message displays ALERT:NO NEXT SIF CODES (all consoles when hooked to own site) Related data - None

Table 1-5. AN/TSQ-73 System Alerts
- Continued

Condition no.	Alert description
95 (cont)	Clear - define SIF codes for next period using CC151 [function] deactivate automatic SIF code validation using CC151 OFF, or allow current SIF code period to expire when automatic SIF code validation will automatically deactivate because no SIF codes are available Remarks = refer to TM 9-1430-652-10-7 for description of SIF codeperiod and timing of this alert
96	TWO OR MORE AUTO TRACKS OF DIFFRING ID HAVE MERGED (BATTALION ONLY) Alert light-ATTN REQD (all tracking mode consoles) PPI alert - symbol becomes special (all consoles) ARO message-row 8, columns 27 thru 49, hooked track message displays ALERT:TRACK MERGE (all consoles when hooked to track) Related data - PPI - Row 2, columns 2 and 3, track alphanumeric block displays WM Clear - CLEAR ALERT or when all but one of merged tracks drop Remarks - when alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track
97	Deleted
98	HEADS UP STATUS RECEIVED ON TRACK OR JAM STROBE Alert light - ATTN REQD (all consoles) PPI alert - track symbol becomes special (all consoles) jam strobe point expands and blinks ARO message alert, - row 8, columns 27 thru 49, hooked track or jam strobe message displays ALERT: HEADS UP (all consoles when hooked to track or jam strobe) Relate data - PPI - row 2, columns 2 and 3, track alphanumeric block displays WU. Row 2, column 2, FU alphanumeric block displays U Clear - press CLEAR ALERT Remarks - hen alert condition is eliminated, track symbol reverts to appropriate one for track ID unless other alerts exist for same track. When a jam strobe alert condition is eliminated, and if no other alerts exist for the same jam strobe, the point stops blinking and returns to normal size

Table 1-6. IFFWAS Alert Generation, Modes 1 and 3A, SIF Validation Active

Received IFF Status / Held IFF Status	Valid	Invalid	No SIF Table Entry
Valid or No Prior Code	No Alert	ALERT	No Alert
Invalid	ALERT	No Alert	ALERT
No SIF Data	No Alert	ALERT	No Alert
Validation Not Active When Code Last Checked	No Alert	ALERT	No Alert

Table 1-7. Mode 4 IFF Alert Generation

Received Mode 4 / Held Mode 4	Not interrogated	No Response	Invalid Response	Valid Response
Not interrogated	No Alert	No Alert	No Alert	No Alert
No Response	IFFDIF Alert	No Alert	No Alert	IFFWAS Alert
Invalid Response	IFFDIF Alert	IFFDIF Alert	No Alert	IFFWAS Alert
Valid Response	IFFDIF Alert	IFFDWF Alert	IFFDIF Alert	No Alert

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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

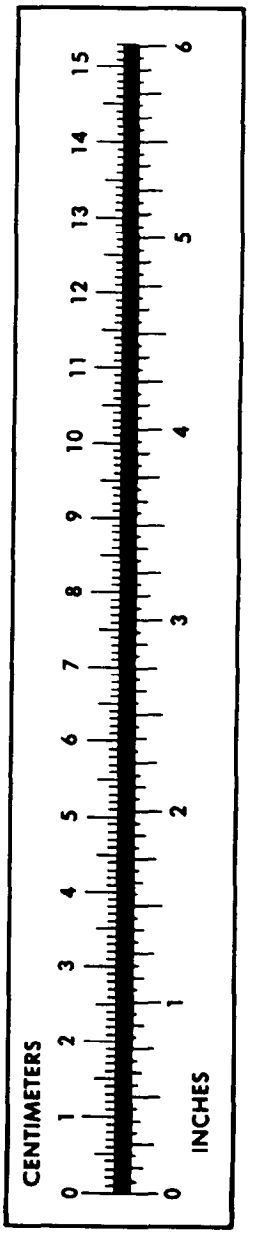
TEMPERATURE

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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