En Route Automation Modernization (ERAM)

Air Traffic Manual (ATM): R-Position User Manual

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Revision History

Revision Number	Date	Comments
SSM-ERAM-124	May 16, 2012	EAC10030 Operational Release delivered under SSM-ERAM-124.
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Preface

The primary audience for this manual is the FAA NOM. This is an R-Position User Manual. The primary audience is an FAA En Route radar controller.

The following table lists the content of the chapters.

Chapter	Name	Description
1	Section 1, *Introduction*	Overview of the manual and R-Position enhancements, hardware, and software.
2	Section 2, *R-Position CHI*	R-Position Computer Human Interface.
3	Section 3, *Managing the Map Display*	Map feature components and their functions within ERAM.
4	Section 4, *Managing Data Blocks*	ERAM data block components and how they are managed.
5	Section 5, *Preference Sets, Drawing Tools & Cursor Menu*	Customizing the display using Preference Sets, Drawing Tools, and Cursor menu.
6	Section 6, *Message Composition, Response, and Update Area Views*	Components and functions for entering messages at the MCA, Response Area (RA), and Update Area.
7	Section 7, *Multiple Commands and Macros*	Entry of single and multiple commands and their storage as macros.
8	Section 8, *Continuous Flight Plan Readout View (CFR View)*	Displaying and managing flight plan readouts and viewing addition remarks and route information.
9	Section 9, *Continuous Range Readout View*	Components for the Continuos Range Readout View including view information list and group panels.
10	Section 10, *Altimeter Setting & Weather Station Report Views*	Components of the Altimeter Settings and Weather Station Report Views.
11	Section 11, *Group Suppression and Conflict Alert Views*	Components for the Group Suppression and Conflict Alert Views.
12	Section 12, *Hold View*	Components and functions of the Hold View.

Chapter	Name	Description
13	Section 13, *Other Views*	Components and functions of the views not covered in the previous chapters.
14	Section 14, *System Status*	Components and functions of the Status View and the Outage List.

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1. INTRODUCTION

1.1 About this User Manual

This chapter introduces the manual and describes the ERAM system and R-Position hardware and software. The major topics are:

- ERAM R-position enhancements
- R-Position Hardware
- R-Position Software

1.1.1 Purpose

The purpose of this document is to provide a reference manual to Air Traffic Control Specialists on how to use the interface features of the En Route Automation Modernization (ERAM) system. The intended audience for this manual is the R-Position Air Traffic Controller.

1.1.2 Symbols and Conventions

The following symbols and conventions are used throughout this manual:

Symbol	Convention
 **CAUTION!**	This symbol warns of a potentially negative unintended consequence of making an entry.
	This symbol indicates an important point that applies to the section preceding it.
	This symbol indicates an alternative method for performing an action.
	This symbol indicates that the keyboard may be used to enter the message.

1.2 ERAM R-Position Enhancements

This section describes the following functional enhancements and capabilities introduced with ERAM in the R-Position:

- Flight Planning Area of Interest (AOI)
- Conflict Alert Processing
- Visual flight Rule Conflicts
- Aircraft Alert Volumes

- Mode C Intruder Alerts
- Enhanced Radar Coverage
- Enhanced Tracking

1.2.1 Flight Planning AOI

ERAM introduces the Flight Planning AOI which is an adapted area outside the Center Boundary within which flight plan data is available from other ERAM facilities. The Center Boundary is also referred to as the Area of Responsibility (AOR). Figure 1–1 shows an example of an AOI.

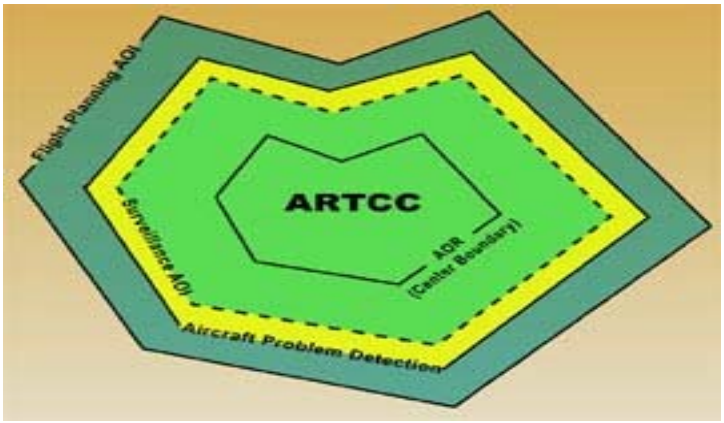

Figure 1–1. Area of Interest

The AOI represents a significant expansion of the availability of flight plan data. Within the flight planning AOI is the Aircraft Problem Detection Area whose boundary defines the area within which the controller will receive conflict probe alerts. Inside the Aircraft Problem Detection Area boundary is the Surveillance AOI.

The Surveillance AOI defines the area where the controller will see targets, safety alerts, and data blocks. ERAM provides the capability to adapt this boundary to cover a much larger area than was possible in Host.

The implementation of the Flight Plan and Surveillance AOI increases the availability of data for controllers. Of most interest to controllers is the Surveillance AOI because, within the Surveillance AOI, controllers can see both flight plans and data blocks for aircraft that pass near, but do not enter their facility.

The AOI allows better preservation of the pairing of the flight plan to the radar track as the flight moves from one facility to the next. Figure 1–2 shows a flight that is moving from Facility B into Facility A and then re-entering Facility B.

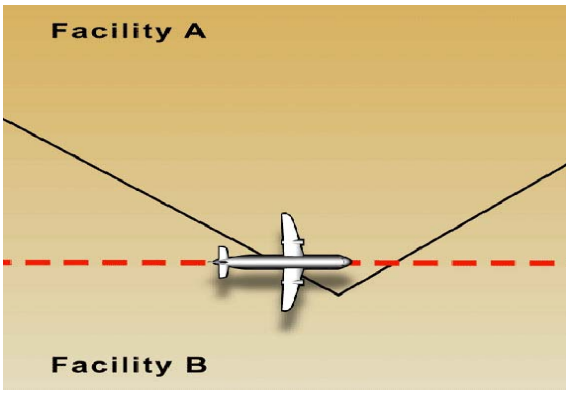

Figure 1–2. Pairing of Flight Plan

ERAM attempts to preserve the pairing of the flight plan to the radar track as the flight moves into the adjacent facility. In most cases, this will eliminate the need to drop the track and then restart the track when the flight re-enters the original facility. In this example, ERAM will attempt to preserve the CID and beacon code of the flight if the time in Facility A is short.

The introduction of AOI has brought about some improvements to handoffs. ERAM allows handoffs to be directed to a sector in an ERAM facility that is not on the flight plan route. This can only be accomplished between two ERAM facilities and the receiving sector must be identified. Figure 1–3 and Figure 1–4 show examples of deviations from the flight plan route. Figure 1–3 shows the flight deviated into Facility C when Facility C was not on the original flight plan route. Figure 1–4 shows the flight deviated into Facility C when Facility C was on the original flight plan route.

Figure 1–3. Deviated Flight #1

Figure 1–4. Deviated Flight #2

With ERAM, the flight can be handed off to Facility B or directly to Facility C in both cases.

Data blocks and flight data are available for aircraft in the AOI. Because ERAM provides continuous updates to the flight data on all aircraft in the AOI, data blocks displayed in adjacent facilities reflect changes made by the controlling facility. Only data blocks forced with a Point Out message from the controlling facility are eligible for Unsuccessful Transmission Message (UTM) service.

Figure 1–5 shows an example of coordination. The Route is based on Aircraft Trajectory when no Adapted Arrival Route (AAR) exists or an AAR is overridden with a splat (*).

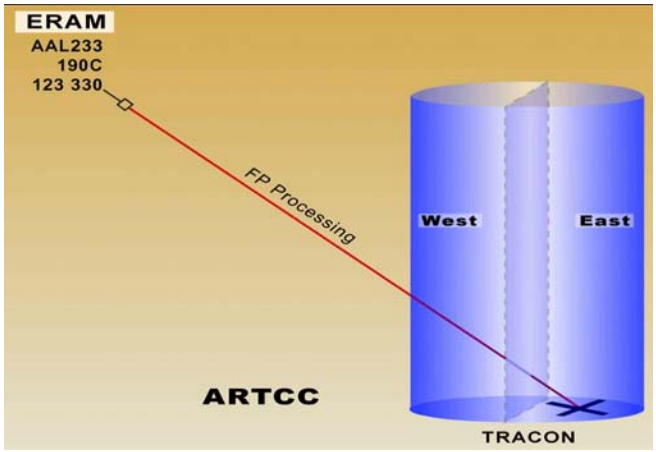

Figure 1–5. Coordination

1.2.2 Conflict Alert Processing

In ERAM, conflict alert (CA) processing uses appropriate separation criteria in its look ahead capabilities to apply alert notifications. Since separation is predicted to be lost in the 5NM separation area, a conflict alert will be generated while the aircraft (UAL12) is still in the 3NM separation area (Figure 1–6).

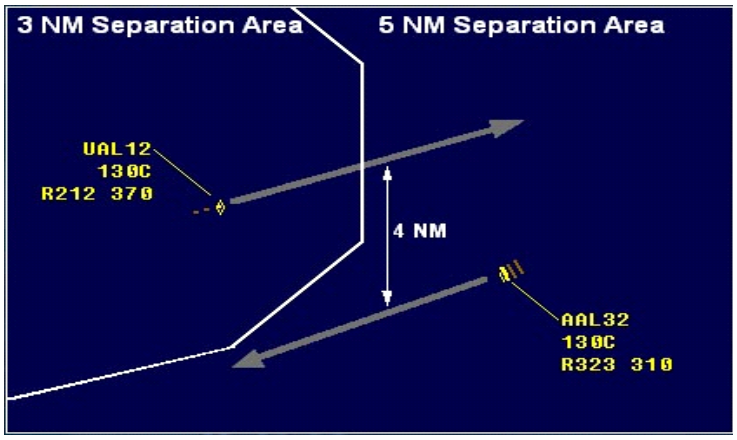

Figure 1–6. Predicted CA in Different Separation Areas

ERAM can also apply a 3-mile, increasing to 5-mile, conflict alert criteria in transitional airspace as shown in Figure 1–7. In this situation, Host will display a conflict alert, but if adapted, ERAM will not.

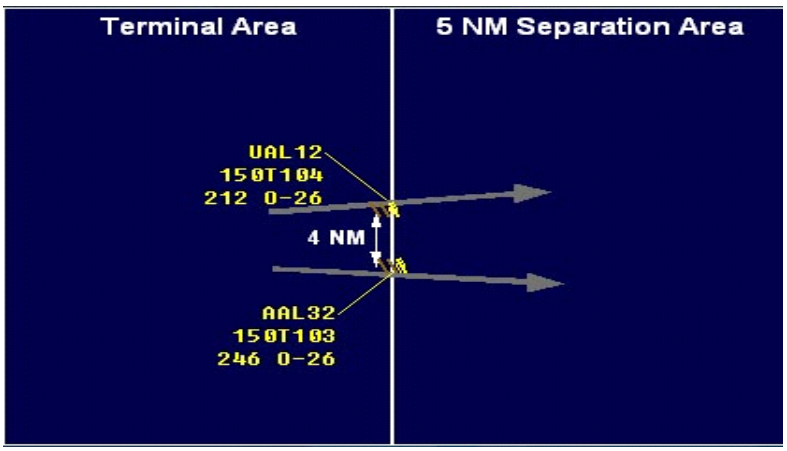

Figure 1–7. Transitional Airspace

If the sector is covered by a Letter of Agreement (LOA) authorizing transitional separation, the system could be adapted to apply transitional conflict alert criteria if the aircraft have at least 3-mile separation that is constantly increasing and the aircraft are on diverging routes or courses or the faster aircraft is in front.

ERAM calculates conflict alerts for a paired aircraft in an adjacent center's airspace even for unannounced boundary conditions (i.e., even if neither of the aircraft is controlled in the local center). If an aircraft enters another ERAM sector without a handoff, whether in the current facility or not, then a Full Data Block (FDB) is forced to that sector. Current ERAM/Host implementations of unannounced boundary conditions are described in Section 1.2.8.

A conflict between the two flights would appear only if a FDB is forced for one of the two (Figure 1–8).

Figure 1–8. Conflict Alerts

ERAM also calculates Enhanced Minimum Safe Altitude Warnings (EMSAWs) for controlled aircraft in adjacent centers. Like conflict alerts, EMSAWs in an adjacent center appear only if an FDB is forced for the flight.

1.2.3 Visual Flight Rule Conflicts

Separate safety alert parameters can be adapted for Visual Flight Rule (VFR) conflicts. For example, the parameter could be set to provide only conflict alerts if the aircraft will be closer than 2 miles. Figure 1–9 shows an example of a Safety Enhancement. Conflict Alert (CA) recognizes the VFR separation criteria.

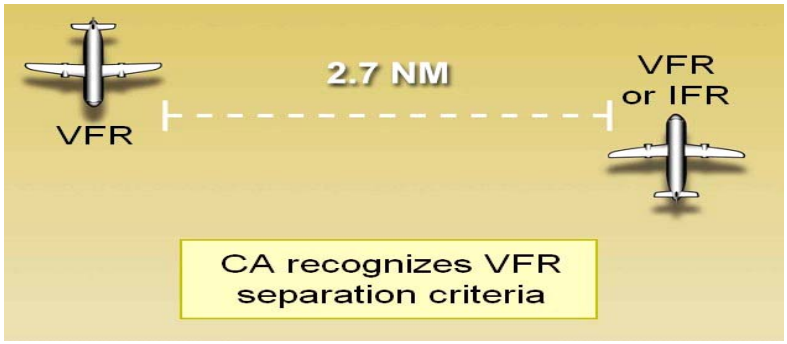

Figure 1–9. Safety Enhancements

1.2.4 Aircraft Alert Volumes

ERAM introduces new adaptable definitions of sections of airspace called Aircraft Alert Volumes or (AAVs) shown in Figure 1–10.

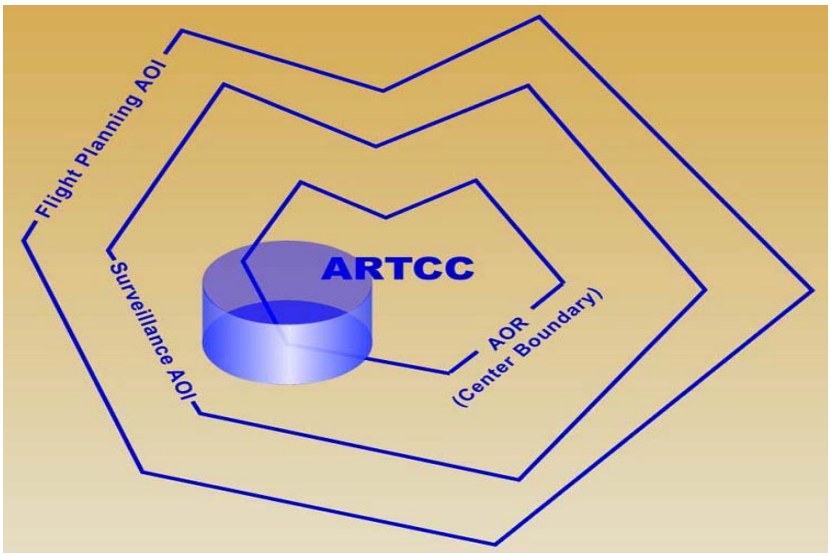

Figure 1–10. Aircraft Alert Volumes

Each AAV airspace can be adapted to have different conflict alert values. This flexibility will improve the accuracy of conflict alerts and will reflect the correct separation criteria; for example, 3 NM vs. 5 NM. This change will reduce nuisance alerts in reduced separation airspace volumes.

1.2.5 Mode C Intruder Alerts

Because ERAM provides better availability of flight data, some conflicts that would have been displayed as Mode C Intruder (MCI) alerts now appear as conflict alerts between two paired aircraft. Figure 1–11 shows an example.

Unlike MCI alerts, all conflict alerts are eligible for operational error detection.

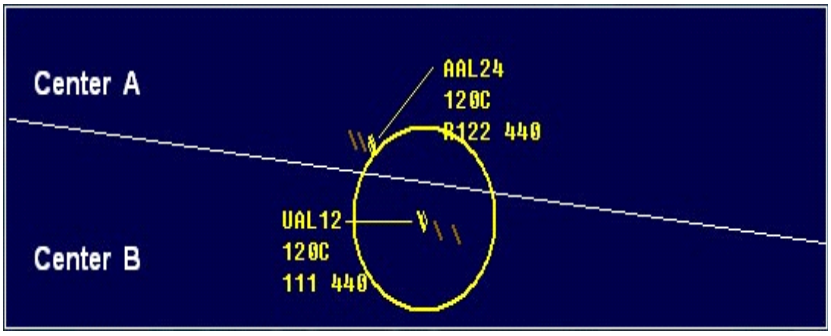

Figure 1–11. Mode C Intruder Alerts

1.2.6 Enhanced Radar Coverage

Radar coverage is enhanced because ERAM provides the ability to adapt an increased number of radars in a center. Figure 1–12 shows an example of ERAM's enhanced radar coverage.

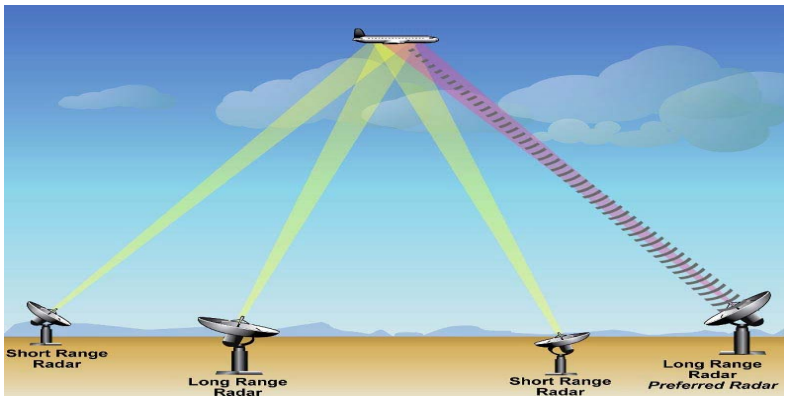

Figure 1–12. Radar Coverage Enhancements

The assignment of supplemental radars to airspace is more flexible in ERAM because ERAM provides the capability to adapt several additional altitude tiers and an increased number of radars in each tier. This flexibility reduces the likelihood a radar target will be missed due to radar outages or incomplete radar coverage. This improved flexibility in the definition of airspace volumes has improved the support for reduced separation areas.

In Host, tracks were updated by quadrant. In ERAM, tracks are updated when the radar data is received. Due to the increased number of radar returns available for any aircraft, in some instances when the preferred radar misses a scan, target updates may occur at different time intervals from a lower priority radar.

1.2.7 Enhanced Tracking and Pairing

ERAM tracks every radar target and attempts to pair each radar track with an active flight plan. If there is a mismatch between the squawked code and the established or assigned code of a target, the data block will “un-pair” from the target and go into coast status (Figure 1–13, Enhanced Radar Tracking and Pairing). The controller can “re-pair” the data block with the target using the “/D” delimiter with the QT command. The "/D" delimiter overrides all system pairing when it is entered.

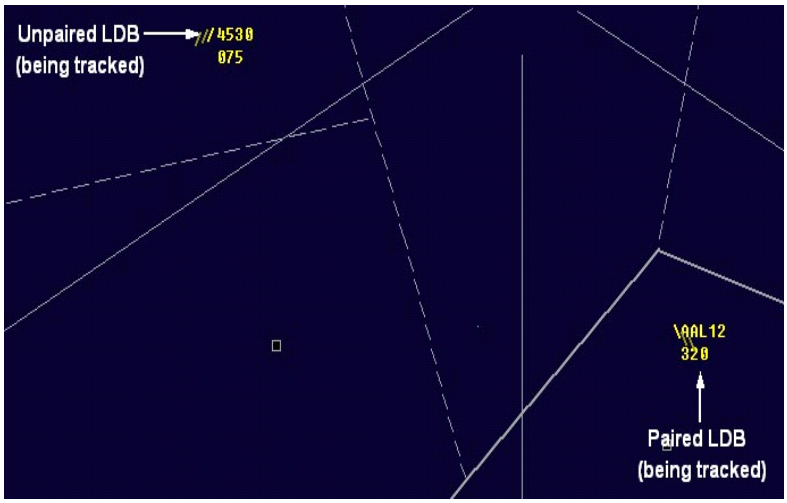

Figure 1–13. Enhanced Radar Tracking and Pairing

There are situations in which radar target returns are supported by beacon data but are not eligible to be automatically converted into a track. Without the track, the corresponding flight cannot be paired. Enhanced tracking and pairing capabilities allow the controller to manually start a track via the QT command. This action “jump-starts” the track and pairs it to the flight.

1.2.8 (Deleted)

1.2.9 Predeparture Flight Plan Amendment

ERAM provides a predeparture flight plan amendment capability to accept reroutes for proposed flight plans and to accept deletion of the protected segment for a proposed or active flight plan. This ERAM enhancement aids in reducing departure delays in that a Traffic Management Coordinator (TMC) from the Traffic Management Unit (TMU) in a local ERAM ARTCC can enter Traffic flow Management (TFM) reroutes into the TFM System for predeparture flights to follow a new traffic flow. These reroutes get forwarded to ERAM and a confirmation of whether the ERAM reroute was implemented is returned to TFM. For example, Figure 1–14, Predeparture Reroute of a Flight, depicts large storm areas in the southwest which are expected to affect flights headed to the southeast. The TMC can enter reroutes for predeparture west-to-east transcontinental flights around the storm areas into their TFM System, which will get sent directly to ERAM.

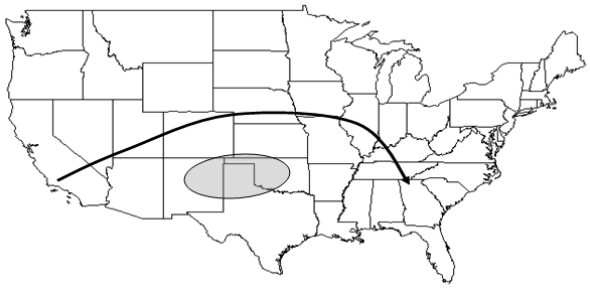

Figure 1–14. Predeparture Reroute of a Flight

The TFM reroute contains a Protected Area where a TMC may elect to override the automated preferential route application in ERAM. The protected portion of the TFM reroute is indicated when the route is displayed or when strips are printed. When a flight is activated, if there is an existing protected reroute area, the protection stays in effect.

Route changes and the Protected Area on a route may coincide, but generally do not. Routes used for TFM reroutes are selected from pre-coordinated routes, like Playbook routes or Coded Departure Routes. These route changes are often complete route replacements or nearly so. The Protected Area of the route is the flight segment that is required by the TFM situation and is determined on a case by case basis by a TFM specialist.

1.3 R-Position Hardware

The ERAM system provides Air Traffic Control Specialists with advanced tools to manage information and to facilitate interacting with the information.

ERAM hardware for the R-Position includes a flat panel screen, which is the main visual interface with the system.

The controller at the R-Position enters commands by using the following hardware:

- Trackball Device
- Keyboard
- Keypad Selection Device (KSD)

1.3.1 Trackball

Figure 1–15 shows the R-Position trackball used to select items from displays and menus to initiate actions.

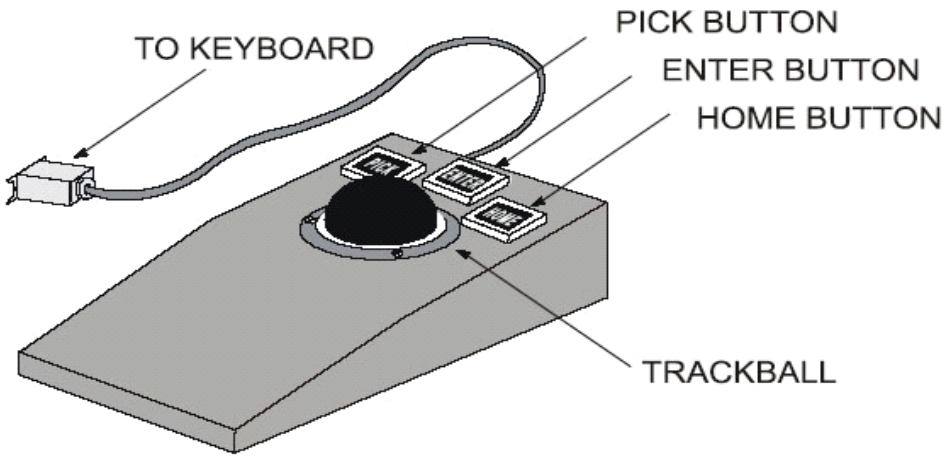

Figure 1–15. Trackball

The R-Position Trackball device contains the following buttons and controls:

- Pick Button
- Enter Button
- Home Button
- Trackball

When pressed (or clicked) and depending on where the controller places it, the trackball cursor can: select an object and echo feedback in the Preview area; or execute an immediate action but feedback does not echo in the Preview area; select points and objects without entering a message; or decrement settings on the display.

When pressed (or clicked) and depending on where the controller places it, the trackball cursor can: select an object, echo feedback in the Preview area and close the message with the contents entered into the system. It can also remove intermediate feedback associated with the message under composition or equate the functions of left-click followed by pressing the keyboard ENTER key to execute an immediate action (feedback is not echoed in the Preview area nor entered into the system), or increment settings on the display.

When the controller presses or clicks the Home button, it may position the trackball cursor in the Vector pick area; or (if held down), move the trackball cursor to a trackball cursor location with each successive middle-click in the following sequence: the Range pick area, the adapted trackball Home position, the Velocity Vector pick area.

The Trackball device moves the trackball cursor on the R-position display. The trackball wraps on the display screen in both horizontal and vertical planes. Trackball travel speed and font size are specified by controller.

1.3.2 Keyboard

Figure 1–16 shows the R-Position Keyboard which has two sets of keys to enter computer messages: Category keys and Function keys.

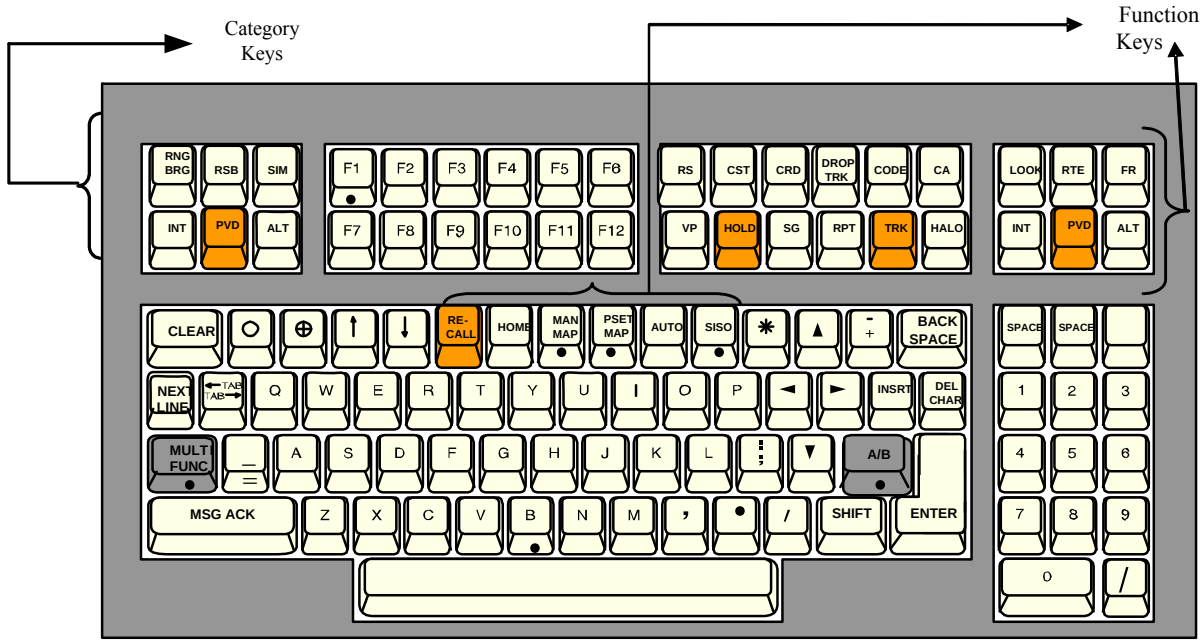

Figure 1–16. R-Position Keyboard

There are 24 hard-labeled function keys and a set of category keys used to enter system messages. Some of the keycap identification features include:

- PVD: Raised keycap, orange
- HOLD: Orange
- TRK: Orange
- RECALL: Orange
- MAN MAP: A black dot centered on the slope of the key

- PSET MAP: A black dot centered on the slope of the key
- SISO: A black dot centered on the slope of the key
- MULTI FUNC: Dark gray with a black dot centered on the slope. With this key, the user can switch between Channel A and Channel B by holding down the Multi-Func key and then pressing the A/B key.
- A/B: Dark gray and a black dot centered on the slope
- B: A black dot centered on the slope of the key

NOTE: Keys with a black dot centered on the slope require the controller to simultaneous press the key and the Multifunc key.

1.3.2.1 Facility Adapted Keys

Only three keys, which are facility adapted, can temporarily override the data displayed on the 4th line of an FDB. When the controller presses and holds these keys, the current data on the 4th line is replaced with:

- Aircraft Data
- Destination Data
- Heading/Speed/Free Form text

Each of the FDB 4th line override keypad keys used to display data in the 4th line of the FDB is associated with a keypad key through adaptation.

1.3.2.2 Hard-Labeled Function Keys

The most commonly used messages are input using labeled function keys. The two types of hard-labeled function keys are: Immediate action (Table 1–1) and Non-Immediate action. Immediate Action keys invoke the associated action when pressed. Actions mapped to them do not have a typed equivalent; therefore, a message abbreviation is not echoed in the Preview area. Actions associated with these keys can be invoked while another message is being composed.

Table 1–1. Immediate Action Hard Function Keys

Key	Function
CLEAR	Clears the content of the Message Composition Area
RECALL	Recalls previous messages entered into the system to be redisplayed in the Preview area
MSG ACK	Acknowledges queued messages in the Update Area View at the RA-Position and clears the RA at the R-position
MULTI-FUNC plus PSET MAP	Key combination for map offset
MULTI-FUNC plus MAN MAP	Key combination for map offset
MULTI-FUNC plus A/B	Key combination to switch channels

Table 1–1. Immediate Action Hard Function Keys (Continued)

Key	Function
MULTI-FUNC plus departure arrow key	Increments chime or alarm volume at RA- and A-positions
MULTI-FUNC plus arrival arrow	Decrements chime or alarm volume at RA
MULTI-FUNC plus “B” character	Key combination to set brightness settings to the initial preset values
MULTI-FUNC plus “T" character	Key combination to display a test alignment pattern
MULTI-FUNC plus “K" character	Key combination to display the Input Device Test pattern
MULTI-FUNC plus SISO	Key combination to display “SO" in the Preview area
HOME	Key that positions the trackball cursor on a pick area or to an adapted home position

Non-Immediate Action keys can be adapted to correspond either to part of a message or to a complete message. This ability is facility adaptable for the R-position only. If the controller presses a function key that corresponds to part of a message, the ERAM system responds by:

- Clearing the contents of the Preview area.
- Echoing the text associated with the function key in the Preview area.
- Advancing the keyboard cursor to the second character position after the last character that is echoed in the Preview area.

If the controller presses a function key that corresponds to a complete message, the ERAM system responds by:

- Clearing the contents of the Preview area.
- Echoing the text associated with the function key in the Preview area.
- Processing message as if the ENTER key had been pressed (that is, displays and emphasizes the “BUSY" indicator and locks the Preview area).

If “SI” is adapted to a function key, and the controller presses it simultaneously with MULTI-FUNC, ERAM:

- Clears the contents of the Preview area.
- Displays the characters “SO" in the Preview area.
- Advances the keyboard cursor to the second character position after the last character that is echoed in the Preview area.

NOTE: After the function key is pressed, an Enter key must be pressed to invoke the message.

1.3.2.3 Category Keys

The R-position keyboard supports two types of category keys: those associated with a list of messages (Category Function Menu) and those associated with checklists such as the Position Relief Checklist.

Category function menus contain a list of messages that the controller may select to execute. Only one message can be selected in a category function menu at a time and only one message can be adapted as the default (prime) for that category.

To display a category Function menu:

1. Press the **Category** key (for example RNG BRG) on the keyboard, OR left/middle-click the **COMMAND MENUS** button.
2. Left/middle-click one of the category function menu buttons (for example RNG BRG).

When the controller has selected a category function menu from the COMMAND MENUS menu in the Master Toolbar or from the category keys on the keyboard, the following occurs:

- A category function menu containing a list of messages is displayed next to the Category Function menu in the toolbar or above the Preview area if selected via a category key on the keyboard.
- The echo text that is associated with the default function replaces the contents of the Preview area.
- The keyboard cursor is placed at the second character position after the last character in the Preview area.

To select a category function Menu Message:

1. On the keyboard press one of the category function keys (F1-F10) that is associated with a specific message OR
2. Left/middle-click one of the messages in the category function menu.

NOTE: Category menus that contain only one message do not display a category menu when selected.

If a category function menu is selected when a category function menu is already displayed, the Preview area is cleared, and the keyboard cursor is placed in the first position of the Preview area.

When a message is selected from a category function menu, the echo text that is associated with the selected message replaces the contents of the Preview area and the keyboard cursor appears at the second character position after the last character in the Preview area.

Table 1–2 lists Keyboard categories for references.

Table 1–2. Keyboard Categories

Keyboard Category Key	COMMAND MENU Button Category Button	Checklist Button	Function	Function Key (F1-F12)	Message Abbrev Echoed in Preview Area
RNG BRG	RNG BRG				
			Range/Bearing	F1	LA
			Range/Bearing/Fix	F3	LB
			Fix/Time	F5	LC

Table 1–2. Keyboard Categories (Continued)

Keyboard Category Key	COMMAND MENU Button Category Button	Checklist Button	Function	Function Key (F1-F12)	Message Abbrev Echoed in Preview Area
			RTE Fix/TME RO	F7	LD
			RTE Speed Adj	F9	LE
			Continuous Range Readout	F10	LF
RSB	RADAR				
			RSB Readout	F1	KA
			TB Coordinates	F3	KB
INT	INT				
			Interim Altitude		QQ
PVD	PVD				
			PVD		QP
ALT	ALT				
			Assigned Altitude		QZ
		POS CHECK			
			S/A		
			NAVAIDS		
			RADAR		
			AIRPORT STATUS		
			FLOW CONTROL		
			WEATHER		
			NON-STANDARD CONDITIONS		
			SECTOR CONFIGURATIONS		
			TRAFFIC		
		EMERG CHECK			
			AIRCRAFT ALTITUDE		
			FUEL REMAINING IN TIME		

Table 1–2. Keyboard Categories (Continued)

Keyboard Category Key	COMMAND MENU Button Category Button	Checklist Button	Function	Function Key (F1-F12)	Message Abbrev Echoed in Preview Area
			PIREP EX/CPBLTY FOR IFR		
			DEP & DESTN POINTS		
			LAST KNOWN PSN		
			HEADING & AIRSPEED		
			NAVIGATION EQUIPMENT		
			NAVAID SIGNALS RECEIVED		
			VIABLE LANDMARKS		
			ACFT COLOR/SOB/EG		

1.3.3 Keypad Selection Device

The Keyboard Selection Device (KSD) is referred to as the keypad (Figure 1–16). It is used to change the Situation Display range, velocity vector settings, and a subset of the display filter settings. The KSD:

- Has nine filter buttons labeled K1 – K9 on the front of the keycaps.
- Has four vector and range increase and decrease buttons.
- Operates independently from the trackball.
- Has filter buttons that enable immediate action commands which toggle a subset of the Situation Display filters on and off.
- Can change the Situation Display range, velocity vector settings, and a subset of the display filter settings.
- Can temporarily override the data displayed in the 4th line of the FDBs.
- Is mounted on the RA-console but logically connected to the R-position so it can toggle display filters on the R-console.
- Supports incrementing and decrementing the Situation Display range and velocity vector length for all FDBs. (These keys are not adaptable.)

NOTE: The keypad and the keyboard are logically different input devices. The keypad has no keys that automatically repeat and does not require multiple keys to be pressed at the same time.

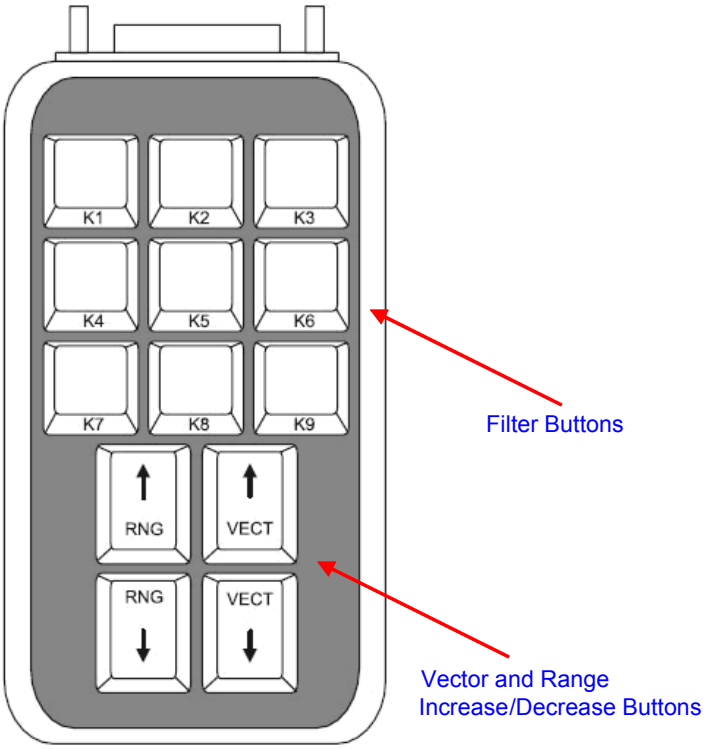

Figure 1–17. Keypad

1.3.3.1 KSD Controls

Each of the nine filter buttons on the keypad is associated with one of the Situation Display filter buttons through adaptation. If the controller:

- Selects a filter key, the button to which it is assigned toggles between on and off.
- Selects a filter key that is unassigned to a Situation Display filter button, the key selection is ignored; no tone will sound.
- Attempts to increment the range or velocity vector when the function is at its highest setting or to decrement it when at its lowest setting; no tone will sound.
- Tries to increment or decrement the velocity vector when the distance vectors are enabled; no tone will sound.

1.3.4 Loudspeaker Panel Assembly

Figure 1–18 shows the Loudspeaker Panel Assembly (LPA).

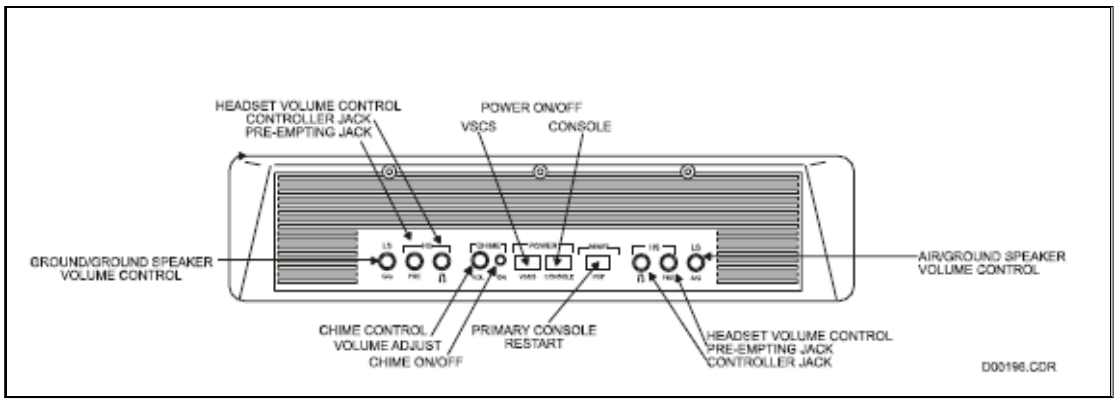

Figure 1–18. Loudspeaker Panel Assembly

The loudspeaker contains two speakers. One speaker is used to receive Ground-to-Ground (GG) interphone messages. The other is for Air-to-Ground (AG) radio messages. Both speakers are part of the Voice Switching and Control System (VSCS).

The LPA Switches are used to:

- Turn power on and off to the VSCS equipment.
- Turn the chime feature on and off for the headset.
- Turn power on and off to the console.

The LPA switches are shielded to prevent inadvertent activation. If the VSCS power is shut off unintentionally, access to the VSCS will be lost for several minutes.

The LPA controls adjust the volume for the loudspeakers, headsets, and chime at the console.

1.3.5 Flight Strip Printer

The RA-Position Flight Strip Printer (FSP) is a thermal printer that uses a fanfold paper supply and cuts the paper after each strip is printed. It does not use a printer ribbon or ink supply. Figure 1–19 shows a Flight Strip Hopper/Printer.

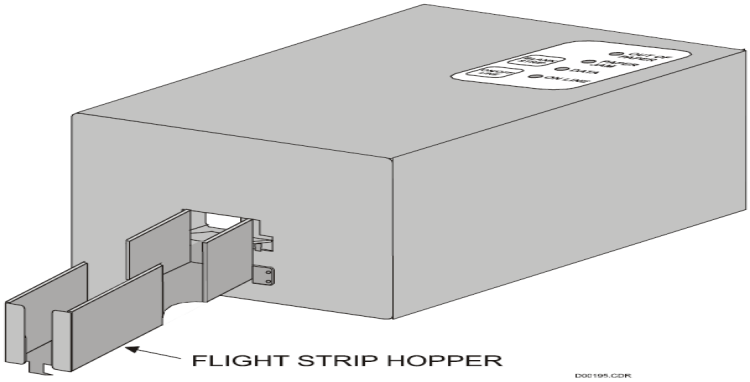

Figure 1–19. Flight Strip Hopper/Printer

The FSP has a printer enclosure to house the strip printing mechanism. A strip receptacle tray is at the front of the FSP, which receives the printed flight strips. Printer paper is fed from the back of the printer.

The power supply of the FSP is located inside the main display monitor enclosure. The FSP itself is located on the console shelf.

The FSP receives data and produces a flight strip. The strips are printed and dispensed one at a time. Each strip is cut by a mechanism inside the printer and then ejected into the strip receptacle tray.

The FSP prints in black or shades of black, but not in color. It uses shading and boxing to draw attention to different parts of the strip. The AID field can be boxed, shaded, or inversed imaged. Boxing, shading, and inverse imaging are site adaptable. Figure 1–20 shows four examples of flight strips.

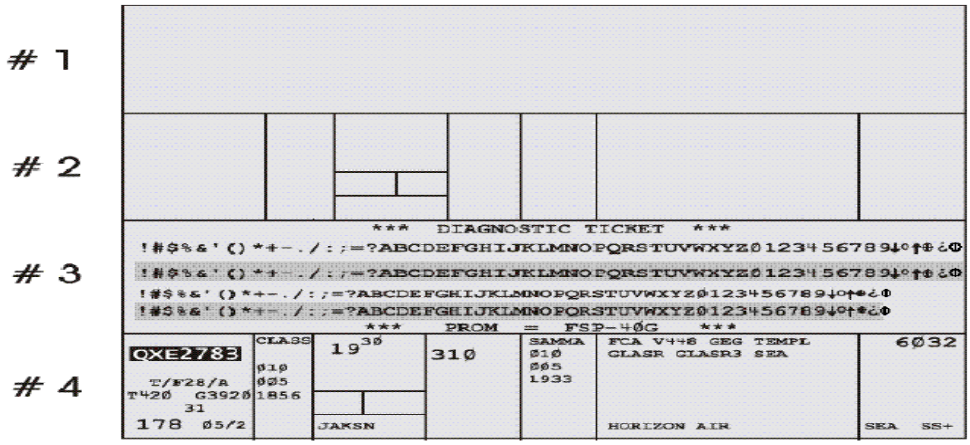

Figure 1–20. Flight Strip Examples

#1 Blank Strip	Dispensed by pushing the Blank Strip switch while offline.
#2 Format Strip	Printed by pushing the Blank Strip switch while online.
#3 Diagnostic Strip	Printed by depressing and holding the ON/OFF line switch and pushing the Blank Strip Switch.
#4 Flight Strip	Flight progress strip.

Multiple text strips have two sets of numbers (sequence and strip) printed on one end of the strip perpendicular to the strip text.

- The strip number shows the order of a multiple strip message. It is a discrete sequence number for each set of multiple strips, from 1 to 999.
- The sequence number distinguishes between multiple-strip text messages. The first number is the location of the strip in the sequence and the second number is the total number of strips in the set.

Figure 1–21 shows an example of sequence numbers on multiple text strips. Each strip in the figure would contain data similar to that shown in Strip #1.

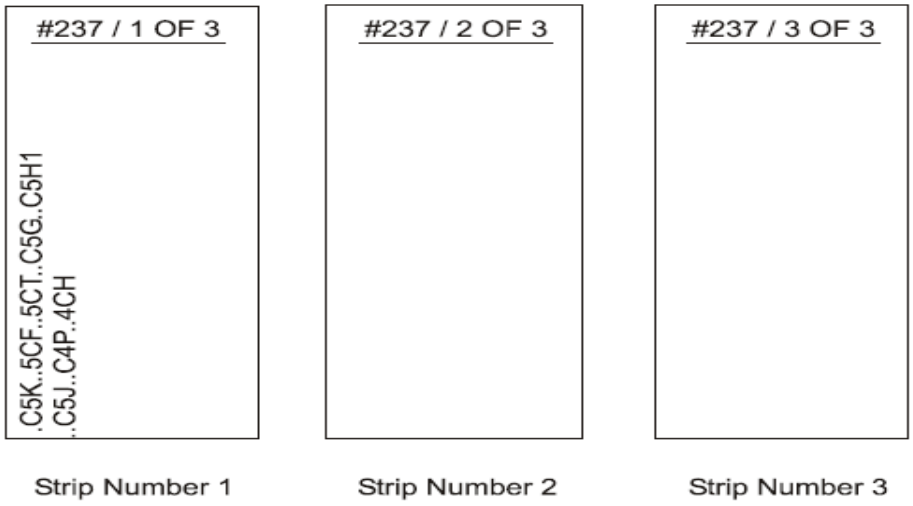

Figure 1–21. Sequence Number Example

1.3.5.1 FSP Controls and Indicators

There are four status lights and two control buttons located on top of the printer. The four status lights indicate the following functions:

- Out of Paper: When lighted indicates the printer is out of paper.
- Paper Jam: When lighted indicates there is a paper jam in the printer.
- Data: When lighted indicates the printer is receiving data.
- Online: When lighted indicates the printer is online and ready to receive data.

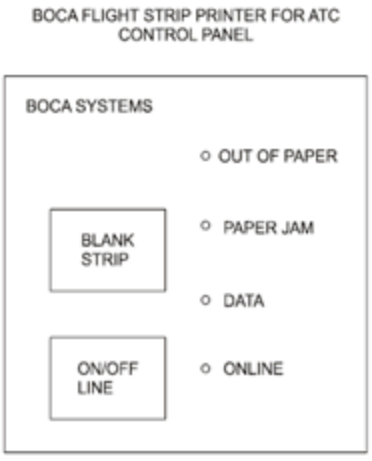

Figure 1–22. BOCA Flight Strip Printer for ATC Control Panel

The two control buttons control the following functions:

- ON/OFF Line control button: Pressing this button takes the printer offline or puts it online as indicated by the status light.
- Blank Strip control button: Pressing this button produces a blank strip with field separator lines when the printer is online and a blank strip with no lines when the printer is offline.
- Pressing both control buttons simultaneously produces a diagnostic strip.

Figure 1–22 shows a BOCA flight strip printer for ATC control panel.

1.3.5.2 FSP Paper

Flight strip paper is available in a cardboard box that opens from the top. To refill the printer with flight strip paper, take the following steps:

1. Make sure printer is on and empty of flight strip paper. The OUT OF PAPER status light should also be on.
2. Remove all printed strips from the flight strip hopper to prevent jamming when loading the paper.
3. Open the flap on the top of the flight strip paper cardboard box and remove the long flap from the top of the box, leaving the two side flaps open.
4. Take the first flight strip from the box and turn the box so the green side of the paper is up and the red arrow feed direction on the bottom side of the paper is pointing toward the printer.
5. Keeping the same alignment, insert the box into the tray behind the printer (the side flap on the box of paper acts as a guide for the strips).
6. Insert the first flight strip from the box into the white plastic slot opening located in the back of the printer.
7. Make sure the green side is facing up and the feed direction side is inserted first.
8. Manually push the paper into the printer until the printer automatically advances the paper.
9. Press the **BLANK STRIP** button on the printer panel to advance one strip through the printer (the blank strip aligns the cutting mechanism for strip ejection).
10. Press the **ONLINE** button and make sure the “Online” green light comes on.
11. The printer is now online and ready to receive strips for printing.

1.4 R-Position Software

This section describes the R-Position software features.

The R-Position main visual interface shows an example of the R-Position display and toolbars (Figure 1–23).

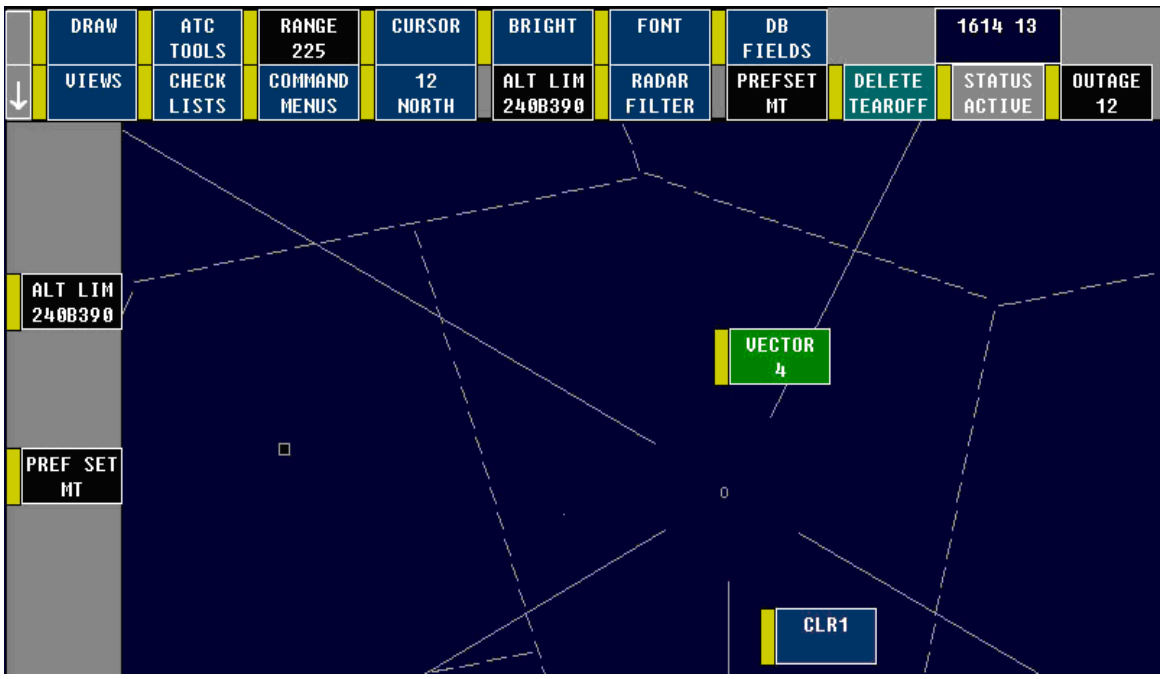

Figure 1–23. R-Position Interface

The system provides flexibility in setting up the display to support the unique operational requirements of each sector:

- Customizable toolbars that contain buttons specified by the controller.
- Tear-off buttons that allow controller placement of frequently used tools.
- Tear-off sublists that enable efficient placement of list information elements. For example, altimeter setting information can be positioned to correspond with the geographic location of the reporting station.
- Interactive views: for example, the Hold View can be used to quickly generate hold messages.
- The ability to record “macros.” A “macro” records a series of frequently used commands so that with one click all the specified commands are entered.
- An audible alarm that emits a 700Hz non-repeating tone for .5 seconds to indicate input errors.

1.4.1 Error Checking Features

Messages entered with the Trackball Enter button or the keyboard ENTER key are checked for the following errors:

- Syntax and format
- Source legality
- Semantic

1.4.2 Syntax and Format Checking

Syntax checking detects illegal characters. Format checking verifies that the required parameters are present and in the correct sequence. Format checking also verifies that the values entered for a parameter are within the required range.

Error messages for syntactic errors in messages appear in the Feedback Area. The system stops error checking as soon as it detects the first error in a message. The message in error is not retained in the Preview area. Press the **Recall** key to display the message in error in the Preview area in order to correct it and resubmit it.

1.4.3 Source Legality (R-Position Only)

A source legality error is generated when the system detects that the controller is not authorized to enter the message. Source legality error messages are displayed in the Feedback Area. The system stops error checking as soon as it detects the first error in a message. The message in error is not retained in the Preview Area.

1.4.4 Semantic Checking

Semantic checking determines whether the current state of the system allows the message to be performed. If not, the system generates a semantic error. An example of a semantic error is an attempt to See All a sector that is also performing a See All. Semantic error messages are displayed in the Feedback Area. The message in error is not retained in the Preview Area.

1.4.5 User Passwords

The default for the security function is set to disabled; however when this function is enabled, ERAM requires controllers to be identified and authenticated through a logon and password process. The system stores a controller ID and password for each controller to access the system.

ERAM uses two types of passwords: strong and simple. Strong passwords are used to log in to the system. They must begin with five alphanumeric characters and contain 8-12 characters (2 numeric, 2 alphabetic, and 1 special). Strong passwords cannot match any of the controller's five previous strong passwords.

Simple passwords are used to save and delete preference sets. Initially, the first 5 characters of the controller's strong password are established in the controller's profile. Strong Passwords are only valid for an adapted number of days (1-999).

To change the Strong password:

1. Log on to an ERAM Position.
2. Type the message abbreviation **LI** and the controller ID.
3. Type the crew number and sign-in indicator (**SI**); this is optional, however, if done, the controller must enter both, not one or the other.
4. Press the keyboard **ENTER** key.

When a controller enters a valid controller ID for an authorized position, the following three-line password prompt appears in the Feedback Area view:

ENTER PASSWORD - OR TO
CHANGE PASSWORD ENTER
CURRENT/NEW/NEW

When the password prompt appears, type:

1. The current strong password.
2. A forward slash (***/***).
3. The new strong password.
4. A forward slash (***/***).
5. The new strong password again and press **ENTER**.

An example sequence follows:

- LI CS 6 SI.
- Press **ENTER**.
- EAGLE+213/JBOND+007/JBOND+007.
- Press **ENTER**.

After a successful change, the system displays the following message in the MCA Feedback Area: PASSWORD CHANGED -<user id> LOGGED IN. Before a password expires, the controller receives a warning message in the RA View: CURRENT PASSWORD WILL EXPIRE IN <d> DAYS. The letter “d” indicates the number of days.

To change the simple password, use the Password (PW) message. To change the Simple password:

1. Type the message abbreviation **PW** and your User ID and then press **ENTER**.
2. When the password prompt appears, type:
    a. The current password.
    b. A forward slash (***/***).
    c. The new password.
    d. A forward slash (***/***).
    e. The new password again and press **ENTER**.

When the PW message is successfully entered, the controller’s simple password is changed.

1.4.6 Security Messages

The default for the security function is set to disabled. ERAM uses the following four security messages:

- Console User Status

- Log In
- Log Out
- User Profile

The Console User Status message allows the controller to view controller ID and the date and time which the controller logged in the system. To request a console user status readout:

1. Type the message abbreviation **CU**.
2. Press **ENTER**.

Table 1–3 lists the Log In security messages and their error messages.

Table 1–3. Log In Failure Messages

Log In Failure Message	System Response
An invalid password is entered	LOG IN FAILED-INVALID INPUT in MCA Feedback Area
A user tries to log in to a position he/she is not authorized	<used id> NOT AUTHORIZED FOR THIS POSITION in MCA Feedback Area
The entered user ID does not match an existing user ID	LOG IN FAILED-INVALID INPUT In MCA Feedback Area
A user tries to log in and the password has expired	YOUR PASSWORD HAS EXPIRED. YOU MUST CHANGE IT NOW Appears in MCA Feedback Area

The default for the security function is set to disabled; when the function is enabled, the Log Out security message indicates to the system that the controller is no longer accountable for message entries made at the position indicated.

The User Profile (UP) security message displays a readout of a controller's profile in the RA. It can also be used to add, modify, or delete a controller's profile. To display a readout of a controller's profile:

1. Type the message abbreviation **UP**.
2. ENTER User ID.
3. Press **ENTER**.

Example Sequence:

- UP MT
- Press **ENTER**.

The controller profile is displayed in the RA. An example of the resulting readout is as follows:

MT R

PASSWORD EXPIRES 09/15/08

A controller's position designator and password can be modified. To modify either of these:

1. Type the message abbreviation **UP**.
2. Enter User ID.
3. Type the position designator abbreviation **P**, and one or more new position designators R,D,A,S (where R = Radar, D = Data, A = Assistant, S = Supervisor).
4. Press **ENTER** (The password prompt displays).
5. Type the new password/new password (password not echoed).
6. Press **ENTER**.

Example Sequence:

- UP P MT R D
- Press **ENTER** (password prompt displays).
- JBOND+007/JBOND+007
- Press **ENTER**.

To modify a User's Position designators only:

1. Type the message abbreviation **UP**.
2. Enter User ID.
3. Type one or more new position designators.
4. Press **ENTER**.

Example Sequence:

- UP MT R D
- Press **ENTER**.

1.4.7 User Profiles

Use the following steps to add a controller profile:

1. Type the message abbreviation **UP**.
2. Type the user profile abbreviation **A**.
3. ENTER User ID.
4. Type the new position designators.
5. Press **ENTER** (password prompt displays).
6. Type the new password/new password.
7. Press **ENTER**.

Example Sequence:

- UP A MT R

- Press **ENTER**.
- JBOND+007/JBOND+007
- Press **ENTER**.

To delete User Profile data:

1. Type the message abbreviation **UP**.
2. Type the delete abbreviation **D**.
3. Enter User ID.
4. Press **ENTER**.

Example Sequence:

- UP D MT
- Press **ENTER**.

NOTE: When the User Profile message is used to read out a controller's profile, the User ID, the position designators, and the expiration date of the strong password are displayed in the RA.

When a controller profile is modified, the following message is displayed in the MCA Feedback Area, indicating that the modification was successful: PROFILE FOR USER <user ID> MODIFIED.

When a controller profile is deleted, all controller profile data, including the controller ID, is deleted from ERAM and the following message is displayed in the MCA Feedback Area, indicating that the deletion was successful: PROFILE FOR USER <user ID> DELETED.

When a controller profile is added, the controller data specified is added to ERAM and the following message is displayed in the MCA Feedback Area, indicating that the addition was successful: PROFILE FOR USER <user ID> ADDED.

1.4.8 Logging In and Out

Log In messages indicate to the system that the person logged in is accountable for message entries made at the console position where the Log In message was entered.

There are several conditions associated with the Log In function:

- Only one controller at a time can be logged in to a given ERAM position.
- A controller can log into multiple consoles (user must be authorized and have a valid controller ID and password).
- If security is enabled (default is disabled) and no one is logged in at the console:
  - The keypad and trackball will be locked.
  - The keyboard can only be used to enter a Log In message (all others will fail).

- A controller can only log in to a position only if that controller's profile contains the correct position designator (ex. R, D, A).
- The Log In message can also be used to change the controller's password.

To log into an ERAM position:

1. Type the message abbreviation **LI** and the User ID.
2. Press **ENTER**.

NOTE: Typing the crew number and sign-in indicator (SI) are optional, but a controller must enter both, not one or the other.

When a controller enters a valid User ID for an authorized position, the following three-line password prompt is displayed in the Feedback Area view:

```
ENTER PASSWORD - OR TO
CHANGE PASSWORD ENTER
CURRENT/NEW/NEW
```

Upon receiving the password prompt in the feedback area, type the current strong password (password not echoed) and press **ENTER**.

After a successful login the following conditions occur:

- The trackball, keypad, and keyboard are enabled.
- The system accepts the entry of all messages adapted for that particular position from each input device.
- The system displays the following message in the MCA feedback area:
  - — <user id> LOGGED IN
  - — The Log In History Pop-up Window is displayed.

An example sequence follows:

- LI CS
- Press **ENTER**.
- EAGLE+213 (password is not echoed)
- Press **ENTER**.

Figure 1–24 shows an example of a Log In History Pop-up window.

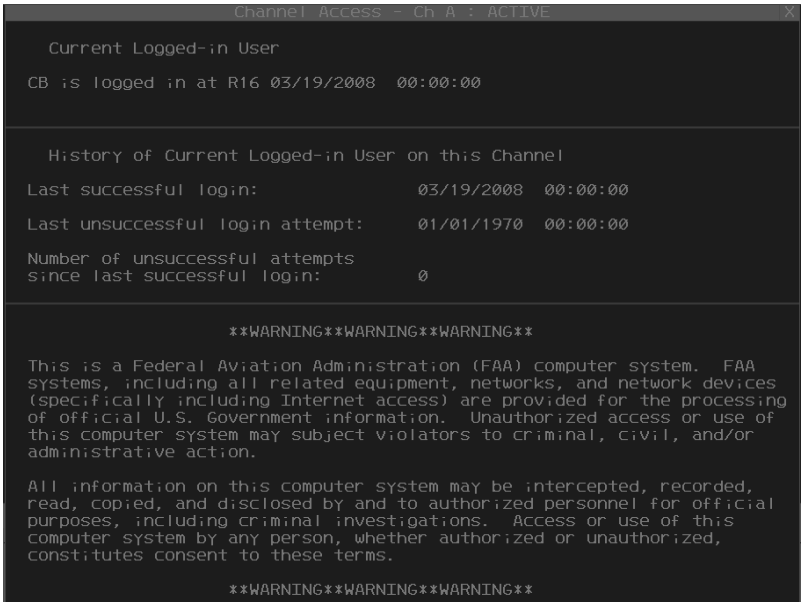

Figure 1–24. Log In History Pop-up Window

To log out from an ERAM position:

1. Type the message abbreviation **LO** and the controller ID.
2. Press **ENTER**.

Example Sequence:

- LO MT 5 SO
- Press **ENTER**.

NOTE: Typing the crew number and sign-out indicator (SO) are optional, but the controller must enter both, not one or the other.

When a controller logs out from a position, the keypad and trackball are disabled and the following message is displayed in the Feedback Area view: <user id> LOGGED OUT.

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2. R-POSITION CHI

This chapter describes the ERAM R-Position Computer Human Interface (CHI). The major sections are:

- Buttons
- Toolbars
- Tear-offs
- Managing Views

2.1 Buttons

Buttons enable the controller to navigate throughout ERAM. Buttons are grouped on toolbars or strategically placed on the display. Color-coding defines functions and the attributes of their associated view or activity.

2.1.1 Button Types

ERAM supports the following types of interactive buttons:

- Menu buttons are used to display/suppress a toolbar menu.
- Toggle buttons are used to display/suppress data on the display. They are selected by left- or middle-clicking the trackball device. When data associated with the toggle button is not displayed, selecting the toggle button displays the data; when data is displayed, selecting the toggle button suppresses the data.
- Increment/decrement buttons are used to set the value of an attribute that is associated with the button (such as font size, brightness, and length). To increment a value, the controller must use the trackball to middle-click the setting; to decrement a value, the controller must use the trackball to left-click the setting.
- Command buttons are used to start the composition of a command (for example, DELETE TEAR-OFF button, DEL annotation button, create a circle annotation button, recorded macro button). Command buttons toggle between activated and deactivated when selected.
- Tear-off buttons are used to customize the display by placing buttons in a controller-specified location. These buttons are anchored to the Situation Display map coordinates or to the display coordinates. Buttons that can be torn-off have a gold bar on the left side of the active button. Only one tear-off copy of a button can be made.

2.1.2 Button Types and Background Colors

Table 2–1 lists the types of buttons and their background colors.

Table 2–1. Button Colors

Name	Background Color	Sample Button	Meaning
Menu Buttons	Blue		The Toolbar menu is closed.
	Brown		The Toolbar menu is open.
Toggle Buttons	Black		The view or feature is not currently displayed.
	gray		The view or feature is currently displayed.
Increment/ Decrement Buttons	Green		Increments or decrements the indicated feature.
Command Buttons	Teal		Executes a command (deactivated)
	Burnt Coral		Activated command

Table 2–2 lists the color coding definitions.**xxxx**

Table 2–2. Color-Code Definitions

Color	Description
Blue	• NEXRAD weather low (level 1) • The background of the parent menu bar buttons when the associated toolbar is closed • The Situation Display background
Cyan	NEXRAD weather high (level 3)
Blue-Cyan	NEXRAD weather medium (checkered pattern, level 2)
Teal	Background for an unselected command button

Table 2–2. Color-Code Definitions (Continued)

Color	Description
Yellow	• FDBs • Target symbols and target history symbols • Route display • LDB text, halos, EMSAW text and penetration vector • R-position D-CRD view MWL indicator text when emphasized • Continuous Range Readout (CRR) View's • Color Brightness Control Group (BCG) and Color Selection pick areas • Traffic Management Advisory (TMA) Color BCG and Color Selection pick area • Situation Display Location (SDL) Group panel pick area labels and header labels • SDL Group labels in Situation Display view and Range Data Block (RDB) text • In the STATUS and OUTAGE buttons to indicate an update to THE STATUS view and Outage list respectively • Toolbar View toggle button to indicate an outage affecting the view
Gray	• Used as a background for a toggle button to indicate that the view or feature is displayed • Gray background for the sublist and button tear off pick area means that the sublist or button has been torn off • Gray in scroll bar arrows indicates the arrow is not selectable for scrolling • Gray button text indicates the button is not selectable. Gray is also used as the toolbar color and the background color for pop-up pick areas.
Coral	• Used for the Continuous Range Readout (CRR) View's Color BCG and Color Selection pick areas • TMA Color BCG and Color Selection pick area • Situation Display Location (SDL) Group panel pick area labels and header labels • SDL Group labels in Situation Display view • RDB text • Non-RVSM indicator • Annotation color selection

Table 2–2. Color-Code Definitions (Continued)

Color	Description
White	• Used for map lines, nominal view, pop-up pick area, and button text, the cursor symbols, the view outlines for moving views, tearoff sublists and buttons • Continuous Range (CRR) Readout View's Color BCG and Color Selection pick areas • TMA Color BCG and Color Selection pick area • Situation Display Location (SDL) Group panel pick area labels and header labels • SDL Group labels in Situation Display view, and RDB text • White scroll bar arrow indicates the arrow is selectable for scrolling
Red	• Used to display the Application Failed indicator ("X") • ERAM banner messages • To indicate a critical outage in the OUTAGE button and in the Outage List
Burnt Orange	• Used for the background of parent menu bar buttons when the associated toolbar is open • For a selected command button • Background emphasis of the current value in the Altitude, Speed, and Heading pop-up menus
Green	• Used for the ATC weather • Continuous Range (CRR) Readout View's Color BCG and Color Selection pick areas • TMA Color BCG and Color Selection pick area, Situation Display Location (SDL) Group panel pick area labels and header labels • SDL Group labels in Situation Display view • RDB text • Background shading of increment/decrement buttons • Return to service coding in the Outage List
Black	• Used as a background for a toggle button • Indicates the view or feature is not displayed • The nominal background color for views
Gold	• Used in the button and sublist tear off pick area to indicate the sublist entry or button can be torn-off (either copied or moved)
Orange	• Used to indicate the item (border, name, or altitude values) is associated with an active SAA (Special Activities Airspace)

2.2 Toolbars

Toolbars are containers that hold buttons; the five basic ERAM toolbars are:

- One Master toolbar
- One Message Composition Area (MCA) toolbar
- Three Support toolbars:
  - — Horizontal
  - — Left Vertical Support
  - — Right Vertical Support

Figure 2–1 shows an example of the Master toolbar and the Left Vertical Support toolbar. The Toolbar button, Master toolbar, and Tear-off buttons enable controllers to customize and manage their workspace efficiently.

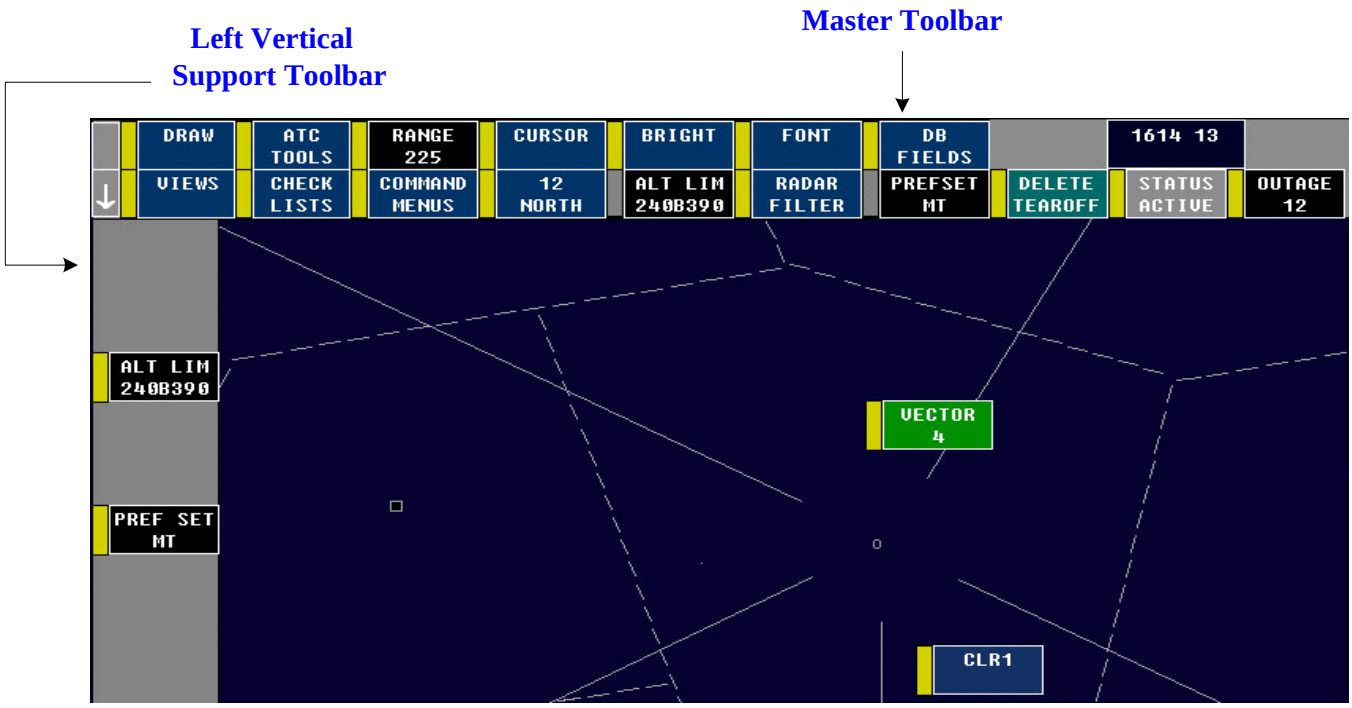

Figure 2–1. Master Toolbar and Vertical Support Toolbar

2.2.1 Toolbar Button

The TOOLBAR button shown in Figure 2–2 is always displayed (it cannot be suppressed). It is a permanent tear-off button that the controller can reposition anywhere on the screen.

Figure 2–2. Toolbar Button

The TOOLBAR button displays a toolbar menu shown in Figure 2–3 with two rows of five buttons that correspond to the R-position toolbars.

The buttons in the top row are used to display/suppress the toolbars; the buttons in the bottom row are used to raise or lower the toolbars. To view the toolbar menu horizontally, left-click the **TOOLBAR** button; to view the toolbar menu vertically, middle-click the **TOOLBAR** button. The TOOLBAR button is not part of any toolbar; it cannot be deleted.

Figure 2–3. Toolbar Menu

2.2.2 Master Toolbar

Figure 2–4 shows the Master Toolbar; which contains a core set of tear-off buttons and can hold additional tear-off buttons added by the controller. Use the Master Toolbar buttons to access associated views, commands, or lists.

Figure 2–4. Master Toolbar

Master Toolbar buttons are color coded to indicate the state of the various displays. Table 2–3, Master Toolbar Buttons, lists the core buttons on the Master toolbar. For an expanded view of each Master Toolbar button and a description of the color coding, refer to the ERAM Air Traffic Manual (ATM): AT Quick Reference Cards, TI.6110.104.

Table 2–3. Master Toolbar Buttons

Button	Displays
DRAW	Draw Menu
ATC TOOLS	Air Traffic Control Tools Menu

Table 2–3. Master Toolbar Buttons (Continued)

Button	Displays
RANGE	Range Slider Bar
CURSOR	Cursor Menu
BRIGHT	Brightness and Map Brightness Menus
FONT	Font Menu
DB FIELDS	Data Block Menu
VECTOR	Vector Length Button
VIEWS	Views Menu
CHECKLISTS	Checklists Menu
COMMAND MENUS	Command Menus
12 NORTH	GeoMaps Button (Reflects map in use) **NOTE:** Twenty (20) site-adaptable options available.
ALT LIM	Altitude Limits Button
RADAR FILTER	Radar Filter Menu
PREF SET	Preference Set Menu
DELETE TEAR-OFF	Delete Tear-off Button

NOTE: Only one view or toolbar menu can be displayed at one time on the Master Toolbar. The controller must close the view or toolbar menu to display the Master Toolbar again.

The ATC TOOLS button opens a submenu that contains buttons for the following options:

- CRR FIX – used to display or suppress the Continuous Range Readout Fix data
- SPEED ADVISORY – used to display or suppress speed advisory data in the Meter Reference Point view and the data block. When the “SPD ADVSRY” button is de-selected/inactive (black), Proposed GIM-S Speeds are not displayed, and currently displayed Proposed GIM-S Speeds are removed from the display for that sector. When the “SPD ADVSRY” button is inactive (black), then Accepted GIM-S Speeds continue to be displayed in the Meter Reference Point View Entry and 4th line data and supports the ‘Resume Normal’ user action.
- WX – used to display or suppress the Weather Menu. When the WX Menu buttons are opened:
  - — The NEXRAD Altitude Level (‘NX ddd ddd’) button is used to increment/decrement the altitude range of NEXRAD Weather
  - — The NEXRAD Intensity Level (‘NX LVL ddd’) button is used to select the NEXRAD intensity level to be displayed (blue shading)
  - — The ATC WX buttons (‘WX1’, ‘WX2, WX3’) are used to select/de-select the display of Level 1 weather/ Level 2 weather/ Level 3 weather. The weather levels are represented by symbols (e.g., “H” and green lines).

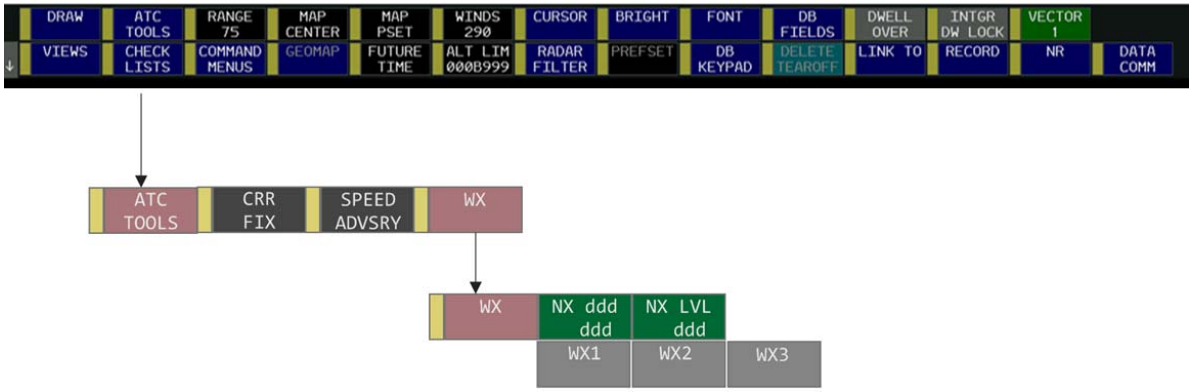

Figure 2–5. ATC TOOLS Button

2.2.3 Message Composition Toolbar

Figure 2–6 shows the Message Composition (MCA) toolbar that contains the macro (Record) button by default. The MCA toolbar has an up and a down arrow used to move the toolbar to the top or bottom of the display.

The MCA toolbar can hold tear-off buttons. On the MCA toolbar, multiple views or toolbar menus can be open at the same time.

Figure 2–6. MCA Toolbar

2.2.4 Support Toolbars

The support toolbars are blank initially. They are only used to display buttons copied from the Master Toolbar. The three support toolbars are:

- Horizontal Support Toolbar: Torn-off buttons line up horizontally and toolbar menus display horizontally within this toolbar at the top or bottom of the display.
- Left Vertical Support Toolbar: Torn-off buttons line up vertically and toolbar menus display vertically within this toolbar on the left edge of the display.
- Right Vertical Support Toolbar: Torn-off buttons line up vertically and toolbar menus display vertically within this toolbar on the right edge of the display.

NOTE: Multiple views or toolbar menus can be open at one time on the three support toolbars.

2.2.5 Moving/Manipulating Toolbars

The controller can display/suppress, reposition, raise/lower, or place the R-Position toolbars to the right or left of the view display; Figure 2–7 shows the Toolbar Menu.

Figure 2–7. Toolbar Menu

2.2.5.1 Displaying or Suppressing Toolbars

1. Left/middle-click the **TOOLBAR** button to display a toolbar.
2. Left/middle-click any button in the top row to display or suppress that toolbar.

NOTE: The MCA, Master Toolbar, and Horizontal toolbar can all be displayed simultaneously.

The button color will change from a black background to a gray background when the toolbar is displayed. The button color will change from a gray background to a black background when the toolbar is suppressed.

2.2.5.2 Repositioning Toolbars

ERAM permits limited movement of each of the horizontal toolbars on the display. Vertical support toolbars are at fixed positions at the left or right margin of the display screen.

There are four (4) containers for horizontal toolbars – two at the top and two at the bottom of the display. The three (3) horizontal toolbars (the Master Toolbar, the MCA and Horizontal Support Toolbar) can be repositioned into these four containers by left/middle-clicking the **Up/Down arrow** along the left margin of the toolbar to move it up or down one position (Figure 2–8).

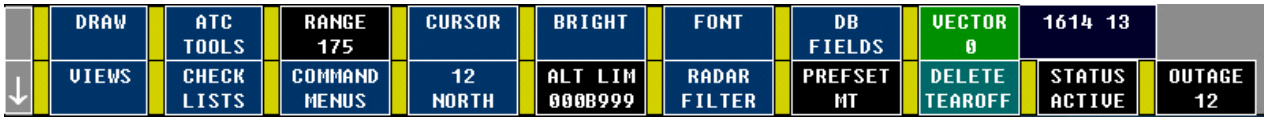

Figure 2–8. Toolbar

2.2.5.3 Raising/Lowering Toolbars

If a toolbar is displayed behind an object or view, it can be raised or brought to the front of the display. Figure 2–8 shows an example of a Toolbar. When the toolbar is displayed in front of an object or view, it can be lowered or sent behind the object or view. Figure 2–9 shows button with Master Toolbar.

1. Left/middle-click **TOOLBAR** button to display the Toolbar buttons.
2. Left/middle-click desired toolbar button to raise/lower that toolbar. When the desired toolbar is raised, that toolbar button will be gray shaded and will show the word LOWER. When the desired toolbar is lowered, that toolbar button will be shaded black and show the word RAISE.

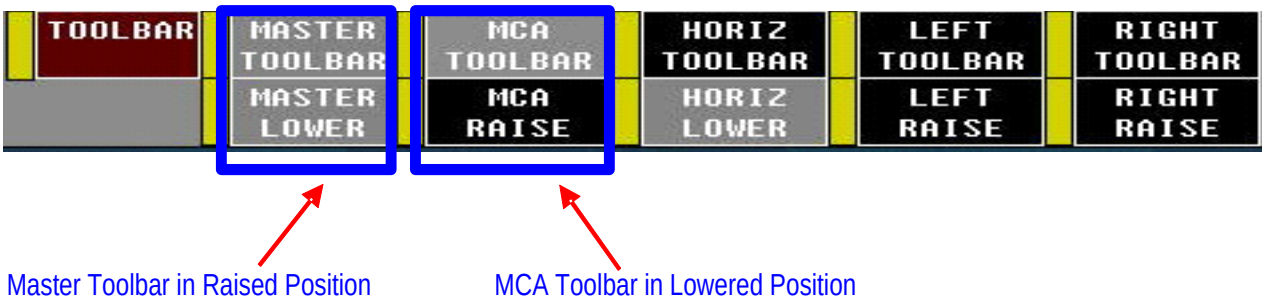

Figure 2–9. Master Toolbar

2.3 Tear-offs

ERAM supports a feature called Tear-offs which applies to many buttons, sublists and list entries. Tear-offs allow the controller to customize the display by placing copies of frequently used buttons, sublists, or list entries in desired locations.

Some items are anchored to map coordinates and will move relative to range settings and map positioning. Other items are anchored to the display coordinates, which means they are fixed on the display and are not impacted by range setting changes or map movements. Determination of how an item is anchored is based on the item type and is not controller selected.

Buttons, sublists and list entries that can be torn-off from their original location and moved or copied to another area of the display are indicated with a Gold Tear-off Bar. The Gold Tear-off Bar is displayed along the left side of the active button or displayed to the left of the sublist or list entry.

Figure 2–10 shows an example of the Gold Tear-off Bar.

Figure 2–10. Gold Tear-off Bar

2.3.1 Tear-off Buttons

The following buttons cannot be torn-off, but the original button can be moved:

- TOOLBAR
- VECTOR
- STATUS
- OUTAGE
- RECORD
- Any recorded macro button created by a controller.

2.3.1.1 Moving Tear-off Buttons

Use the Gold Tear-off Bar to move a button from one location to another.

To tear a button off from its original location and move it to another location on the Situation Display:

1. Left/middle-click the **Gold Tear-off Bar** on the button. A white frame (outline) appears and the track-ball cursor attaches to the upper left hand corner of the button.
2. Move the button to desired location on Situation Display or the desired toolbar.
3. Left/middle-click to drop and place the tear-off button.

To move a tear-off button to another location on the Situation Display:

1. Left/middle-click the **Gold Tear-off Bar** of the desired button.
2. Move the cursor to the desired location.
3. Left/middle-click to place the tear-off button.

A tear-off button that is put on the Situation Display continues to be displayed even if the toolbar from which it was torn is suppressed.

When a button has been torn-off (copied), it can only be moved or deleted. No additional copies are allowed. The Gold Tear-off Bar changes to a gray bar on the original button that remains on the Master Toolbar as shown in Figure 2–11 to indicate it has been torn-off; the torn-off button retains the gold bar to indicate it may be repositioned.

Figure 2–11. Master Toolbar

When a Tear-off Button is placed on a toolbar, a green grid appears to indicate available positions in the toolbar. If the button is placed in a position already occupied, the existing buttons are automatically repositioned.

2.3.1.2 Deleting Tear-off Buttons

Deleting a Tear-off Button deletes the copy of the button. The original button remains and can be torn-off again.

To delete a single Tear-off Button:

1. Left/middle-click the **DELETE TEAROFF** button on the Master Toolbar. The trackball cursor changes to a deletion cursor (Figure 2–12).
2. Middle-click the button to be deleted.

To delete multiple Tear-off Buttons:

1. Left/middle-click the **DELETE TEAROFF** button on the Master Toolbar. The trackball cursor changes to a deletion cursor.
2. Left-click each button to be deleted except the last one. The selected buttons will be covered by a white X.
3. Middle-click the last button to be deleted; the tear-offs are deleted.

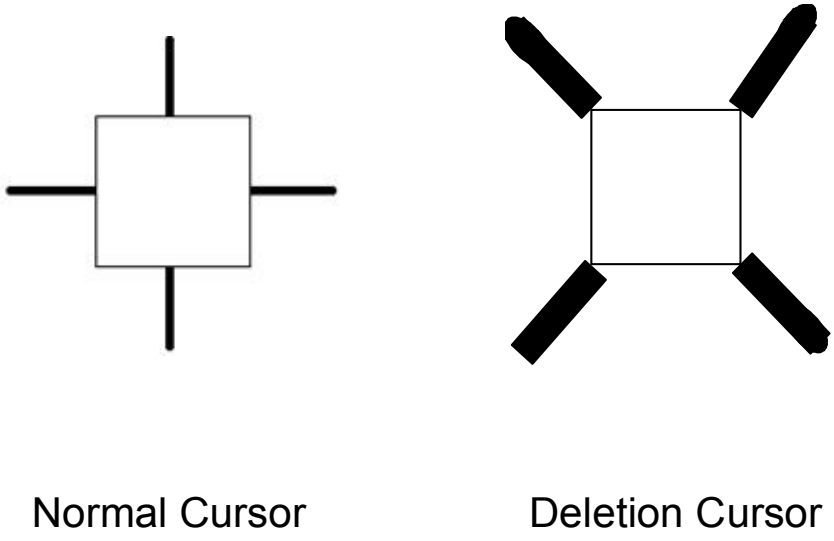

Figure 2–12. Normal and Delete Cursors

NOTE: To deselect but not delete a torn-off button, left-click the button a second time. Middle-clicking a previously selected button deselects it and deletes the remaining selected buttons.

2.3.2 Tearing-off Sublist and List Entries

Only one copy of a Sublist or List Entry can be torn-off. The Gold Tear-off Bar in the view turns gray when a tear-off exists. Figure 2–13 shows an example of a Tear-off Sublist Item and Figure 2–14 shows an example of a Tear-off list entry.

Figure 2–13. Tear-off Sublist Items

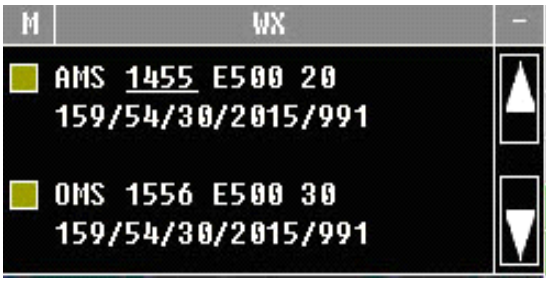

Figure 2–14. Tear-off List Entries

Tear-off Sublists and Tear-off List Entries enable controllers to copy and place a sublist or list entry on the Situation Display. Tear-off sublists and list entries may not be placed on a toolbar.

To tear-off a sublist item or list entry:

1. Left/middle-click **gold bar** to the left of the desired sublist item or list entry.
2. Move the cursor to the desired location on the Situation Display.
3. Left/middle-click to place a copy of the sublist item or the list entry at the desired location.

List entries can be torn off from the Altimeter Setting view and Weather Station Report view. Sublist items can be torn-off from the following views:

- Hold view
- Inbound view
- Departure List view
- Meter Reference Point view.

A torn-off sublist or torn-off list entry is semi-transparent, formatted the same as the original sublist or list entry, and inherits the Situation Display background color. The gold bar allows the tear-off to be moved as shown in Figure 2–15.

Figure 2–15. Torn-off Sublist

A torn-off sublist, in Figure 2–16 or list entry is anchored to the map coordinates. Its position on the display will move relative to range setting changes and map repositioning. Gray bars indicate that the top two sublists are torn off.

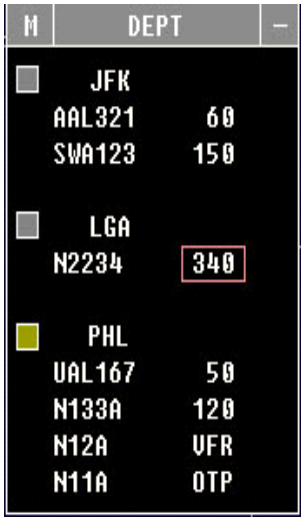

Figure 2–16. Gray Bars

2.3.2.1 Deleting Tear-off Sublists/List Entry

Deleting tear-off sublists or tear-off list entries deletes the copy; the original sublist item/list entry remains in the view, regains a gold tear-off bar and can be torn-off again.

A single sublist item or list entry is deleted similarly to a tear-off button. To delete a single tear-off sublist item or list entry:

1. Left/middle-click **DELETE TEAROFF** button on the Master Toolbar. The trackball cursor changes to a deletion cursor.
2. Middle-click the sublist item/list entry to be deleted.

2.3.2.2 Deleting Multiple Tear-off Sublist Items/Tear-off List Entries

Multiple sublist items or list entries are deleted similarly to a tear-off buttons. To delete multiple tear-off sublist items or list entries:

1. Left/middle-click **DELETE TEAROFF** button on Master Toolbar.
2. Left-click gold tear-off bar of all but last sublist item/list entry to select and highlight them.
3. Middle-click the last sublist or list entry and marked tear-offs are deleted.

2.3.3 Displaying/Suppressing the Tear-off Bar

Gold tear-off bars are displayed by default. The Tear-off menu item is a toggle that can be used to display or suppress the gold tear-off bar. Select it to suppress the gold tear-off bar. Select it again to display the gold tear-off bars. Suppressing the Tear-off Gold Bars in sublists and list entries does not impact the display of associated tear-offs. To display/suppress the gold tear-off bars:

1. Left/middle-click the 

in the view header to display the view menu.
2. Left/middle-click **TEAR-OFF** menu item to suppress/display gold tear-off bars.

Repeating this function toggles between displaying view tear-off buttons (gray shading displays behind TEAR-OFF menu item) and suppressing view tear-off buttons (black shading displays behind TEAR-OFF menu item).

2.4 Managing Views

Views are managed at the R-position using the Views Menu shown in Figure 2–17, Views (Display/Suppress) Menu. The Views Menu provides the user with the capability to display or suppress views at the R-position and is accessed by selecting the Views (**VIEWS**) Menu Display button located on the R-position's Master Toolbar.

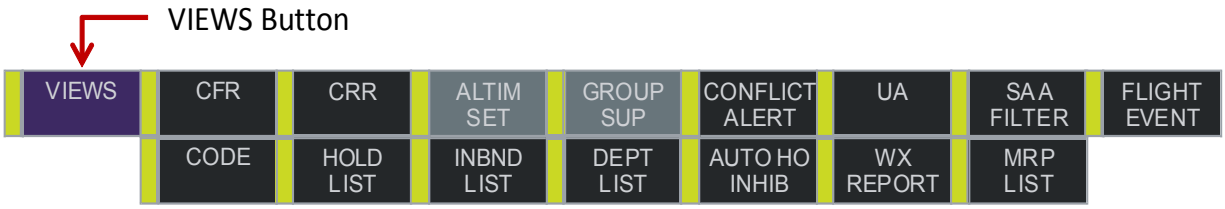

Figure 2–17. Views (Display/Suppress) Menu

The Views Menu consists of the following buttons:

- **CFR**: used to display or suppress the Continuous Flight Plan Readout (CFR) View
- **CRR**: used to display or suppress the Continuous Range Readout View
- **ALTM SET**: used to display or suppress the Altimeter Settings List View displayed at
- **GROUP SUP**: used to display or suppress the Group Suppression List View
- **CONFLICT ALERT**: used to display or suppress the Conflict Alert List View
- **UA**: used to display or suppress the D-CRD Update Area View (if adapted)
- **Flight Event**: used to display or suppress the Flight Event List View
- **CODE**: used to display or suppress the Beacon Code Selection List View
- **HOLD LIST**: used to display or suppress the Hold List View
- **INBND**: used to display or suppress the Inbound List View
- **DEPT LIST**: used to display or suppress the Departure List View

- **AUTO HO INHIB**: used to display or suppress the Automatic Handoff Inhibit List View
- **WX REPORT**: used to display or suppress the Weather Station Report List View
- **MRP LIST**: used to display or suppress the Meter Reference Point View (if adapted)

2.4.1 Common View Features

Most of the R-Position Views share the common features shown in Figure 2–18, This figure is an example of the Weather Station Report view and allows the controller to set the display attributes for the view. Common view features include:

- The title bar (View Header), which contains:
  - The view title (WX in the example)
  - The View menu button M
  - The View Suppress (close) button –
- Scroll bars – display if the information available exceeds the capacity of the view.
- Tear-offs – a feature of some views; gold bar to left of data indicates sublist or list entry may be torn-off.
- View Menu Items – used to change aspects of the view.

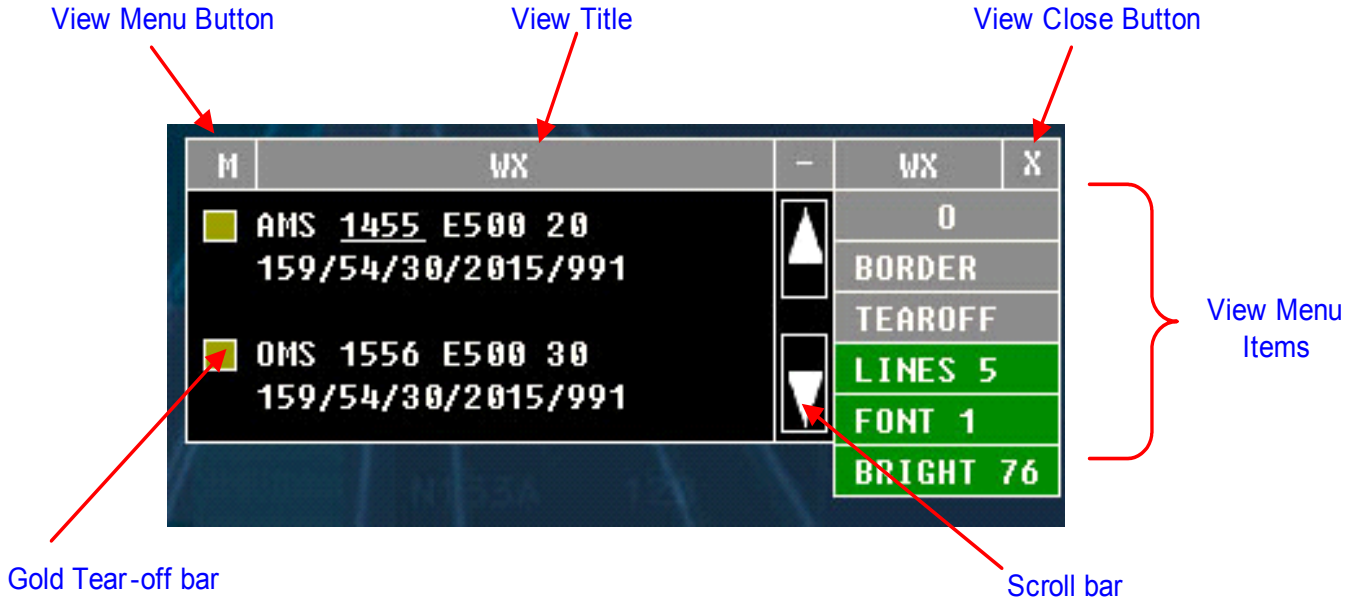

Figure 2–18. The Weather Station Report View

2.4.1.1 View Menu Items

View menu items are specific to each view. They share the same color-coding scheme as toolbar buttons. Common to most R-position views are the following menu items:

- O / T – switches between an opaque or semi-transparent view
- BORDER – turns the view border on/off
- TEAR-OFF – displays or suppresses the Tear-off buttons
- LINES – increments/decrements the number of lines in the view
- FONT – increments/decrements the font size in the view
- BRIGHT – increments/decrements the brightness of the view
- Additional items that change view-specific features will be covered in later chapters.

2.4.2 Displaying a View

To display a view:

1. Locate the View button on the Situation Display or associated toolbar.
2. Left/middle-click the **View** button to display the view.

For views without a title bar, middle-click the **View**.

Table 2–4 lists the view menu buttons.

Table 2–4. Views Menu Buttons

Button	Displays
CFR	Continuous Flight Plan Readout View
CRR	Continuous Range Readout View
ALTIM SET	Altimeter Settings View
GROUP SUP	Group Suppression View
CONFLCT ALERT	Conflict Alert View
UA	Update Area View
SAA FILTER	Special Activities Airspace (SAA) Filter View
FLIGHT EVENT	Flight Event View
CODE	Beacon Code View
HOLD LIST	Hold View
INBND LIST	Inbound List View
DEPT LIST	Departure List View
AUTO HO INHIB	Auto Handoff Inhibit View
WX REPORT	Weather Station Report View
MRP LIST	Meter Reference Point View

2.4.3 Suppressing a View

Not all views can be suppressed. The Status View and Outage View are accessed through independent buttons. These buttons can never be suppressed. The Time View, the MCA View, and the RA View are always displayed. Figure 2–19 shows the MCA View and Figure 2–20 shows the RA View.

Figure 2–19. MCA View

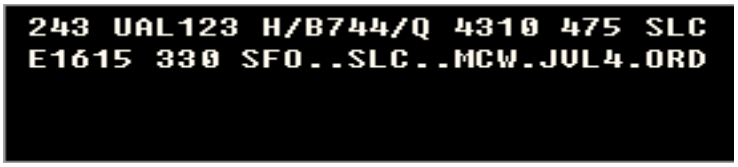

Figure 2–20. Response Area (RA) View

To suppress a view, left/middle-click the  button at the right top corner of the view header.

2.4.4 Moving a View

For views with a title bar, perform the following steps to move the view:

1. Left/middle-click in the view title, otherwise left-click within the view.
2. Use the trackball to position the view outline at the desired location.
3. Left/middle-click to place the view.

NOTE: Middle-clicking on a view without a title bar accesses the view menu.

2.4.5 Scrolling a View

A scroll bar with up/down arrows will display in the following views if the view contains information that is not currently displayed:

- Altimeter Setting View
- Weather Station Reporting View
- Message Composition Area
- Response Area
- Departure List View

To scroll a view, left/middle-click the **up** or **down** arrow to scroll the view.

2.4.6 Toggling Between Opaque (O) and Semi-Transparent (T) Views

An opaque view obscures everything behind it. An “O” is displayed in the view menu for opaque views. A semi-transparent view allows data blocks and targets to show through the view. A “T” is displayed in the view menu for semi-transparent views.

To toggle between the two states, left/middle-click the **O** or **T** menu item.

2.4.7 Turning View Borders On/Off

To turn off the view border, left/middle-click the **BORDER** menu item.

Repeating this function toggles between turning view border on (gray shading is displayed behind BORDER menu item) and view border off (black shading is displayed behind BORDER menu item).

2.4.8 Adjusting the Number of Lines Displayed Within a View

To adjust the number of lines displayed within a view:

1. Left-click the **LINES** numeric value to decrease the number of lines, or
2. Middle-click the **LINES** numeric value to increase the number of lines within the view.

NOTE: The LINES menu item is auto-repeating – holding down the button, rather than single clicking, will increment/decrement lines until the button is released or the maximum/minimum number of lines is reached.

A scroll bar will only appear if the data in the view exceeds the number of lines selected for display.

2.4.9 Adjusting the View Font Size

To adjust the font size of a view, left-click the **FONT** numeric value to decrease or middle-click the **FONT** numeric value to increase the view font size.

As the font size increases, the size of the view increases (the menu position adjusts accordingly); as the font size decreases, the size of the view decreases (the menu position adjusts accordingly). The menu font size does not change.

2.4.10 Adjusting the View Brightness

To adjust the view brightness:

1. Left-click the **BRIGHT** numeric value to decrease or
2. Middle-click the **BRIGHT** numeric value to increase the brightness of the view text.

The BRIGHT menu item is auto-repeating – holding down the button, rather than single clicking, will increment/decrement brightness until the button is released or the maximum/minimum brightness is reached.

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3. MANAGING THE MAP DISPLAY

ERAM enables a controller to manipulate and manage the Geomap Display (Map Display) by turning specific map features on and off and by adjusting the attributes of other features. The Map Display is accessed from the R-Position workstation by selecting the MAP button in the Master Toolbar; the MAP button contains the name of the map in use (e.g., 12 North).

This chapter describes Map Display management features and attributes. Major topics are:

- Map Range
- Map Brightness
- Displaying a Geomap
- Weather
- Time View

3.1 Map Range

The Range button is a toggle button on the Master Toolbar used to display/suppress the Range View:

1. Click the **RANGE** button to display the Range View.
2. Left/middle-click the **Close** button (minus sign on the far right) or the **RANGE** button to suppress (close) the Range View.

Figure 3–1 shows the Range View.

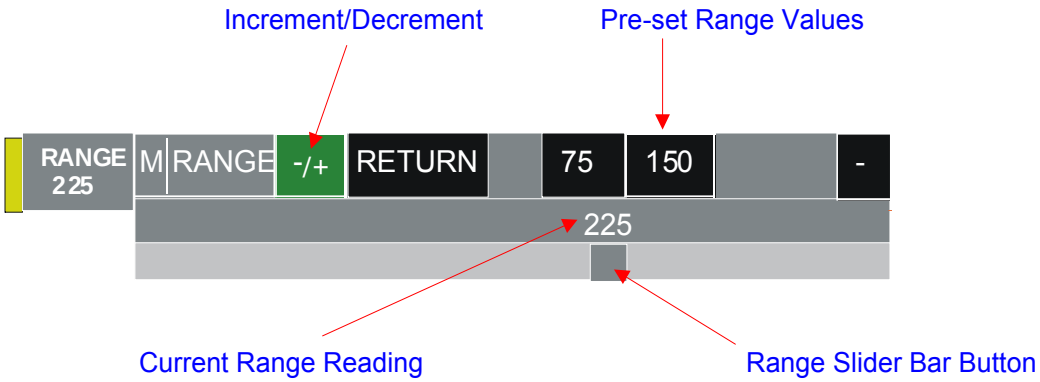

Figure 3–1. Range View

The controller can adjust the Range View several ways:

Using the Increment/ Decrement Button	*Left-click the **Increment/Decrement** button to decrease the range setting by 25 NM at a time.*
	*Middle-click the **Increment/Decrement** button to increase the range setting by 25 NM at a time.*
Using the Range Slider Bar	*Left/middle-click the **Range Slider Bar** to initiate drag mode then move the slider left to decrease range or right to increase range by increments of 1 NM.*
	Middle-click to close drag mode and replace current value with new range value.
	Left-clicking closes drag mode and cancels action.  *Left/middle-click to the left/right of the Range Slider Bar to decrease/increase range by 10 NM.*
Using Pre-Set Range Value	*Middle-click the desired **Pre-Set Range Value** button(s) to change the range to the present value(s).*

There are three other tasks that the controller can do:

To Specify a Pre-Set Range Value	*Left-click the **Pre-Set Range Value** number.*
	*Type the value and then press the **ENTER** key.*
	The preset value cannot be changed if the preset button is currently selected (grayed out).
To Return to a Previous Range Value	*Left/middle-click the **RETURN** button and previous range value displays.*
To Type a Range Value	*Left-click the **Range Value** above the slider bar.*
	*Type the value and then press the **ENTER** key.*

3.2 Map Brightness

Controllers can adjust the brightness of geomap elements/features using the BRIGHT/MAP BRIGHTNESS toolbar button functions:

To adjust the brightness of a geomap element:	*Left/middle-click the **BRIGHT** button on the Master Toolbar. The geomap Brightness Toolbar (Figure 3–2, Managing Brightness of Geomap Elements) is displayed.*

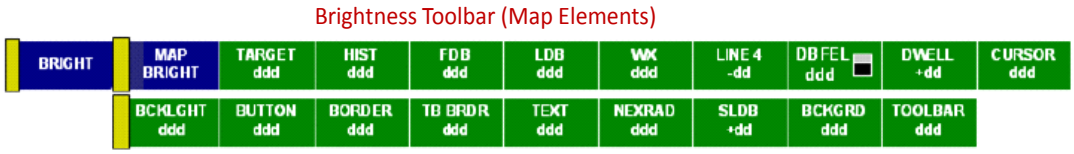

Figure 3–2. Managing Brightness of Geomap Elements

NOTE: The capability exists in adaptation to define a set of Brightness buttons (i.e., the number of buttons for each menu, button labels, and positions within the menus) that is unique to each geomap.

To increase the brightness of a geomap element:

- *From the Brightness toolbar, middle-click the desired button to increase the brightness of the selected geomap element. The brightness increases from 0 - 100 in increments of 2.*

To decrease the brightness of a geomap element:

- *From the Brightness toolbar, left-click the desired button to decrease the brightness of the selected geomap element. The brightness decreases from 100 - 0 in increments of 2.*

To manage the brightness of geomap features:

- *Left/middle-click the **BRIGHT** button on the Master Toolbar.*The geomap Brightness Toolbar (Figure 3–2, Managing Brightness of Geomap Elements) is displayed.
- *Left/middle-click the **MAP BRIGHT** button from the geomap Brightness toolbar. The Map Brightness Toolbar (Figure 3–3, Managing Brightness of Geomap Features) is displayed.*

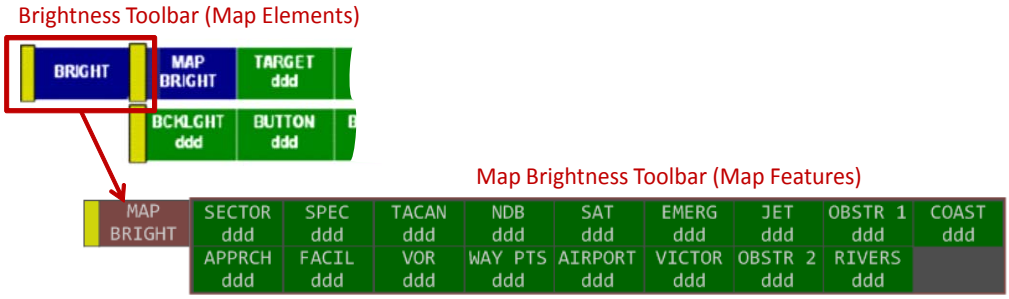

Figure 3–3. Managing Brightness of Geomap Features

NOTE: The Brightness/Map Brightness toolbar button is de-emphasized when no geomap is displayed.

To increase the brightness of a geomap feature:	• *From the Map Brightness toolbar, middle-click the desired button to increase the brightness of the selected map feature. The brightness increases from 0 - 100 in increments of 2.*
To decrease the brightness of a geomap feature:	• *From the Map Brightness toolbar, left-click the desired button to decrease the brightness of the selected map feature. The brightness decreases from 100 - 0 in increments of 2.*

NOTE: The capability exists in adaptation to support up to 255 Map Brightness Menus. The assignment of objects to map filter buttons and the assignment of objects to the Brightness Control Group (BCG) buttons are independent mapping (e.g., objects 1, 2, and 3 can be assigned to the same map filter button, but may be assigned to three different BCG buttons).

3.3 Displaying a Geomap

Controllers can display or suppress the display of facility-adapted maps.

To request a geomap for display using the Map Request (MR) command.	*Left/middle-click the **MAP** button on the Master Toolbar (The MAP button contains the name of the geomap in use (e.g., 12 North).*

NOTE: The MAP button opens a geomap toolbar (Figure 3–4, Geomap Toolbar) with up to 20 map filter buttons. Filter button labels are adaptable. The capability exists to specify a unique set of buttons for the Geomap toolbar for each geomap in adaptation. The map elements assigned to each button depend on the map selected.

NOTE: Facility-adapted maps may also be displayed by invoking a preference set or by receipt of a new geomap name from the alternate channel synchronization data.

Figure 3–4. Geomap Toolbar

To display/suppress map elements:	*From the Geomap Toolbar, left/middle-click any map filter button to toggle the associated elements.* *SAAs that are adapted may be filtered on or off. SAAs not adapted to a filter button are displayed at all times. Active SAAs are displayed in orange. Inactive SAAs can be displayed in white by selecting the button to which those SAAs are assigned. The mapping of objects to map filter buttons and to the brightness control group (BCG) buttons are independent mappings (e.g., objects 1, 2, and 3 can be mapped to the same filter button, but may be mapped to 3 different BCG buttons).*

3.4 Weather

Controllers can adjust the display for weather; this includes NEXRAD altitudes and levels and ATC weather intensities. Figure 3–5 shows the Weather View.

To access the weather toolbar:

1. Left/middle-click the **ATC TOOLS** button from the Master Toolbar.
2. Left/middle-click the **WX** button from the ATC Tools toolbar to display the Weather (WX) toolbar.

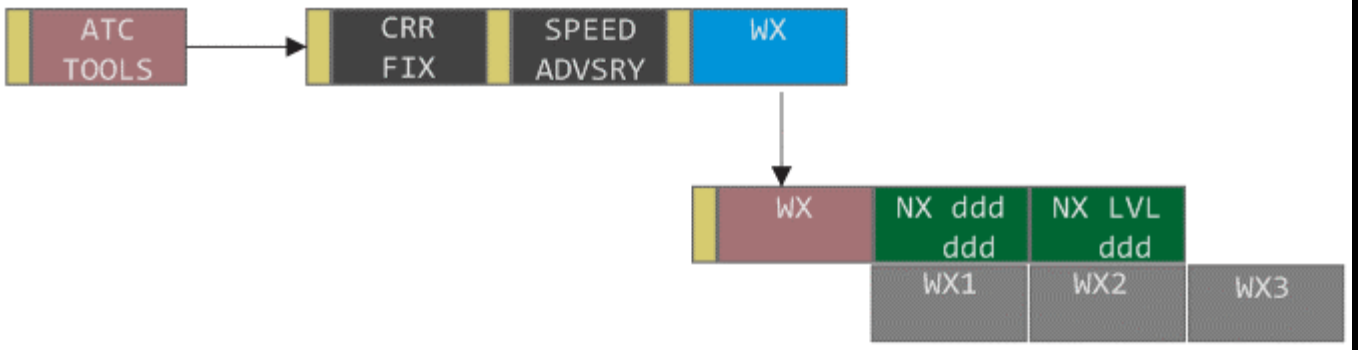

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Figure 3–5. Weather Toolbar Menu

1. To set the NEXRAD altitudes, left/middle-click the **NX Altitude** button to decrement/ increment through the available options.
2. To set the NEXRAD levels, left/middle-click the **NX LVL** button to decrement/ increment through NEXRAD levels.

The NX LVL button has four options: all levels; levels 2 and 3; level 3 only; and off.

To display ATC weather intensity:

1. Left/middle-click the **ATC TOOLS** button from the Master Toolbar.
2. Left/middle-click the **WX** button from the ATC Tools toolbar to display the Weather (WX) toolbar.

3. Left/middle-click **WX1**, **WX2**, or **WX3** button to display associated ATC weather intensity.

3.5 Time View

The Time View shown in Figure 3–6 displays the current UTC time and can be customized and located anywhere on the display; but cannot be suppressed.

To customize the time view:

1. Middle-click the **Time View** to bring up the Time View menu.
2. Left/middle-click desired menu item as appropriate to change Time View settings.

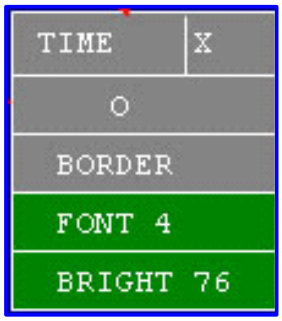

Figure 3–6. Time View

To move the time view:

1. Left-click the **Time View**; a move frame (white view outline) will be displayed and the trackball cursor will be attached to the upper left hand corner of the frame.
2. Move the frame to desired location on Situation Display.
3. Left/middle-click to drop the frame and place the Time View.

As illustrated in Figure 3–7, Time View (With Sector Message Text), the Time View also contains a Sector Message Notification Area (MNA) that is displayed beneath the Clock Time Area when the sector is eligible to receive the message.

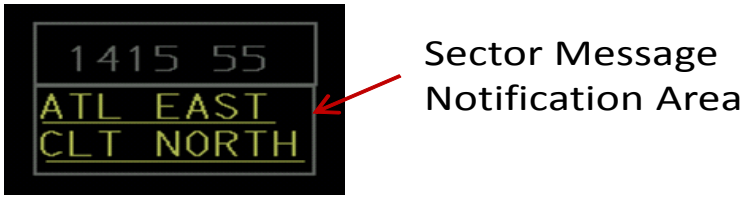

Figure 3–7. Time View (With Sector Message Text)

The Time View Menu settings are applicable to both the Clock Time Area and the Sector Message Notification Area.

When Sector Message text is initially displayed or updated in the Sector Message Notification Area of an R-Position Time View, the message text is displayed with yellow text and update highlighting (i.e.,

underline). The R-Position user has the ability to acknowledge update highlighting by left-clicking or middle-clicking within the Notification Area. When sector message text is displayed in the Notification Area without update highlighting, selecting within the Notification Area has the same effect as selecting the Time View Clock Time Area when the Notification Area is not present. The results when the Notification Area is not present are:

1. **Left-click** of the Notification Area will initiate a move of the entire Time View.
2. **Middle-click** of the Notification Area will initiate display of the Time View Menu.

When sector message text is displayed in the Notification Area with update highlighting, if the user does not acknowledge the update highlighting within an adapted time period, the system will automatically acknowledge the update highlighting on the user's behalf. When the Sector Message Notification Area is displayed, the Clock Time Area is (subject to border filter setting) separated from the Sector Message Notification Area by a separator line. The separator line has the same color and brightness as the Time View border and is displayed subject to the Border display setting in the Time View Menu.

The width of the Clock Time Area and Sector Message Notification Area will be the same. The width is determined by the wider of the two Time View areas. The Sector Message Notification Area may contain up to 16 characters per line of sector message text and up to 32 characters of total sector message text. The Sector Message Notification Area will be a maximum of three lines.

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4. MANAGING DATA BLOCKS

This chapter describes how to manage ERAM data blocks. The main topics are:

- 3-Mile Separation Targets
- Data Blocks
- Changing Data Block Types
- Aircraft in Hold
- Hold Options
- Data Blocks in Handoffs
- Data Block Fields Toolbar Menu
- FDB 4th Line Data Overview
- System Override
- RVSM Display Capability
- Keypad – Aircraft Data Override Key
- Leader Lines
- Radar Filter Toolbar Menu
- Data Block Font

4.1 Targets

ERAM supports several target symbols. shows the target symbols.

Table 4–1. Target Symbols

SYMBOL	Target Symbol Name
X	Correlated Primary
•	Reduced Separation
/	Uncorrelated Beacon
\	Correlated Beacon
+	Uncorrelated Primary
	Identing Beacon
V	Code 1200 Beacon
|	MCI Correlated Track

4.2 3-Mile Separation Targets

ERAM provides a unique target symbol and a 3-mile halo for targets eligible for 3-mile separation (Figure 4–1).

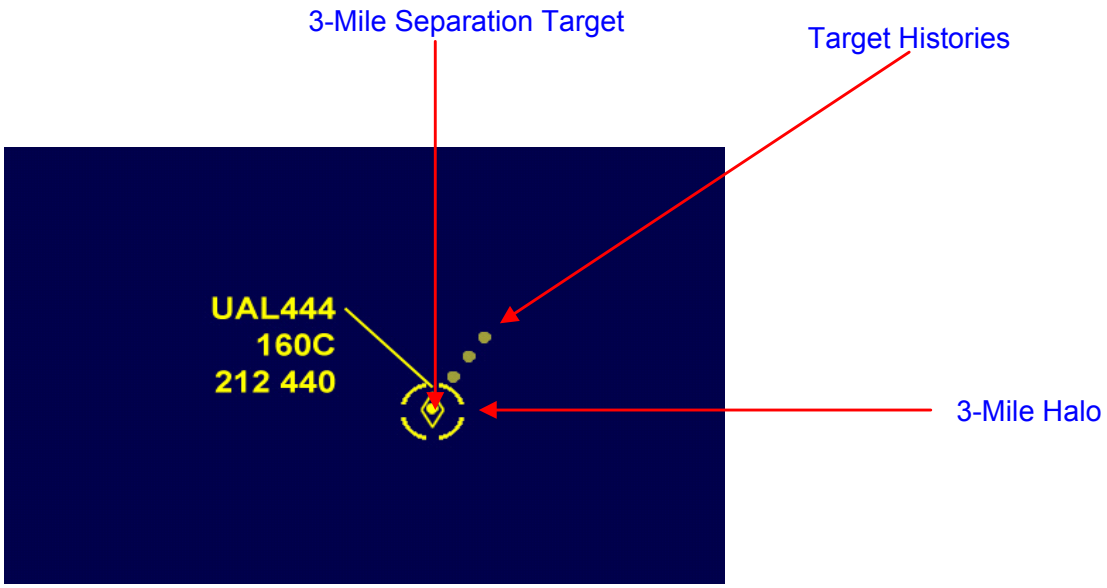


Figure 4–1. 3-Mile Separation Indicators

4.2.1 3-Mile Separation Target

When a flight is in 3-mile separation airspace and the system is receiving radar from the preferred sensor of a single-site source, the target symbol shown in Figure 4–2 becomes a filled-in circle.

NOTE: Target histories reflect the target symbol that was displayed.

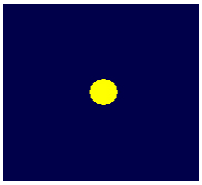


Figure 4–2. Target Symbol

4.2.2 3 NM Halo

When a flight is in 3-mile separation airspace and the system is receiving radar from the preferred sensor, a standard 3 NM halo is displayed. It consists of a yellow circle with four gaps in it (Figure 4–3).

Figure 4–3. 3-Mile Halo

4.2.3 Automatic Changes to Reduced Separation Symbols

Reduced separation targets shown in Figure 4–4 and halos revert to standard separation targets and halos automatically when the preferred radar is not painting the target or the aircraft leaves reduced separation airspace. The target symbol switches to a backslash.

A target symbol will automatically return to a reduced separation symbol if the aircraft becomes eligible for reduced separation again, as shown in Figure 4–4.

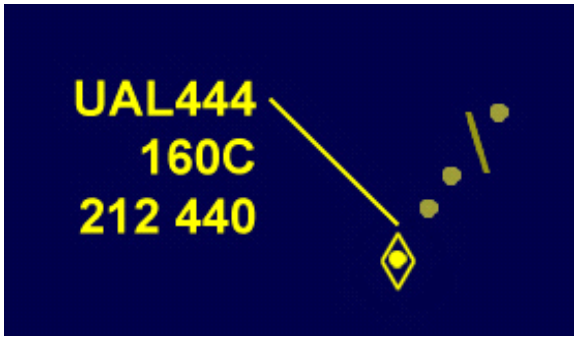


Figure 4–4. Target Symbol

ERAM never converts standard separation halos to reduced separation halos without controller action.

4.2.4 Requesting a Reduced Separation Halo (3 NM Halo)

To request a reduced Separation Halo (3 NM Halo), type:

4.2.5 Non-ADS-B Indicator

Flights that are not both ADS-B equipped and reporting are flagged with a non-ADS-B indicator (coral "A", Figure 4–5, Non-ADS-B Example Hold View). Active flights that are either ADS-B equipped and not reporting via ADS-B or active flights that are not ADS-B equipped are flagged. For proposed flights, those that are not ADS-B equipped are flagged. The non- ADS-B indicator flags the exception, like ERAM does, with the Non-RVSM indicator and conveys only one state (i.e., not reporting ADS-B). It does not differentiate between not ADS-B equipped and ADS-B equipped and not reporting via ADS-B.

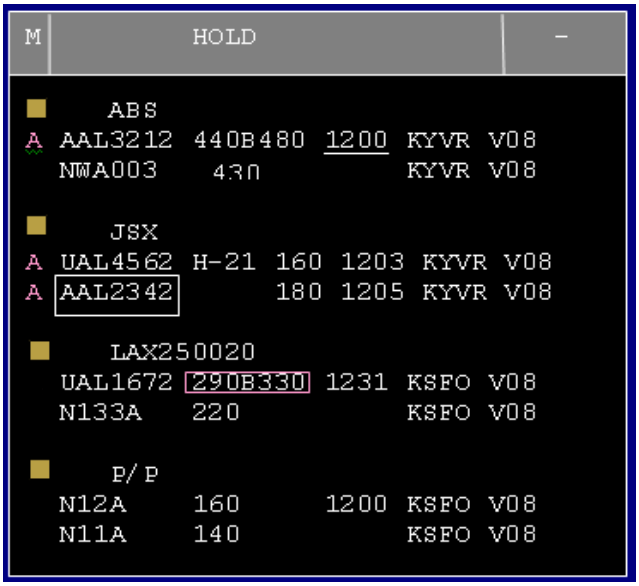


Figure 4–5. Non-ADS-B Indicator Example – Hold View

The non-ADS-B indicator is displayed in the following views, where **A** = always displayed and **F** = filterable via NON-ADS-B toolbar filter button:

- Departure List View (F)
- Inbound List View (F)
- Hold List View (F)
- Continuous Range Readout (CRR) View (F)
- Continuous Flight Plan Readout (CFR) View (F)
- RA-Flight Plan Readout Active Flights (A)

4.3 Data Blocks

ERAM supports multiple data block types, including the following:

- Full Data Block (FDB)
- Limited Data Blocks (LDB)
- LDBs with enhanced formatting (E-LDB)

Each data block type is illustrated as follows:

Full Data Block FDB		• A four line by 11 character array • First line displays Aircraft Identification (ACID) • Second line displays altitude information: normal interim altitude is indicated by a “T”; local interim altitude (if present) is indicated by an “L” • Third line displays the Computer Identification (CID), Field E-type data (Section 4.3.4), Flight Event List (FEL) display indicator, and the Heading/Speed/Free form text (HSF) indicator • Fourth line displays HSF, aircraft, and destination data • Has a position symbol, leader line, and velocity vector • Displayed at FDB brightness • Provides access to Altitude, Speed, and Heading pop-up menus • Can display a Range Data Block (RDB)
Enhanced Limited Data Block ELDB		• Displays same data elements as first two lines of FDB • NO position symbol, leader line, or velocity vector • Displayed at LDB brightness
Paired Limited Data Block LDB		• Displays Aircraft Identifier (ACID) and Mode C altitude • NO position symbol, leader line, or velocity vector • Displayed at LDB brightness

Unpaired Limited Data Block LDB		• Displays Beacon Code and Mode C altitude • NO position symbol, leader line, or velocity vector • Displayed at LDB brightness

For unpaired flights with ADS-B and non-1200 codes, the controller can choose to display call signs instead of beacon code on the first line. A filter button (BCAST FLID) is provided on the Data Block Fields toolbar (see Section 4.8, Data Block Fields Toolbar Menu) to filter the display of call signs for all ADS-B equipped unpaired flights. The BCAST FLID button turns on/off all call signs for unpaired flights that are ADS-B equipped.

Up to two FDBs may be displayed for the same flight; one FDB is for the requesting sector position and the other FDB is a Quick Look data block from the target sector. Range Data Block (RDB) information is supported for Quick Look Data Blocks and FDBs if either of the following conditions exists:

- The user has assigned the FDB to a Situation Display Location Group
- TMA Scheduled Time of Arrival (STA) is available
- TMA Delayed Countdown Time (DCT) data is available
- TFM reroute exists for the flight or the system has automatically added a flight to a Situation Display Location Group that has a filter specification defined
- A Non-ADS-B Indicator is eligible for display.

4.3.1 Full and Alternate Data Blocks

The displayed data of a data block is broken down in to fields; full data block data is displayed in six fields (Field A through F); alternate data block data is displayed in three fields (A through C). A brief description of the data block fields follows:

- **Line Zero:** the line immediately above the data block. This line is normally blank, but is used for display of some alert indications, including the Automatic Handoff Initiation Indicator, and the Coordination Indicator.
- **Field A:** located on the 1st line of the data block and may be up to 7 characters long.
- **Field B:** located on the 2nd line and may have up to 4 characters.
- **Field C:** also located on the 2nd line and may have up to 4 characters.
- **Field D:** located on the 3rd line and may contain up to 4 characters.
- **Field E:** located on the 3rd line and may contain up to 5 characters. There are two indicators that may also be displayed on the third line following Field E. See Section 4.3.4 for more details.
- **Field F:** located on the 4th line and may contain up to 9 characters.

When an FDB is displayed, the AID of the flight is displayed as Field A on the first line of the data block. If the flight object indicates an unannounced boundary crossing, an accent symbol **(^)** is displayed over the first character displayed in Field A. The accent symbol **(^)** is displayed over the second character

displayed in Field A if the flight object indicates that automatic handoff initiation has been inhibited for the flight.

An additional character that may be displayed above the AID is the Coordination Indicator. An FDB Coordination Indicator is displayed in the FDB to notify the controller that there is GIM-S speed data available, which will help aircraft to meet their scheduled time at metering fixes, for controller action. The indicator is a "C", and is displayed in Line Zero of the FDB, in the third character space (See Figure 4–6, FDB Coordination Indicator).

Figure 4–6. FDB Coordination Indicator

The FDB Coordination Indicator provides the user with an indication that a Proposed GIM-S Speed is available for user action (Accept/Reject) or that a "No Speed Advisory Could Be Calculated" indication is available for user action.

Field D (CID) of the FDB can contain other data besides the CID. For example, when a radar handoff is accepted, the system displays a Communications Verification Required (CVR) indicator (an inverse-video V) to the left of the CID (Field D1) of the FDB to alert the controller that initial voice contact has not been verified. A Communications Transfer Required (CTR) indicator (an inverse-video R) is displayed in Field D1 of the FDB after a handoff is accepted letting the transferring controller know that the flight has been handed off and that the pilot needs to be instructed to change frequency. The CTR indicator can be manually turned on at the controlling sector in the case of a manually coordinated handoff. Like the CTR indicator, the Manual Communication Transfer Required or **MCTR** indicator is an inverse-video “R” displayed in field D1 of the FDB.

User commands, supported at both the R- and D-positions, allow the controller to clear either of the Communication indicators (CVR, CTR, or MCTR) or set the MCTR indicator. For example, when a radar handoff is accepted, the system displays the CVR indicator. When the pilot checks in with the sector, the controller will be required to clear the indicator using a variation of the Initiate Handoff (QN or QZ) command. This user command requires the following syntax:

// <FLID> or **QN // <FLID>** or **QZ // <FLID>:**

NOTE: The flight Identification (FLID) number can be entered as a CID, an ACID, a beacon code, or via a trackball pick of the data block.

If a CVR indicator is erroneously cleared, the “**//**” command can also be used by the controlling sector as a toggle to restore the indicator. Alternatively, the CVR indicator may be restored by positioning the trackball cursor on the CVR indictor (Field D1) in the FDB and pressing the **Trackball-select** or **Trackball-enter** button.

In a scenario where a controller initiates a manual handoff, the controller is allowed to enter the user command to set the MCTR indicator on, informing the controller that the flight has been handed off but

the frequency has not been transferred. The command for setting the MCTR on requires the following syntax:

/R <FLID> or **QN /R <FLID>** or **QZ /R <FLID>**

After the flight has been transferred to the next sector's frequency the normal toggle command can be used to clear the MCTR indicator.

4.3.2 Limited Data Blocks

A target symbol and a beacon radar return may result in the display of a LDB on the R-Position Situation Display. LDBs have no track position symbol, leader line, or velocity vector. There are two distinct types of LDBs, **Paired** and **Unpaired**. Paired and unpaired LDBs may be displayed to the left or right of the target symbol location. Two formats exist for paired and unpaired LDBs; Standard and Enhanced.

Standard formatting is used for a paired LDB when the user has not requested Enhanced formatting. The paired LDB in Standard format contains two lines of characters. A third line is displayed when special code text exists or for the FEL display indicator (if applicable). Standard formatting is used for an unpaired LDB when the beacon surveillance report is either:

- not ADS-B Supported
- ADS-B Supported and the BCAST FLID Display Filter setting is "Active"
- ADS-B Supported, the BCAST FLID Display Filter setting is "Inactive", and the ADS-B callsign is not available
- ADS-B Supported and the beacon code is 1200

Enhanced formatting for paired LDBs contains the filed callsign in the first line. The second line contains the same data elements as the second line of a FDB. In addition, a third line is displayed when the corresponding beacon surveillance report has special code text and the FEL display indicator, (if applicable) is available for display. Enhanced formatting is used for unpaired LDB when the following conditions are met for the beacon surveillance report:

- The user has requested Enhanced format for the LDB (i.e. the BCAST FLID display filter setting is inactive)
- The track associated with a surveillance report is ADS-B supported
- The ADS-B callsign is available and
- The beacon code is valid (it is not 1200)

4.3.3 Position Symbols

Table 4–2, Position Symbols, shows ERAM position symbols used with FDBs and LDBs in Enhanced format.

Table 4–2. Position Symbols

SYMBOL	Position Symbol Name
↓	Arrow Down
↑	Arrow Up
#	Coast Track
◊	Flight Plan Aided Track (Flat Track)
Δ	Free Track
⧖	Frozen Data Block
H	Hold at a Fix or Present Position Hold

4.3.4 Field E Data

Field E data is located on the 3rd line of an FDB and may contain up to five characters. There are two indicators that may also be displayed on the third line following Field E; the Flight Event List (FEL) Display Indicator and the Heading/Speed/Free form text (HSF) indicator. The FEL symbol is displayed for a 24-Bit Mismatch flight, a Duplicate 24-bit condition, multiple codes, or a Call Sign Mismatch condition. The FEL symbol remains displayed as Field E contents time share. To display a suppressed FEL view, the user can trackball-pick (Select or Enter) the FEL symbol. If the FEL view is currently opened, selecting the FEL symbol raises the view to the top of the stack.

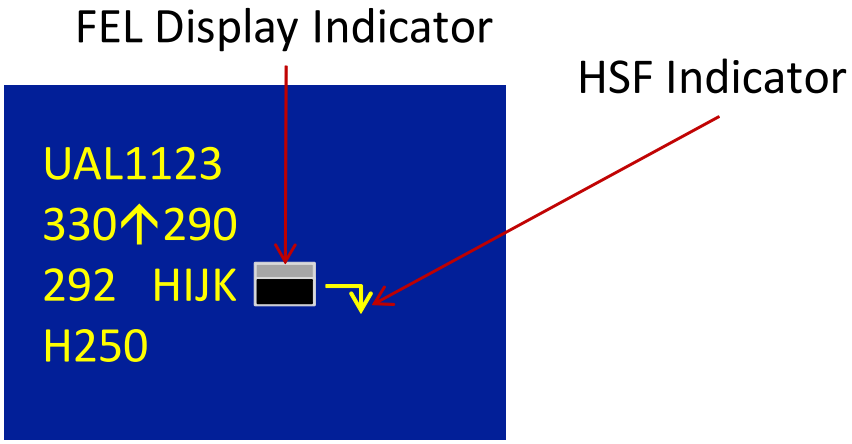


Figure 4–7. Full Data Block Third Line Indicators

The HFS indicator toggles the heading, speed, and free form text in the associated FDB (See Section 4.9.1 for more details). Table 4–3, Field E Data, shows Field E data used by ERAM.

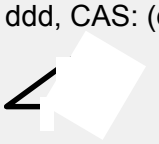
Table 4–3. Field E Data

Field E Data	Explanation
EMRG	7700 beacon return.
HIJK	7500 beacon return.
RDOF	7600 beacon return.
EFC	Expect Further Clearance. This is displayed in Field E at the adapted amount of time prior to the expiration of an EFC time for an aircraft in HOLD status.
FAIL	Handoff is failing.
OLD	Crosstell track data has timed out.
MIFF	E-MSAW alert indefinitely suppressed.
MOFF	E-MSAW alert is suppressed on a track for a specific alert within a center, in a particular E-MSAW area.
MSAW	E-MSAW alert for an aircraft.
H-dd	Track is being handed off to sector dd within the center.
HLdd	Track is being handed off intercenter or from an ARTS facility. L will contain the receiving center's one letter designator, and dd will contain the two-digit ID of the receiving sector.
HLLL	Handoff is to an ARTS facility where LLL is the ARTS facility identifier.
HL	Track is intercenter automatic handoff, or intercenter manual handoff with sector 00 entered.
HUNK	Track is being handed off to an unknown (UNK) facility.
HLdl	Track is being handed off to a specific position dL in an ARTS facility.
HLLdL	Track is being handed off to a specific position dL in an ARTS facility (first L).
HLLx	Track is being handed off to a position x in an ARTS facility LL.

Table 4–3. Field E Data (Continued)

Field E Data	Explanation
LLdd	Host-No-Host (HNH) qualified track is in crosstell status from an external ARTS. The first L will be the one-letter external ARTS facility identifier (may not contain the letters H, O, or K); the second L will be the one letter receiving NAS center identifier and dd will be the sector to which the handoff is routed.
O-dd	Handoff has been accepted by sector dd within the center (intracenter), or sector dd has retracted a handoff to an ARTS facility
OLdd	Handoff has been accepted for an interfacility handoff where L will contain the receiving center's one letter designator, and dd will contain the two-digit ID of the receiving sector.
OLLL	Handoff is accepted by an ARTS facility where LLL is the ARTS facility identifier.
OUNK	Handoff has been accepted by an unknown (UNK) facility.
OLLdL	Handoff has been accepted by a second ARTS as OLLdL, where LL is the first two characters of the local center's ID for the ARTS, and dL is the ARTS position.
OLdl	Handoff has been accepted by a position dL in an ARTS facility (first L).
OLLx	Handoff has been accepted by a position x in an ARTS facility LL.
K-dd	Handoff has been accepted by sector dd within the center and /OK was input with the accept message.
KLdd	Intercenter handoff has been accepted by sector dd in center L and a sector other than the receiving sector has accepted the handoff, (Accept Handoff action contained /OK).
KLdl	Handoff has been accepted by a position LdL in an ARTS facility (first L). Position dL was different from the position addressed in handoff.

Table 4–3. Field E Data (Continued)

Field E Data	Explanation
KLLdL	Handoff has been accepted by a second ARTS as KLLdL, where LL is the first two characters of the local center's ID for the ARTS facility and dL is the ARTS position that accepted the handoff.
KLLx	Handoff has been accepted by position x in an ARTS facility LL. Position x was different from the position addressed in handoff.
HOLD	The aircraft is in hold status.
CST	Aircraft is in coast status.
dddd	The beacon code received, if it is different from the assigned code.
NONE	Displayed if the track has an assigned beacon code, and a beacon code is not received.
ddd, CAS: (d)dd, MAS: Mdd 	The ground speed (range 001 to 999). Accepted GIM-S speed
MISM	Displayed in the receiving ERAM facility's data block during a handoff from a HOST, TRACON, or other ERAM facility when there is a discrepancy in the target position between the two facilities.
CODE	Temporarily displays the primary beacon code when an alert condition (e.g., 7700) is causing a special beacon code to be displayed.
FRZN	Displayed when the data block is in frozen (FRZN) status indicating that the data block is unpaired from the target.
SIDE	Warning to both the initiating and receiving controller that an interfacility (ERAM ARTCC to ERAM ARTCC) handoff is a side stream handoff. The SIDE indicator is displayed starting when the handoff is initiated and will continue to flash and time share with handoff accept information.

4.3.4.1 Temporary Display of the Surveillance Reported Beacon Code

The user may temporarily display the surveillance reported beacon code in all FDBs, LDBs and Conflict Data Blocks (CDB) displayed on that R-position.

ERAM can receive surveillance data from both radar and ADS-B equipment. When both types of sources are providing data, one type is considered the primary or preferred source and one is the alternate source. When surveillance data is being received from both radar and ADS-B sources, ERAM will display special text associated with an alert condition reported by either source, not just the preferred source. The alert condition is reported via a special beacon code, e.g., 7700/EMRG, or for ADS-B there is also Target Status data that is used to report alert conditions. These alert conditions are reported in Field E of FDBs or on Line 3 of LDBs or CDBs.

When the controller invokes the override to temporarily display the surveillance reported beacon code, ERAM will display the reported beacon code, or special text associated with the beacon code, from the preferred source. Special text associated with an alert condition reported by the alternate source via the beacon code or from the ADS-B Target Status data will not be displayed while the override is in effect. The intent is to display only the preferred source beacon data while the override is in effect. When the override is in effect, special text that was displayed in Field E of FDBs or on Line 3 of LDBs or CDBs prior to the override is not displayed if the alert condition is only being reported in the alternate source data or in the ADS-B Target Status data.

The following provides details on each type of affected data block:

- FDBs display the surveillance reported beacon code in Field E, temporarily overriding all current display eligible Field E items. No Field E timesharing occurs while the override is in effect. If the beacon code is a special code, e.g., 7700, 7600, the associated special text, e.g., EMRG, RDOF, is displayed rather than the actual beacon code. If there is no surveillance reported beacon code, Field E contains 4 blank spaces. Reasons for a valid surveillance reported beacon code not being available for FDBs include the beacon code being marked invalid, missed surveillance returns, the flight being in coast, or the flight not being paired.
- For Quick Look FDBs, the state of the override at the requesting sector will determine the contents of Field E. That is, if the requesting sector R-position has the override in effect, then the surveillance reported beacon code, or associated special text, will be displayed in Field E of the Quick Look FDB at the requesting sector.
- Paired LDBs and unpaired LDBs that are displayed in enhanced format (meaning they are displaying the ADS-B reported callsign on Line 1 of the LDB), display the surveillance reported beacon code on Line 3 of the LDB, similar to what is currently done if the surveillance reported beacon code is a special code. This allows for the AID to remain displayed during the override. If the beacon code is a special code, e.g., 7700, 7600, the associated special text, e.g., EMRG, RDOF, is displayed rather than the actual beacon code. If there is no surveillance reported beacon code, i.e., it has been marked as invalid, Line 3 is not displayed.
- Unpaired LDBs that are not displaying the ADS-B reported callsign on Line 1 of the LDB will not be affected by the override. The beacon code is already displayed on Line 1 of the LDB, so no Line 3 will be displayed.

Two methods can be used to apply the override. One is via an adaptable keypad key, which works similarly to the FDB 4th line overrides in that the key must be held down to keep the override in effect. The availability of this method is dependent on site adaptation of the R-position keypad keys.

The second method is via a Toolbar button on the Data Block Fields Menu labeled ‘CODE’. This button has similar functionality to the keypad key override, but is controlled by trackball button press-and-hold vs. keypad key press-and-hold. The button is located between the NON-RVSM and DEST buttons on Row 1 of the Data Block Fields Menu. The CODE button has a ‘cut’ corner in the upper right corner of the button. The cut corner is a triangle displayed in a different color than the rest of the button. When the button is inactive, the main part of the button is black and the cut corner is grey. When the button is active, the main button is grey and the cut corner is black.

To invoke the override, move the cursor to the CODE button and press-and-hold the **left** or **middle trackball** button. While the trackball button is held down, the surveillance reported beacon code is displayed, and the cursor is locked on to the CODE button. The override stays in effect until one of the following occurs:

a. The trackball button is released.

b. Another trackball button is pressed.

c. An adapted <adp_SDKeypadKeys> override keypad key is pressed.

d. The Clear key on the keyboard is pressed.

e. The keyboard trackball cursor Home key is pressed.

f. The display is switched to the other channel.

g. The display test pattern is invoked.

h. The input device test pattern is invoked.

i. The See-All command is invoked.

NOTE: The controller can tear-off the CODE button and place a copy on the Situation Display. When torn-off, the button will be tied to the Situation Display Coordinates, as opposed to map coordinates.

The following shows the CODE button, in an inactive state, on the Data Block Fields Menu:

4.3.5 Mismatch Indicator

During an interfacility handoff to an ERAM facility, a discrepancy or mismatch in the target position causes MISM to time share in Field E of the data block at the receiving ERAM facility. The receiving ERAM facility can show MISM during handoffs from another ERAM, HOST, or TRACON facility.

UAL1123
330↑290
292 MISM

NOTE: The receiving controller can clear the MISM indicator from a data block by entering a track message.

4.3.6 Frozen Track (FRZN) Indicator

ERAM provides the capability for controllers to un-pair and freeze data blocks via the Commanded Frozen command (QH F). The command syntax includes an optional position identifier, which allows the controller to park the frozen data block at a desired location (i.e., a fix, lat/long, and FRD, or a trackball pick) until it may be worked at a later time. The Commanded Frozen command works for both locally and non-locally controlled flights.

A frozen data block is still eligible to be handed off. The acronym FRZN appears in Field E of the FDB and the position symbol is changed to an hourglass. Figure 4–8, Datablock with Frozen Indicator, shows this example. In addition, an unpaired LDB is associated with the target.

Figure 4–8. Data Block with Frozen Indicator

To freeze the data block, enter the hold command with the F indicator.

To remove a FRZN indicator, enter the start track command for the aircraft.

4.3.7 Lost Mode C Indicator

ERAM uses four Xs (XXXX) to indicate Lost Mode C.

This indicator is displayed for an aircraft that previously had Mode C when an adapted number of returns have been received with no Mode C.

Once Mode C is received, ERAM will remove the lost Mode C indicators.

UAL444
310XXXX
216 440

4.3.8 Exceptional Vertical Rate Indicator

This indicator is a single X following the Mode C altitude value.

The single “x” is displayed when the aircraft’s vertical rate of climb or descent exceeds the adapted value for the aircraft performance characteristics.

Once the aircraft returns to its expected climb or descent rate, ERAM will remove the Exceptional Vertical Rate Indicator.

UAL444
310↑240X
216 440

NOTE: Safety alert processing continues using the displayed altitude.

4.3.9 Blinking

Blinking draws the controller’s attention to the data on the display. Characters can be blinked bright/dim so they are always visible or they can be blinked on and off. The following display objects blink on and off:

- LDBs – when the beacon code is 7600, 7700 or one of the two adapted special beacon codes
- Coordination Indicator in Line Zero of the FDB for conflicts of controlled/uncontrolled aircraft
- FDB Field E- when:
  - — the beacon code is 7600, 7700 or one of the two adapted special beacon codes
  - — a flight's position is frozen and CST is eligible for display
  - — OLD is eligible for display as a Field E display item
  - — a beacon code mismatch is eligible for display as a Field E display item, the flight is in handoff and the local center is the receiving facility
  - — a beacon code mismatch is eligible for display as a Field E display item, the flight is in handoff and the local center is the controlling facility, or was previously the controlling facility

  NOTE: A beacon code mismatch means that the code that the aircraft is squawking is different from the code that the aircraft should be on.

  - — any of the following items are displayed in Field E:
    - H-(d)dd
    - HL(d)dd
    - HLdL
    - HL

  - HLLL
  - LL(d)dd
  - O-(d)dd
  - OL(d)dd
  - OLdL
  - OLLL
  - K-(d)dd
  - KL(d)dd
  - KLdL
  - FAIL
  - MSAW
  - MISM
- Mode C Intruder Conflict Data Blocks (CBD) (field A only)
- EMSAW Warning Altitude characters
- Characters in the RA-position RA-CRD-UA Message Waiting Indicator when the RA-CRD-UA Message Waiting Indicator is emphasized at the RA-position.

The following display object blinks bright/dim:

- FDB text array including the leader line, velocity or distance vector and the track position symbol when the flight is eligible for conflict alert display at the sector.

4.3.10 Dwell Emphasis

Dwell Emphasis (increased brightness) is applied when the trackball cursor comes to rest on an FDB data block text array or the track position symbol, or, a Conflict Data Block (CDB) or paired Limited Data Block (LDB).

The following conditions apply to Dwell Emphasis:

- No keystroke or trackball button press is required for applying dwell.
- The cursor resting on the FDB leader line or vector line does not cause dwell emphasis to be applied.
- When a data block is displayed with dwell emphasis, dwell emphasis is applied to the text array, leader line, track symbol, vector line (velocity or distance), and RDB associated with the data block.
- Dwell emphasis brightness is controlled by the DWELL increment/decrement button in the BRIGHTNESS toolbar menu.
- Dwell emphasis is removed from the data block when the cursor is moved off the data block, or when a trackball button is pressed.

4.3.11 Data Block User Emphasis

User Emphasis enables controllers to lock dwell emphasis in place for the selected FDB and CDB or paired LDB (standard and enhanced formats).

To apply/remove controller emphasis, left-click in the data block Field A.

4.4 Changing Data Block Types

The data block type of individual aircraft not under your control or in hold status can be changed. Aircraft not under your control can be cycled between an FDB and a paired LDB. Limited data blocks can be toggled between paired LDBs and E-LDBs.

To cycle between an FDB and a paired LDB, middle-click the target symbol and repeat until the desired data block type appears.

NOTE: ERAM always displays a FDB for all flights for which the user has track control, unless the aircraft is in hold.

To toggle between a paired LDB and an Enhanced LDB (E-LDB), left/middle-click the **Altitude** field.

4.5 Aircraft in Hold

ERAM provides several data block indicators for aircraft in hold.

4.5.1 Default Data Block Type

The default data block type for flights in hold is set by using the Hold Options menu.

After reaching the hold fix, individual data blocks can be changed to other allowable data block types as desired.

4.5.2 Hold Data Blocks

When an aircraft is in hold status, HOLD appears instead of ground speed in Field E. An aircraft in hold displays an “H” as the position symbol (Figure 4–9). If a flight goes into coast while in hold, the position symbol changes from an “H” to a “#” symbol.

Figure 4–9. Hold Data Block

NOTE: The H position symbol combined with a correlated beacon target may appear to the controller to be an N.

4.5.3 EFC Indicator

For an aircraft in hold, when the Expect Further Clearance (EFC) time approaches, ERAM provides two data block indicators:

- ERAM will force an FDB
- "HOLD" in Field E is replaced by "EFC" (Figure 4–10)

Figure 4–10. Data Block Hold EFC

4.5.4 Conflict Alert

When there is a conflict alert that involves an aircraft in hold, an FDB is forced and the data blocks blink. When the conflict has been resolved, the data block reverts to its state before the alert.

4.5.5 E-MSAW Alerts

When there is an Enhanced Minimum Safe Altitude Warning (E-MSAW) alert that involves an aircraft in hold, an FDB is forced and the E-MSAW blinks.

After the resolution of the conflict, the data block reverts to its state before the alert.

4.5.6 Intra-facility Handoff

When an aircraft is in hold and is involved in an intra-facility handoff:

- An FDB will be forced at initiating and receiving sectors.
- The Hold View entry will be forced on the receiving sector's display.
- When the handoff is accepted, the data block for the receiving sector changes to the current setting in the Hold Options menu at the transferring sector. The data block on the transferring sector reverts to the current settings in the Hold Options menu.

4.6 Flight Plan Readout

To do an implied Flight Plan Readout: middle-click in Field A of the FDB, E-LDB, or paired LDB. The Flight Plan readout appears in the Continuous Flight Plan Readout View, if it is displayed, or in the RA View if the Continuous Flight Plan Readout View is not displayed.

4.7 Data Blocks in Handoff

ERAM enables controllers to change the heading, speed, free-form text, and interim altitude after handoff to another ERAM facility and before leaving the AOR.

In this example, Facility A (Figure 4–11) can modify the 4th line data after Facility B (below) accepts the handoff. These changes are reflected in the data blocks of both facilities if the aircraft is within the transferring controller's AOR. If a QQ or QS message does not pass, the transferring controller receives a message in the feedback area and the Message Waiting button is highlighted. When the Message Waiting button is acknowledged, an Unsuccessful Transmission Message (UTM) is displayed.

The transferring controller will also see 4th line changes made by the receiving controller after the handoff is accepted. In this example, Facility A will see changes to the flight plan or the data block made by Facility B (Figure 4–12). However, Facility B will not receive a UTM if information does not pass back.

Facility A Situation Display – Transferring Controller

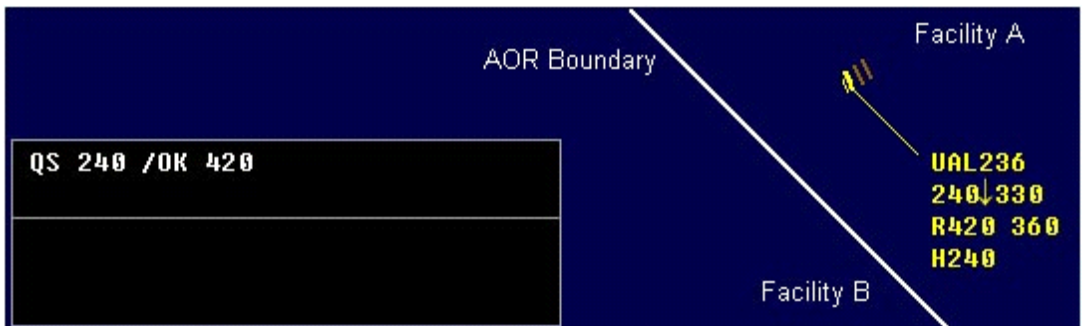


Figure 4–11. Facility A Situation Display

Facility B Situation Display – Receiving Controller

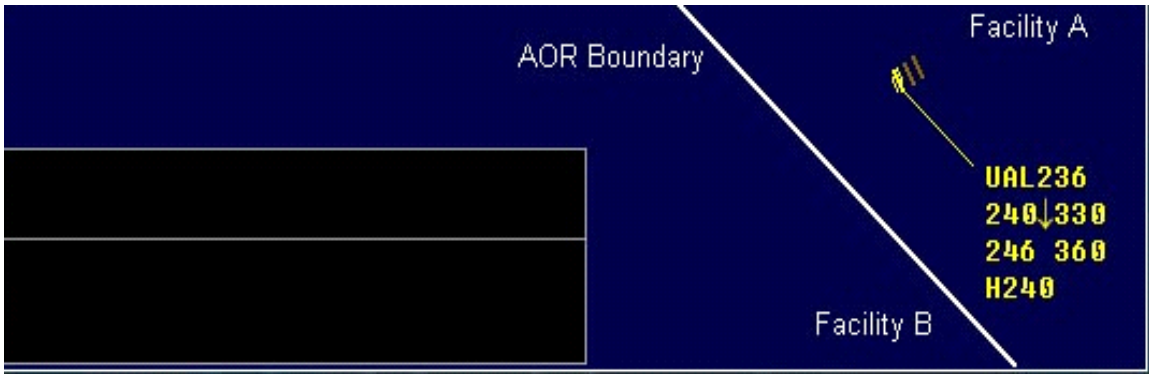


Figure 4–12. Facility B Situation Display

4.8 Data Block Fields Toolbar Menu

The controller can control whether aircraft destination, type, non-RVSM indicator, and RDBs are displayed. Figure 4–13 shows the Data Block Fields toolbar.

To access the Data Block Fields toolbar menu, left/middle-click the **DB FIELDS** button on the Master Toolbar to display the Data Block Fields toolbar menu.

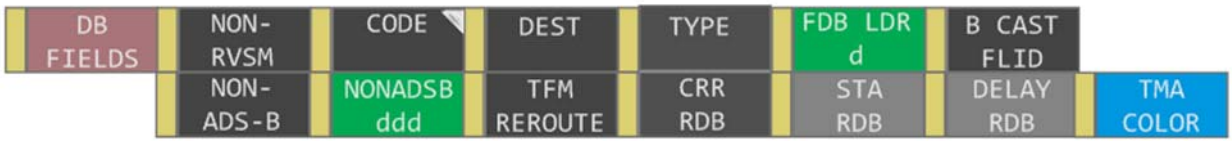


Figure 4–13. Data Block Fields Toolbar

To display/suppress the data block indicators, left/middle-click **DEST**, **TYPE**, **NONRVSM**, or **RDB** buttons to toggle the display of the desired indicator. DEST and TYPE cannot be displayed at the same time. Table 4–4 lists the RDB buttons.

Table 4–4. RDB Buttons

Button	Displays
DEST	Aircraft Destination
TYPE	Type of Aircraft
NON-RVSM	Non-RVSM Indicator
RDB	Range Data Blocks

NOTE: The NON-RVSM indicator cannot be toggled off if your sector includes RVSM airspace.

4.9 FDB 4th Line Data Overview

ERAM supports the 4th line for a FDB which can display the following data items:

- Speed (Controller-entered or GIM-S): the FDB 4th line contains three possible speed values:
  a. Controller-entered speed, i.e., the legacy 4th line speed (Figure 4–14, a) FDB Fourth Line Speed Values).
  b. Accepted GIM-S speed value with the GIM-S speed indicator in green (Figure 4–14, b). When a Proposed GIM-S speed is accepted and the 4th line already contains a heading and a controller-entered speed, the Accepted GIM-speed only replaces the controller-entered speed. Heading information and Accepted GIM-S speed then co-exist.
  c. Accepted GIM-S speed value with the GIM-S speed indicator being stale (gray) (Figure 4–14, c). A stale Accepted GIM-S speed indicates that TBFM has calculated a new Proposed GIM-S speed following the acceptance of a previously calculated Proposed GIM-S speed for a flight. A Proposed GIM-S speed is never displayed in FDB 4th line.

Figure 4–14. FDB Fourth Line Speed Values

- Heading
- Free Form Text: when there is an Accepted GIM-S Speed displayed in the 4th line and the controller enters Free Form Text (FFT), the FFT replaces the Accepted GIM-S Speed in the 4th line of the data block. However, the Accepted GIM-S Speed is retained such that when the FFT is deleted, then the Accepted GIM-S Speed advisory speed is re-displayed in the 4th line of the data block.
- Aircraft Data (aircraft type and equipment suffix)
- Destination

The valid combinations of data items that can be displayed in the 4th line of an FDB are:

- Heading
- Speed (controller-entered or accepted GIM-S)
- Heading and Speed (controller-entered or accepted GIM-S)
- Free Form Text
- Aircraft Data
- Destination

4.9.1 Accessing the 4th Line of an FDB

The TYPE button toggles the display of aircraft data. To access the aircraft data:

1. Left/middle-click **DB FIELDS** in Master Toolbar.
2. Left/middle-click the **TYPE** button.

The DEST button toggles the display of destination data. To access the destination data:

1. Left/middle-click **DB FIELDS** in Master Toolbar.
2. Left/middle-click the **DEST** button.

The Heading/Speed/Free form text (HSF) indicator shown below in Figure 4–15 toggles the fourth line text in a selected FDB on/off. The HSF indicator is at the end of the third line of the FDB in the shape of an arrow pointing down.

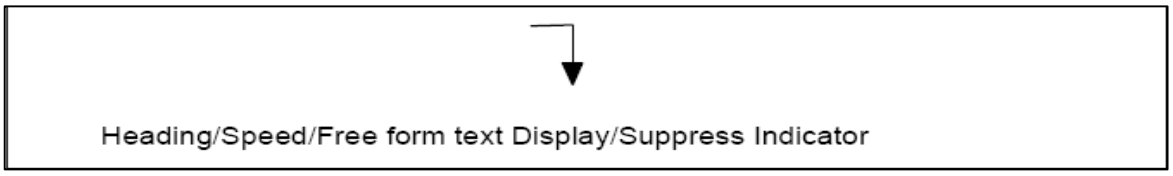


Figure 4–15. HSF Indicator

To toggle between displaying/suppressing fourth line data, left/middle-click **HSF** indicator to toggle between display/suppress data, OR enter the HSF Display/Suppress command:

1. Type **QS**
2. Type **Flight ID**
3. Press **ENTER**

4.9.2 Temporarily Overriding FDB Data

A controller can temporarily override the display contents of the 4th line of the FDB with the following three keypad keys:

- Aircraft Data override key
- Destination override key
- Heading /Speed/ Free form text (HSF) override key

To temporarily override the Aircraft Data in an FDB, press and hold the **Aircraft Data Override** keypad key.

- If the FDB has aircraft data (type and equipment), it appears in the 4th line
- If the FDB has no destination, none appears

To temporarily override the Destination Data in an FDB, press and hold the **Destination Data Override** keypad key.

- If the FDB has a destination, it appears in the 4th line
- If the FDB has no aircraft data, none appears

To temporarily override the Heading/Speed/Free form text data in an FDB, press and hold the **Heading/Speed/Free form Text Data Override** keypad key.

- If the FDB has Heading/Speed/Free form text data, it appears in the 4th line

- If the FDB has no Heading/Speed/Free form text data, none appears

4.10 System Override

The system override allows the controller to Display/Suppress Indicator setting to display the HSF data when one of the following occurs:

- Heading, speed, or free form text is added to an FDB
- The contents of existing HSF field for an FDB is changed (not deleted)
- The sector position is being offered a handoff of the FDB

NOTE: If an FDB 4th Line heading field is deleted and the speed field still exists, the HSF Display/Suppress Indicator setting is unchanged. If an FDB 4th Line speed field is deleted and the heading field still exists, the HSF Display/Suppress Indicator setting is unchanged.

Table 4–5 shows examples of FDB formats.

Table 4–5. FDB Formats

An FDB With:	Example:
Free Form Text Data	UAL1123 290C 292 300↴ EXPEDITE
Heading Data	UAL1123 290C 292 300↴ H420
Controller-Entered Speed Data	UAL1123 290C 292 300↴ S390
Heading and Controller-Entered Speed Data	UAL1123 290C 292 300↴ H240 M75
Heading and Accepted GIM-S Speed Data	UAL1123 290C 292 300↴ H240∠M75

Table 4–5. FDB Formats (Continued)

Line 0 – Coordination	C UAL1123 290C 292 300↴ B737/A
Aircraft Data	UAL1123 290C 292 300↴ B737/A
Destination Data	UAL1123 290C 292 300↴ ORD

4.11 RVSM Display Capability

The system allows for Reduced Vertical Separation Minimum-related (RVSM) processing at the R-position. The processing includes:

- An indication in the FDB and ELDB when a flight is not equipped for RVSM
- An indication in the Altitude menu of what flight levels are within RVSM range
- The ability to filter and override filters for NON RVSM indicators

4.11.1 RVSM Indicator

The Non-RVSM indicator is a coral box that circumscribes the last text character in field B of the FDB and ELDB. This indicator is displayed for two reasons:

1. If the NON RVSM button is toggled to on, no filtering takes place and the NON RVSM Indicator will be displayed in those FDBs, ADBs, and ELDBs for which it is eligible for display.
2. If the Aircraft Data Override key is enabled and the flight is not RVSM equipped.

4.11.2 NON RVSM Button

The DB Fields Menu in the Master Toolbar contains the NON RVSM button. When available, this button toggles the display of the NON RVSM indicator in the FDBs, ADBs, and ELDBs.

To access the NON-RVSM button:

1. Left/middle-click the **DB FIELDS** button in the Master Toolbar.
2. Left/middle-click the **NON RVSM** button in the DB FIELDS Menu.

If the sector contains any RVSM airspace, the NON RVSM button has grayed out text.

If the sector contains no RVSM airspace, the NON RVSM button has white text on a black background (displayed as available).

To adjust the brightness of the NON-RVSM indicator:

1. Left/middle-click the **FDB** button in the BRIGHT menu in the Master Toolbar.
2. Left-click to decrease brightness (each press decreases it incrementally). If the controller holds the button, the brightness decreases until the button is released.
3. Middle-click to increase brightness (each press increases it incrementally). If the controller holds the button, the brightness increases until the button is released.

4.11.3 RVSM Altitude Menu Values

Altitude values above Flight Level 290 are displayed in gray and in 2000 ft increments. Figure 4–16 shows an Altitude Menu for a flight equipped with RVSM capabilities:

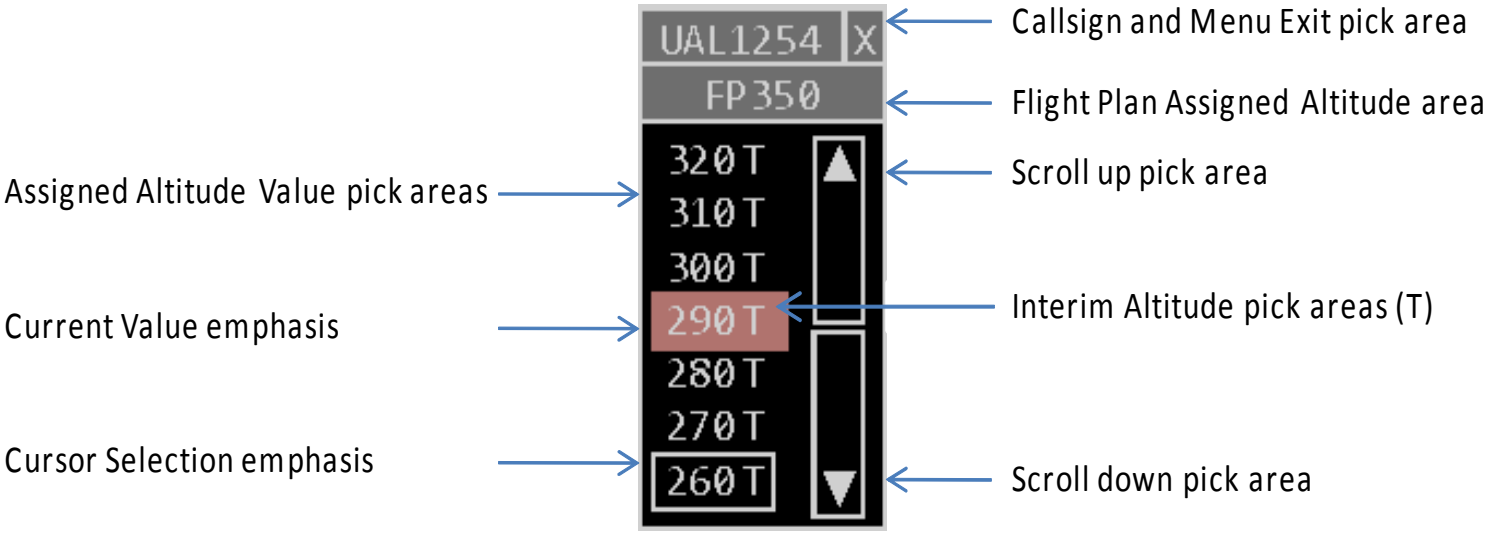


Figure 4–16. Altitude Menu Without RVSM Equipment

4.12 Keypad – Aircraft Data Override Key

The controller can display the NON-RVSM Indicator in an FDB and ELDB when the flight is not RVSM equipped.

To display the NON RVSM Indicator:

1. Press and hold the **Aircraft Data Override** key on the keypad.
2. Release the key and the FDB or ELDB will return to its prior display state.

4.13 Leader Lines

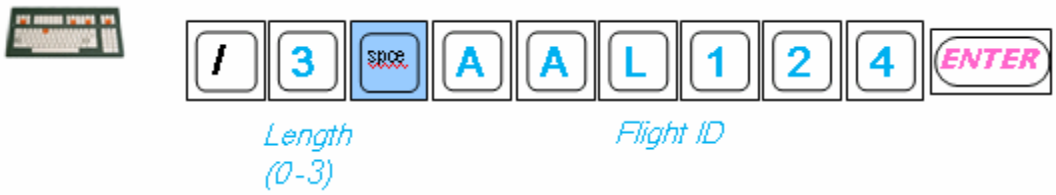
The controller can control leader line length and offset for data blocks.

To adjust the leader line length for all FDBs:

1. Left-click the **FDB LDR** button to decrease leader line length of FDBs.
2. Middle-click the **FDB LDR** button to increase leader line length of FDBs.

NOTE: The leader line length has a range of 0 – 3.

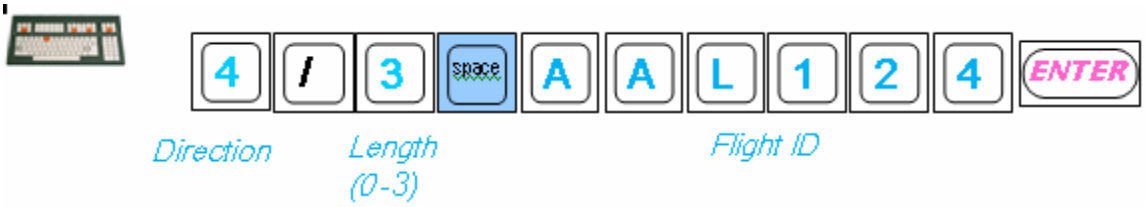
To adjust the leader line length for individual FDBs:



The leader line length has a range of 0 – 3.

FDBs can be offset to any of eight compass directions.

The controller can adjust the data block offset and leader line length for individual FDBs in a Single Entry by typing a number to indicate the direction, a /, the number to indicate the length, a space, **FLID**, and **ENTER**.



LDBs (paired, unpaired, enhanced) can be offset to the east or west:

a. Type the number **4** (west) or the number **6** (east).
b. Left-click the target symbol to complete the change.

NOTE: The default offset direction for LDBs is east.

4.14 Radar Filter Toolbar Menu

The Radar Filter toolbar menu allows the controller to display/suppress LDBs and various classes of radar data. Figure 4–17 shows the Radar Filter Toolbar Menu.

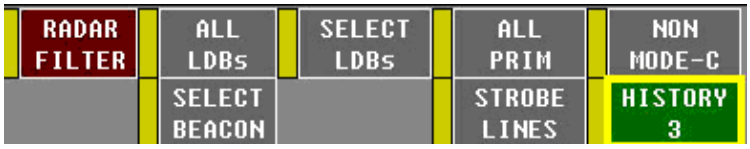


Figure 4–17. Radar Filter Toolbar

To access the Radar Filter Toolbar menu, left/middle-click the **RADAR FILTER** button on the Master Toolbar to display the Radar Filter Toolbar menu.

To display/suppress radar filters, left/middle-click the **ALL LDBs**, **SELECT LDBs**, **SELECT BEACON**, **ALL PRIM**, **NON MODE-C** or **STROBE LINES** button to toggle display of desired filter ON or OFF.

Table 4–6 lists beacon code button functions.

Table 4–6. Beacon Code Buttons

Button	Function
ALL LDBs	Displays ALL LDBs.
SELECT LDBs	Displays LDBs whose beacon codes are in the Beacon Code List.
SELECT BEACON	Displays a target symbol for all aircraft with beacon codes in the Beacon Code List.
ALL PRIM	Displays a primary target symbol for all non-beacon returns and a beacon target symbol for all radar-reinforced beacon data that does not contain Mode C.
NON MODE-C	Displays a target symbol for all beacon aircraft except those equipped with Mode C.
STROBE LINES	Displays STROBE LINES.

NOTE: FDBs, ADBs, or E-LDBs may be displayed in place of paired LDBs.

4.15 Data Block Brightness

Users can control the brightness of many data block features. Figure 4–18 shows the Brightness Master Toolbar.

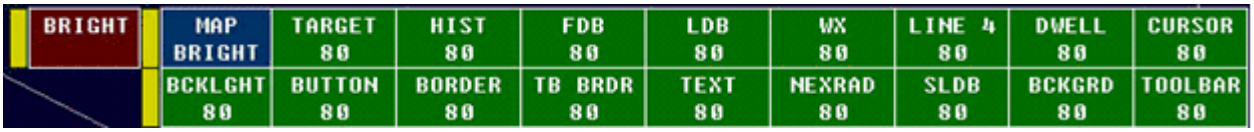


Figure 4–18. Brightness Master Toolbar

To access the brightness toolbar menu, left/middle-click the **BRIGHT** button on the Master Toolbar to display the Brightness toolbar menu.

To adjust the data block display element brightness:

1. Left-click the desired button to decrease brightness of that display element.

2. Middle-click the desired button to increase brightness of that display element.

Table 4–7 describes the functions provided by the Brightness Toolbar buttons.

Table 4–7. Table Brightness

Brightness Toolbar Buttons	FUNCTION
MAP BRIGHT	Opens a toolbar with buttons to control the brightness of adapted map elements.
TARGET	Controls the brightness of targets.
HIST	Controls the brightness of history trails.
FDB	Controls the brightness of FDBs and ADBs.
LDB	Controls the brightness of LDBs (paired, unpaired, and enhanced).
WX	Controls the brightness of the levels of ATC weather (WX1, WX2, and WX3).
LINE 4	Controls the brightness of FDB line 4.
DWELL	Controls the brightness of the dwell emphasis.
CURSOR	Controls the brightness of the trackball cursor.
BCKLGHT	Controls the backlight intensity or master brightness of the display.
BUTTON	Controls the background brightness of buttons and tear-off bars.
BORDER	Controls the brightness of view borders and button borders.
TB BRDR	Controls the brightness of the Situation Display Border and the Toolbar interior borders.
TEXT	Controls the brightness of button text (labels).
NEXRAD	Controls the brightness of NEXRAD weather display data.
SLDB	Controls the amount of increased brightness (0 – 20) for select LDBs (aircraft whose beacon codes are in the Beacon Code List).
BCKGRD	Controls the brightness of the Situation Display background.
TOOLBAR	Controls the brightness of the background of the Toolbar.

NOTE: FDBs and ADBs are in the same brightness group. Paired LDBs, unpaired LDBs, and E-LDBs are in the same brightness group.

4.16 Data Block Font

The controller can control the font size of data blocks. Figure 4–19 shows the Font Toolbar menu.

To access the Font Toolbar menu, left/middle-click the **FONT** button on the Master Toolbar to display the Font Toolbar menu.

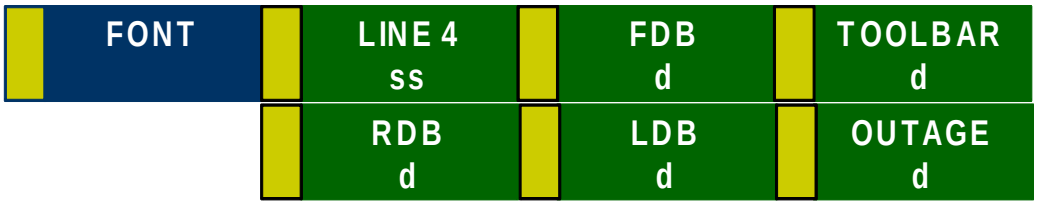


Figure 4–19. Font Toolbar Menu

To adjust the data block font size:

1. Left-click the desired button to decrease font size of that display element.
2. Middle-click the desired button to increase font size of that display element.

Table 4–8 shows the Font Toolbar button and functions.

Table 4–8. Font Toolbar Buttons

Button	Function
Line 4	Controls the font size of FDB Line 4.
RDB	Controls the font size of Range Data Blocks.
FDB	Controls the font size of ADBs and Lines 1-3 of FDBs.
LDB	Controls the font size of LDBs (paired, unpaired, and enhanced).

NOTE: FDB s and ADBs are in the same font size group.

LDBs (paired, unpaired, and enhanced) are in the same font size group.

4.17 Vector Lines

The controller can control whether vector lines are displayed and specify their length. Figure 4–20 shows the Master Toolbar.

Figure 4–20. Toolbar

To adjust vector line length:

1. Left-click the **VECTOR** button on the Master Toolbar to decrease vector line length.
2. Middle-click the **VECTOR** button on the Master Toolbar to increase vector line length.

NOTE: Set vector length to 0 to turn off vector lines. Vector lengths have 5 facility adapted values (nominally 0, 1, 2, 4, and 8).

There is only one instance of the VECTOR button; a copy of it cannot be torn off but the button can be moved.

When the trackball **Home** button is pressed (right-click), the VECTOR button is temporarily displayed at the highest display precedence wherever it is located and the cursor is placed on it.

4.18 Target Histories

The controller can control the number of target histories displayed.

To access the History button, left/middle-click the **RADAR FILTER** button on the Master Toolbar to display Radar Filter toolbar menu which includes the HISTORY button.

Figure 4–21 shows the Radar Filter Menu.

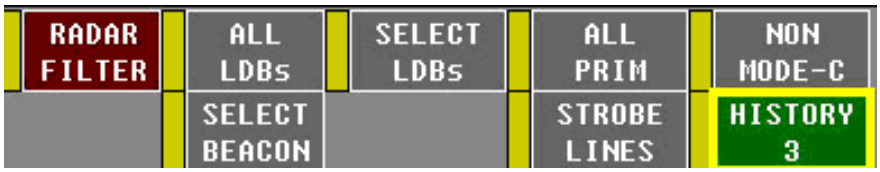


Figure 4–21. Radar Filter Menu

To adjust the number of target histories:

1. Left-click the **HISTORY** button to decrease the number of histories.
2. Middle-click the **HISTORY** button to increase the number of histories.

NOTE: To suppress histories, select a value of 0. The HISTORY button has a range of 0-5.

4.19 Full Data Block Menus

FDB Menus provide the controller with other methods for composing commands. A controller can invoke the following menus by selecting an FDB field:

- Altitude Menu
- Heading Menu
- Speed Menu
- Free Form Text Menu

The FDB Menu appears to the right of the selected FDB. If the FDB Menu cannot fit to the right of the FDB, it is then displayed to the left of the selected FDB.

4.19.1 Altitude Menu

The Altitude Menu allows the controller to update the assigned altitude for a flight plan, assign an interim altitude, or remove an interim altitude for the selected FDB. The controller can invoke the Altitude Menu by positioning the trackball cursor in the text string of Field B or C of the selected FDB and then pressing the **Trackball Select** or **Enter** button. The trackball cursor must be on a character within Field B or C that is not a leading or trailing space.

4.19.2 Altitude Value Pick Areas

Figure 4–22 shows an example of the Altitude Menu with menu pick areas identified. The menu header contains the callsign and the menu's Exit pick areas. The second line contains the flight plan assigned altitude pick area. The main body of the Altitude Menu initially displays three altitude values above and below the current altitude value. Current value emphasis is denoted with a colored block. If the minimum or maximum altitude value is reached, additional altitude values (more than three) will be displayed above the minimum or below the maximum value.

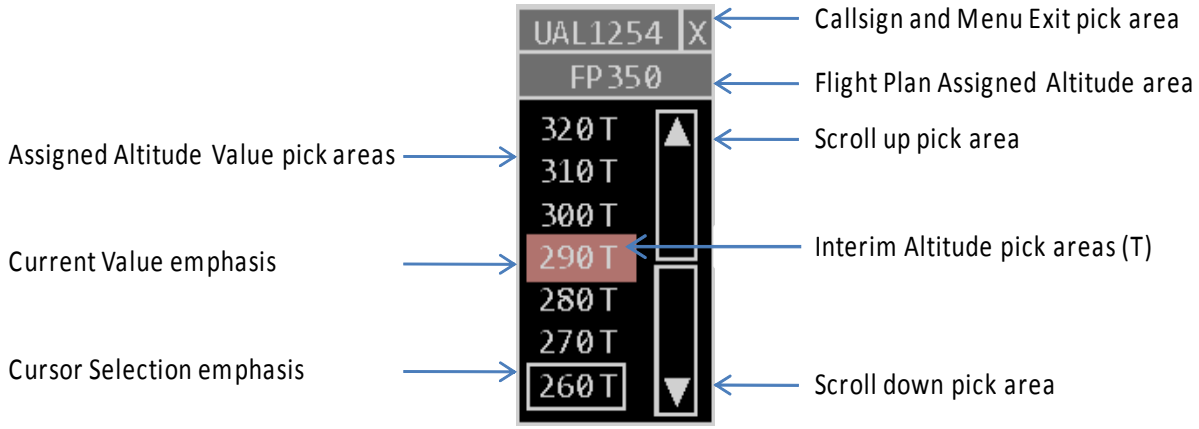


Figure 4–22. Altitude Menu Pick Areas

In the following three examples, the Interim Altitude Eligibility Override function is adapted for the facility. If the FDB contains an interim altitude, the current altitude value is set to the interim altitude value in the FDB and denoted in the Altitude Menu using current value emphasis. If the FDB does not contain an interim altitude, the current altitude value is selected based on the flight plan assigned altitude value. Figure 4–23 shows an example of the Altitude Menu when the selected FDB contains an Interim Altitude and the Flight Plan Assigned altitude is 290.

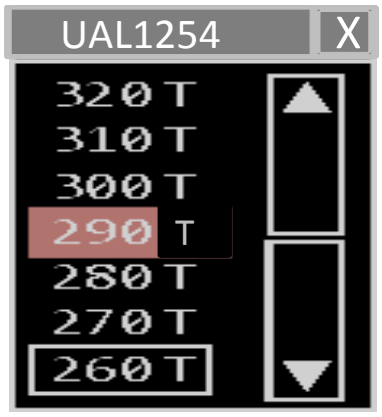


Figure 4–23. Altitude Menu with Assigned Interim Altitude & Flight Plan

Figure 4–24 shows an example of the Altitude Menu when the selected FDB contains an Interim Altitude and the Flight Plan Assigned Altitude is 350.

Figure 4–24. Altitude Menu with Assigned Interim Altitude & Flight Plan

Figure 4–25 shows examples of the Altitude Menu for assigned and blocked altitudes. In these examples, the Interim Altitude Eligibility Override function is not adapted for the facility and the selected FDB does not contain an interim altitude.

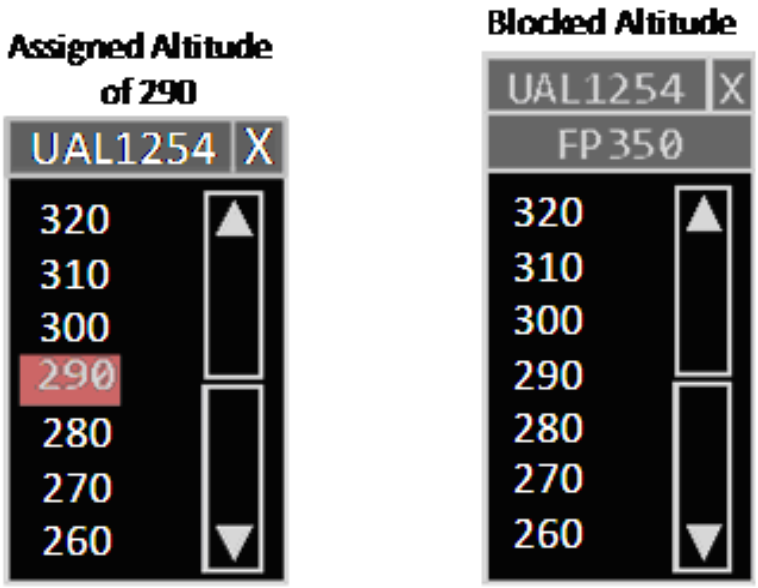


Figure 4–25. Assigned and Blocked Altitude

4.19.3 Interim Altitude Pick Areas

The Interim Altitude pick area can be used to assign an Interim Altitude to the selected FDB. When the Interim Altitude pick areas are displayed, each Altitude Value pick area has an associated Interim Altitude pick area except for the 000 Altitude Value pick area.

When an interim altitude pick area is selected (Trackball Select or Enter button), and the sector position does not require an eligibility override for the selected FDB, the position's Message Composition Area (Preview and Feedback areas) is cleared, the interim altitude command is composed in the Preview Area, and the Altitude Menu is removed from the display. The Interim Altitude command that is composed in the Preview Area is "*QQ altitude value cid*", where the altitude value is the interim altitude value selected and the cid number is the Computer Identification number of the selected FDB.

4.19.4 Interim Altitude Indicator

The Interim Altitude Indicator is a "T" that:

- Appears when the Interim Altitude Eligibility Override function is not adapted for the facility.
- Appears next to Altitude Value pick area that is equal to the interim altitude value.
- Cannot be selected by the controller (if attempted, error tone will sound, Invalid Selection cursor is displayed).

Figure 4–26 is an example of the Altitude Menu displayed with Interim Altitude Indicator.

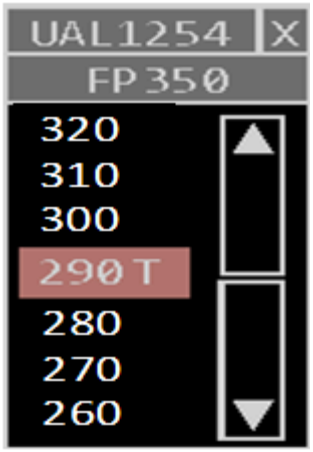


Figure 4–26. Altitude Menu with Interim Altitude Indicator

4.19.5 Scrolling the Altitude Menu

The Altitude Menu displays seven entries per page, one page at a time. The controller can scroll the menu, one page at a time, to see entries above and below the current entries.

The Flight Plan Assigned Altitude pick area:

- Displays current flight plan assigned altitude information.
- Appears when the FDB contains Interim Altitude in the selected FDB or when the flight plan assigned altitude is not a single altitude (format (d) dd).

4.19.6 Selecting the Flight Plan Assigned Altitude Pick Area

When the FDB selected has an interim altitude, the Flight Plan Assigned Altitude area can be selected to remove the interim altitude by left/middle-clicking the **Flight Plan Assigned Altitude Area**.

NOTE: The controller selects the Altitude Value pick area to send a flight plan assigned altitude command and an interim value command to the system.

4.19.7 Entering an Assigned Altitude for a Selected FDB

A flight plan assigned altitude can be entered from the Altitude Menu when the sector position is not being offered a handoff for a flight. To assign an altitude perform the following steps:

1. From the Altitude Menu, left/middle-click the **Altitude Value** pick area. The Altitude Menu is removed from the display. The Altitude /OK Menu is displayed.
2. Left/middle-click **/OK** to enter an assigned altitude -or- **EXIT** to cancel.

4.19.8 Entering an Interim Altitude for a Selected FDB

An interim altitude can be entered from the Altitude Menu. To assign an interim altitude to a selected FDB perform the following steps:

1. From the Altitude Menu, left/middle-click the **Interim Altitude** pick area. The Altitude Menu is removed from the display. The Altitude /OK Menu is displayed.
2. Left/middle-click **/TT** to enter altitude -or- **EXIT** to cancel.

4.19.9 Altitude Menu Cursor Selection Emphasis

When the trackball cursor moves over a pick area that is eligible to be selected, the area is displayed with cursor selection emphasis, which is a white box around the pick area. Figure 4–27 shows an example of the Altitude Menu cursor selection emphasis:

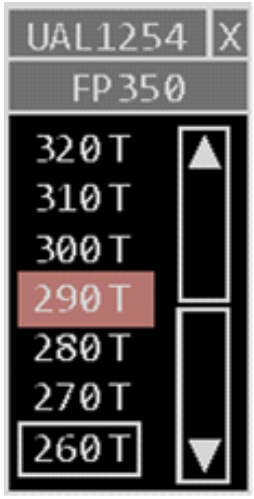


Figure 4–27. Cursor Selection Emphasis

NOTE: When the Trackball cursor moves over the Interim Altitude pick area (The “T”), both the numeric value and “T” are highlighted. If the cursor is on the numeric value, only the value is highlighted.

4.19.10 Exiting or Canceling the Altitude Menu

To exit the Altitude Menu, left/middle-click 

. The Altitude Menu is removed from the display.

To cancel the Altitude Menu, left/middle-click outside the Altitude Menu. The Altitude Menu is removed from the display.

NOTE: The same will happen if a function key is pressed.

4.20 Altitude /OK Menu

The Altitude /OK Menu displays after an entry is made in the Altitude Menu or Altitude Text Box Menu. Once an entry is made, the Altitude /OK Menu then replaces the Altitude Menu or the Altitude Text Box Menu.

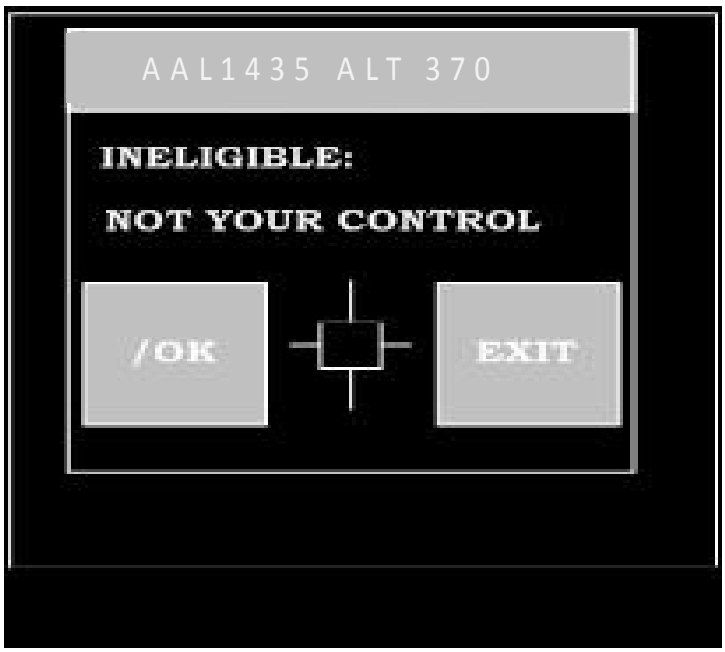


Figure 4–28. Altitude/OK Menu

NOTE: When the Altitude /OK Menu is displayed, the trackball cursor is placed between the two pick areas in the menu.

To select the /OK pick area:

1. Left/middle-click the **/OK** pick area. The system performs the command with eligibility override parameter (/OK) and enters it.
2. The Altitude /OK Menu is removed from the display.

To remove an interim altitude:

1. Left/middle-click the **/TT** pick area. The system performs the command with eligibility override parameter (/TT) and enters it.
2. The Altitude /OK Menu is removed from the display.

4.21 Altitude Text Box Menu

The Altitude text menu box enables controllers to enter a flight plan assigned altitude or an interim altitude for a flight using the Altitude Text Box Menu (Figure 4–29).

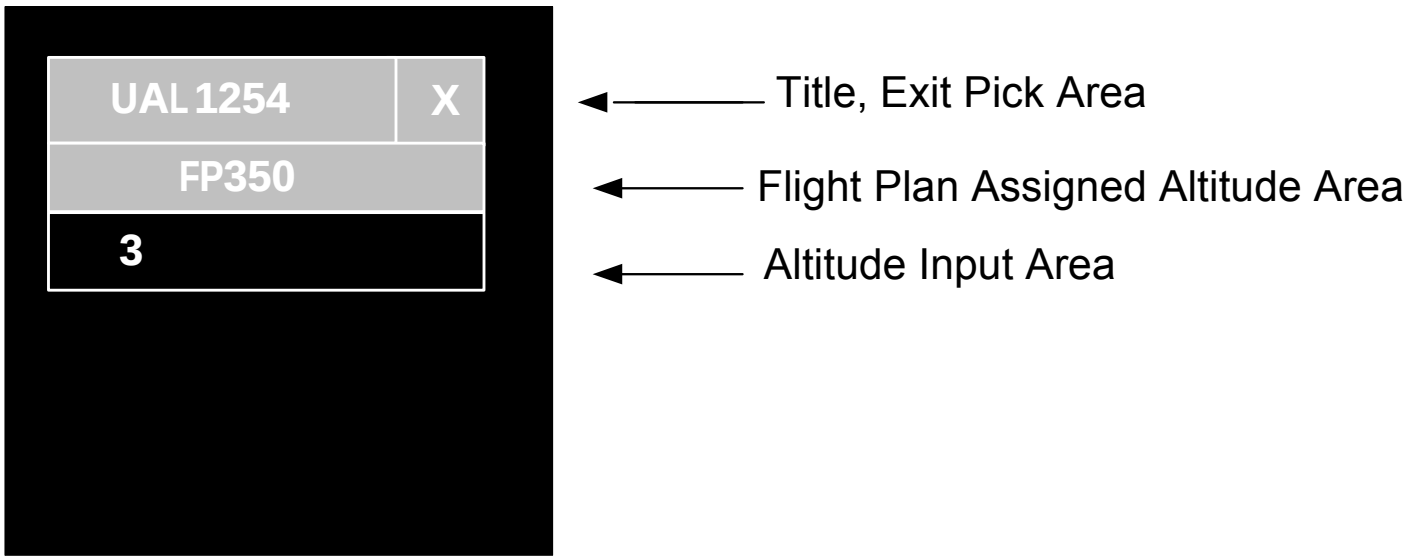


Figure 4–29. Altitude Text Box Menu without Error Area

To enter the altitude value:

1. Type a value. The Altitude Menu is replaced with Altitude Text Box and typed value is displayed in Altitude Input Area.
2. Press **ENTER** to close. The system performs command and enters it and the Altitude Text Box Menu is removed from the display.

NOTE: The controller can enter an altitude value for a flight plan assigned altitude or an Interim Altitude with as many as seven characters.

If the controller enters an invalid altitude value an error tone sounds and INVALID appears in the Altitude Input Error Area as shown in Figure 4–30.

Figure 4–30 shows the Altitude Text Box Menu.

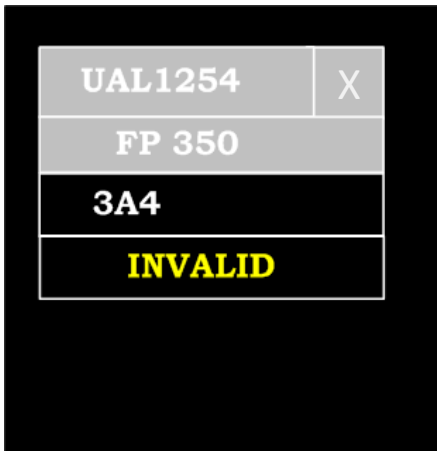


Figure 4–30. Altitude Text Box Menu-INVALID

4.21.1 Assigned Altitude Validation

The Altitude Text Box Menu contains a valid flight plan assigned altitude value when the format matches (d is a digit between 0-9).

- ddd
- OTP/ddd
- VFR/ddd
- VFR
- OTP
- dddBddd

NOTE: Aircraft with assigned altitudes of VFR or OTP are not probed, even if altitudes are included; for example, OTP/105.

4.21.2 Interim Altitude Validation

If the Altitude Input Area contains a text string with the letter “T” in the first character position followed by three digits (0-9), then it is considered valid and no other validation of the text string is done.

4.22 Heading Menu

The Heading menu allows controllers to update the 4th line data of an FDB. Users can select the heading value from a list or enter the heading value with the keyboard. Figure 4–31 shows the Heading Menu with Compass headings.

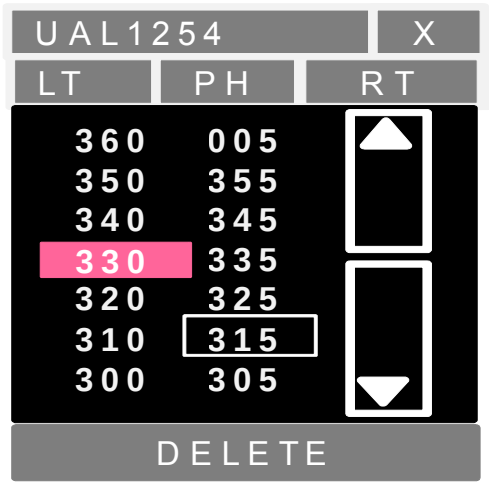


Figure 4–31. Heading Menu with Compass Headings

NOTE: When an FDB is selected, the contents of the heading field in the 4th line of the FDB selected determine what is displayed in the heading menu. This includes whether compass headings, left

turns, right turns, or the Delete Heading pick area is initially displayed. Figure 4–32 and Figure 4–33 shows Heading Menu displaying Left Turns and Right Turns.

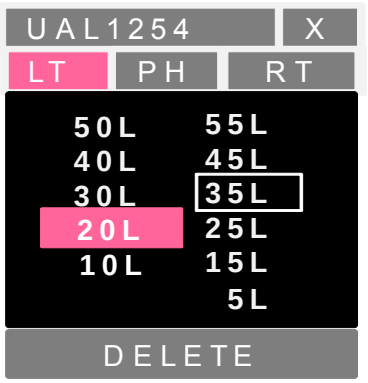


Figure 4–32. Heading Menu Displaying Left Turns

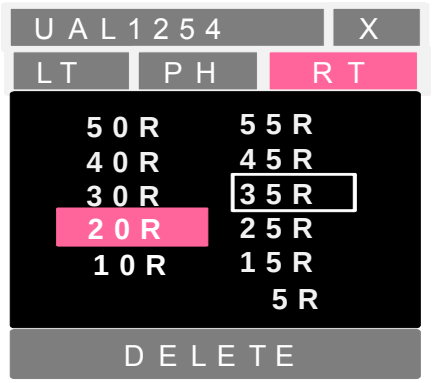


Figure 4–33. Heading Menu Displaying Right Turns

To invoke the Heading Menu from an FDB, left/middle-click the **Field D** (CID) in the third line of the FDB or in the Heading field in the 4th line of the FDB.

NOTE: The 4th line of the FDB can contain other data besides heading. The Heading Menu can only be invoked from the heading field in the 4th line of an FDB when heading data is displayed in the 4th line of the FDB.

4.22.1 Compass Heading Values

The system will display compass headings initially shown in Figure 4–34 when the heading field for the FDB is one of the following:

- The heading field contains a valid compass heading from 001 to 360 degrees in the format of ddd (where ddd is 001-360).
- The heading field does not contain a valid compass heading, left turn, or right turn value.
- There is no fourth line heading data.

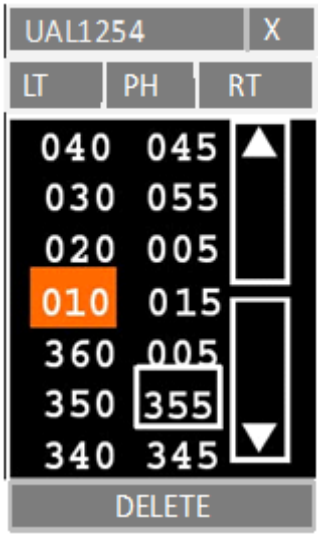


Figure 4–34. Current Compass Heading Value of 010

NOTE: When the compass heading value in the 4th line is equal to the current heading value in the heading menu, the current heading is displayed with current value emphasis.

Heading values are from 005-360 in increments of 5. For example: 005, 010, 015 and so on. If the current compass value is not in an increment of 5, the closest value that is an increment of 5 is displayed with current value emphasis.

To select a compass heading value:

1. Left/middle-click either on the **Field D** (CID) in the third line of the FDB or in the **Heading field** in the 4th line of the FDB. The Heading Menu is invoked and the cursor is positioned on the current heading value in the list of heading values.
2. Left/middle-click the desired value.

4.22.2 Left and Right Turn Values

The Heading Menu also displays all left or right turn values (eleven values for each).

Figure 4–35 shows turn values.

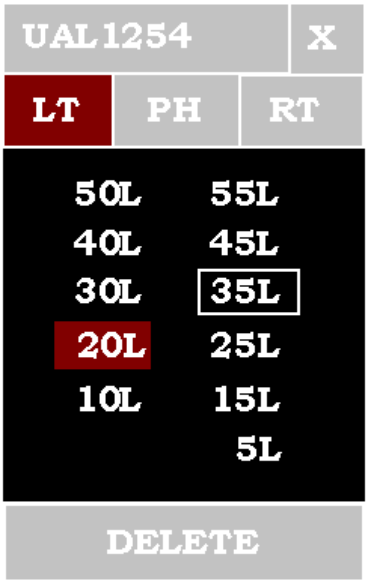


Figure 4–35. Heading Menu with Turn Values

If the left or right turn heading value for the FDB is a value from 5-55 in increments of 5, that heading is used as a current heading value. If it is from 5-55 and not an increment of 5, the closest value to 5 is used as the current heading value.

When the heading value in the 4th line heading field is equal to a value displayed in the heading menu, the value is displayed with current value emphasis.

When the Heading Menu is invoked and a left or right turn value is displayed with current value emphasis, the trackball cursor is positioned on that value.

When a heading menu is invoked and a turn value is not displayed with Current Value emphasis, the trackball cursor is positioned on the “30L” or “30R” value.

To display left/right turns in the heading values, left/middle-click inactive **LT** or **RT** pick area to display left or right turns in heading menu.

To display compass heading values, left/middle-click active **LT** or **RT** pick area to display compass headings in heading menu.

The Compass heading values appear when the Left and Right Turn pick areas are inactive. The controller can switch between displaying compass heading values, Left Turn or Right Turn values.

4.22.3 Present Heading Pick Area

The Present Heading pick area in the Heading Menu updates the heading field in the 4th line of the FDB with the text “PH”. The text is white with a gray background.

To select the preset heading pick area, left/middle-click the **Preset Heading** pick area.

4.22.4 Delete Heading Pick Area

The Delete Heading pick area is used to delete the heading value in the 4th Line of the FDB.

To delete a heading value, left/middle-click the **Delete** heading.

4.22.5 Cursor Selection Emphasis Heading Menu

Cursor Selection emphasis is a white box around the pick area. When the trackball moves over a Heading Value pick area, it is displayed with a Cursor Selection emphasis.

4.23 Heading /OK Menu

The Heading /OK Menu in Figure 4–36 prompts the controller for an eligibility override when the sector position does not have track control of a flight and the controller is specifying or deleting a heading. The Heading /OK Menu is displayed after an entry is made in the Heading Menu or in the Heading Text Box Menu. The Heading /OK Menu is then replaced by the Heading Menu or the Heading Text Box Menu.

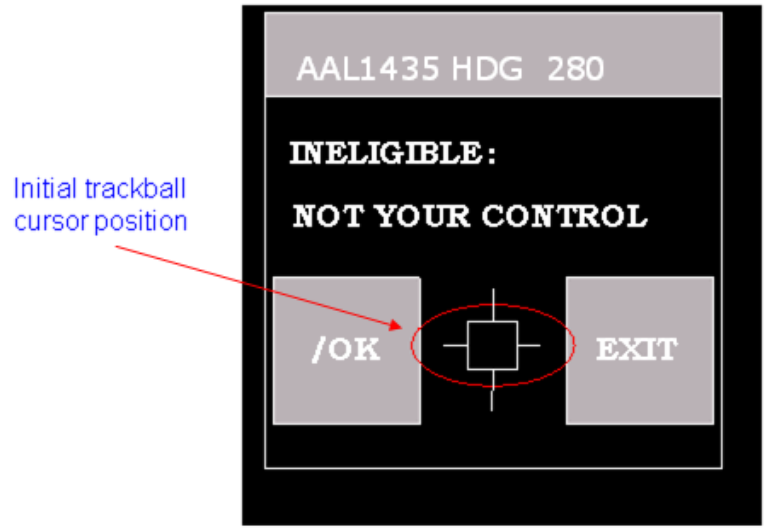


Figure 4–36. Heading /OK Menu #1

When the Heading /OK Menu appears, the trackball cursor is between the two pick areas in the menu. When the controller left/middle-clicks the ***/OK*** pick area, the system performs and enters the 4th Line delete heading command with the eligibility override parameter (/OK) and enters it. The Heading/OK Menu is then removed from the display.

When the system is prompting for an eligibility override to delete an FDB 4th Line heading, the Heading/OK Menu Title contains “DEL HDG” followed by the heading value selected (Figure 4–37). To close the Heading/OK menu:

1. Left/middle-click ***/OK***.
2. Left/middle-click **EXIT**. The Heading /OK menu closes.

Figure 4–37. Heading /OK Menu #2

4.24 Heading Text Box Menu

The Heading Text Box Menu shown in Figure 4–38 allows the controller to enter the heading for a flight. The Heading Text Box menu can be invoked from the Heading Menu by performing the following steps:

1. Type a value (up to 4 characters). The Heading Menu is replaced with Heading Text Box and typed value is displayed in Heading Input Area.
2. Press **ENTER** to close. The system executes the command and the Heading Text Box Menu is removed from the display.

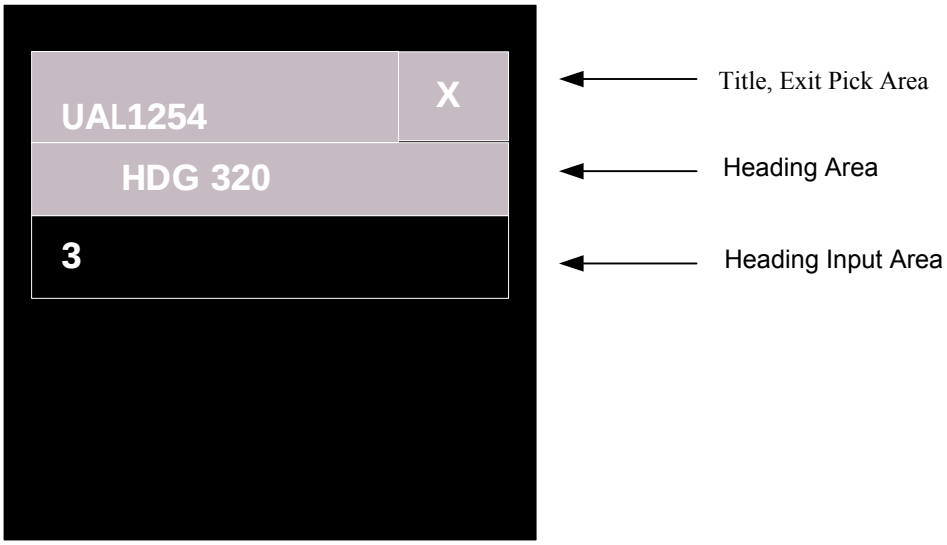


Figure 4–38. Heading Text Box Menu

The Heading Area displays the current heading that is associated with the FDB 4th line heading data. If the sector position did not have track control of the flight when the Heading Menu was invoked, the system removes the Heading Text Box Menu and displays the Heading /OK Menu. If the controller enters an invalid heading value, an error tone sounds and the word INVALID appears in the Altitude Input Error Area as shown in Figure 4–39.

Figure 4–39. Heading Input Error Area

4.25 Speed Menu

The Speed Menu in Figure 4–40 allows controllers to update the 4th line of an FDB with a new speed or remove the current speed value. Speed values (knots or mach) can be selected from a list or typed in with the keyboard.

If there is no Proposed or Accepted GIM-S Speed, but there is a controller-entered speed in the 4th line of the data block, the entered speed is centered and highlighted in the menu.

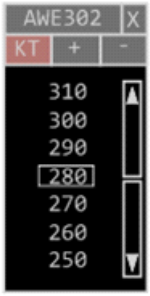


Figure 4–40. Speed Menu Displaying Controller-Entered Speed in Knots

4.25.1 Invoking the Speed Menu

To invoke the Speed Menu from an FDB, left/middle-click the **Field E** (Ground Speed) in the third line of the FDB or the **Speed field** in the 4th line of the FDB.

NOTE: The 4th line of the FDB can contain other data besides speed data. The only time the Speed Menu can be invoked from the 4th line of an FDB is when speed data is displayed in the 4th line of the FDB.

4.25.2 Speed Values in Knots

The maximum and minimum speed values in knots are 110 and 400 respectively. Any value between 110 and 400 in the 4th line speed field becomes the Current Speed Value displayed in the Speed Menu as shown below in Figure 4–41. When the value is less than 110, the menu displays the lowest seven values, when higher than 400, the highest seven. The additional speed values are in increments of 10.

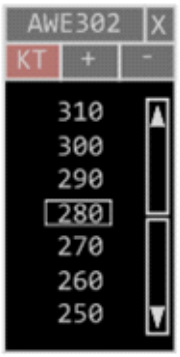


Figure 4–41. Speed Menu Displaying Controller-Entered Speed in Knots

NOTE: The menu shows **290** knots as the Current Speed Value if the 4th line speed field does not match a knots or mach speed format, or, does not exist and the knot speed pick area in the Speed Menu is selected.

When the Speed Plus pick area is active, a plus sign is appended to the knot values. When the Speed Minus pick area is active, a minus sign is appended to the knot values.

4.25.3 Speed Values in Mach

The minimum and maximum speed values in knots are .62 and .96 respectively. Any value between .62 and .96 in the 4th line speed field becomes the Current Speed Value in the Speed Menu as shown in Figure 4–42. When the value is less than .62, the menu displays the lowest seven values, when higher than .96, then the highest seven.

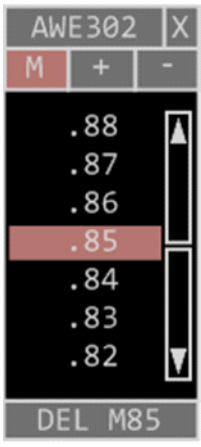


Figure 4–42. Controller-Entered Speed Value in Mach

NOTE:

- The menu will show .79 as the Current Speed value if there is no 4th line speed field in the data block and a speed in mach is to be displayed.
- When a proposed GIM-S Speed value matches a controller-entered Speed value, the Proposed GIM-S Speed is positioned after the controller-entered speed in the Speed Menu.

4.25.4 Speed Menu Formats

When a Proposed GIM-S Speed exists and a Speed Menu is displayed, the display of Mach or knots depends on the unit of the Proposed GIM-S Speed. For example, if a Proposed GIM-S Speed is received in Mach and there is no controller-entered speed in the 4th line, then when the Speed Menu is displayed, the Proposed GIM-S Speed is centered in the menu and the units of the speed are Mach.

If there is a controller-entered speed in the 4th line in Mach, and a Proposed GIM-S Speed is in knots, then the Speed Menu is displayed with a proposed speed advisory centered in the menu and the units are in knots. If a Proposed GIM-S Speed contains a cruise and descent speed, the units of the cruising speed are used in the Speed Menu.

If the plus (+) or minus (-) sign is selected, the Proposed GIM-S Speed is removed from the Speed Menu (Figure 4–43).

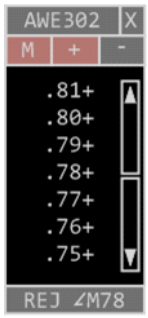


Figure 4–43. A Proposed GIM-S Speed Exists (plus sign button toggled on)

If there is an Accepted GIM-S Speed (e.g., M76) and the plus (+) or minus (-) button is selected, a plus or minus sign is suffixed to the speed entry (Figure 4–44). When the speed entry is selected, the speed is treated as a controller entered speed. The 4th line in FDB would show, for example, M76+. However, if the Accepted GIM-S Speed entry contains a cruise and descent speed (e.g., M76/280), when the plus or minus button is toggled on, the GIM-S speed entry is removed from the Speed Menu list, so that the Speed Menu would show … .78+, .77+, .76+, .75+, .74+… .

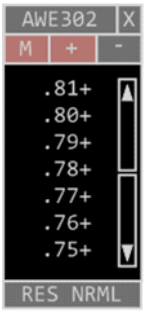


Figure 4–44. An Accepted GIM-S Speed Exists (plus sign button toggled on)

When a Proposed GIM-S Speed is issued, the Speed Menu is centered at the Proposed GIM-S Speed value (Figure 4–45). The Proposed GIM-S Speed value is prefixed with the GIM-S symbol (proposed speed symbol). The cursor default position is at the Proposed GIM-S Speed value.

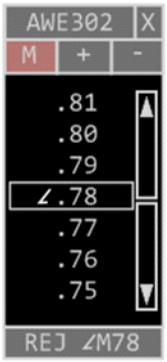


Figure 4–45. Proposed GIM-S Speed (no Controller Entered Speed)

The DEL button is replaced with the REJ (for REJECT) <speed symbol> <PROPOSED SPD> button. When the REJ button is selected, the Proposed GIM-S Speed is rejected. The rejected Proposed GIM-S speed is displayed in the Meter Reference Point View Entry and the 4th line of the data block shows a blank.

When the Speed Menu is displayed, the Menu is centered at the Proposed GIM-S Speed value. Two command buttons are displayed at the bottom of the menu: DEL and REJ (Figure 4–46). The default cursor position is at the Proposed GIM-S Speed.

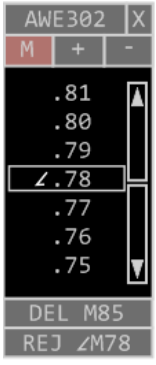


Figure 4–46. Proposed GIM-S Speed with Controller Entered Speed

When scrolling up the Speed Menu to where the current 4th line speed value is (assuming the current controller-entered speed is at the center of the Speed Menu), the current controller-entered speed value is highlighted. Figure 4–47 shows the Speed Menu where no Accepted GIM-S Speed exits.

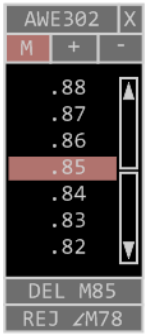


Figure 4–47. Speed Menu (No Accepted GIM-S Speed Exists)

When TBFM issues a Proposed GIM-S Speed that contains cruise and descent speeds, the Speed Menu displays both speeds in the format of <speed symbol><speed 1>/<speed 2>. The REJ button becomes two lines and changes to REJECT in the first row of the button and the proposed GIM-S speed in the second row. The Speed Menu is centered at the Proposed GIM-S speed(s) (Figure 4–48). The default cursor position is located at the Proposed GIM-S Speed. Each speed entry in the Speed Menu is a unique speed entry. For example, M70 is different from M70/270. When the Speed Menu is invoked, and the Proposed GIM-S Speed has two speed values, the Speed Menu is in the same units as the Proposed GIM-S cruise speed.

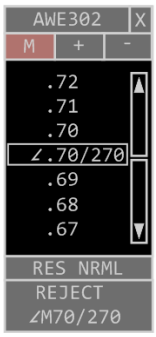


Figure 4–48. Cruise and Descent Accepted GIM-S Speed

If an Accepted GIM-S Speed exists and TBFM issues a Proposed GIM-S Speed with a value that does not match the current Accepted GIM-S Speed, then when the Speed Menu is displayed, it is centered at the Proposed GIM-S speed. Two command buttons, RES NRML and REJECT, are located at the bottom of the Speed Menu (Figure 4–49).

When both a current Accepted GIM-S Speed and a Proposed GIM-S Speed exist, the menu is centered on the Proposed GIM-S speed, but the Accepted GIM-S Speed is highlighted in coral (Figure 4–49). The current Accepted GIM-S Speed is not prefixed with a speed symbol (as the value is no longer valid).

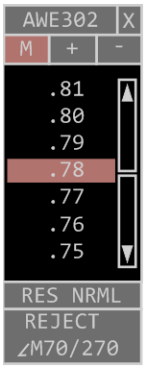


Figure 4–49. Speed Menu (An Accepted GIM-S Speed Exists)

TBFM can issue a “No Speed Advisory Could Be Calculated” indication to ERAM. This results in the display of the NO ADVSRY button in the Speed Menu (Figure 4–50). When the NO ADVSRY button is selected, the FDB Coordination Indicator is removed, but the text string, NO ADVSRY, in the Meter Reference Point View Entry remains.

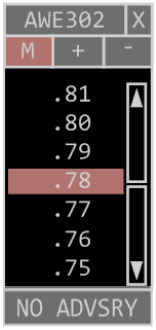


Figure 4–50. No Speed Advisory can be Calculated

When TBFM determines that No Speed Advisory is Required for a flight (e.g., the flight’s current speed is sufficient to meet the STA) after there is an Accepted GIM-S Speed for a flight, the Speed Menu only shows the RES NRML command button (Figure 4–51). When the RES NRML button is selected, the system clears the Accepted GIM-S Speed, sets a null (blank) value in Meter Reference Point View Entry until a new Proposed GIM-S Speed is received, and sets a null (blank) value in 4th line of the data block. The default cursor position is at the current Accepted GIM-S Speed value.

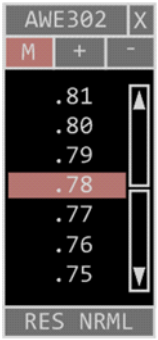


Figure 4–51. No Speed Advisory Required

When selecting a rejected Proposed GIM-S Speed from Meter Reference Point View Entry and there is neither an Accepted GIM-S Speed nor a controller-entered speed at the sector position, the Speed Menu is centered at the rejected Proposed GIM-S Speed (see Figure 4–52). The menu may be scrolled up or down (Figure 4–53).

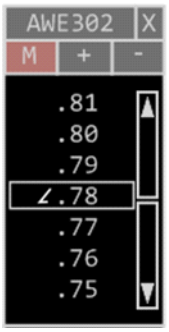


Figure 4–52. Speed Menu: Centered at the Rejected Speed

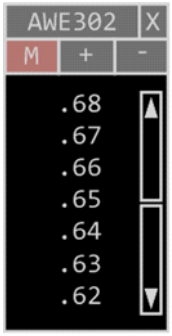


Figure 4–53. Speed Menu: Scrolling Down the Speed Menu

When selecting a rejected proposed GIM-S speed from Meter Reference Point View Entry and there is a controller-entered speed at the sector position, the Speed Menu is displayed centered on the rejected Proposed GIM-S Speed. Figure 4–54 shows an example where there is controller-entered speed of .85, and a rejected proposed GIM-S speed of .78. When the Speed Menu is displayed, the menu is centered at .78, because even though .78 was rejected by the controller, .78 is considered a valid speed advisory until the next updated valid speed advisory is received. When only an Accepted GIM-S Speed exists, the Speed Menu is centered at the Accepted GIM-S Speed.

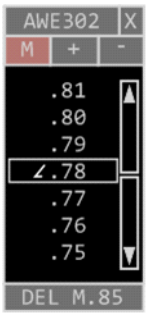


Figure 4–54. Speed Menu: Centered at the Proposed GIM-S Speed

4.25.5 Pick Areas

A controller can toggle the Speed Menu between knots and mach. In the menu, KT means the pick area will display the speed in knots and M means it will display in mach.

To toggle the Speed Knot/Mach pick area, left/middle-click the **Speed Knot/Mach** pick area.

A controller can toggle the Speed Menu Plus and Speed Minus pick areas. Only one of the two areas, Speed Plus or Speed Minus, may be active at a time. If Speed Plus is active, then selecting Speed Minus will deactivate Speed Plus and vice versa.

NOTE: When the speed pick area is active, a plus sign is appended to the speed values displayed.

When the speed pick area is active, a minus sign is appended to the speed values displayed.

To toggle the Speed Plus/Speed Minus pick area, left/middle-click the **Speed Plus** pick area.

To select a Speed Value pick area, left/middle-click the **Speed Value** pick area.

To delete a Speed pick area, left/middle-click **DELETE** in the Speed Menu.

NOTE: When a controller-entered speed instead of the Proposed GIM-S Speed is selected from a Speed Menu (or entered via the QS command) and there is an Accepted GIM-S Speed for the flight, the Proposed GIM-S Speed in the MRP View Entry is marked as rejected.

4.25.6 Speed /OK Menu

The Speed /OK Menu in Figure 4–55 is used to prompt the controller for an eligibility override when specifying a speed, or deleting the speed.

Figure 4–55. Speed /OK Menu

NOTE: When the Speed/OK is invoked, the cursor is automatically placed between the two pick areas.

The /OK button in the Speed/OK Menu is used to compose the 4th Line speed command with the eligibility override parameter (/OK) and enter the command.

To select the /OK Pick Area, left/middle-click the **/OK** button. The system sends the speed command. The Speed /OK Menu is removed from the display.

When the system is prompting for eligibility override to delete an FDB 4th Line speed, the Delete Speed /OK Menu Title in Figure 4–56 is displayed. The header of the menu displays DEL SPD followed by the speed value to be deleted.

Figure 4–56. Delete Speed /OK Menu

4.26 Speed Text Box

A controller can enter an FDB 4th Line speed command for a flight with the Speed Text Box shown in Figure 4–57.

To invoke the Speed Text Box:

1. Left/middle-click either the **Field E** (Ground Speed) in the third line of the FDB or the **Speed** field in the 4th line of the FDB. The Speed Text Box is displayed. Begin typing to cause the removal of the Speed Menu and the display of the Speed Text Box.
2. Type a speed value.
3. Press **ENTER**.

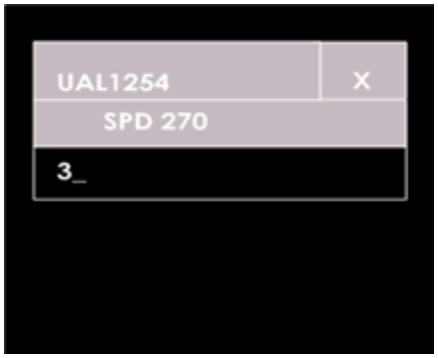


Figure 4–57. Speed Text Box

NOTE: If the sector position did not have track control of the flight when the speed menu was invoked, the Speed Text box menu is removed and the Speed /OK menu is displayed.

4.26.1 Valid Speed Values

When the controller invokes the speed text box menu from the speed menu, it contains valid speed values when it matches one of the valid formats. The “d” is a digit between 0-9.

- ddd
- ddd+
- ddd-
- +d(d)
- -d(d)
- dd
- dd+
- dd-
- Mdd
- Mdd+
- Mdd-
- M.dd
- .dd
- .dd+
- .dd-
- PS
- +

When the speed value entered by the controller is not valid, the Speed Input Error Area is displayed with the text “INVALID” (Figure 4–58).

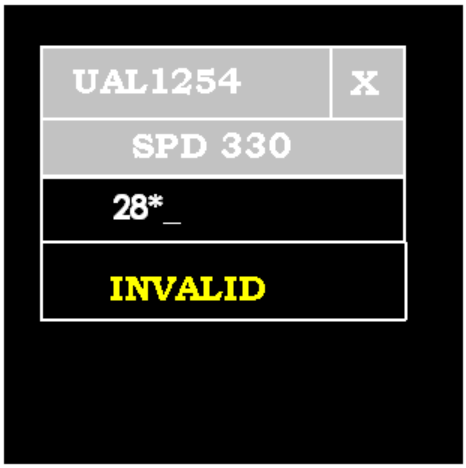


Figure 4–58. Speed Input Error Area

4.27 Free Form Text Box Menu

The Free Form Text Box menu (Figure 4–59) enables the controller to update and delete the FDB 4th Line free form text for a selected FDB.

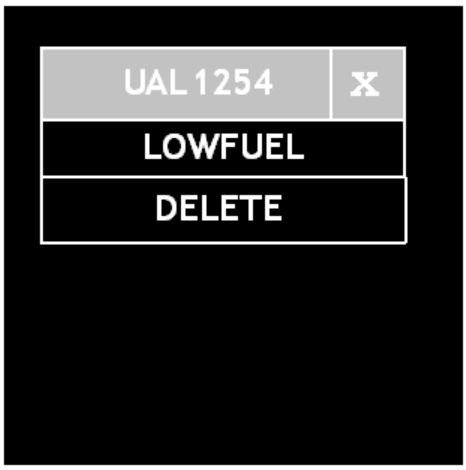


Figure 4–59. Free Form Text Box Menu

To enter free form text when there is no free form text in the 4th line:

1. Type **QS**.
2. Type space.
3. Type clear weather symbol followed by 1 to 8 characters of text (no embedded spaces in the text).
4. Type space.

5. Type computer ID.
6. Press **ENTER**.

Free form text entered in the command appears in the 4th line of the FDB.

When the Free Form Text Box Menu is invoked, the Free Form text Input Area will be pre-filled with the free form text from the 4th line of the selected FDB. The controller can now edit this text. Free Form text is considered valid when the following is true:

- The text string entered is from 1 to 8 characters in length with no embedded spaces.
- The text string contains only the characters A-Z, 0-9, minus(-), plus(+), equal(=), asterisk(*), slash(/), underscore(_), semicolon(;), period (.), comma(,), up arrow, down arrow, and overcast symbol.

4.27.1 Editing Free Form Text

To edit free form text:

1. Left/middle-click a character in the free form text string in the 4th line of an FDB. Free Form Text Box Menu appears with text. Cursor is automatically positioned on the Free Form Delete pick area.
2. Edit the text as necessary.
3. Press **ENTER**. The Command is entered.

The controller can invoke the Free Form Text Box menu only when there is Free Form data in the 4th line of the FDB. If the controller types an invalid format or character, a tone sounds and the error area displays “INVALID” shown in Figure 4–60.

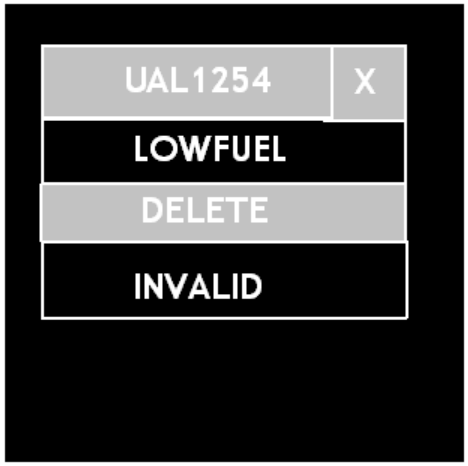


Figure 4–60. Free Form Text Input Area

4.27.2 Deleting Free Form Text

To delete free form text:

1. Left/middle-click a character in the free form text string in the 4th line of an FDB. The Free Form Text Box Menu appears with text. The cursor is automatically positioned on the Free Form Delete pick area.
2. Left/middle-click the **DELETE** button. The Free Form Text Box Menu is deleted and the free form text is deleted from the 4th line in the specified FDB.

4.28 Free Form Text/OK Menu

The Free Form Text /OK Menu shown in Figure 4–61 is used to prompt for eligibility when updating an FDB 4th Line free form text string or deleting the free form text string when the sector position does not have track control.

To delete the Free Form Text with /OK Menu, left/middle-click ***/OK*** when the Free Form Text /OK Menu is displayed with DEL TEXT in the FDB 4th Line Data. The system performs the free form text command. The Free Form Text /OK Menu is removed from the display and the Free form text is removed from the 4th line in the specified FDB.

Figure 4–61. Deleting Free Form Text

To change the Free Form Text with /OK Menu, left/middle-click ***/OK*** when the Free Form Text /OK Menu shown in Figure 4–62 is displayed with the modified text in the FDB 4th Line Data. The system performs the free form text command. The Free Form Text /OK Menu is removed from the display and the Modified free form text is displayed in the 4th line in the specified FDB.

Figure 4–62. Changing Free Form Text

4.29 Test Patterns

The two types of test patterns available on the R-position Console are: the Static Test Pattern (Figure 4–63 and Figure 4–64) which has several options and the Input Device Test Pattern (Figure 4–65).

The Static Test pattern can be invoked from any R-Position Console and is used to determine whether the display is aligned.

The Input Device Test pattern can be invoked from any R-Position Console and can be used to verify the keyboard, keypad, and Cursor Positioning/Selection Device (CPSD).

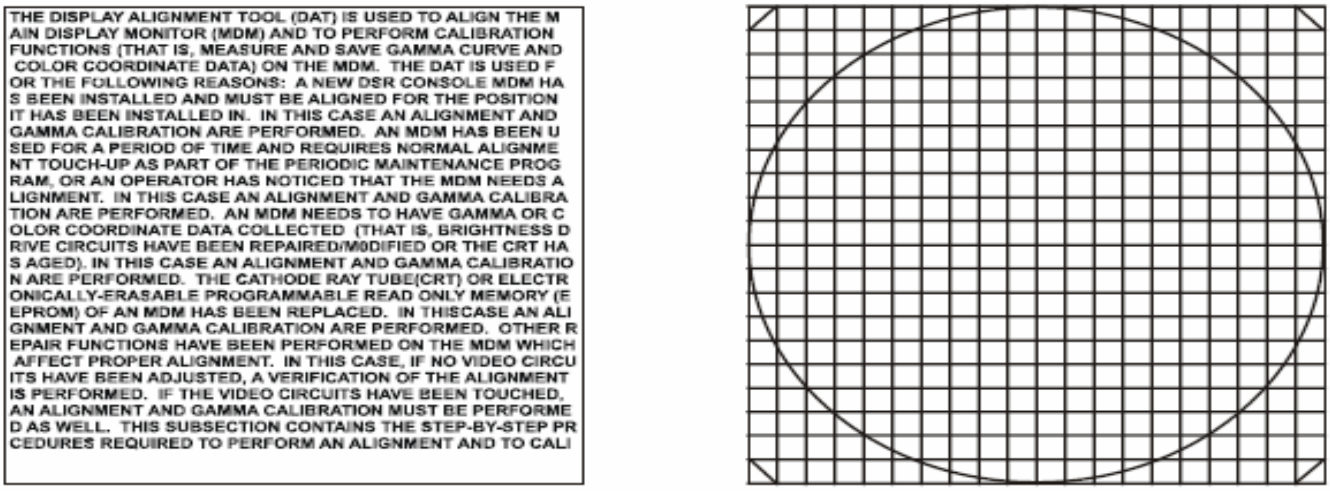


Figure 4–63. Static Test Pattern Example #1

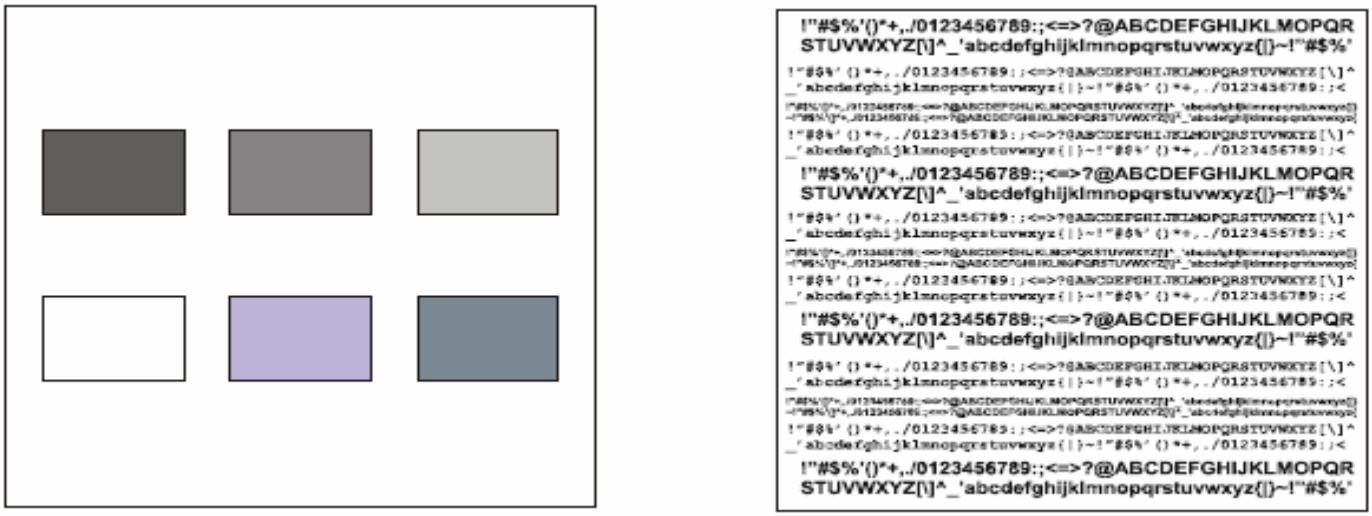


Figure 4–64. Static Test Pattern Example #2

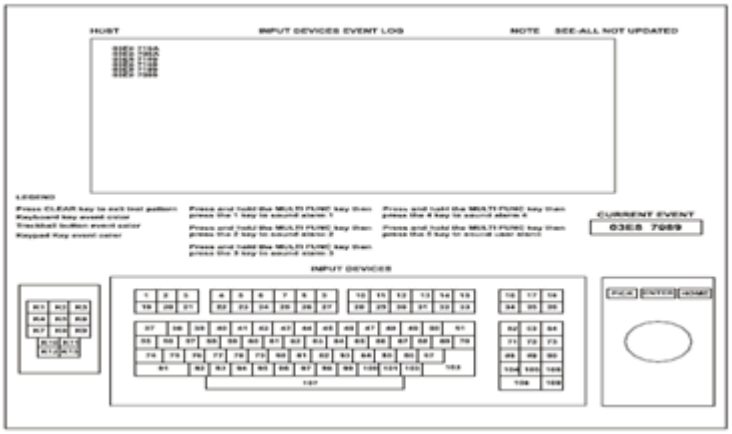


Figure 4–65. Input Device Test Pattern

To access the Static Text pattern, press the **MULTI-FUNC** and **"T"** keys simultaneously at the R-position.

To cycle through the text patterns, press the **MULTI-FUNC** and **"T"** keys repeatedly and the system will cycle through the test patterns.

NOTE: If the Clear key is pressed while a test pattern is displayed, the test pattern is removed and the views that were removed from the display are restored to the same size and location in which they were displayed prior to the display of the test pattern, including updates to the views.

While a static test pattern is being displayed at the R-Position, the system allows for a Clear key press and a simultaneous press of the **MULTI FUNC** and **"T"** keys.

To access the Input Device test pattern, press the **MULTI-FUNC** and **"K"** keys simultaneously at the R-position.

NOTE: If the Clear key is pressed while an Input Device Test Pattern is displayed at the R-Position, the system removes the Input Device Test Pattern and restores the views that were removed from the display to the same size and location in which they were displayed prior to the display of the Input Device Test Pattern, including updates to the views.

While the Input Device Test Pattern is displayed at the R-Position, depressing any input device key(s) will cause the key(s) background to change to white for the duration the key(s) remains depressed. Additionally, moving the trackball will cause normal cursor movement (i.e., cursor size/speed will be the same as the operational cursor when the pattern was invoked).

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5. PREFERENCE SETS, DRAWING TOOLS & CURSOR MENU

This chapter describes the components and functions to customize the view display at the R-Position. Major topics are:

- Managing Preference Sets
- Drawing Tools
- Creating Text Annotations
- Using the Cursor Menu
- Using the Circle Location Text Box

5.1 Managing Preference Sets

The controller can create as many as 20 Preference Sets (Pref Sets). Pref Sets allow the controller to save a snapshot of ALL display settings.

To access the Preference Set Menu, left/middle-click the **PREF SET** button in the Master Toolbar to display the PREF SET menu.

NOTE: The PREF SET menu (Figure 5–1) can be accessed only when someone is signed in at a sector. The PREF SET button contains the operating initials of the person signed in. Operating initials are the same as the User ID.

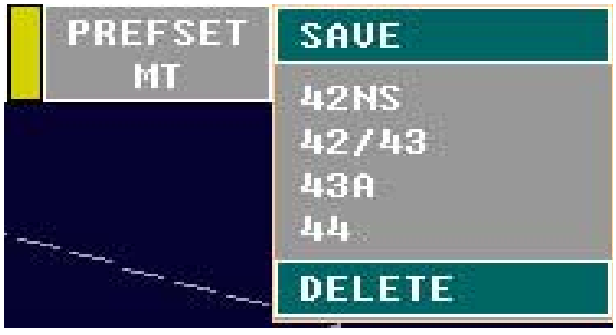


Figure 5–1. PREF SET Menu

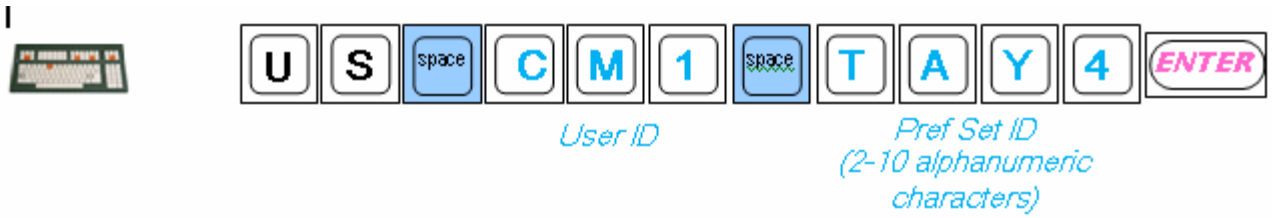
5.1.1 Updating and Saving a Preference Set

To update a preference set:

1. Left/middle-click the **Pref Set** button to open the Pref Set Menu.
2. Left/middle-click the **SAVE** menu item; the controller will receive a prompt to enter a preference set name.

3. Left-click desired Pref Set name from existing Pref Set menu list; name appears in Pref Set input box.
4. Press the **ENTER** key.
5. Type the password when prompted.
6. Press the **ENTER** key. The Pref Set will be updated.

NOTE: A controller must be signed in to access the Pref Set menu.



To save a preference set:

1. Press the **ENTER** key.
2. Type the password when prompted.
3. Press the **ENTER** key. The Pref Set is saved.

NOTE: If a new Pref Set name is entered, a new Pref Set is created.

If the Pref Set name already exists, the Pref Set will be updated with the current display settings.

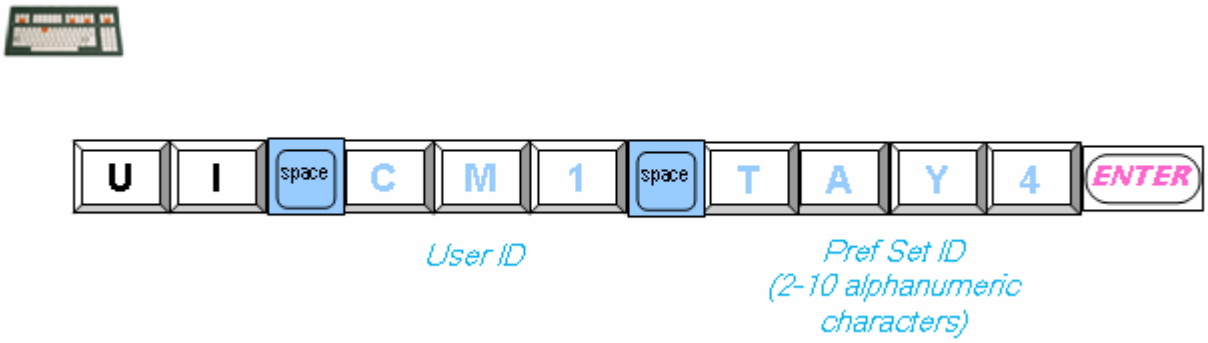
The controller may save a Pref Set to their User ID from the MCA even though they are not signed in. A password is required.

5.1.2 Invoking a Pref Set

To invoke a Preference set, left/middle-click an option from the menu list. The Preference Set appears.

NOTE: The controller must be signed in to access their Pref Set menu.

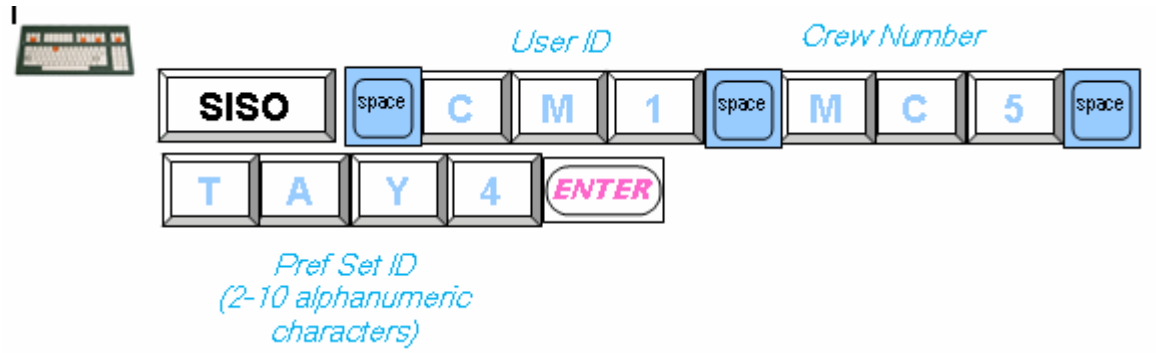
The Pref Set button will be grayed out if no controller is signed in at the sector. The circle X cursor will display and a tone will sound if the controller tries to select the Pref Set button when it is grayed out.



CAUTION
Whatever map is associated with this Preference Set is the one that will be displayed.

NOTE: This message allows controllers to invoke another controller's Pref Set.

To invoke a Preference set at sign-in:



NOTE: If the controller signs in without specifying a preference set, the preference set will not change.

Signed-in controller's initials will appear on the Pref Set button on the Master Toolbar.

5.1.3 Saving a Preference Set

To save a Preference set:

1. Left/middle-click the **SAVE** menu item; the controller will receive a prompt to enter a preference set name.
2. Type in desired name of Preference Set in Pref Set input box (between 2-10 alphanumeric characters).
3. Press the **ENTER** key.
4. Type in password when prompted.
5. Press the **ENTER** key. The Preference Set name will be added to the list on the Pref Set menu.

CAUTION
The currently displayed map is saved with your Pref Set.

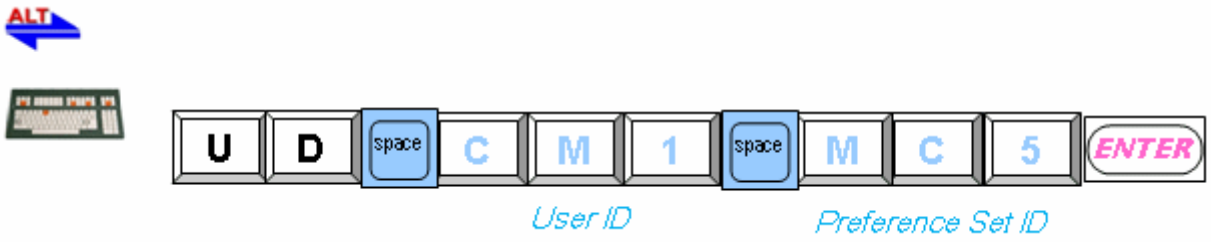
NOTE: Refer to Appendix A for a complete list of Saved Settings.

5.1.4 Deleting Preference Sets

To delete one Preference set:

1. Left/middle-click the **DELETE** menu item.

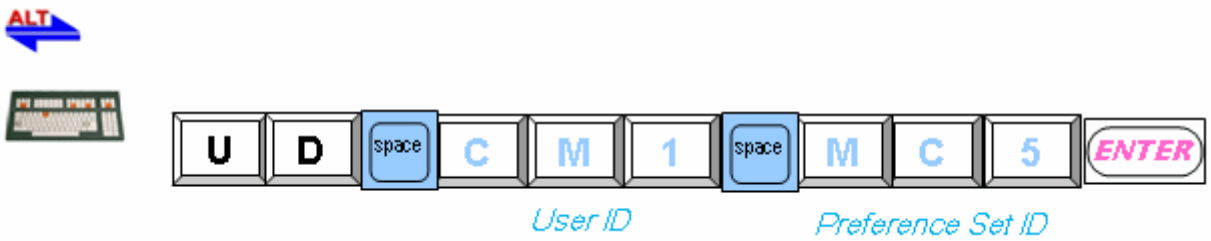
2. Middle-click the Preference Set from the list to be deleted.
3. Type in password when prompted.
4. Press the **ENTER** key. The Pref Set is deleted.



1. Type a password when prompted.
2. Press the **ENTER** key. PREFERENCE SET(S) DELETED FOR USERID is displayed. Pref Set is removed from the list.

To delete Multiple Pref Sets:

1. Left/middle-click the **DELETE** menu item.
2. Left-click all but the last Preference Set from the list to be deleted.
3. Middle-click last Preference Set.
4. Type in password when prompted.
5. Press the **ENTER** key. Selected Pref Sets are deleted.



1. Press the **ENTER** key.
2. Type in password when prompted.
3. Press the **ENTER** key. PREFERENCE SET(S) DELETED FOR USERID displays. Pref Sets are deleted.

5.1.5 Closing the Pref Set Menu

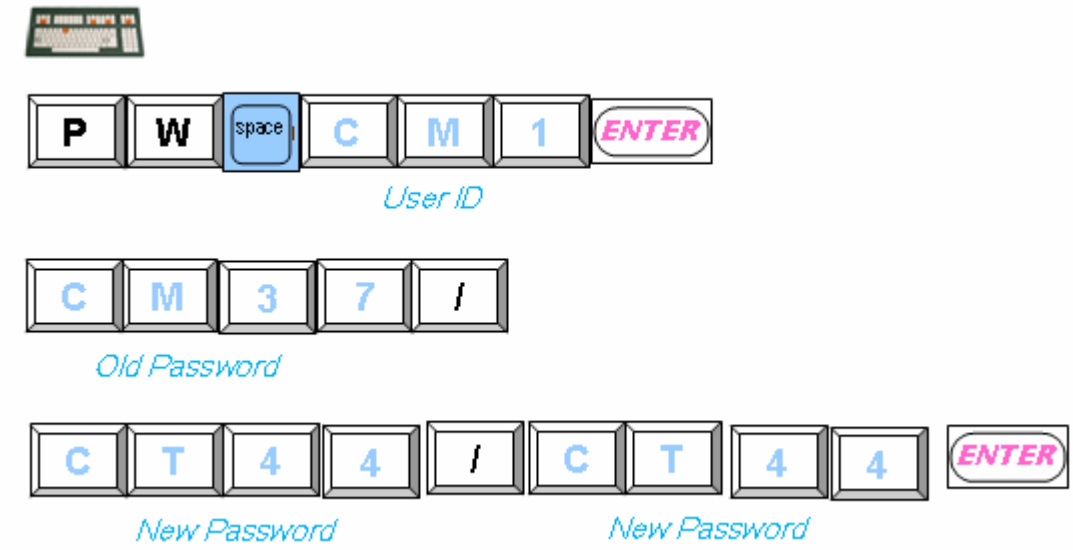
To Close the Pref Set Menu, left/middle-click the **Pref Set** button on the Master Toolbar.

Left/middle-click anywhere on the display to close the Pref Set menu.

Press the **CLEAR** key or any hard labeled function key to close the Pref Set menu.

5.1.6 Changing Passwords for Pref Sets

To change passwords for Pref sets:



1. Type **PW**, a space, User ID in the MCA.
2. Press the **ENTER** key; ENTER PASSWORD appears in the Feedback area.
3. Type in current password, a forward slash (/), the new password, a forward slash (/), the new password again. (Passwords can be 3 to 12 alphanumeric characters.)
4. Press the **ENTER** key. ✓SUCCESSFUL PASSWORD CHANGE appears.

NOTE: A red X and PASSWORD CHANGE FAILED message appears if the password is not changed.

The controller cannot delete and save preference sets on the Preference Set menu, without a password.

5.2 Drawing Tools

The Draw Tools menu shown in Figure 5–2 allows the controller to create, move, customize (e.g.; size, color), delete, and anchor graphic annotations. This allows controllers to mark specific areas with temporary “scratch pad” symbols for reference.

5.2.1 Accessing the Draw Menu

To display the Draw toolbar, left/middle-click the **DRAW** button on the Master Toolbar. Table 5–1 lists the buttons on the DRAW menu toolbar.

Figure 5–2. Draw Tool Menu

Table 5–1. Draw Menu Toolbar Buttons

Button	Function
Rectangle shape	Draws rectangle shape placed over selected area of display
Circle shape	Draws circle shape placed over selected area of display
O SIZE	Circle (radius) size setting (increment/decrement)
Line shape	Draws a line at selected display area
A	Creates text at selected display area
COLOR	Change annotation color brightness control group (increment/decrement)
Color Selection	Changes the color of annotations between 4 colors
FONT	Text font default size
A FONT	Controls font size (increment/decrement)
DISP/MAP	Anchor annotation to Situation Display (DISP vs. Map) coordinates MAP (toggle)
DEL	Delete single annotation
DEL ALL	Delete all annotations

5.2.2 Anchoring Annotations

The controller must set the desired anchor before creating any annotations. Annotations will be anchored (attached) to either the map or the Situation Display. The controller can switch between anchoring annotations to the map or Situation Display as needed. Figure 5–3 shows Anchoring the rectangle to the Map.

NOTE: The controller cannot change the annotation anchor after an annotation has been created.

5.2.3 Anchoring Annotations to the Map

To anchor annotations to the map, left/middle-click the **Annotation Anchor** button to toggle from display mode to map mode. When the annotation is anchored to the map, an “M” is displayed on the Annotation Anchor button.

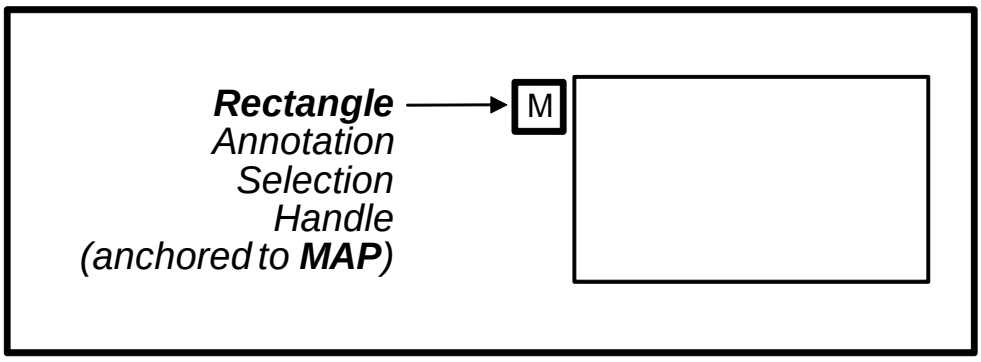


Figure 5–3. Anchoring Rectangle to the Map

NOTE: When anchored to the map, annotations move and change size automatically if, for example, map offsets are performed or the map range is reset.

An Annotation Anchor button (a small square with an M [for MAP] inside) appears to show that the annotation is anchored to the map. The Annotation Anchor button is visible only when the Draw toolbar is displayed. Figure 5–4 shows Anchoring Annotations to the display.

5.2.4 Anchoring Annotations to the Display

To anchor annotations to the display, left/middle-click the **Annotation Anchor** button to toggle from map mode to display mode. When the annotation is anchored to the display, a “D” is displayed on the Annotation Anchor button.

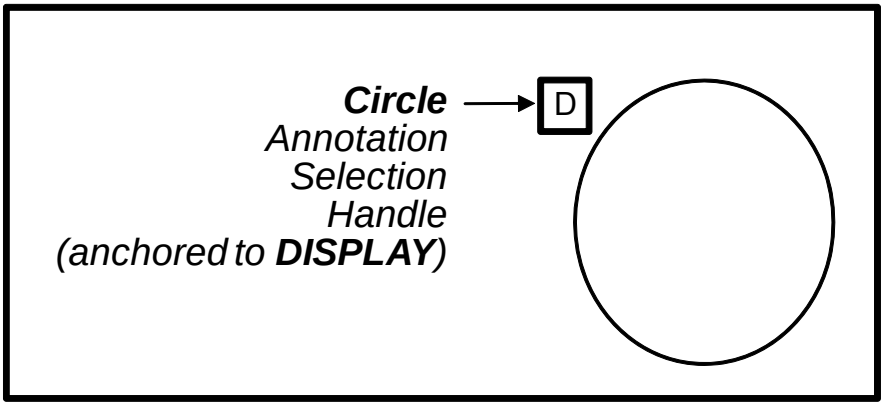


Figure 5–4. Anchoring Circles

NOTE: When anchored to the display, annotations stay in place. They do not change with offsets or map range resets. The circle size button has an X over it and is deactivated.

An Annotation Anchor button (a small square with a D [for DISPLAY] inside) will display to indicate the annotation is anchored to the Situation Display. The Annotation Anchor button is only visible when the Draw toolbar is displayed; it disappears when the Draw toolbar is suppressed.

5.2.5 Modifying Annotations

To modify annotation color:

1. Left/middle-click the **Color Selection** button to select one of four colors (green, white, coral, yellow).
2. Middle-click the handle for the annotation. The graphic annotation buttons will change accordingly and annotations will display in that color.

NOTE: Annotation color may be changed after an annotation has been created.

To modify annotation brightness:

1. Left-click the **COLOR** button to decrease brightness (numeric value decreases).
2. Middle-click the **COLOR** button to increase brightness (numeric value increases).

NOTE: Annotation brightness default setting is 60. Brightness can be increased/decreased with a range of 0 to 100.

Annotation brightness setting affects the current color selection and brightness for all annotations and any annotation toolbar settings of that color.

5.2.6 Creating and Moving Circles/Rectangles

To create and move circles/rectangles:

1. Left/middle-click the **circle/rectangle** button (button with desired graphic).
2. Left-click to place cursor at upper left corner of desired annotation location on the display. Cursor changes to + (cursor is in sizing mode) and appears at bottom right corner of circle/rectangle and movement of the trackball sizes the white annotation frame.
3. Left-click when circle/rectangle is desired size. Cursor now appears at top left corner of circle/rectangle (cursor is in move mode) and movement of trackball places the white circle/rectangle annotation frame at any location.
4. Middle-click to anchor annotation when circle/rectangle is in desired location.

Figure 5–5 and Figure 5–6 show the Circles and Rectangles in Multiple Modes.

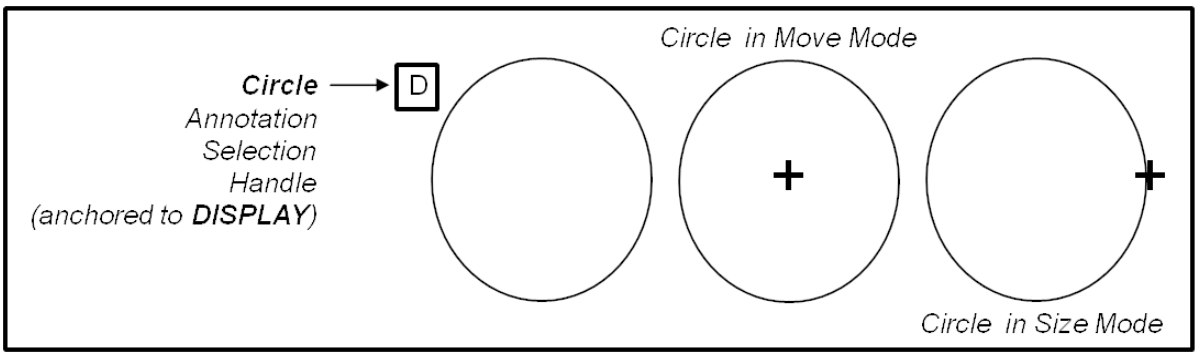


Figure 5–5. Circle in Multiple Modes

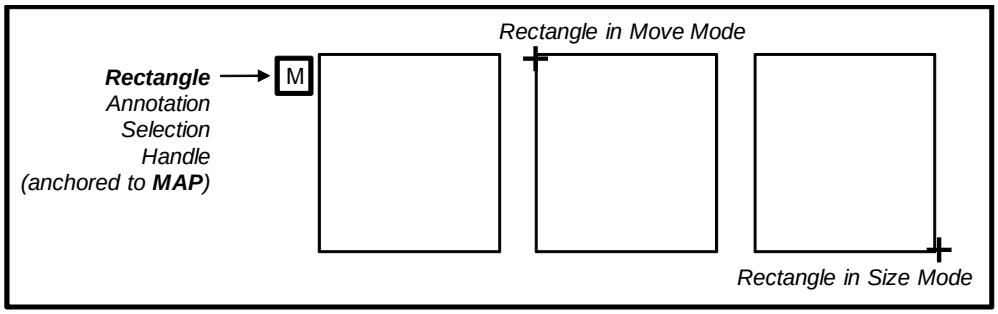


Figure 5–6. Rectangle in Multiple Modes

NOTE: Selected annotation color displays when annotation is anchored.

Incorrect trackball ENTER cursor (a circle with the letter P) will display and an alarm will sound if controller mistakenly middle-clicks when selecting annotation to change location. User must left-click to select annotation and to change to sizing mode, and middle-click to place a selected annotation.

5.2.7 Repositioning Anchored Circles/Rectangles

To reposition anchored circles/rectangles:

1. Left-click the **Annotation Anchor** button. This selects a single annotation to be moved. Cursor is in move mode and appears at the top left corner of rectangle; movement of trackball moves a white circle/rectangle annotation frame. Original circle/rectangle remains in place.
2. Middle-click to anchor annotation when circle/rectangle is at new location.

NOTE: A circle or rectangle can only be repositioned when all other annotation buttons are suppressed and no text appears in the MCA.

The O Size button next to the Circle button on the Draw toolbar indicates the radius (not diameter) of the circle annotation anchored to the map. 5 NM is the default with a range of 5-50NM. If the default is not changed, then the circle annotation with a radius of 5NM actually has a diameter of 10NM.

When the annotation anchor is the map, the text MAP is displayed on the Annotation Anchor button in the Draw toolbar.

Rectangle annotation frame is a duplicate copy of the rectangle. Once anchored in the new position, the original rectangle disappears from the previous location.

5.2.8 Modifying the Size of Anchored Circles/Rectangles

To modify the size of anchored circles/rectangles:

1. Left-click the **Annotation Anchor** button. This selects a single annotation to be sized. Annotation Anchor button is replaced by the cursor in move mode at the top left corner of circle/rectangle.

2. Left-click to change cursor to size mode. Cursor in size mode appears at the right lower corner and movement of trackball changes the size of the white circle/rectangle annotation frame. The original circle/rectangle does not change.
3. Middle-click to anchor annotation when circle/rectangle is desired size. Annotation displays as selected color. The original circle/rectangle disappears.

NOTE: Circle annotation frame is a duplicate copy of the circle. Once anchored in the new position, the original circle disappears from the previous location.

5.2.9 Modifying the Size of Circles/Rectangles Anchored to the Map

To modify the size of circles/rectangles anchored to the map:

1. Left-click the **Annotation Anchor** button. This selects a single annotation to be sized. The Annotation Anchor button is replaced by a white annotation composition circle/rectangle with the cursor in move mode displayed at the center of the circle/rectangle.
2. Left-click to change cursor to size mode. Cursor in size mode appears at the 3 o'clock position of the annotation composition circle. The white annotation composition circle is anchored and movement of trackball changes the size of the circle/rectangle.
3. Middle-click to anchor annotation when circle is desired size. Annotation displays as selected color. The original circle/rectangle disappears.

NOTE: Actual radius of the circle/rectangle will be displayed in NM at the center of the circle/rectangle only when the circle is anchored to the map. Numeric value will change as circle/rectangle radius is increased or decreased.

5.3 Creating Text Annotations

To create text annotations:

1. Left/middle-click the **A** button on the Draw toolbar.
2. Left-click location where text is to be placed. Text composition box displays in text composition mode.
3. Type in desired text message using keyboard. White text appears.
4. Press the **ENTER** key to anchor completed text annotation. Text box disappears and only message in selected color displays.

Middle-click to anchor completed text annotation. Text box disappears and only message displays.

Figure 5-7 shows creating Text Annotations.

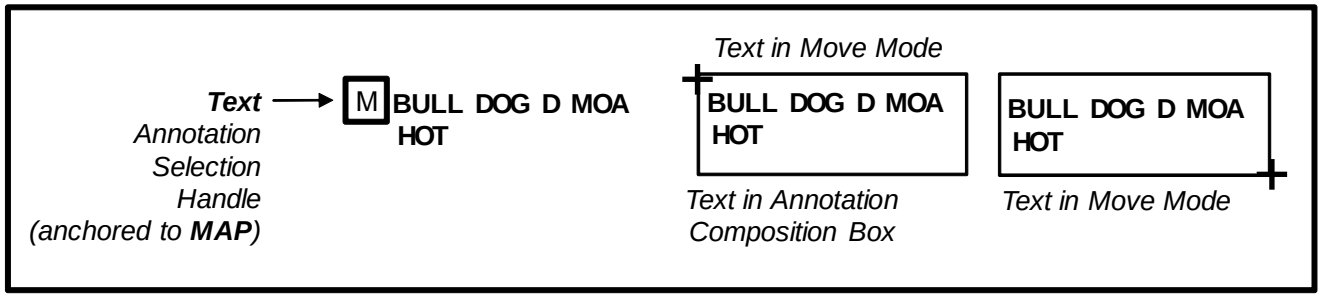


Figure 5–7. Creating Text Annotations

NOTE: Preview area in the MCA should not have text present when creating text messages.

Text font default setting is 2 with a range of 1-8. User should verify desired font size prior to creating text message. Maximum text length is 20 characters and maximum text lines are 5.

Press the **CLEAR** key to cancel annotation mode.

5.3.1 Repositioning a Single Text Annotation

To reposition a single text annotation:

1. Left-click the **annotation anchor** button on text annotation. A white text edit box appears around the text annotation. Trackball movement repositions the text annotation frame to desired location.
2. Middle-click completes the text move and the moving frame disappears. Text in original location disappears.

NOTE: Text annotations can only be moved one at a time.

Press the **CLEAR** key to cancel annotation mode.

5.3.2 Increasing/Decreasing Text Annotation Font Size

To increase/decrease the text annotation font size:

1. Left/middle-click the **Font Size** button to increase/decrease the numeric value (font size).
2. Left/middle-click the **Font Size** button.
3. Middle-click the annotation handle to apply the font size change, if any.

NOTE: The text default font size is 2 with a range of 1 to 8.

Previously anchored text will retain original font size.

Press the **CLEAR** key to cancel annotation mode.

5.3.3 Deleting Annotations

To delete one annotation:

1. Left/middle-click **DEL** button to activate single deletion mode.
2. Middle-click the annotation select handle of object or text to delete that single annotation.

Press the **CLEAR** key to cancel annotation mode.

To delete all annotations:

1. Left/middle-click the **DEL ALL** button to activate delete all mode.
2. Left/middle-click the **DEL ALL** button to confirm/delete all annotations.

5.3.4 Creating Line Annotations

To create line annotations:

1. Left/middle-click the **Line Annotation** button (button labeled with a slanted line).
2. Left-click when cursor is positioned at the first point of the line. Cursor changes to +. Trackball movement creates line segment length.
3. Left-click to create next point of the line annotation. Repeat trackball movement and left-click to create additional points until annotation is complete.
4. Middle-click to anchor completed line annotation.

Figure 5–8 shows the Creating Line Annotations.

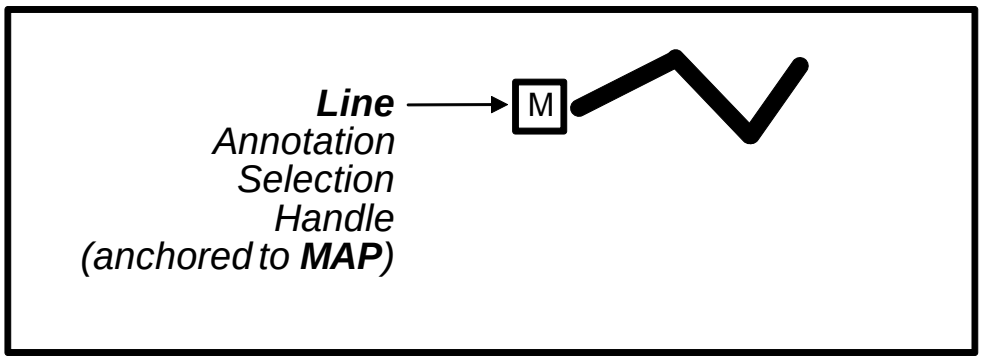


Figure 5–8. Creating Line Annotations

NOTE: Line annotations may have up to 29 segments.

If the controller attempts to create more than 29 segments, the invalid selection cursor will display and an error alarm will sound.

Press the **CLEAR** key to cancel the annotation mode.

5.3.5 Repositioning Line Annotations

To reposition line annotations:

1. Left-click the **Annotation Anchor** button to select the annotation and display the composition annotation cursor. This indicates the line annotation is in move mode. Trackball movement repositions the annotation frame.
2. Middle-click to end the move operation and the annotation appears in new location.

NOTE: If Annotation Anchor button does not display, check that no other annotation button is active and no text appears in the Preview area of the MCA.

Line annotations cannot be resized. Delete the line annotation and recreate a new line annotation.

Press the **CLEAR** key to cancel the annotation mode.

5.4 Using the Cursor Menu

The Cursor menu (Figure 5–9) enables the controller to customize the speed and size of the cursor on the Situation Display and to set the volume of the alarm.

To access the cursor menu, left/middle-click the **CURSOR** button on Master Toolbar to display the Cursor toolbar menu. The three buttons in the Cursor toolbar are increment/decrement buttons that adjust cursor attributes.

Figure 5–9. Cursor Menu

To adjust the cursor speed:

1. Left-click the **SPEED** button to decrease the speed of cursor.
2. Middle-click the **SPEED** button to increase the speed of cursor.

NOTE: The SPEED button is used to adjust the cursor speed from 1(slowest) to 3 (fastest).

To adjust the cursor size:

1. Left-click the **SIZE** button to decrease the size of the cursor.
2. Middle-click the **SIZE** button to increase the size of the cursor.

NOTE: The SIZE button is used to adjust the cursor size between a range of 1 (smallest) to 5 (largest).

The cursor will visibly decrease or increase in size as controller decrements/increments value.

To adjust the cursor tone volume:

1. Left-click the **VOLUME** button to decrease cursor tone volume.
2. Middle-click the **VOLUME** button to increase cursor tone volume.

NOTE: Use the VOLUME button to adjust the volume tone that sounds when a value is at its upper or lower limit or an input is invalid. It ranges from 1 (softest) to 5 (loudest). Audible tone is sampled as the controller increments/decrements volume.

5.5 The Circle Location Text Box

The Circle Location Text Box shown in Figure 5–10 allows the controller to specify the location of the center of the circle by typing a fix name, fix radial distance, or longitude/latitude.

To access the circle location text box:

1. Left/middle-click the **Draw** button in the Master Toolbar.
2. Left/middle-click the **Circle Annotation Text Box**. Circle Location Input Area is ready to receive input but is not displayed until the first keystroke is entered.
3. Type in a value. (Circle Location Text Box displayed below Circle Annotation button) that can be any of the following: fix name, Fix radial distance, or Latitude/Longitude. Text will automatically appear in Circle Location Input Area as the controller types.
4. Press the **Keyboard Enter key** to close the Circle Location Text Box.

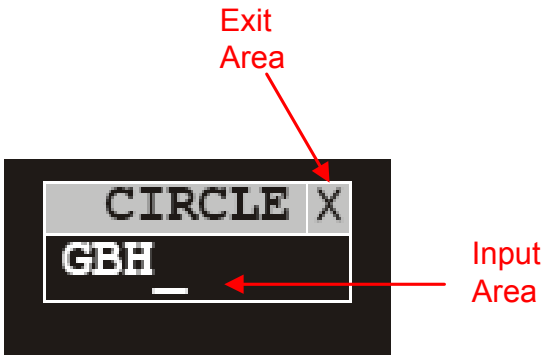


Figure 5–10. Circle Location Text Box

NOTE: After the Keyboard Enter Key is pressed, the new circle annotation is displayed in the current annotation color setting at the controller specified location and size

The new circle annotation is anchored to the map location.

5.5.1 Input Error

The Circle Location Input Error consists of a tone and text box. They will activate during two conditions:

- When the Circle Location Input Area has invalid format for a text string and the ENTER key is pressed:
  - — A single error tone sounds.
  - — The error area is displayed as INVALID below the Circle Location Input area.

- When the Circle Location Input Area contains a valid format of a fix name or fix radial distance that is not in the system as an adapted fix and the ENTER key is pressed:
  - A single error tone sounds.
  - The error area displays NOT FOUND.

5.5.2 Text Box Exit Pick Area

The Circle Location Text Box shown in Figure 5–11 Exit pick area closes the Circle Location Text Box.

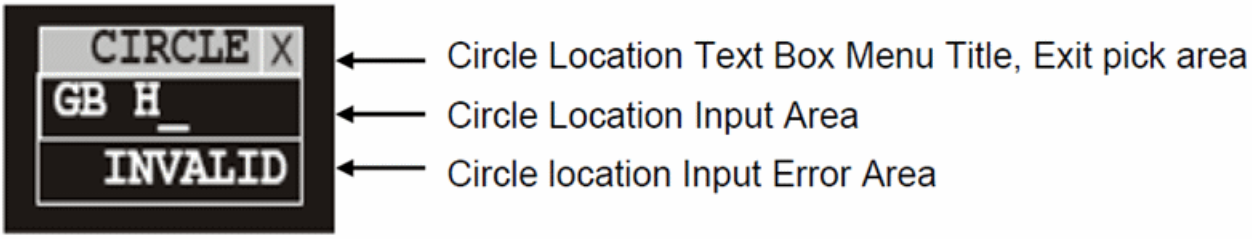


Figure 5–11. Circle Location Text Box # 2

To access the Text Box Exit pick area, left/middle-click the **Exit pick** area. The Circle Location Text Box is removed.

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6. MESSAGE COMPOSITION, RESPONSE, AND UPDATE AREA VIEWS

This chapter describes components and functions for entering messages at the R-Position. Major topics are:

- MCA View
- RA View
- Update Area View
- Longitudinal Scale Message
- Map Offset

6.1 Message Composition Area View

The Message Composition Area (MCA) View is used to enter messages at the R-Position. As shown in Figure 6–1, the MCA View contains two distinct areas: the Preview Area and the Feedback Area. These areas of the MCA View are discussed in more detail in Section 6.1.1 and Section 6.1.2 respectively.

Figure 6–1. MCA View

6.1.1 Preview Area

The Preview Area is the upper area of the MCA View and used for message composition. The Preview Area is initially displayed as two lines and can expand as more characters are entered. The number of lines displayed for the Preview Area is set from the MCA View Menu (Figure 6–2) using the “PA LINES” button. To access the MCA View Menu, middle-click anywhere on the Preview Area (other than arrows and scroll bars). When more than 6 lines are displayed in the Preview Area the view expands to the “PA LINES” setting before displaying the Scroll pick areas. The “WIDTH” button on the MCA View Menu provides the user with the option of controlling the width of the Preview Area. The Preview Area contains a maximum of 1500 characters (30 lines of 50 characters) when the width is set to 50 characters and a maximum of 1020 characters (34 lines of 30 characters) when the width is set to 30 characters. The FONT and BRIGHT buttons are used to change the font and brightness in the MCA View.

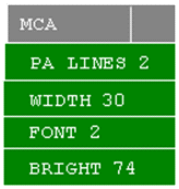

Figure 6–2. MCA View Menu

The trackball, cursor arrow keys, or the scroll bar can be used to scroll the Preview area. When the scroll bar or cursor arrow keys are used, the Preview area will scroll one line at a time. When the preview area is scrolled, the keyboard cursor will not move off the display. It will, instead, remain in the same location (if located on the first or last line of the Preview area) while text continues to scroll beneath it.

The Preview area displays two types of cursors:

- The READY cursor – an underscore  cursor (bright white) indicating that the Preview area is unlocked and can accept message entry. When the controller presses the Enter key to enter the message echoed in the Preview area, the keyboard cursor will change to a BUSY cursor.
- The BUSY cursor – an hour glass  outline (displayed in white on a black background), indicating that the system is processing a message. The BUSY cursor will be the same font size as the font size selected for the Preview area. When the BUSY cursor is displayed, the Preview area is locked.

Pressing the CLEAR key unlocks the Preview area and returns the keyboard cursor to indicate “READY” an underscore.

6.1.2 Feedback Area

The Feedback Area is the lower half of the MCA View and displays messages entered into the system from the Preview Area. The Feedback Area is initially displayed as 4 lines and can expand up to a maximum of 30 lines when the “WIDTH” option on the MCA View Menu is set to 50 characters and 34 lines when the width is set to 30 characters. To access the MCA View Menu, middle-click anywhere on the Feedback Area (other than arrows and scroll bars).

The Preview area displays the following types of messages:

- Accept messages – preceded by a green check
- Reject messages – preceded by a red X
- Error messages – preceded by a red X

When an Accept or Reject message is returned to the Feedback Area, the entered command is not displayed in the Preview area (Figure 6–3). The Preview area is cleared and will shrink back to two lines if it was previously expanded. The Preview area expansion capability will be allowed again when the controller clears the Preview and Feedback Area by pressing the CLEAR key, a hard labeled function key, or by picking a category function key.

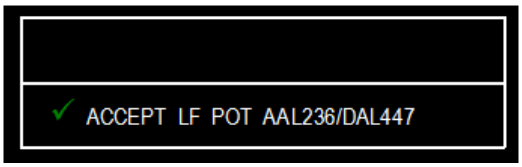

Figure 6–3. Accept Message

When the controller invokes the Recall function (RECALL key on keyboard), each entered command and up to 2 lines of associated feedback (accept, reject, or error) message is recalled and displayed (Figure 6–4).

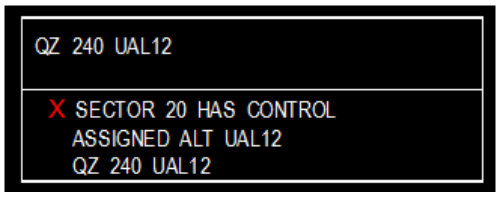

Figure 6–4. Reject Message

If either the Accept, Error, or Reject message is more than 3 lines of text, the system will automatically expand the Feedback Area to the number of lines in the command response. When the Feedback Area is expanded, it will expand downward. If there are more lines of the message to be displayed than can be accommodated by expanding downward, the system will expand the MCA view upwards to display the remainder of the message in the Feedback Area.

6.1.3 Moving the MCA View

To move the MCA View:

1. Left/middle-click anywhere in view except scrollbars or arrows. A view outline appears.
2. Trackball movement places outline in desired location.
3. Left/middle-click to select the new location. The MCA view displays.

6.2 Response Area (RA) View

The Response Area (RA) View shown in Figure 6–5 displays the response to a flight plan readout of an active flight. The view can be moved to any location on the Situation Display (including areas covered by a Toolbar). The RA View has a default of 4 lines but will automatically expand to 10 lines. After 10 lines the scroll pick areas are displayed allowing up to a maximum of 300 lines. Only one message at a time is displayed in the RA View. New data replaces the currently displayed data.

The coral colored “A” displayed in the RA View represents a Non-ADS-B indicator for active flights. When displayed, the flight is either not ADS-B equipped or is equipped but no ADS-B based surveillance data has been received (within an acceptable time tolerance) for the flight. The Non-ADS-B indication notifies the controller that ADS-B based surveillance support is not available and cannot be expected to support

radar separation standards when in non-radar areas. Aircraft spacing in compliance with manual separation standards will be required when approaching the non-radar areas for flights reflecting the Non-ADS-B Indication.

A TFM pending reroute notification is inserted between the altitude and the route string when there is a pending reroute for the flight. The pending reroute notification consists of a cyan “T”.

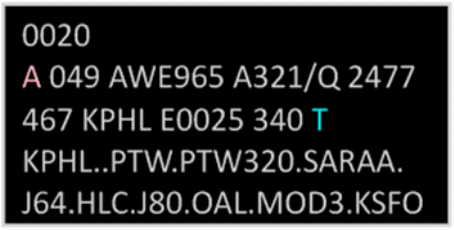

Figure 6–5. Response Area (RA) View

Figure 6–6 shows the Response Area (RA) View Menu. The RA View Menu is used to change the format and contents of the RA View. The RA View Menu is invoked by pressing the Trackball **Enter** button when the trackball cursor is within the boundary of the RA View when a pick area is not selected. The “WIDTH” option on the RA View Menu allows the user to set the width for the RA View (between a 25 or a 50 maximum character width).

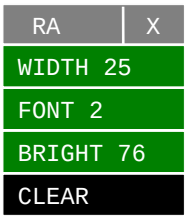

Figure 6–6. Response Area (RA) View Menu

To clear the RA View:

1. Left/middle-click the **CLEAR** menu item. The RA View contents are cleared and the RA View contracts to 4 lines.
2. Press the **MSG ACK** key. RA contents are cleared.

To move the RA view:

1. Left/middle-click anywhere in view except scrollbars or arrows. A view outline appears.
2. Trackball movement places outline in desired location.
3. Left/middle-click to select the new location. RA view displays.

6.3 Update Area View

The Update Area (UA) View (Figure 6–7) is accessed through the UA button in the Views toolbar menu. The UA view allows the controller to acknowledge waiting messages. If the message contains more than three lines of text, a scroll bar will display allowing the controller to scroll up and down.

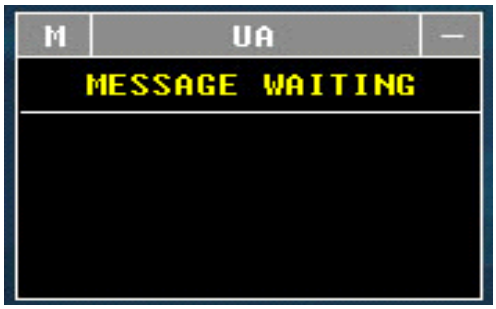

Figure 6–7. Update Area

To access the update area view:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **UA** button to display the Update Area View.

NOTE: The Message Waiting Indicator is emphasized when a message needs acknowledgment.

To acknowledge waiting messages:

1. Left/middle-click the **UA** button to display the Update Area View.
2. Left/middle-click emphasized Message Waiting Indicator to display the message in the view.

CAUTION

Acknowledging or clearing a message at either the R-position or RA-position will update the view at both positions

To access the Update Area View Menu (Figure 6–8), left/middle-click the M button in view header to display view menu.

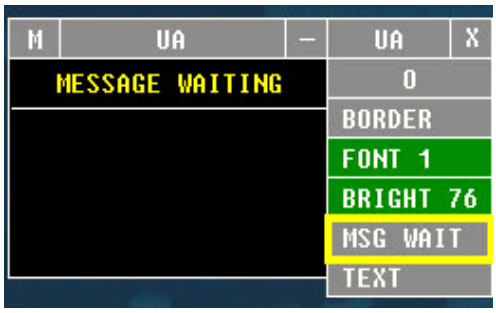

Figure 6–8. Update Area View Menu

To display/suppress the Message Waiting Area, left/middle-click the **MSG WAIT** menu item to display/suppress the Message Waiting Area.

NOTE: The MSG WAIT menu item is a toggle button. When the Message Waiting Area is displayed, the MSG WAIT menu item background will be shaded gray (Figure 6–8). When the Message Waiting Area is suppressed, the MSG WAIT menu item background will be shaded black.

To display/suppress the Update Area Text Area, left/middle-click the **TEXT** menu item.

NOTE: The TEXT menu item is a toggle button. When the text area is displayed, the TEXT menu item background is shaded gray Figure 6–8). When the text area is suppressed, the TEXT menu item background is shaded black.

MSG WAIT menu item is a toggle button. When the Message Waiting Area is displayed, the MSG WAIT menu item background will be shaded gray (Figure 6–8). When the Message Waiting Area is suppressed, the MSG WAIT menu item background will be shaded black.

6.4 Longitudinal Scale Message

The Longitudinal Scale message is used to display and delete a movable longitudinal scale on the Situation Display.

The conditions for using the longitudinal scale are as follows:

- If the length of the scale overruns the Situation Display's boundaries, only what is in the boundaries is displayed. The scale can be moved so that all of it shows in the display.
- If the longitudinal scale is displayed and the Situation Display is modified, the map is offset, or the scale is changed, the number of miles on the longitudinal scale stays the same.

To display a longitudinal scale at the sector/facility-adapted default location, orientation, and length:

1. Type **LS** (message abbreviation).
2. Press **ENTER**.

To display a longitudinal scale specifying location and orientation:

1. Type **LS**.
2. Left-click the Situation Display where the controller wants the anchor point of the scale to be located.
3. Middle-click the Situation Display to specify the desired orientation.

To modify the length of a displayed longitudinal scale:

1. Type **LS**.
2. Type the desired length numerically.
3. Press **ENTER**.

To move a displayed longitudinal scale and accept the current orientation and length:

1. Type **LS**.
2. Position the trackball cursor on the display where the scale is to be relocated.
3. Press **ENTER**.

To delete a displayed longitudinal scale:

1. Type **LS**.

2. Press **ENTER**.

6.5 Map Offset

The Map offset enables controllers to move a specified map point with data to the center of the viewport by using the MAN MAP key.

To specify a map offset:

1. Position the trackball cursor on the Situation Display map.
2. Press the **MULTI-FUNC** and **MAN MAP** function keys simultaneously.

To offset the Situation Display to an adapted geographic location, press the **MULTIFUNC** and the **PSET MAP** function keys simultaneously.

NOTE: The MAN MAP key repositions a specified map point so it is in the center of the viewport. The PSET MAP key is used to move an adapted geographic point to the center.

If a map is offset so that an edge of the map is displayed in the view, any area in the view body not devoted to the map is blank.

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7. MULTIPLE COMMANDS AND MACROS

This chapter describes multiple commands and macros.

7.1 Multiple Commands

ERAM allows a single command to be entered for multiple aircraft or multiple commands to be entered for a single aircraft. ERAM also allows the controller to store frequently used single or multiple commands as macros.

A single command can be entered for up to 15 aircraft at the same time. The command is processed for each aircraft individually; which results in individual command recall for each flight ID.

Up to six commands can be entered for a single flight with a single entry. Each command is processed individually which results in individual command recall for each message.

NOTE: Users may also enter UU commands at the R-Position console.

7.1.1 Eligible Commands for Multiple Flight IDs

Table 7–1, Eligible Commands for Multiple FLIDs, lists the eligible commands.

Table 7–1. Eligible Commands for Multiple FLIDs

Command	Associated Process
QA	Select Auto Handoff
QB	Discrete Code Request
QB	Qualifier Modification
QF	Flight Plan Readout
QH	Hold
QN, QZ	Initiate Handoff
QN, QZ	Offset Data Block
QP	Pointout
QP	Request/Suppress Data Block
QP R	Suppress MRP View Entry
QP J, QP T	Halo
QQ	Enter Interim Altitude
QQ	Delete Interim Altitude
QS	4th Line Speed/Heading/Free Form Text

Table 7–1. Eligible Commands for Multiple FLIDs (Continued)

Command	Associated Process
QU	Route Display **NOTE:** The QU Re-route action is not a valid command for multiple FLIDs.
QZ	Assigned Altitude
DM	Departure Message

NOTE: To execute a QN command (such as accept handoff), the controller cannot use the implied command. The controller must type QN. The complete table with syntax examples is located in Appendix B.

7.1.2 Single Command for Multiple Aircraft

To use a single command for multiple aircraft:

1. Type command in the MCA.
2. Left-click all desired track symbols except the last one; middle-click the last track symbol.

   NOTE: The QU Route Display command may be executed for multiple flights, but the command must be entered with AID/CID to identify flights; not trackball pick.

Or, for manual entry

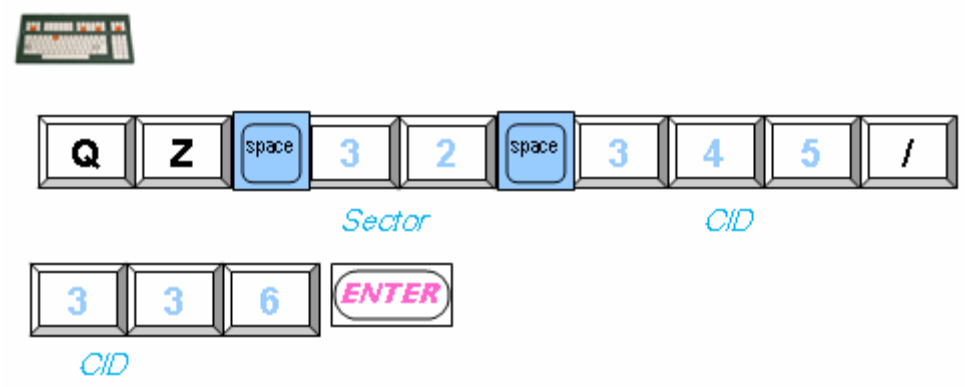
1. Type command in the MCA, a space, FLID, and a forward slash (/), next FLID, up to 15 FLIDs can be entered.

   NOTE: Use a forward slash (/) to separate each FLID and not a space.

   NOTE: Enter**/OK** to complete the command as needed when prompted.

   NOTE: If multiple flight IDs are specified in a command entry, the controller can not specify /OK as part of the command entry. If a logic check is necessary, a prompt will appear for each flight ID.

The following is an example of entering a single command for multiple aircraft via the R-Position console keyboard.

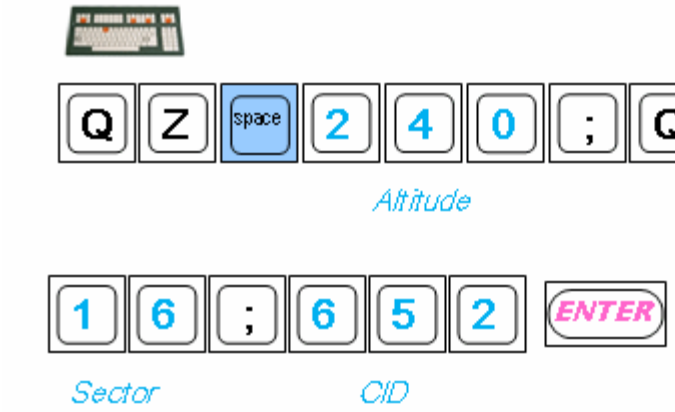


NOTE: To review each command and the responses, press the **RECALL** key. Each press of the RECALL key displays a command in the Preview area and the system response to the command in the Feedback Area.

7.1.3 Multiple Commands for a Single Flight ID

To use multiple commands for a single flight ID:

1. Type or press a quick action key to input the first command in the MCA; subsequent commands need to be typed.
2. Enter any parameter values for a command. End each command with a semicolon.
3. Type either the AID or CID of the desired aircraft.
4. Press the **ENTER** key to complete commands.



7.2 Macros

Controllers can store frequently used single or multiple commands as macros and can create up to nine macros with each Preference Set.

7.2.1 Accessing the RECORD Toolbar Menu

The Record toolbar menu (Figure 7–1) contains a button labeled MSG followed by the number of the macro to be recorded and a button labeled MACRO DELETE. Locate the RECORD button on the display. The RECORD button is on the MCA toolbar by default.

To access the Record toolbar menu, left/middle-click the **RECORD** button to display the Record toolbar menu.

Figure 7–1. Record Toolbar

7.2.2 Recording a Macro

To record a macro:

1. Left/middle-click the **MSG** button. An input box is displayed.
2. Press the quick action key or type the two letter message followed by any required parameters.
3. Press **ENTER**, which moves the cursor to the next line of the input box.
4. Continue entering command strings on separate lines (up to six).
5. Left/middle-click the **SAVE MSG** below the input box to save the new macro. A blank button displays with a blinking cursor.
6. Type a label for the button (up to seven characters). If no label is typed, the system will use the first six characters of the recorded command macro as the label.
7. Press **ENTER**. Macro with button label is saved. Input area closes and the tearoff pick area appears on the button.
8. Move the button to desired location on the display. Macro buttons must be moved to record another macro.

NOTE: Before clicking SAVE MSG all commands entered should be viewed for accuracy. When labeling macro buttons, make sure they are easily identifiable and distinguish them from other macro buttons.

Press the **CLEAR** key or click any other location on the display to cancel recording a macro.

If nine macros have already been created, the MSG button will display MSG MAX and no more macros can be saved.

Saved macros cannot be modified.

7.2.3 Moving a Macro Button

Macros can be placed anywhere on the Situation Display or on a toolbar and behave like any other tear-off button.

1. Left/middle-click the Tear-off Gold Bar on left side of macro button. The white outline of the button appears and moves with the cursor.
2. Left/middle-click when macro is in desired location.

NOTE: The placement of macro buttons should allow the buttons to be easily distinguishable.

Once the macro is moved, a new MSG button will be displayed on the Record button menu. Macro buttons must be moved to begin recording another macro.

Macros placed on the display are tied to the map coordinates and the button position will change if the range changes. They can be covered by a toolbar or a view.

7.2.4 Invoking a Macro for a Single Flight ID

When the macro button has been created, the macro can be invoked instead of entering the commands one at a time.

1. Left/middle-click the desired macro button.
2. Left/middle-click track symbol for the single flight ID.
3. If left-click is used, press the **ENTER** key to invoke the commands.

NOTE: When clicking the desired macro button and track symbol, the recorded commands within that macro and the desired flight are displayed in the Preview area of the MCA. This allows the controller to ensure the desired commands are being used on the desired flight.

Macros with multiple commands can only be entered for a single aircraft. If more than one flight ID is selected, an error message appears in the Feedback Area TOO MANY FLIGHT IDs.

7.2.5 Invoking a Macro for Multiple Flight IDs

Macros that contain a single command can be invoked for multiple aircraft by entering multiple flight IDs.

1. Left/middle-click a macro button.
2. Left-click track symbol for each of the multiple flight IDs except the last flight.
3. Left/middle-click track symbol for last flight.
4. If left-click is used then, press the **ENTER** key to invoke the command.

NOTE: When clicking the desired macro button and track symbols, the recorded command within that macro and the desired flights are displayed in the Preview area of the MCA. This allows the controller to ensure the desired command is being used on the desired flights.

If the controller attempts to select multiple flight IDs for a macro with multiple commands, an error message appears in Feedback Area TOO MANY FLIGHT IDs.

If the controller select more than 15 flight IDs for a macro with a single command, an error message appears in Feedback Area TOO MANY FLIGHT IDs.

7.2.6 Deleting Macros

To delete a macro:

1. Left/middle-click the **RECORD** button to display the Record toolbar menu.
2. Left/middle-click the **MACRO DELETE** button. A list of macros appears.
3. Left-click all but last macro to be deleted. An “X” appears over the selected macros to be deleted.
4. Middle-click the last macro to complete deletion. The Delete menu will close and the buttons will be removed from the display.

NOTE: Unless the controller updates this Preference Set, the next time the controller invokes this Preference Set, the macros will return.

7.2.7 Deleting Tear-offs

To delete a tear-off:

1. Left/middle-click the **DELETE TEAROFF** button from Master Toolbar.
2. Middle-click the desired tear-off button to delete. This also deletes the associated macro.

7.2.8 Temporary Macros

The following refer to temporary macros:

- Can be placed anywhere on the display or a toolbar, if located on a display it will be tied to map coordinates.
- Macros can be covered by a toolbar or a view.
- Up to nine macros can be displayed.
- When nine macros have been created, the MSG MAX will appear on the MSG button and one macro must be deleted to create a new macro.
- Invoking a Pref Set displays all macros saved in that Preference Set.
- When a macro is typed at a sector, it will remain on display until it is manually deleted or automatically deleted when invoking a Preference Set adds macros that exceed 9.
- Excess macros not part of a Preference Set will be deleted, oldest first.

8. CONTINUOUS FLIGHT PLAN READOUT VIEW (CFR VIEW)

The CFR View, Figure 8–1, displays up to ten different flight plans. Controllers can use the view to display and manage flight plan readouts. To access the CFR view, left/middle-click the **VIEWS** button located on the R-Position Master Toolbar, and then left/middle-click the **CFR** button located on the **Views** Toolbar Menu. The information in the CFR view is automatically updated. The ACID and CID is displayed in green text for a preset period of time, whether or not the Continuous Flight Plan Readout Plan was previously displayed.

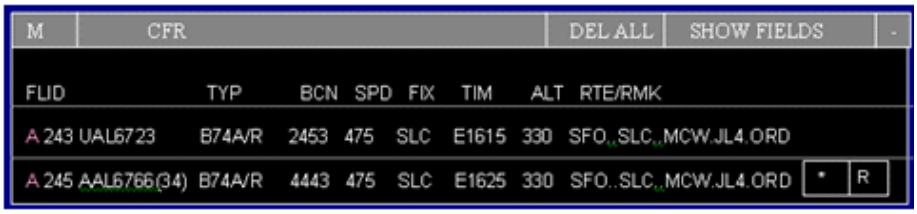
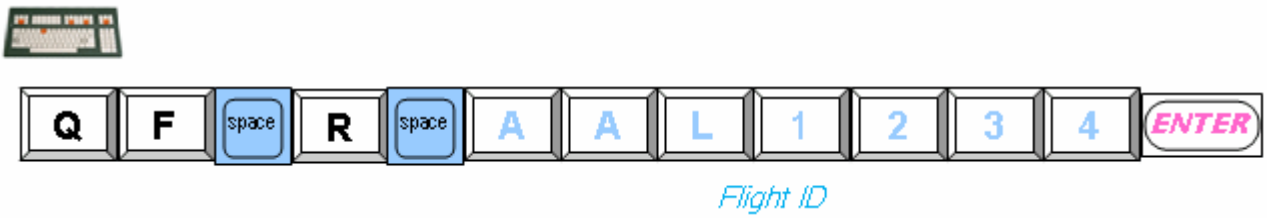


Figure 8–1. CFR View

If the CFR view is suppressed, the requested flight plan is displayed in the RA View. Flight plan readouts requested in the ICAO format are always displayed in the RA View. If the CFR View is open, flight plans can also be directed to the RA View using the following command format.



The coral colored “A” pictured to the left of the Flight ID (FLID) in the CFR View (Figure 8–1), represents a Non-ADS-B indicator. When displayed, the flight is either not ADS-B equipped, or is equipped but no ADS-B based surveillance data has been received (within an acceptable time tolerance) for the flight. The Non-ADS-B indication notifies the controller that ADS-B based surveillance support is not available and cannot be expected to support radar separation standards when in non-radar areas. Aircraft spacing in compliance with manual separation standards will be required when approaching the non-radar areas for flights reflecting the Non-ADS-B indication.

Figure 8–2, CFR View Menu, shows the CFR View Menu. It is used to change the format and contents of the CFR View. To access the CFR View Menu, left/middle-click the M (Menu) button in the CFR View title bar.

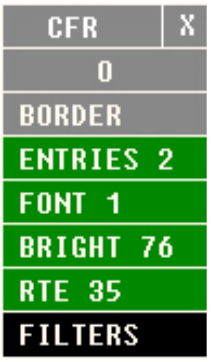


Figure 8–2. CFR View Menu

To set the number of flight plans displayed:

1. Left-click **ENTRIES** to decrease number of displayed flight plans.
2. Middle-click **ENTRIES** to increase number of displayed flight plans.

NOTE: The number of entries in the CFR View is 1-10. There is no scrolling in this view.

As the number of displayed entries is decremented, the oldest entries are deleted.

To set the number of characters displayed in the Route Field:

1. Left-click **RTE** to decrease number of characters displayed.
2. Middle-click **RTE** to increase number of characters displayed.

NOTE: The RTE range is 30-100 characters. This button supports auto repeating for incrementing/decrementing.

To customize the display of flight plans:

1. Left/middle-click **FILTERS** in the CFR View menu to display the Filters Pop-Up Menu.
2. Left/middle-click toggle buttons in the **Filters Pop-Up Menu** to display/suppress columns and column data. Changes will take place immediately.
3. Click anywhere on the display to close the view menu.

Table 8–1, Filter Pop-up Menu Buttons, shows the Filter Pop-up Menu buttons with toggle column data information.

Table 8–1. Filter Pop-up Menu Buttons

Filter Pop-up Menu Button	Toggles Columns / Column Data
ALT	Altitude
BCN	Beacon Code
CID	Computer ID
FIX	Fix
LBL	Column Labels

Table 8–1. Filter Pop-up Menu Buttons (Continued)

Filter Pop-up Menu Button	Toggles Columns / Column Data
RTE	Route
SPD	Speed
TIM	Time
TYP	Aircraft Type

To display additional route information, left/middle-click **Additional Route Indicator** (boxed asterisk) in the CFR View to display additional route information.

To display remarks, left/middle-click **Flight Plan Remarks Indicator** (boxed R) in the CFR View to display remarks.

To show all fields, left/middle-click **SHOW FIELDS** in CFR View title bar to display suppressed fields.

Figure 8–3, CFR View – Show Fields, shows the CFR View with Show Fields.

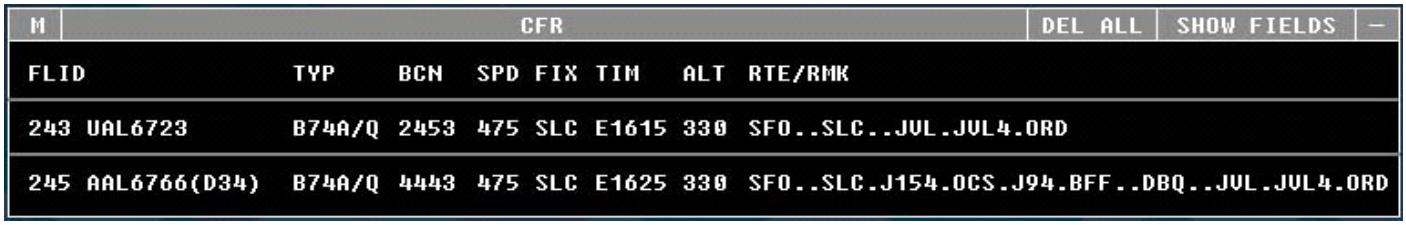


Figure 8–3. CFR View – Show Fields

NOTE: When the return message is displayed in the title bar, the filter button is disabled. The Show Fields option is grayed out if all fields are selected or if there are no flights to display in the view.

To delete a flight plan entry:

1. Middle-click the desired CID or ACID; a Delete Pop-Up menu is displayed.
2. Left/middle-click **DELETE** to delete entry.

Figure 8–4 and Figure 8–5 show the CFR View with Delete features.

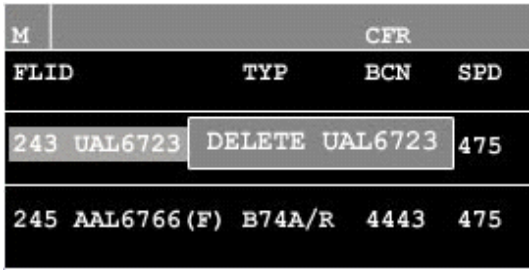


Figure 8–4. CFR View - Deleting

To delete all flight plan entries, left/middle-click **DEL ALL** in the view header to delete all entries.

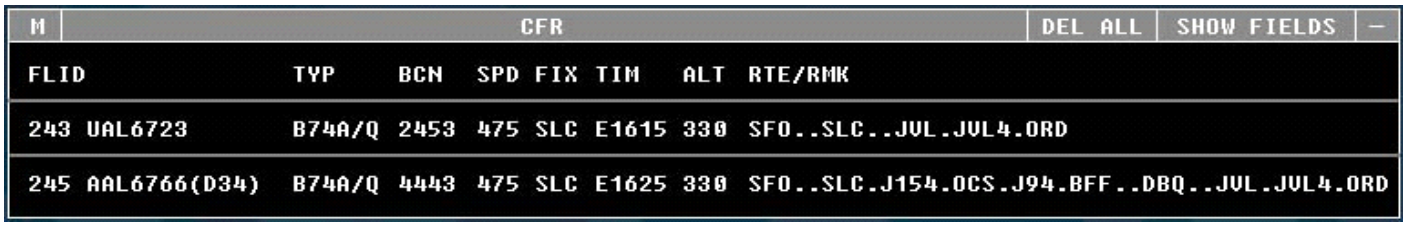


Figure 8–5. CFR View - Deleting All Entries

9. CONTINUOUS RANGE READOUT VIEW

This chapter describes the Continuous Range Readout (CRR) View which displays target distance from a controller determined fix or fixes.

Controllers use the Continuous Range Readout (CRR) View shown below in Figure 9–1 to manage and control the continuous range readout display to monitor aircraft spacing and sequencing.

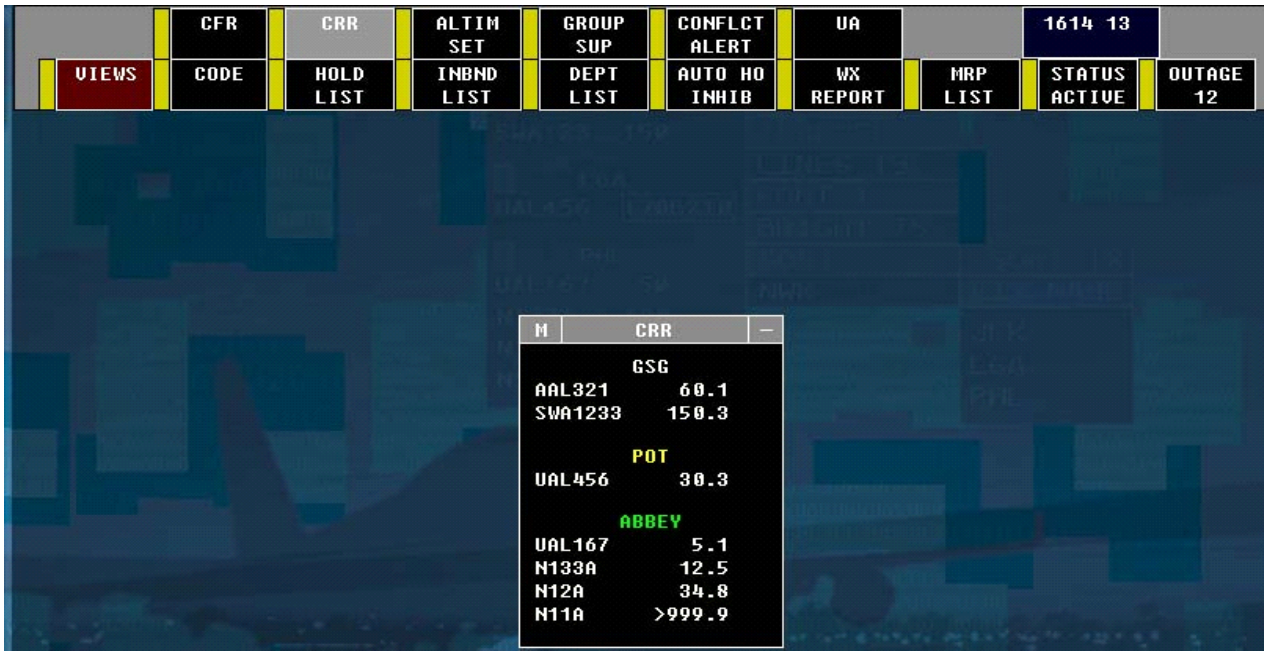


Figure 9–1. CRR View

9.1 Accessing the CRR View

To access the CRR View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display the Views toolbar menu.
2. Left/middle-click the **CRR** button in the Views toolbar to access the CRR view.

Figure 9–2 shows the CRR View with range readout data. Each group name is displayed in the Range Readout View Information list with associated entries listed below the group name. Group name color may be selected from the Range Color Selection panel. The Location Group Panel displays only group names. Flight data is suppressed.

The CRR View will auto contract/expand up to the set number of lines (3-20) as entries are added and deleted. If the number of entries exceeds the number of lines set, a scroll bar appears. If the number of lines is set to 21+, the view automatically expands or contracts to accommodate all entries.

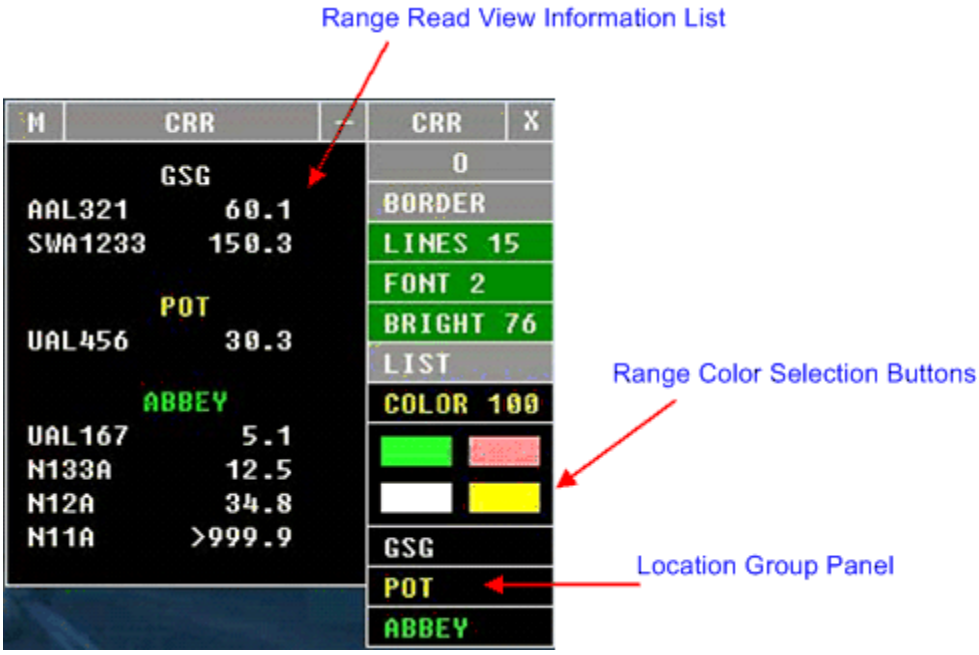


Figure 9–2. CRR View with Range Readout Data

9.2 Switching Between Views

The controller can switch between the Range Readout View Information List and the Situation Display Location Group Panel. To switch between views:

1. Left/middle-click the M button in view title bar to access the CRR view menu.
2. Left/middle-click the **LIST** menu item in the CRR View Menu to toggle between the Range Readout View Information List and the Location Group Panel.

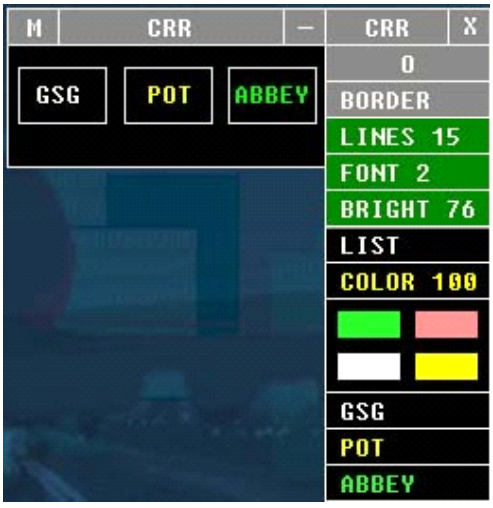


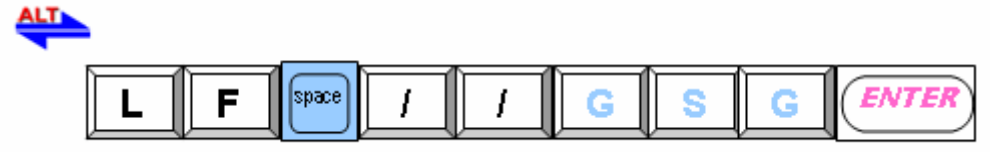
Figure 9–3. CRR View Menu with Situation Display Location Groups

NOTE: When LIST menu item is gray, the Range Readout Display information list will be shown. When LIST menu item is black, the Location Group panel will be shown. Figure 9–3 shows CRR View Menu with Situation Display Groups.

9.3 Creating a Group

1. Type **LF**.
2. Left-click the group reference point on the display.
3. Type the group name.
4. Press **ENTER**. The new group name appears in CRR view.

NOTE: Group name can be 1 to 5 alphanumeric characters.



9.4 Creating a New SDLG

When a new Situation Display Location Group (SDLG) is created, the controller can specify a location of the group in one of the following ways:

- A selected trackball point on the Situation Display.
- A Fix name, Fix Radial Distance (FRD) or Latitude/Longitude.

Procedures for creating the SDLGs are presented in the subsequent subsections.

9.4.1 Creating an SDLG with a Specified Label

Use the following procedures to create a Situation Display location group with a specified label without adding an FDB to the group.

1. Type **LF** and a space.
2. Type a fix and a space -or- left-click a Situation Display point.
3. Type a group label (Optional).
4. Press **ENTER**.

Fix=	Fix name //aa (a)(a)(a) Fix radial Distance //aa(a)(a)(a)dddddd Latitude and Longitude //dddd(a)/dddd(d)(a)

NOTE: When the location is a fix name, the group label is optional. Otherwise, the label is required.

When a Latitude/Longitude is specified, the letter for the latitude can be an N or S. When a Latitude/Longitude is specified the letter for the longitude can be an E or W.

9.4.2 Creating an SDLG with a Specified Label and Adding FDBs

To create an SDLG with a specified label and add one to four FDBs to the group by performing the following steps:

1. Type **LF** and a space.
2. Type a fix and a space -or- left-click a Situation Display point.
3. Optional -Type a group label (only optional if fix specified).
4. Type up to 4 CIDs separated by "/"s. (e.g., 321/231/345/456).
5. Press **ENTER**.

Location =	Fix name //aa (a)(a)(a) Fix radial Distance //aa(a)(a)(a)dddddd Latitude and Longitude //dddd(a)/dddd(d)(a)

NOTE: A maximum of four trackball picks is allowed.

9.4.3 Creating a SDLG without a Specified Label and Adding FDBs

To create an SDLG without a specified label and add one to four FDBs to the group by performing the following steps:

1. Type **LF** and a space.
2. Type a fix and a space –or- left/middle-click a Situation Display point.
3. Type up to 4 CIDs separated by "/"s (e.g., 321/231/345/456).
4. Press **ENTER**.

Location =	Fix name //aa (a)(a)(a) Fix radial Distance //aa(a)(a)(a)dddddd Latitude and Longitude //dddd(a)/dddd(d)(a)

9.5 Using the CRR View Menu

To access the CRR View menu, left/middle-click the 

button in view header to access the CRR view menu.

To change the group color:

1. Left/middle-click the desired Range Color Selection button.
2. Left/middle-click one or more of the group labels in the View Menu to assign the selected color.

NOTE: Group Labels in the view or Location Group Panel cannot be used to change color selection.

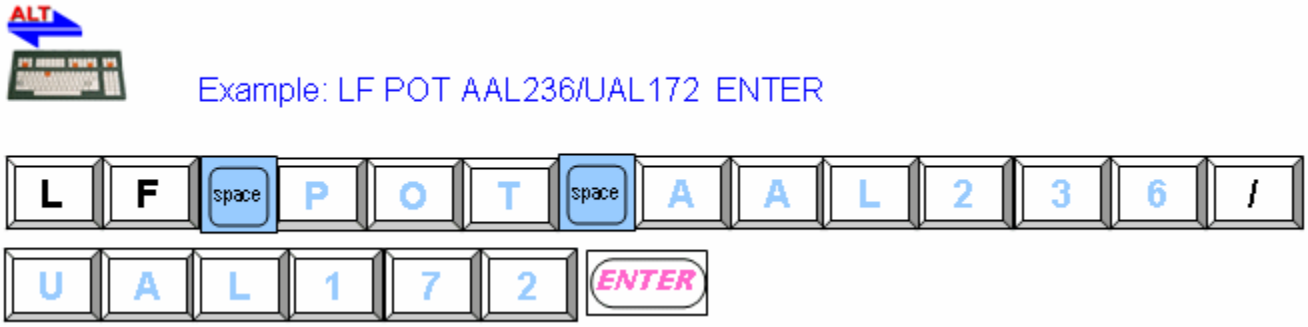
To change the group color brightness:

1. Left/middle-click one of the four color buttons on the CRR view menu.
2. Left-click the **COLOR** menu item to decrease the color brightness of all groups in the CRR View with that color. Numeric value will decrease as color brightness decreases.
3. Middle-click the **COLOR** menu item to increase the color brightness of all groups in the CRR View with that color. Numeric value will increase as color brightness increases.

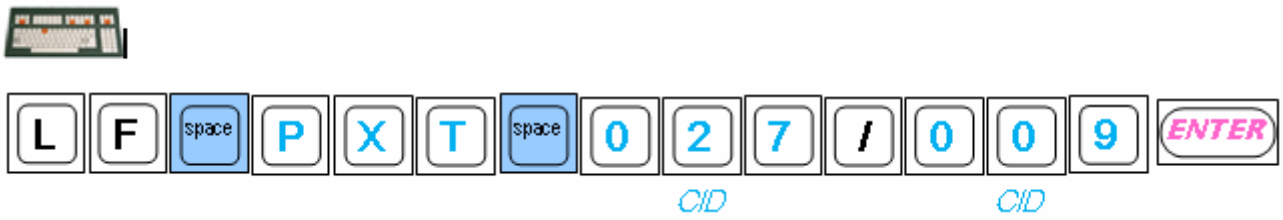
NOTE: The brightness range is 0-100 in increments of 2. Group Labels in the view or Location Group Panel cannot be used to change brightness.

To add one or more flights to a location:

1. Left-click the group label in the CRR view or on the Situation Display.
2. Left-click the track symbols of all but the last AID to be added to the group.
3. Middle-click the final track symbol to complete the procedure.



To create a group and add one or more flights to the group using the MCA, use the following command:
Example: LF PXT 027/009 ENTER



To delete one entry from a group, with the Range Readout Display Information List displayed:

1. Left/middle-click the entry in the CRR View. A Delete Pop-Up Box is displayed. To delete one entry from a group, perform the following step:
2. Left/middle-click the Delete menu item to delete the single entry.

Figure 9–4 shows an example:

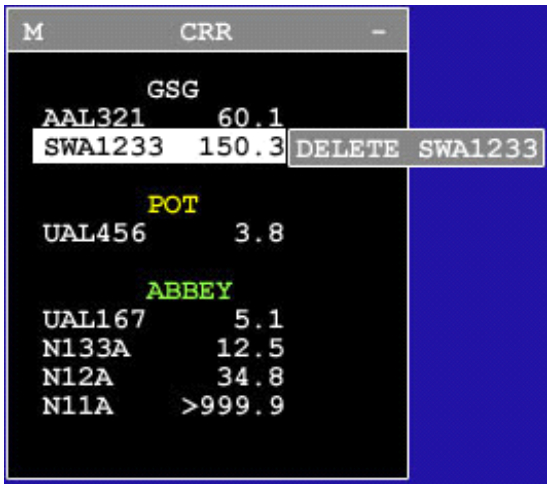


Figure 9–4. CRR View - Deleting One Entry

To delete all entries from a group:

1. Middle-click the Group Label. A DELETE ALL Pop-Up Box is displayed.
2. Left/middle-click the **DELETE ALL** pop-up to delete all of the entries.

Figure 9–5 shows an example.

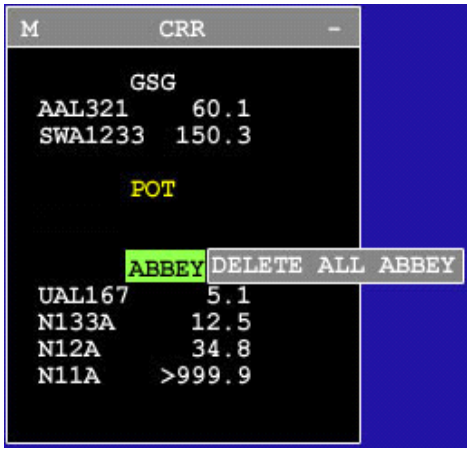


Figure 9–5. CRR View - Deleting All Entries

To delete a group label:

1. Middle-click the Group Label of an empty group. A Delete Pop-up Box is displayed.
2. Left/middle-click the **DELETE** pop-up to delete the Group Label. An example of this is shown in Figure 9–6.

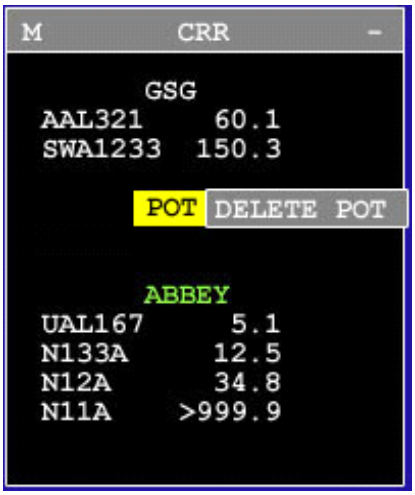


Figure 9–6. CRR View - Deleting Group Label

NOTE: A group must be empty for a group label to be deleted from the view shown in Figure 9–6.

9.6 Range Data Blocks

The RDB is a special data block linked to the target position symbol that provides continuous range readout data to the controller. The range shown indicates the distance from the aircraft to a selected fix, or to a controller-selected point on the Situation Display. It may also show the aircraft's STA and DCT.

The Range Data Block shown in Figure 9–7 displays the mileage from the target to the specified fix. The Range Data Block is displayed below the target symbols of aircraft that are listed in the CRR View if the option to display the continuous range readout is currently selected. Optionally, the Range Data Block can include the STA and/or DCT.

Figure 9–7. Range Data Block

NOTE: STA data is displayed in four-character format.

The DCT data is displayed in minutes and tens of seconds.

A minus sign indicates a negative delay time. A zero indicates the display time is less than one minute.

Mileage is displayed to the .10 of a mile.

9.6.1 Displaying the Range Data Blocks

The buttons for displaying the Range Data Blocks and selecting the fields displayed in each data block are located on the Data Block (DB) Fields Menu shown in Figure 9–8, Data Block Fields Menu. The DB Fields Menu is accessed by clicking on the DB FIELDS button, located on the Master Toolbar, and contains the following buttons:

- Non-RVSM Indicator Display Button
- Destination Display Button
- Aircraft Data (TYPE) Display Button
- FDB Leader Length Button
- BCAST FLID Display Button
- Non-ADS-B Indicator Display Button
- Non-ADS-B Brightness Button
- TFM Reroute Indicator Display Button
- CRR RDB Display Button
- STA RDB Display Button
- Delay RDB Display Button
- TMA Color Menu Display Button

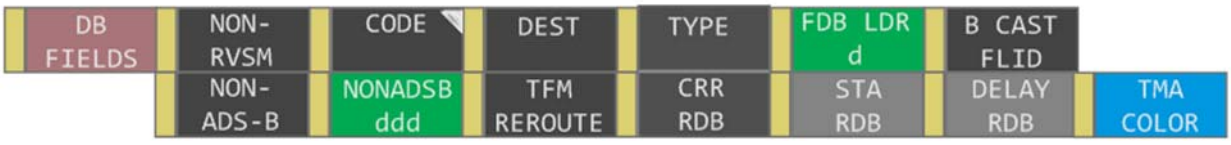


Figure 9–8. Data Block Fields Menu

The RDB is de-emphasized (dimmed) when there is an Accepted GIM-S speed for the flight. In Figure 9–9, Sector 01 accepts a Proposed GIM-S speed for AWE301, resulting in the STA and DCT displayed with de-emphasis for AWE301 RDB.

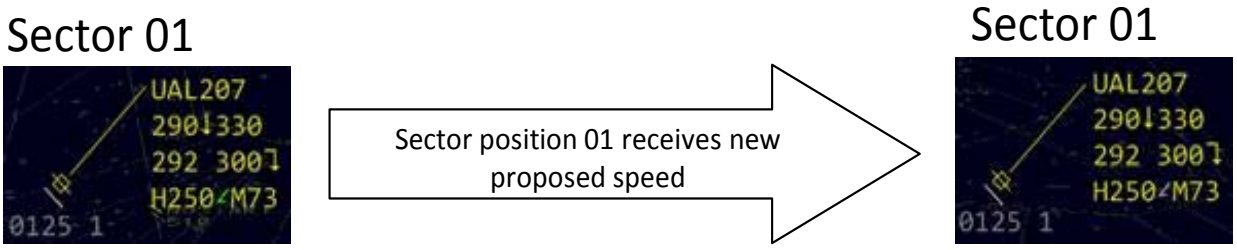


Figure 9–9. Sector Position Accepts Proposed GIM-S Speed

In Figure 9–10, Sector 01 has previously accepted a Proposed GIM-S speed for UAL207. The STA and DCT in RDB continue to be displayed with de-emphasis when the new Proposed GIM-S Speed is received (Figure 9–10), because Sector 01 has previously accepted a GIM-S speed. The reason that the RDB coding does not change when a new Proposed GIM-S Speed is received, is that an action may or may

not be in order to get the flight to reach the non-CSP metering arc on time. The speed of that flight is still ‘valid’ for the metering fix, assuming that the downstream sector may be able to absorb delay and still get the flight to the metering fix on time.

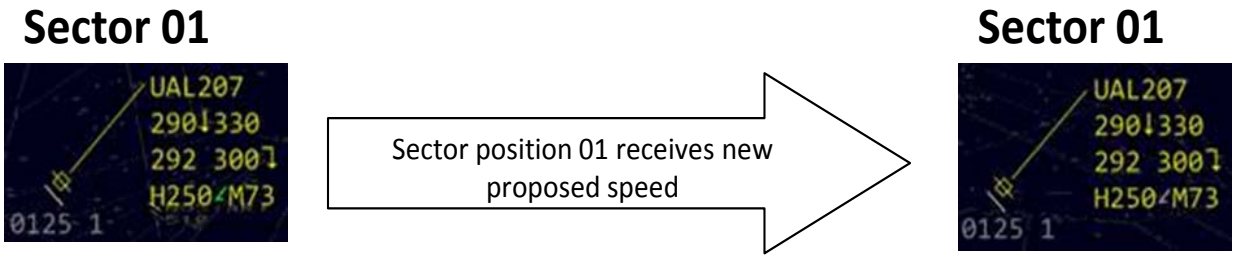


Figure 9–10. Accepted GIM-S Speed (Followed by New Proposed GIM-S Speed Within a Sector)

In Figure 9–11, Sector 01 has previously accepted a Proposed GIM-S speed for AWE301. The Sector 02 then receives a new Proposed GIM-S Speed for AWE301 and the STA and DCT in the RDB for the flight are displayed in the normal text color (without de-emphasis). See Figure 9–11.

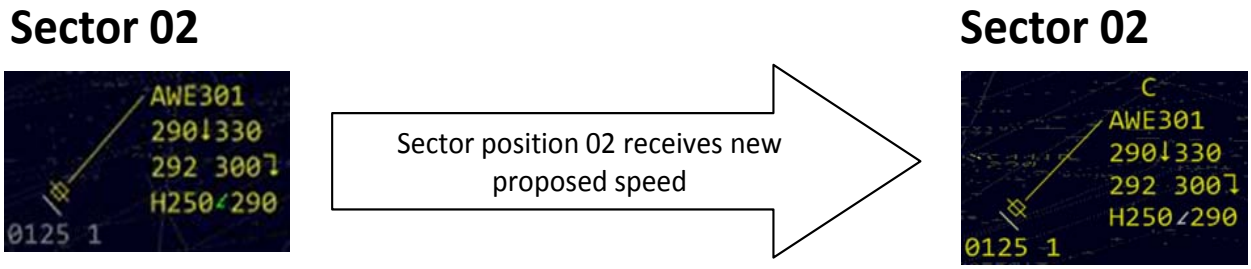


Figure 9–11. Accepted GIM-S Speed at Sector 01 (Followed by New Proposed GIM-S Speed at Sector 02)

To manage information associated with Range Data Blocks, do the following:

1. Left/middle-click the **CRR RDB** button on the DB Fields menu to toggle the display of Range Data Blocks for aircrafts listed in the CRR View.
2. Left/middle-click **STA RDB** to toggle the STA field of a data block on and off.
3. Left/middle-click **DELAY RDB** to toggle the DELAY field of a data block on and off.

9.6.2 Range Data Block Offset Setting

To adjust the leader line offset direction, press the MULTI-FUNC and “O” keys simultaneously to cycle the RDB offset angle.

The offsets are in 45 degree increments from 45 to 315 degrees (e.g. 45, 90, 135…315). Figure 9–12, Data Block Fields Menu with STA/DELAY Data, shows Data block Field Menu with STA/DELAY data.

9.6.3 Changing the Brightness and Color of the STA/DELAY Data

The brightness of the de-emphasized STA and DCT text of the RDB is controlled by the TMA De-emphasis Brightness Button located on the far right in the TMA Color Menu. The TMA De-emphasis Brightness Button allows the controller to change the brightness of TMA data displayed in the RDB when the TMA data (STA and DCT) is de-emphasized. The brightness of the button label on the first line reflects the "dd" brightness setting of the de-emphasized TMA data. The TMA De-emphasis Brightness Button behaves independently of the TMA Color Brightness Control Group Button that allows the user to control the brightness of each of the four colors that can be used for TMA data displayed in an RDB.

To change the color/brightness of the STA/DELAY data in the Range Data block in the normal emphasis condition:

1. Left/middle-click the **TMA COLOR** button (Figure 9–12).
2. Left/middle-click desired color. The font color of the STA and DELAY data changes.
3. Left-click the **COLOR** button to decrease the brightness of the STA and DELAY data.
4. Middle-click the **COLOR** button to increase the brightness of the STA and DELAY data.

To change the Brightness of the STA/DELAY data when it is de-emphasized:

1. Left/middle-click the **TMA COLOR** button (Figure 9–12).
2. Left-click the **TMA/** button (right-most button in the menu) to decrease the brightness.
3. Middle-click the **TMA/** button (right-most button in the menu) to increase the brightness.

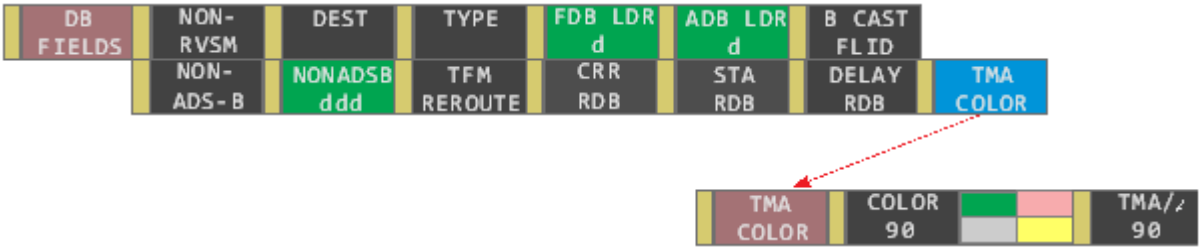


Figure 9–12. Data Block Fields Menu with STA/DELAY Data

10. ALTIMETER SETTING & WEATHER STATION REPORT VIEWS

This chapter describes the components of the Altimeter Settings and Weather Station Report Views.

10.1 Altimeter Settings View

The Altimeter Settings View shown in Figure 10–1 provides the controller with the Altimeter Station name, time of altimeter reading and the Altimeter setting.

To access the altimeter settings view:

1. Left/middle-click the **VIEWS** button on the Master Toolbar to display the Views toolbar menu.
2. Left/middle-click the **ALTIM SET** button on the Views toolbar menu to display the Altimeter Settings View.

Figure 10–1. Views Toolbar Menu

The following information is provided for each altimeter station:

- The gold box indicates it can be torn off and placed in another location on the display.
- Station name.
- Time of reading. Time is underlined if the entry is old.
- Altimeter setting is underlined if it is below 2992. The letter M appears if the reporting station is missing altimeter data.

The Altimeter Settings View Template may contain up to 24 cells arranged in even number of lines and rows shown in Figure 10–2. The controller controls the number of lines and rows in the Altimeter Settings View menu. The layout of the Altimeter Settings View mimics the Altimeter Settings View Template.

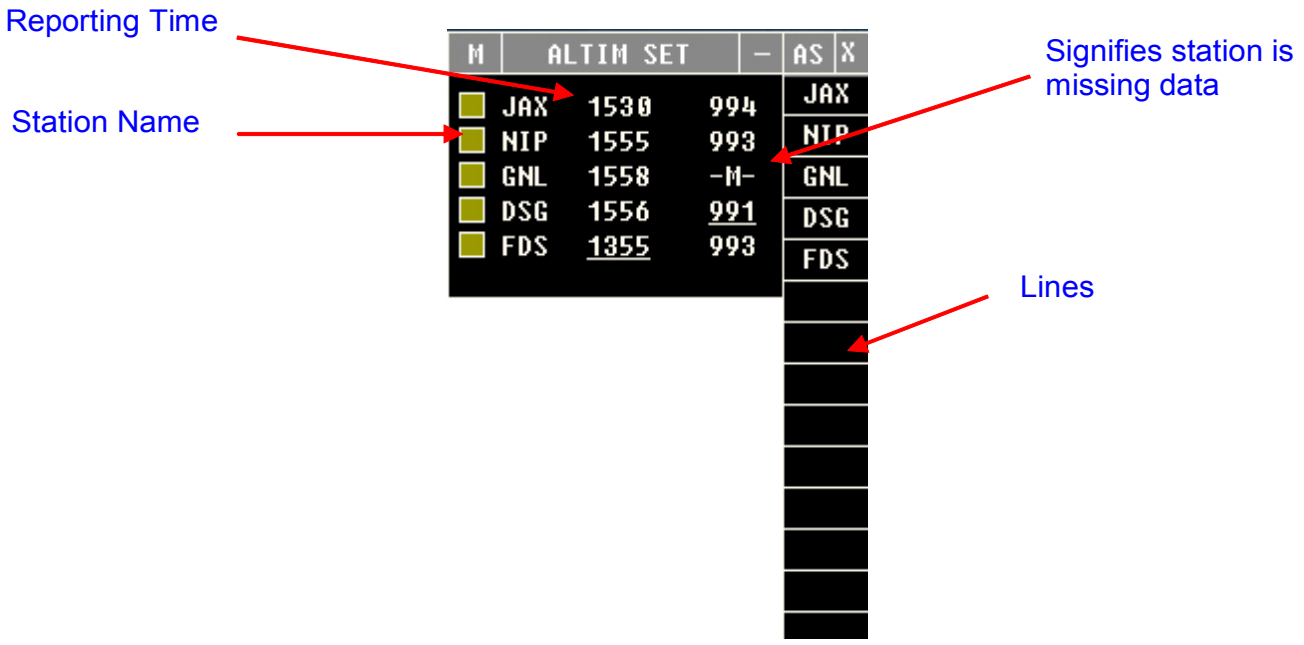


Figure 10–2. Altimeter Setting View Template

To add altimeter station IDs:

1. Left/middle-click the M button on the view header. The view menu is displayed.
2. Left/middle-click **TEMPLATE**. The AS Template ID is displayed.
3. Left/middle-click the desired cell.
4. Type the Altimeter Station ID and press **ENTER**.
5. Left/middle-click the X button in the Template header or press **ENTER** to close the Template.

CAUTION

The controller may update multiple Altimeter Station IDs while the template is open, however, the controller must press ENTER after typing each Altimeter Station ID. In order for changes to be retained the controller must press X or press ENTER again to close the template.

NOTE: Lines and columns define the size of Altimeter Settings View (Figure 10–3), however, the actual positioning of individual Altmeter Station IDs may vary due to elimination of blank cells.

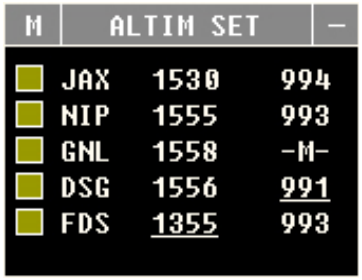
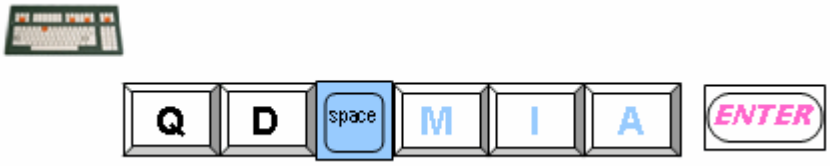


Figure 10–3. Altimeter Setting View

1. Left/middle-click M.
2. Type desired Altimeter Station ID. A pop-up will appear to accept your entry.
3. Press **ENTER**. The Station ID will be added to the view, if the Station ID was already displayed, it will be removed.



To move an altimeter station name:

1. Left/middle-click the **TEMPLATE** menu item. The template displays.
2. Left/middle-click entry to be moved. Entry will be highlighted.
3. Left/middle-click the desired cell. Entry is relocated.
4. Left/middle-click X or press the **ENTER** key to close template.

To delete the altimeter station from the Altimeter Settings view:

1. Left/middle-click the desired entry. DELETE pop-up menu appears (Figure 10–4).
2. Left/middle-click the **DELETE** menu item. Entry is deleted.

Figure 10–4. Altimeter Setting View - Delete

NOTE: If the controller deletes an Altimeter station in the Altimeter Setting view, it will delete that Altimeter station from the view and the tear off. Figure 10–4 shows the Altimeter Setting View.

If the controller deletes an Altimeter station tear-off using the delete tearoff button, it will only delete the tear-off leaving the Altimeter station in the view.

A QD message toggles individual altimeter stations; it does not overwrite the entire list.

To delete the altimeter stations form the template:

1. Left/middle-click the M button on the view header. The view menu is displayed.
2. Left/middle-click **TEMPLATE**. The AS Template ID is displayed.
3. Left/middle-click the desired cell and backspace to remove the entry.
4. Press **ENTER**.
5. Left/middle-click X or press **ENTER** to close template.

10.2 Weather Station Report View

The Weather Station Report view shown in Figure 10–5 allows the controller to display weather station names, time of weather station reading and any relevant reported information concerning the weather. These entries are automatically updated when new weather data is received. Within the view, controllers can add or delete weather station report entries.

To access the Weather Station Report view:

1. Left/middle-click the **VIEWS** button on the Master Toolbar to display the Views toolbar menu.
2. Left/middle-click the **WX REPORT** button on the Views toolbar menu to display Weather Station Report view.

Figure 10–5. Weather Station Report View

To interpret the Weather Station Report view:

1. The gold box to the left of the weather data indicates it can be torn off and placed on the Situation Display.
2. The last requested reporting station will be displayed at the top of the Weather Station Report view shown in Figure 10–6. The letter –M- will appear if weather station is missing data.
3. Time is underlined if the entry is old.

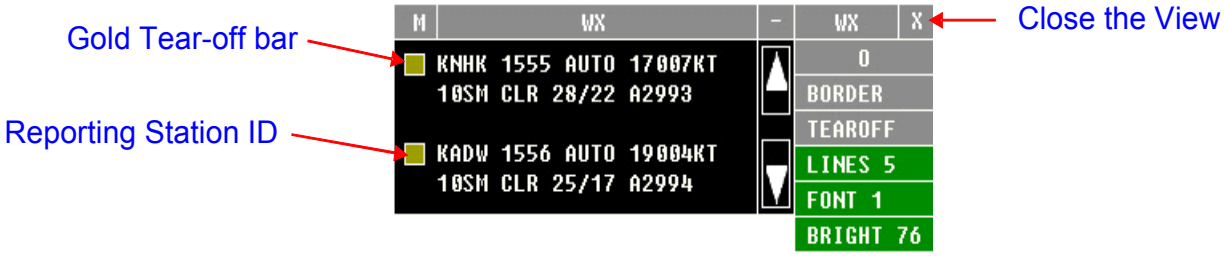


Figure 10–6. Weather Station Report View with Menu

To add a weather station report:

1. Left/middle-click the M button in the Weather Station Report view header. The view menu appears.
2. Type in a valid Weather Station ID. When the controller starts typing, a pop-up input box will appear.
3. Press the **ENTER** key.

NOTE: If the weather station ID entered is an invalid format, the input box will remain open and display INVALID.

If the weather station ID entered is not adapted, the input box will close and the Feedback Area of the MCA will display a red X, the entered station ID, and NON-ADAPTED STATION.

If the requested station ID is already displayed, the entry is deleted from the view.

To delete a weather station report:

1. Left/middle-click the entry in the Weather Station Report view. A pop-up menu appears with DELETE followed by the name of the weather station.
2. Left/middle-click **DELETE**. Figure 10–7 shows the Weather Station Report view with the Delete Feature.

Figure 10–7. Weather Station Report View - Delete

Enter a weather request (WR) command for a station already in the view.

Enter a weather station in the pop-up input box already in the view.

11. GROUP SUPPRESSION AND CONFLICT ALERT VIEWS

This chapter describes components of the Group Suppression View and Conflict Alert View.

11.1 Group Suppression View

Controllers can use the Group Suppression View shown in:

Figure 11–1 to see and manage conflict alert suppression groups and manipulate group suppression information. In ERAM, controllers can use the Group Suppression Input Box to handle all manipulations of the groups and the system will automatically delete groups that have become obsolete.

11.1.1 Accessing the Group Suppression View

To access the Group Suppression View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display the Views toolbar menu.
2. Left/middle-click the **GROUP SUP** button on the Views toolbar to display Group Suppression View.

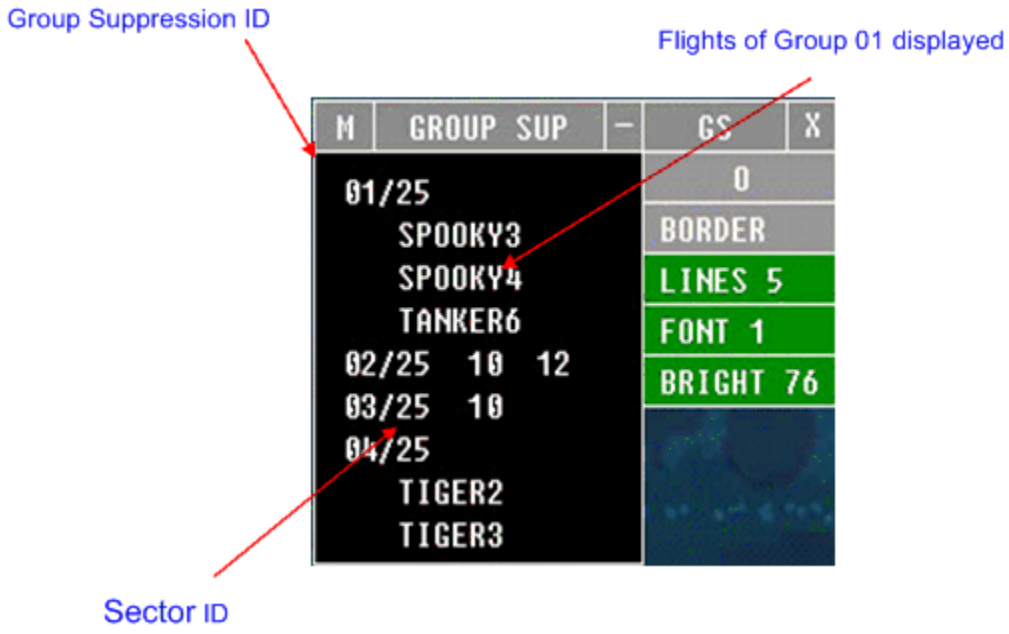


Figure 11–1. Group Suppression View

11.1.2 Interpreting the Group Suppression View

The first column contains the Group Suppression number followed by a “/”. The second column contains the sector IDs of all the subscribed sectors. The controller’s sector is displayed first in the group suppression list. The flights in the Group will be displayed underneath the Group Suppression sublist.

The Group Suppression View cannot be suppressed if the sector is suppressing at least one group entry on the list. If the Group Suppression View is empty, only the view header will be displayed. If the Group Suppression View is set to opaque and is suppressed or covered by another view, it will be displayed automatically and/or forced to the top of the display when the first suppression of a group is entered and any subsequent suppression is entered. If the Group Suppression View is set to semitransparent, an opaque view may still cover it when the first suppression of a group is entered and any subsequent suppression is entered.

If a sector is displaying an FDB due to a handoff or point out and that flight is a member of a suppression group that group will be forced to the sector’s view. Flights will be displayed in alphanumeric order. If necessary, the view will automatically expand to display all the contents.

11.1.3 Displaying/Suppressing Group Contents

To display/suppress the group contents, left-click the group suppression ID to toggle the group contents on and off.

11.1.4 Accessing the Group Suppression View Menu

To access the Group Suppression View menu, left/middle-click 

in the Group Sup view header. The view menu appears.

11.1.5 Creating a New Group

With the view menu displayed, begin typing. The Group Suppression Input Box in Figure 11–2 will open automatically and replace the view menu.

1. Type the flight ID of one aircraft, a slash /, followed by the flight ID of a second aircraft to be added to the group. (Example: 313/357)
2. Press the **ENTER** key. The group label is displayed but the members of the group are not.

NOTE: When a group is entered that is not in the list, it will be added. When a group is entered that already exists in the list, it will be deleted. Adding an A in the group suppression message will explicitly add that group.

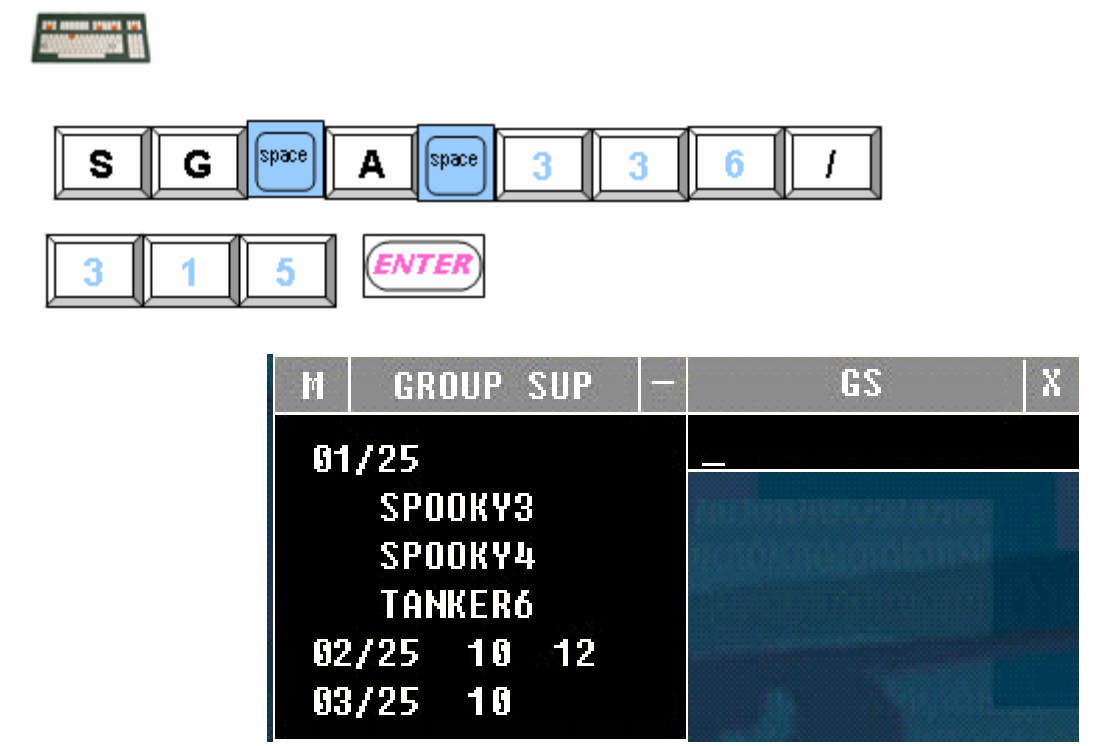


Figure 11–2. Group Suppression View - Creating New Group

11.1.6 Adding a Flight to a Group

To add a flight to a group, begin typing with the view menu open. The Group Suppression Input Box will open automatically and replace the view menu. Continue with the following steps:

1. Type the group ID, a space, followed by the flight ID. (Example: 04 357)
2. Press the **ENTER** key to add the flight and close the Input Box.

NOTE: When a flight that is not in the group is entered, it will be added. When a flight is entered that already exists in the list, it will be deleted. Adding an A or a D in the group suppression message will explicitly add or delete that flight. Figure 11–3 shows the Group Suppression View with delete feature.

11.1.7 Deleting a Flight from a Group

To delete a flight from a group:

1. Left/middle-click the AID. A DELETE pop-up box opens next to the AID (Figure 11–3).

2. Left/middle-click the **DELETE** pop-up. Flight ID is deleted from the group.

Type Group ID, a space, followed by the Flight ID. (Example: 04 357)

NOTE: A controller can only delete a flight from a group if the sector has track control of the flight.

When a flight is entered that already exists in the group, it will be deleted. When a flight is entered that is not in the group, it will be added. Adding an A or D in the group suppression message will explicitly add or delete that flight.

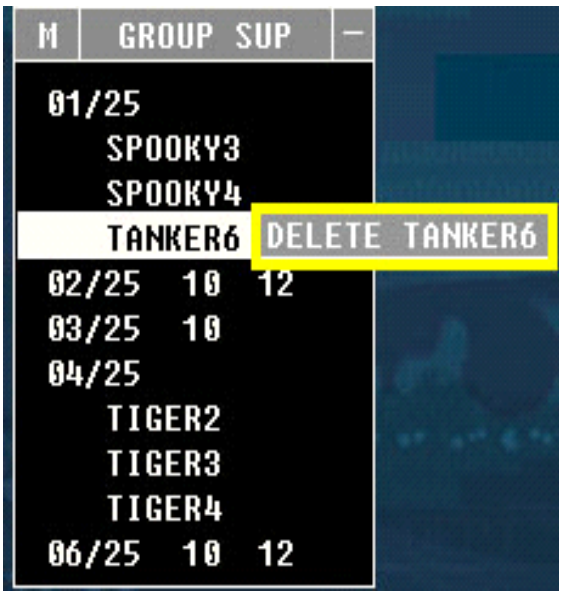
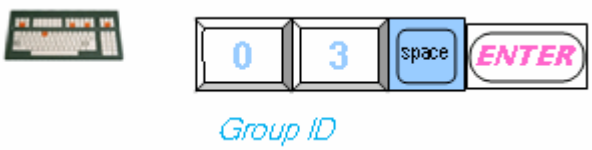


Figure 11–3. Group Suppression View - Deleting a Flight

11.1.8 Displaying a Group not already in the View

A group created at another sector can be displayed in the Group Suppression View.

1. With the view menu open, begin typing. The Group Suppression Input Box will open automatically and replace the view menu.
2. Type the group ID. (Example: 03)
3. Press the **ENTER** key. The group will be displayed.



NOTE: Adding a group to your view does not automatically subscribe to that group.

11.1.9 Subscribing to a Group

1. Middle-click the group ID. ADD Pop-Up menu displays.
2. Left/middle-click the **ADD** menu item. The group is added to the sector.

1. With the view menu displayed, begin typing. The Group Suppression Pop-Up Box will automatically display.
2. Type the letter **A**, a space, followed by the group ID (Example: A 03)
3. Press the **ENTER** key.

The group is added to the sector.

NOTE: When a group is entered to which the controller are already subscribed, the controller will be unsubscribed. Adding an A in the group suppression message will explicitly subscribe that flight.

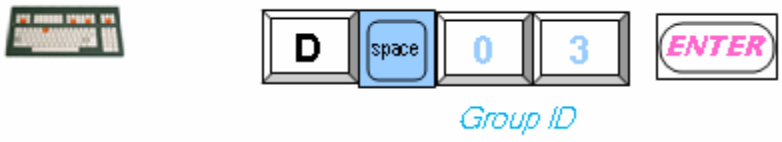
11.1.10 Unsubscribing from a Group

To unsubscribe from a group:

1. Middle-click the group ID. The DELETE Pop-Up menu displays.
2. Left/middle-click the **DELETE** menu item to remove the group from the sector.

1. Left/middle-click 

in the Group Supp view title bar to display the view menu.
2. Begin typing. The Group Suppression Pop-Up Box will replace the view menu.
3. Type the letter **D**, a space, followed by the group ID Example: D 03
4. Press the **ENTER** key. The group is deleted from the sector.



NOTE: When a group is entered to which the controller are not already subscribed, the controller will be subscribed. Adding a D in the group suppression message will explicitly unsubscribe that flight.

11.2 Conflict Alert View

The Conflict Alert View shown in Figure 11–4 allows the controller to view and manage entries for display of conflicting aircraft pairs.

To access the Conflict Alert View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **Conflict Alert** button on the Views toolbar to display the Conflict Alert View.

NOTE: If set to opaque, the Conflict Alert View is displayed automatically and on top of all other views (opaque and semi-transparent) when a new entry is added and/or an entry's conflict status changes from suppressed to unsuppressed.

CAUTION

If set to semi-transparent, the Conflict Alert View will continue to be covered by any opaque view when an entry is added. However, it is displayed on top of all other semi-transparent views when an entry is added.

The Conflict Alert View can be suppressed only when it is empty. Only the view header displays if the Conflict Alert View is empty. Figure 11–4 shows an example of the Conflict Alert view.

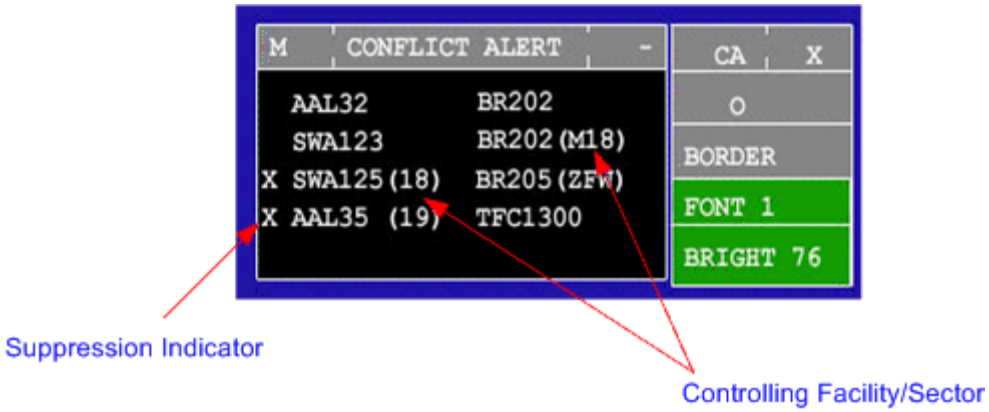


Figure 11–4. Conflict Alert View

To suppress a conflict pair, middle-click the entry to be suppressed in the Conflict Alert View. An X (suppression indicator symbol) will appear to the left of the entry.

To unsuppress a conflict pair, middle-click X before the entry to be unsuppressed in the Conflict Alert View. The X is removed from the view.

12. HOLD VIEW

This chapter describes the Hold View displayed at the R-Position workstation. The Hold View allows the controller to view, alter, and manage holding information for a flight. It is also used to manage handoffs for aircrafts in hold. Major topics discussed in this chapter are:

- Interpreting the Hold View
- The Hold View Menu
- Using the Hold View

12.1 Interpreting the Hold View

The Hold View is displayed from the VIEWS toolbar at the R-Position workstation (Illustrated in Figure 12–1). To access the view, first left/middle-click the **VIEWS** button in the Master Toolbar and then, from the resulting VIEWS toolbar, left/middle-click the **HOLD LIST** button to display the Hold View.

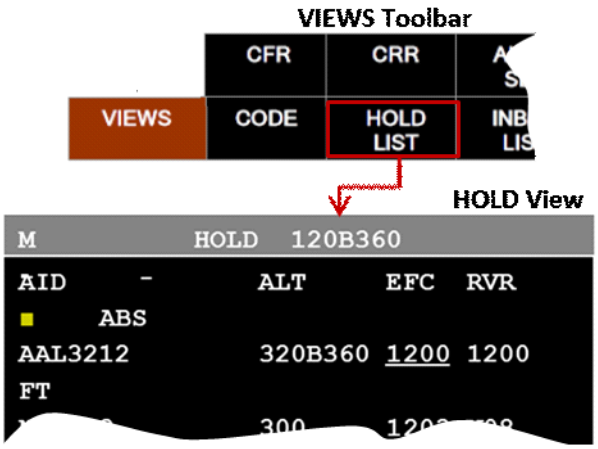


Figure 12–1. Accessing the Hold View

The basic layout of the View is shown in Figure 12–2. The view includes sublists that identify the name of the holding fix or present position (P/P), and entries within the sublists that identify flights currently in hold or that have a future hold specified. Within a sublist, entries are sorted with current holds above future holds and then by altitude.

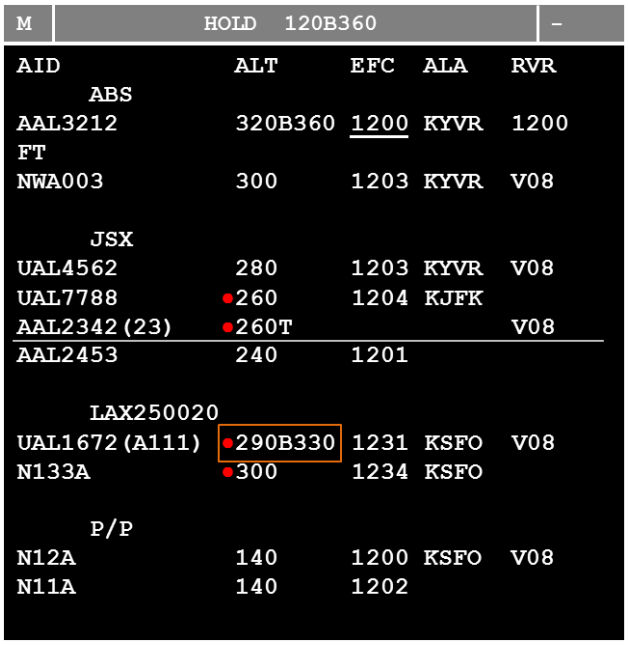


Figure 12–2. Hold View - Basic Layout

Hold View entries include the Aircraft Identifier (AID), altitudes (including the Non-RVSM Indication), Expect Further Clearance Time (EFC), Alternate Airport (ALA) information, and Runway Visual Range (RVR) information. Aircraft control designator information is appended to the AID for entries where the sector is not the controlling sector for the flight. The aircraft control designator information is enclosed in parenthesis. Gold tear off bars are displayed to the left of each Hold Fix name or P/P group. The tear off bars allow the torn off sublists to be placed anywhere on the display.

The Hold View displays the assigned or interim altitude of the aircraft in the altitude (ALT) column of the view. A filled red circle preceding the altitude field indicates that two or more flights in a Hold sublist have the same altitude or altitudes within the same altitude block. A coral outline around the altitude field indicates that the flight is not RVSM-equipped and the displayed altitude is in RVSM airspace. An underlined EFC time indicates that the EFC has expired or will soon expire. The AID, ALT, and EFC columns are always displayed in the Main Hold View. The RVR and ALA columns are user selectable via the Hold View Menu.

12.2 The Hold View Menu

Figure 12–3 shows the Hold View with its Hold View Menu displayed. The Hold View menu is used to manage the display of and operations performed on Hold View entries. To access the Hold View Menu, left/middle-click the View Menu pick area (**M**) located in the top-left portion of the Hold View header.

The SORT pick area in the View Menu displays a sub-menu for sorting entries in the Hold View. Entries can be sorted alphabetically by fix name or in a user specified order. Selecting the FIX NAME menu item sorts the sublists in alphabetical order with the present position sublist at the bottom. When the FIX NAME menu item is de-selected Hold View entries are displayed in the user specified order. The user specifies the sort order by using the “Trackball Select” to select multiple entries in the order to be sorted or “Trackball Enter” for a single selection. The last multiple entry needs to be selected with the Trackball

Enter. Upon Trackball Enter, the selected sublist names are moved to the top of the list in the order they were selected and that will be the order in which they are displayed.

NOTE: The alternate airport field is labeled ALA because that is the ICAO flight plan identifier (Figure 12–3).

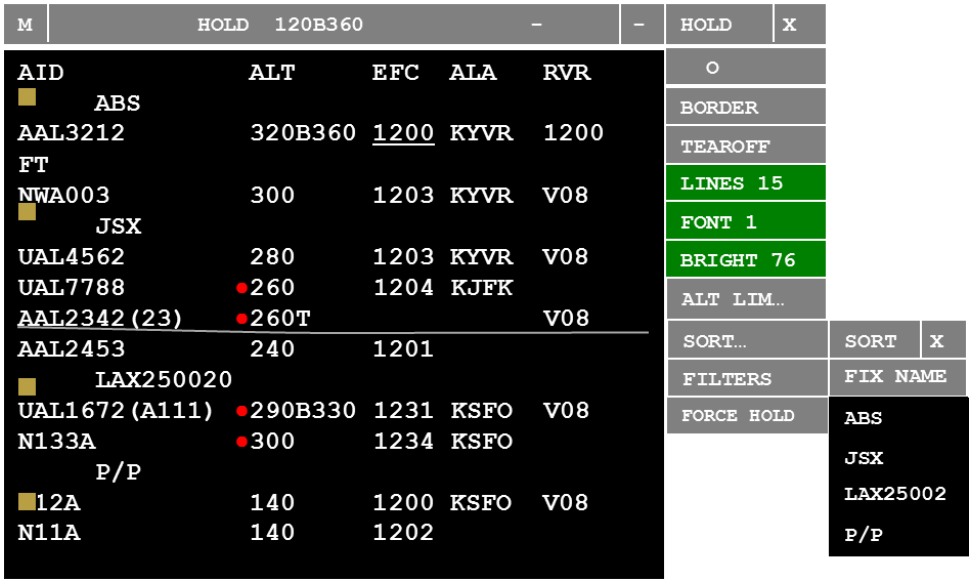


Figure 12–3. Hold View with View Menu

The FILTERS pick area in View Menu displays a sub-menu for selecting whether or not to display column labels in the Hold View and for selecting whether or not to display optional columns (e.g. ALA or RVR). The filterable items on the FILTERS sub-menu are the View column headers (LBL), the RVR data column, and the ALA data column. The user selects whether or not to display the column headers in the Main Hold View via the LBL Hold View Menu item. If the column headers are selected for display, they are displayed in torn-off sublists. The display status for the column headers is saved in preference sets and data is synchronized to the alternate channel.

12.3 Using the Hold View

This section provides procedures for multiple Hold View functions. Major topics include:

- Placing an Aircraft in Hold
- Canceling a Hold
- Deleting Hold View Entries
- Changing the Hold Altitude
- Changing the EFC Time, RVR, and ALA
- Handing off One or More Flights in Hold
- Handing-off All Flights in Hold at a Fix
- Managing Sublist Tear-offs

12.3.1 Placing an Aircraft in Hold

Follow the procedures below to place an aircraft in Hold.

1. Left-click the desired sublist header. The QH command and the fix name or P, for present position, is echoed in the Message Composition Area (MCA).
2. Left-click all but the last position symbols of selected flight IDs.
3. Middle-click the last position symbol to complete the hold message.

1. Alternatively, type **QH**, a space, followed by the appropriate syntax to place an aircraft in Hold. For example: QH RMG/1234 NW/LT/20NM AAL236.

   NOTE: Figure 12–4 shows examples of QH command syntax.

   - If the EFC time is included, the fix is followed by a slash and the four-digit time.
   - If any hold instructions are entered, they all must be entered. The direction is the compass indication, such as NW.
   - The turns are RT or LT for left or right turn.
   - The leg lengths are in nautical miles with NM after the number, or in minutes, with MIN after the number. If no direction, turns, or leg lengths are entered, default information is used.

Action	Syntax	Example
Present Position Hold	QH P FLID	QH P AAL236
Hold at Fix	QH FIX FLID	QH RMG AAL236
Hold at Fix with EFC	QH FIX/EFC FLID	QH RMG/1234 AAL236
Present Position Hold with EFC and Holding Instructions	QH P/EFC (Direction/Turns/Leg Lengths) FLID	QH P/1234 NW/LT/20NM AAL236

Figure 12–4. Examples Hold Command Syntax

2. Press the **ENTER** key. The aircraft is put in hold, the entry is added to the Hold View, and ACCEPT is displayed in the MCA. If the holding fix is within a sector's airspace and the flight's altitude (interim, local interim, or assigned) is within the sector's specified holding altitude limits, an entry is posted in the Hold View.

1. Alternatively, with the Hold View menu displayed, begin typing to display the Hold View Input Box and enter the ACID without the QH.
2. Press the **ENTER** key to place the flight in hold. Using the Hold View Input Box, the system recognizes the input as a hold command so QH is not part of the syntax.

12.3.2 Canceling a Hold

When a future or current Hold is cancelled, the Hold View entry is grayed out until the user specifically deletes it. If the Hold is cancelled via the Hold View pop-up CANCEL+DELETE option, the entry is removed at the sector that entered the cancel as soon as the hold cancellation is received. If the flight's hold (current or future) has been cancelled and the hold entry was retained, the grayed out hold entry is removed if the flight is updated to indicate a new future or current hold. The entry is also deleted if the flight object is deleted or if the flight is put into a commanded frozen status.

Follow the procedures below to cancel a Hold.

1. Left-click the **AID** in the Hold view (e.g. "AAL321"). A pop-up menu is displayed providing the user with the options to cancel a hold (CANCEL) or cancel and immediately delete (CANCEL + DELETE) an entry from the Hold View.
2. To cancel a hold, left-click the **CANCEL** button in the pop-up menu. The hold is canceled and the text of the entry is grayed out.
3. To cancel the hold and immediately remove an entry from the Hold View, select the **CANCEL + DELETE** button in the pop-up menu.

1. With the Hold View menu open, type the Flight ID of the aircraft in hold to be canceled. The Hold View Input Box will replace the Hold List View Menu.
2. Press the **ENTER** key to close the Input Box. The hold is canceled and the text of the entry is grayed out.

1. Type **QH**, a space, **C**, a space, AID. Example: QH C AAL123.
2. Press the **ENTER** key. The hold is canceled and the text of the entry is grayed out.

CAUTION

Entering a route amendment will cancel a hold for an aircraft and may immediately remove the entry from the hold view.

12.3.3 Deleting Hold View Entries

Follow the procedures below to delete Hold View entries.

1. Left-click the **AID** field of an entry. A Pop-up list is displayed.
2. Left-click **CANCEL+DELETE** button. The entry is removed from the list.

NOTE: Selecting the **CANCEL** option will gray out the entry, but the entry is not removed from the view.

12.3.4 Changing the Hold Altitude

Follow the procedures below to change the Hold altitude for an aircraft.

1. Left/middle-click the **Altitude** field to open the Altitude Menu. The cursor will be placed over the next lower altitude.
2. Left/middle-click the desired altitude. New altitude displays in Hold View and the data block is updated.

NOTE: Any assigned or interim altitude updates to the data block will also be reflected in the hold view.

If two flights in a Hold sublist have the same altitude or altitudes within the same altitude block, both values will be underlined.

12.3.5 Changing the EFC Time

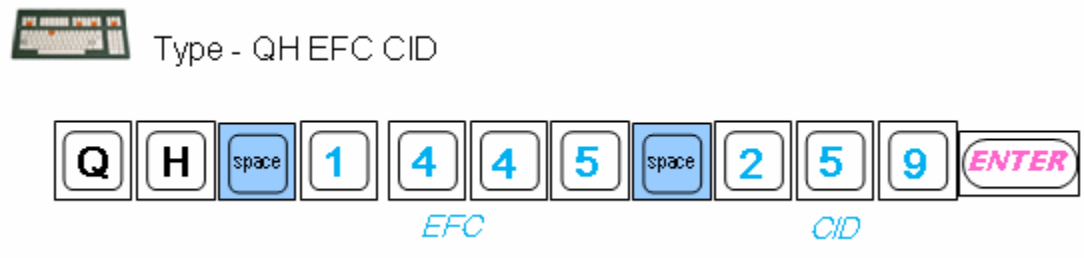
Follow the procedures below to change the Expect Further Clearance (EFC) time.

1. Left/middle-click the **EFC** field of the desired Hold View entry. This opens an EFC Input Box. If there is no EFC time for the entry, a labeled box appears when the cursor is positioned over the blank area.
2. Left/middle-click the box to activate the cursor to make the entry.
3. Type the four-digit EFC time.
4. Press the **ENTER** key. EFC time is updated in the Hold View.

NOTE: Leaving the EFC time blank in the EFC Input Box will result in the EFC data being deleted for the aircraft, and the aircraft will be put into indefinite hold.

The EFC time will be underlined if the EFC time has expired or will soon expire. The underline will remain until hold is canceled or an EFC time is entered that is beyond the EFC alert parameter.

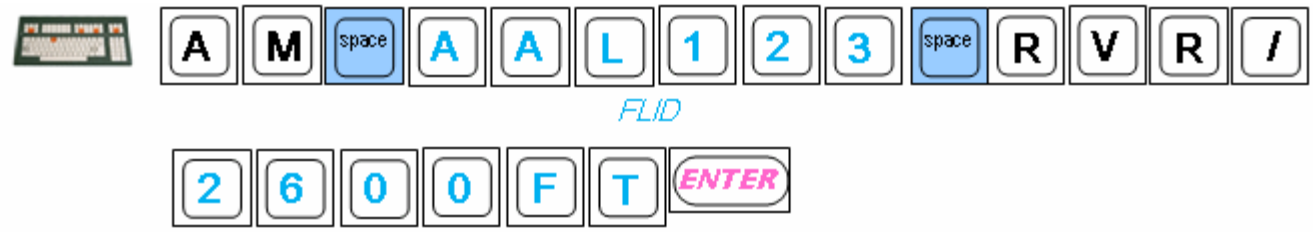
The EFC data is passed to the next sector as long as the aircraft is in hold, but when a hold is canceled, the EFC is deleted.



12.3.6 Changing the RVR

Follow the procedures below to change the RVR information for an aircraft.

1. Left/middle-click the **Runway Visual Range (RVR)** field of the aircraft. This will open an RVR Input Box. If there is no RVR data for the entry, a labeled box will appear when the cursor is positioned over the blank area. The Preview area of the MCA must be empty before the RVR Input Box can be displayed.
2. Left/middle-click the box to activate the cursor to make the entry.
3. Type the new RVR data. Up to seven alphanumeric characters can be typed.
4. Press the **ENTER** key to change/add RVR data in the flight plan and the Hold View.



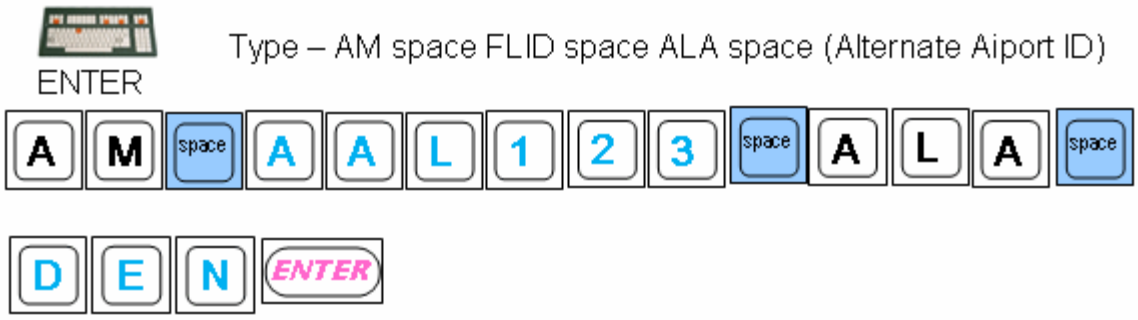
NOTE: Leaving the RVR blank in the RVR Input Box will result in the RVR data being deleted for the aircraft.

The RVR data entered in the Hold View is stored in the flight plan.

12.3.7 Changing Alternate Airports

Follow the procedures below to change alternate airports.

1. Left/middle-click the **ALA** field of the aircraft. An ALA input box opens. If there is no Alternate Airport ID for the entry, a labeled box will appear when the cursor is positioned over the blank area. The Preview area of the MCA must be empty before the RVR Input Box can be displayed.
2. Left/middle-click the box to activate the cursor to make the entry.
3. Type the new Alternate Airport ID. Up to four alphanumeric characters can be typed.
4. Press the **ENTER** key and the Alternate Aiport ID is added/changed in the flight plan and Hold View.



NOTE: Leaving the alternate airport blank in the ALA Input Box will result in the alternate airport being deleted for the aircraft.

The alternate airport entered in the Hold View is stored in the flight plan.

12.3.8 Handing-off One or More Flights in Hold

Follow the procedures below to hand off one or more flights in Hold.

1. Type the sector.
2. Left-click all but the last AID to be handed off if selecting more than one aircraft.
3. Middle-click the single AID or the last AID to be handed off. The handoff(s) are initiated. The handoff status is available to the user in the FDB for the flight.

NOTE: When an aircraft is handed off from the Hold View, it is automatically added to the Hold View of the receiving sector.

After handoff is accepted, the aircraft is automatically removed from the Hold View when the aircraft leaves the transferring sector's airspace.

12.3.9 Handing-off All Flights in Hold at a Fix

Follow the procedures below to hand off all flights in Hold at a fix.

1. Type the sector.
2. Middle-click the desired fix. The Handoff of all flights in Hold at that fix is initiated.

NOTE: When an aircraft is handed off from the Hold View, it is automatically added to the Hold View of the receiving sector.

After handoff accepts, the aircraft is automatically removed from the Hold View when the aircraft leaves the transferring sector's airspace.

12.3.10 Managing Sublist Tear-offs

Figure 12–5 shows a Hold View entry that has been torn off from the Main Hold View. The fields containing the altitude, EFC time, RVR data, and Alternate Airport ID can be changed in a torn off sublist in the same manner as in the Main Hold View.

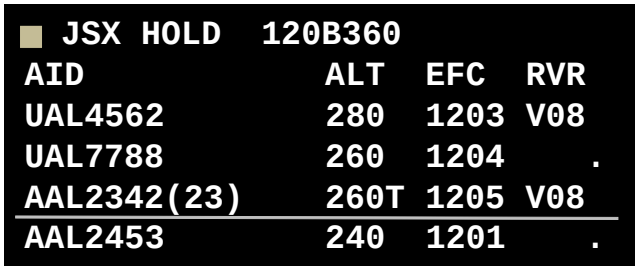


Figure 12–5. Torn-Off Hold View

If there is no data for EFC, RVR, or ALA, this will be indicated by a period rather than a space, as in the Hold View. This is because there is no dwell emphasis in tear offs to indicate the field location. If the EFC, RVR, or ALA periods are selected, a label will be displayed in the field and the input box will be displayed next to it. If there is no RVR field for the entry, a dot rather than a space will appear when the cursor is positioned over the blank area.

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13. OTHER VIEWS

This chapter describes all the other views. The major topics are:

- Auto Handoff Inhibit View
- Beacon Code View
- Departure List View
- Inbound List View
- Meter Reference Point List View
- Position Relief and Emergency Checklist Views
- FEL View
- SAA Filter View

13.1 Auto Handoff Inhibit View

The Auto Handoff Inhibit view shown in Figure 13–1 and Figure 13–2, allows controllers to prevent automatic handoffs to adjacent sectors and facilities.

To access the Auto Handoff Inhibit view:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **AUTO HO INHIB** button on the Views toolbar menu to display the Auto Handoff Inhibit view.

Figure 13–1. Auto Handoff Inhibit View

NOTE: If there are any entries in the Auto Handoff Inhibit view the controller cannot suppress the view.

After the NO H/O label, facilities will be listed first. Up to four facilities and sector IDs can be listed per line (Figure 13–2).

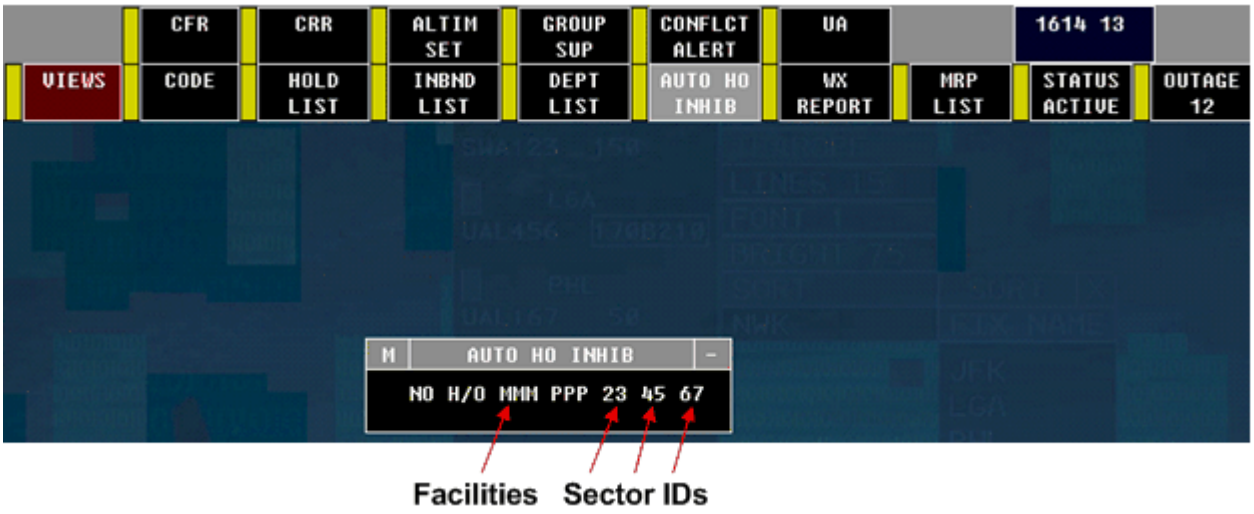


Figure 13–2. Auto Handoff Inhibit View - Interpreting

To add or delete a facility or sector using the View menu:

1. Left/middle-click M to display the view menu. Begin typing a facility or sector ID. The Auto Handoff Input Box will replace the view menu.
2. Press the **ENTER** key to submit the message and close the input box.

NOTE: Entering a sector or facility acts as a toggle. If the sector or facility is in the list, it will be deleted; if it is not in the list, the sector or facility will be added.

To delete a facility or sector using the list entry:

1. Left/middle-click the facility or sector ID field to be deleted. A Delete Pop-up is displayed.
2. Left/middle-click **DELETE** to delete the facility or sector ID entry.

Figure 13–3 shows Auto Handoff Inhibit view with Delete feature.

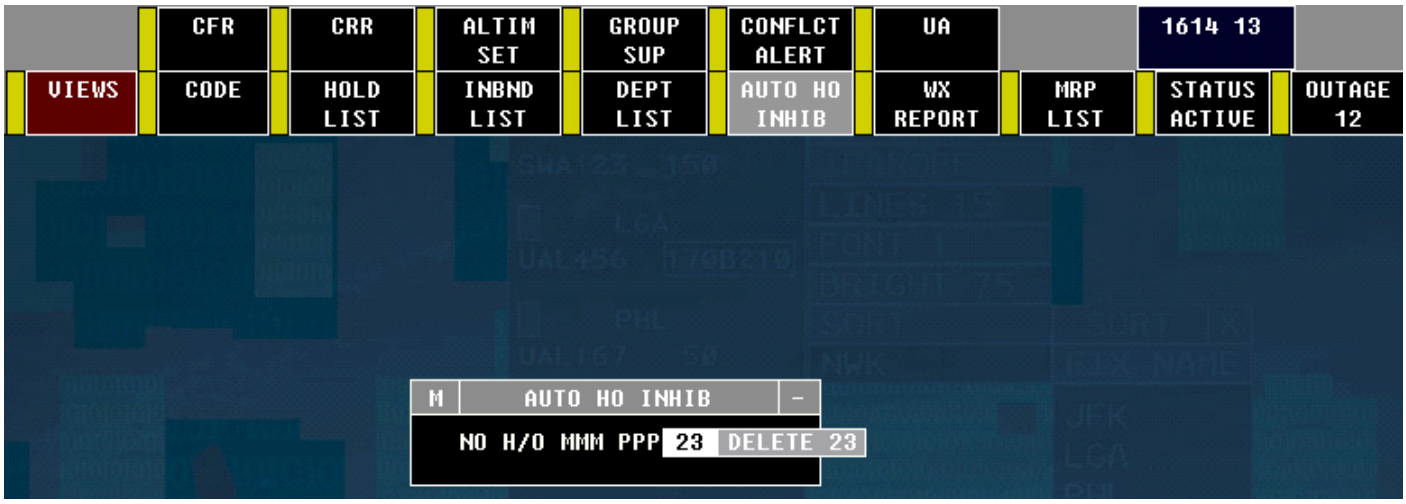


Figure 13–3. Auto Handoff Inhibit View - Deleting

13.2 Beacon Code View

The Beacon Code View shown in Figure 13–4 allows the controller to manage the beacon code list.

To access the Beacon Code View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **CODE** button on the Views toolbar menu to display the Beacon Code View.

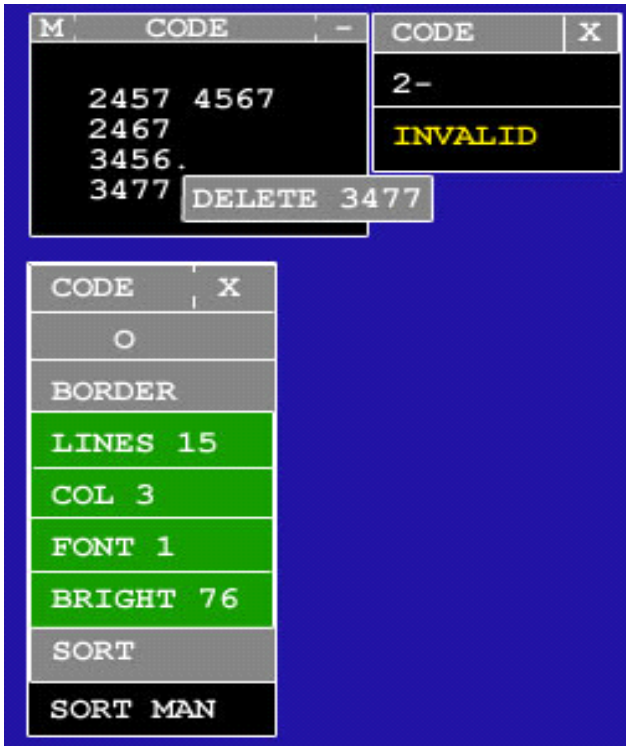


Figure 13–4. Beacon Code View

Beacon codes with a dot after them have been manually added to the list.

To add a beacon code:

1. Left/middle-click M in view header to display the Beacon Code View Menu.
2. Begin typing a beacon code. A Beacon Code Input Box will temporarily replace the menu.
3. Press the **ENTER** key to submit the message and close the Input Box.

NOTE: If the code is on the list, it is deleted; if it is not on the list, the code will be added.

When a Beacon Code has been added manually, a period will appear to the right of the entry.

INVALID will appear below the entry box if an invalid code is entered.

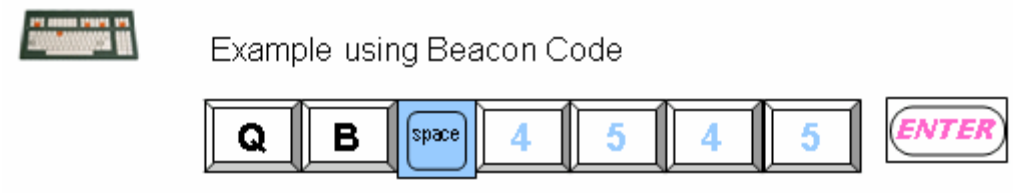
To delete a Beacon Code Using DELETE Pop-up Box:

1. Left/middle-click the **Beacon Code** entry. A Delete Pop-Up Box will be displayed next to the entry.
2. Left/middle-click **DELETE** to delete the Beacon Code entry.

3. Left/middle-click M in the view header to display the Beacon Code View Menu.
4. Begin typing a beacon code. A Beacon Code Input Box will temporarily replace the menu.

5. Press **ENTER** to submit the message and close the Input Box.

NOTE: If the code is on the list, it will be deleted; if it is not on the list, the code will be added.



To sort manually entered beacon codes:

1. Left/middle-click 

in the view header to display the Beacon Code View Menu.
2. Left/middle-click the **SORT MAN** menu item to toggle the list.

NOTE: When toggled on, the Beacon Code list will display manually entered codes at the top. SORT MAN menu item is shaded gray.

When toggled off, the list will sort all entries by ascending numerical order. SORT MAN menu item is shaded black.

13.3 Departure List View

The Departure List View in Figure 13–5 shows the controller a list of departing aircraft.

To access the Departure List View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **DEPT LIST** button on the Views toolbar menu to display the Departure List View.

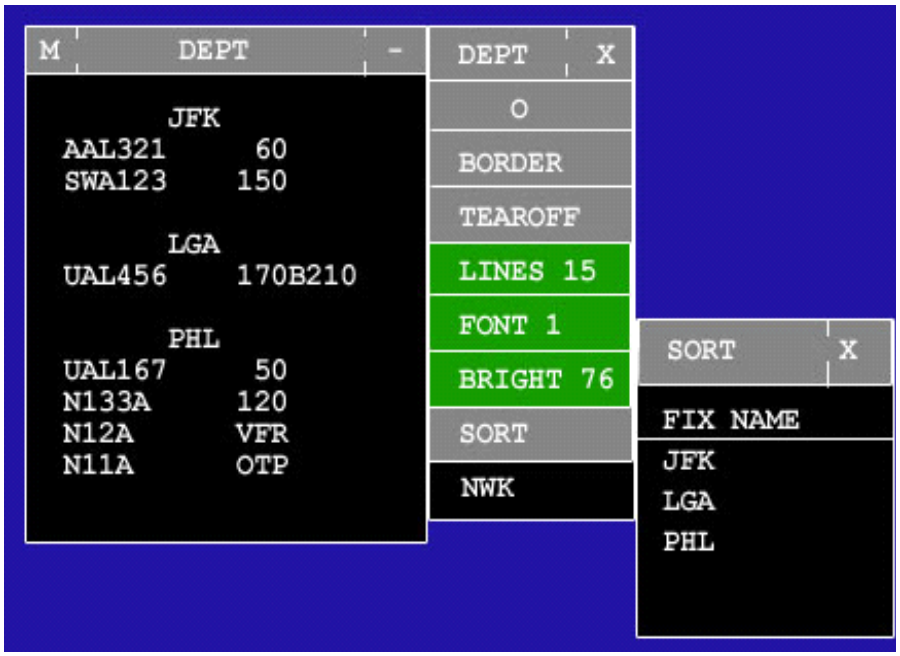


Figure 13–5. Departure List View

To interpret the Departure List View:

The view includes sublist titles, AIDs and filed altitudes, including non-RVSM indicator.

To suppress a Fix Sublist: left/middle-click the sublist heading to suppress the sublist.

To redisplay a Fix Sublist:

1. Left/middle-click M in the view header to display Departure List View menu.
2. Left/middle-click the fix name to redisplay sublist.

To sorting alphanumerically by fix name:

1. Left/middle-click M in the view header to display Departure List View menu.
2. Left/middle-click the **SORT** menu item to open the Sort Pop-Up Box.
3. Left/middle-click the **Fix Name** button to sort fixes alphanumerically.

NOTE: The sublist in both the View and the Sort menu are sorted alphanumerically.

To sort manually by fix name:

1. Left/middle-click M in the view header to display Departure List View menu.
2. Left/middle-click the **SORT** menu item to open the Sort Pop-Up Box.
3. Left-click the fixes in the desired order (first picked will appear first, second will appear second, etc).

4. Middle-click the last fix.

13.4 Inbound List View

The Inbound List View shown in Figure 13–6 allows the controller to view and manage information about inbound flights.

To access the Inbound List View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **INBOUND LIST** button on the Views toolbar menu to display the Inbound List View.

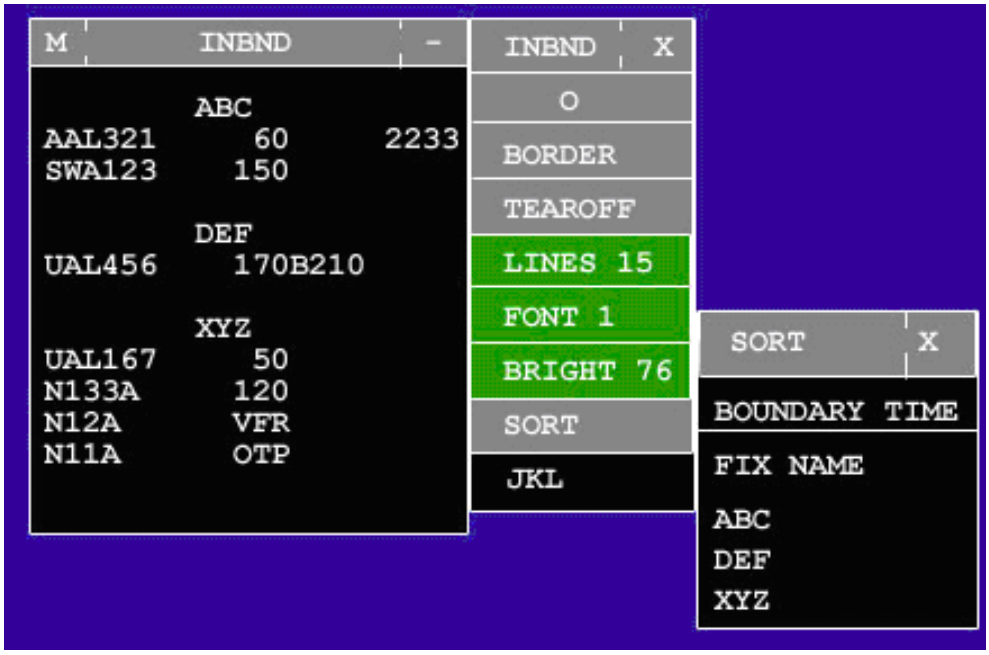


Figure 13–6. Inbound List View

The Inbound List View includes sublist titles, AIDs, and filed altitudes, including non-RVSM indicator.

To suppress a Fix sublist, left/middle-click the sublist heading to suppress the Fix sublist.

To redisplay a Fix sub-list:

1. Left/middle-click 

in the view header to display Inbound List View menu.
2. Left/middle-click the **SORT** menu item to display SORT Pop-up Box.
3. Left/middle-click the fix name to redisplay the sublist.

To sort alphanumerically by Fix Name:

1. Left/middle-click the **SORT** menu item to open the Sort Pop-Up Box.

2. Left/middle-click the **Fix Name** button to order fixes alphanumerically. The sublists

NOTE: The sublists in both the View and the Sort menu are sorted alphanumerically.

To sort manually by Fix Name:

1. Left/middle-click the **SORT** menu item to open the Sort Pop-Up Box.
2. Left-click the fixes in order (first picked will appear first, second will appear second, etc).
3. Middle-click the last fix to complete list and close the Pop-Up Box.

NOTE: The sublists in both the View and the Sort menu are sorted in the selected order.

To sort by Boundary Crossing Times:

1. Left/middle-click **SORT** to display Sort menu.
2. Left/middle-click **BOUNDARY TIME**. This will sort the Inbound List by Boundary Crossing Time and close the Pop-Up Box.

NOTE: If Boundary Crossing is selected, all sublists will disappear and the flights will be listed in a straight list. To redisplay sublists, select the Fix Name or sort the fixes manually.

13.5 Meter Reference Point List View

The Meter Reference Point List View shown in Figure 13–7, Meter Reference Point (With GIM-S Status and Speed Fields), allows controllers to view projected sequence streams for selected fixes.

The GIM-S speed field shows controller-accepted and rejected (includes timed-out) speed advisory data. An accepted proposed speed is shown in Figure 13–7 for flight N50001. A rejected or system timed-out Proposed GIM-S Speed is also shown in Figure 13–7 for flight AWE302. A Proposed GIM-S speed is timed-out when the controller does not accept the Proposed GIM-S speed within a GIM-S Notification Interval. In the event that a “No Speed Advisory Could Be Calculated” is received for a flight, the controller may acknowledge the No Advisory status by selecting the **NO ADVSRY** button.

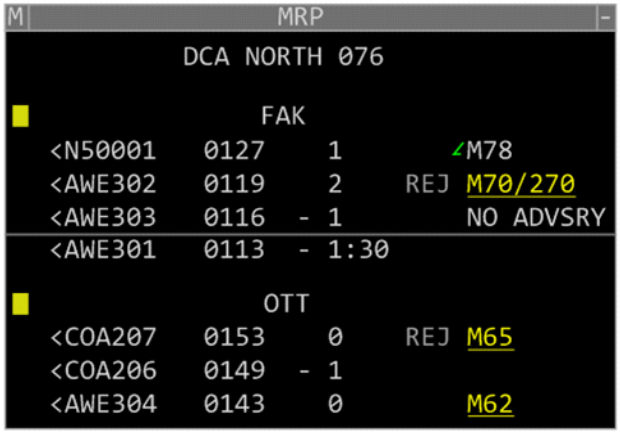


Figure 13–7. Meter Reference Point (With GIM-S Status and Speed Fields)

To access the Meter Reference Point List (MRP) View:

1. Left/middle-click the **VIEWS** button in the Master Toolbar to display Views toolbar menu.
2. Left/middle-click the **MRP LIST** button on the Views toolbar menu to display the Meter Reference Point List View.

To accept a Proposed GIM-S speed for an aircraft (assumes that the MRP List View is currently displayed):

1. Left/middle-click the Proposed GIM-S speed value in the MRP List View.

Figure 13–8. Meter Reference Point List View (Deleted)

Figure 13–9, Meter Reference Point List View (View Menu), shows the Meter Reference Point List View with the View Menu open.

Figure 13–9. Meter Reference Point List View (View Menu)

NOTE: When a Meter Reference Point View is displayed at the R-position and communication is not established with the IFPA (Interface Proxy Set A) CSCI or if reconstitution from IFPA has not been completed, an "**OLD –**" prefix is added to the title of the MRP View and any airport sub-lists to show that the data is not current (Figure 13–10, MRP View – OLD Coding).

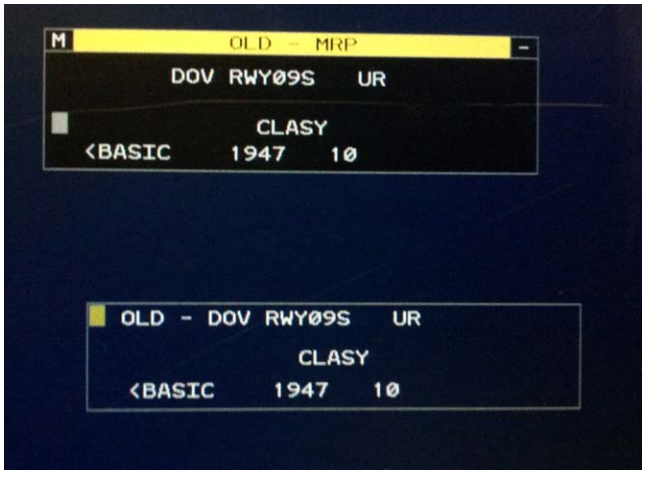


Figure 13–10. MRP View – OLD Coding

To re-sequence entries using the MRP List View:

1. Left/middle-click the **MRP LIST** button on the Views toolbar menu to display the Meter Reference Point List View.
2. Left-click the AID of all but the last entry in the desired sequence. The Re-sequence Request is echoed in the Preview Area.
3. Middle-click the AID of the last entry. This will complete the re-sequence.

NOTE: The maximum number of entries that can be re-sequenced is five.

To re-sequence entries using the Position Symbol:

1. Left/middle-click 

in the view header to display the MRP List View Menu.
2. Left/middle-click the **RESEQ** menu item.
3. Left-click the AID of all but last position symbol in the desired sequence.
4. Middle-click the AID of the last position symbol in the sequence.

NOTE: Re-sequencing of flights can only be done within a sublist. Attempts to re-sequence across sublists will result in an error message.

To suppress an entry:

1. Middle-click the AID of the entry to be suppressed. This will display a Suppress Pop-Up Box.
2. Left/middle-click the **Suppress Pop-Up Box** to suppress the entry and close the pop-up.

NOTE: When a Proposed GIM-S Speed Advisory (PA) message is received by ERAM from TBFM with the Action Indicator (Speed Advisory Status) set to Delete (D) and there currently is an Accepted GIM-S Speed for the flight, the Accepted GIM-S Speed is now marked as stale (i.e. display a stale GIM-S Status Indicator) in the Meter Reference Point View Entry for the flight.

To suppress/display the GIM-S Speed column of the Meter Reference Point List View:

1. Left-click the 

View Menu button in the MRP View header.
2. Left-click the **SPEED**button in the View Menu. When the SPEED button is toggled off, the Speed column is suppressed and the width of the view contracts. When the SPEED button is toggled on, the Speed column is opened, and the width of the view expands, even if the Speed column currently contains no data.

To accept a Proposed GIM-S Speed from the Meter Reference Point List View (Figure 13–11, Accept Proposed GIM-S Speed):

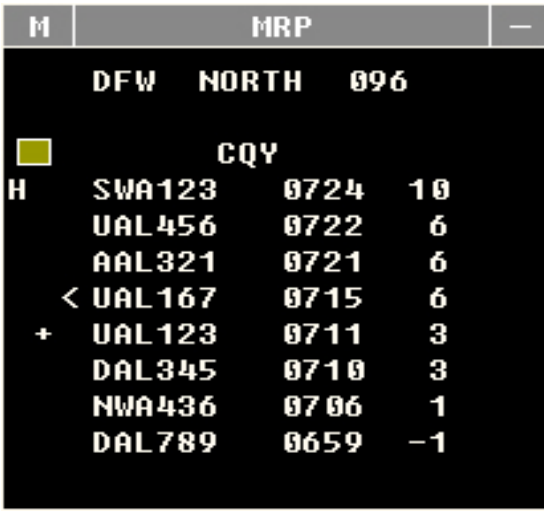


Figure 13–11. Accept Proposed GIM-S Speed

1. Left-click the proposed speed in the MRP View. The Speed Menu is displayed.
2. Left-click the desired speed in the Speed Menu.

To reject a Proposed GIM-S Speed from the Meter Reference Point List View:

1. Left-click the proposed speed in the MRP View. The Speed Menu is displayed.
2. Left-click the "**REJ <proposed GIM-S speed>**" in the Speed Menu.

13.6 Position Relief and Emergency Checklist Views

Using the Checklist View button shown in Figure 13–12 allows controllers to view up to ten facility-adapted checklists.

To access the Emergency Checklist View:

1. Left/middle-click the **CHECK LISTS** button in the Master Toolbar to display Check Lists toolbar menu.
2. Left/middle-click the **EMERG CHECK** button on the Check List toolbar menu to display the Emergency Checklist View.

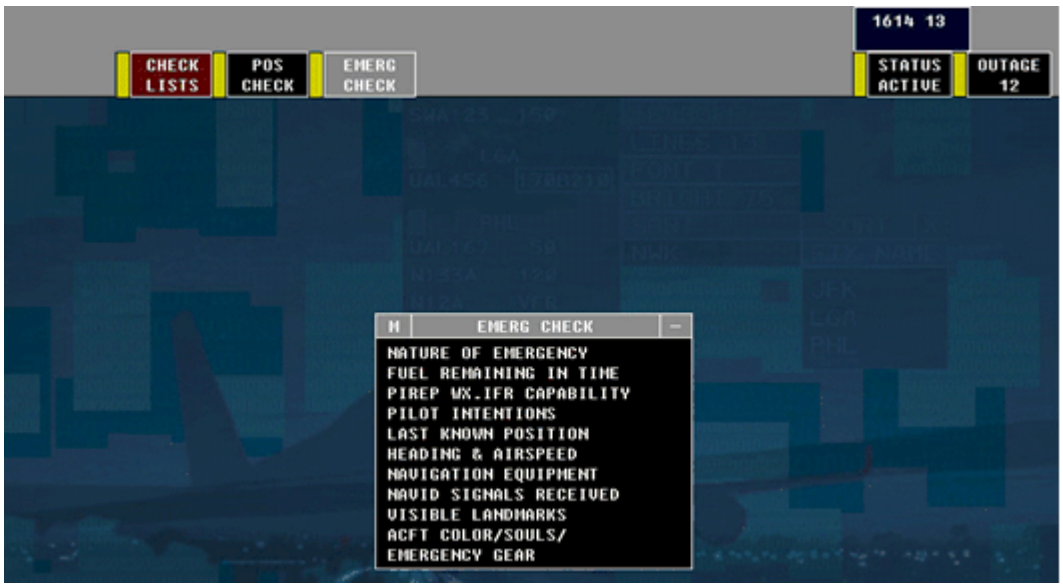


Figure 13–12. Emergency Checklist View

To access the Position Relief Checklist View:

1. Left/middle-click the **CHECK LISTS** button in the Master Toolbar to display Views toolbar.
2. Left/middle-click the **POS CHECK** button on the Check List toolbar to display the Position Relief Checklist View (Figure 13–13).

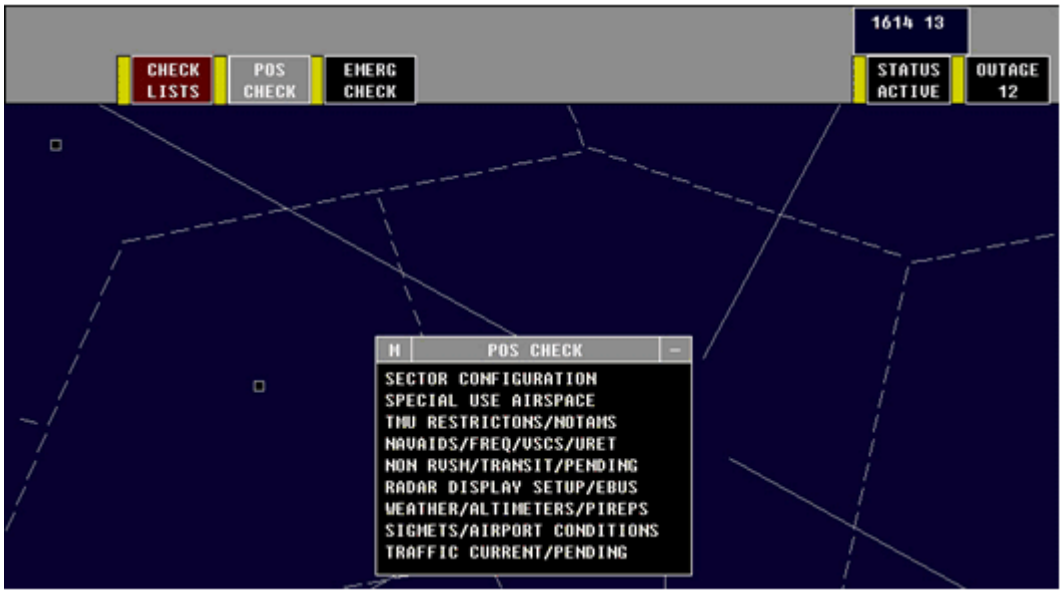


Figure 13–13. Position Checklist View

13.7 SAA Filter View

The SAA Filter View contains a list of SAAs that can be displayed on the Situation Display. From this view, each SAA can be individually filtered to selectively limit the amount of SAA information that is displayed. An example of the SAA Filter View with several entries is shown in Figure 13–14, SAA Filter View.

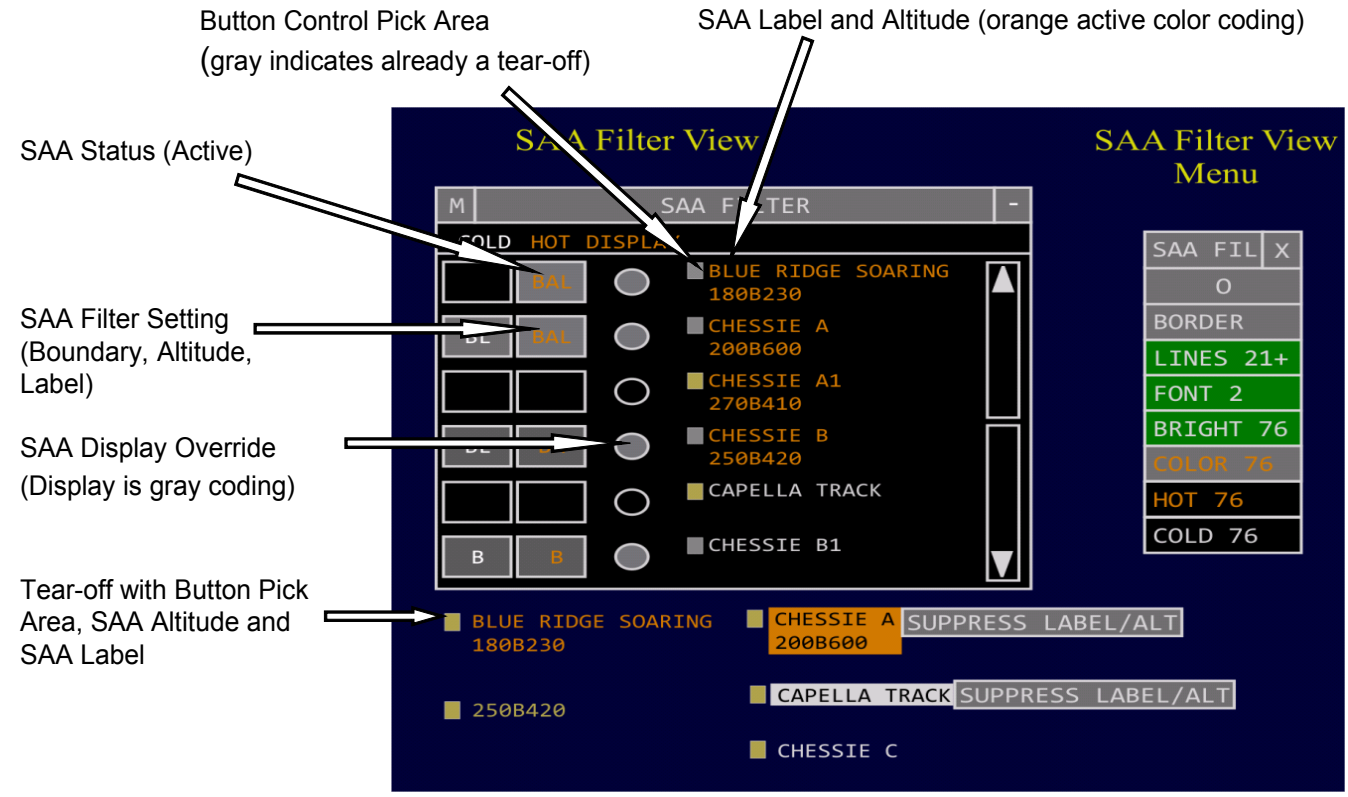


Figure 13–14. SAA Filter View

An SAA Filter View entry displays SAA information such as SAA status (cold=inactive or hot=active), SAA Filter Setting, SAA Altitude Override Filter setting, Button Control pick area, SAA label (e.g., BLUE RIDGE SOARING, CHESSIE A), and SAA altitude range for a sector position. The SAA Filter Setting allows the user to control the display of the components of the SAA (Boundary, Altitude, and Label) on the Situation Display when the SAA is eligible for display. When the SAA Filter Setting is set to “BAL”, the SAA Boundary, SAA Altitude range, and the SAA Label are eligible for display on the Situation Display.

The user can scroll the SAA Filter View a page at a time to see entries above and below the displayed entries. The SAA Filter View page is the maximum number of entries setting. SAA entries are sorted with the active SAAs at the top of the SAA Filter View, alpha-numerically by the SAA sort ID, then the inactive SAAs, alpha-numerically by the SAA sort ID.

NOTE: The SAA sort ID may be different from the displayed SAA label.

When an SAA Filter View entry becomes active for a sector position and the altitude of the SAA overlaps with the altitude range of the sector position (i.e., altitude eligible), the SAA is displayed on the Situation

Display with a Boundary, Altitude, and optionally a Label. However, when an SAA Filter View entry becomes active for a sector position and the altitude of the SAA does not overlap with the altitude range of the sector position (i.e., altitude ineligible), the SAA is not displayed on the Situation Display.

Altitude eligibility of the SAA can be controlled by changes in SAA altitude made at the D-Position. The user can override the SAA altitude eligibility by selecting the SAA Altitude Override Filter Button (beneath the DISPLAY column) for an individual SAA in the SAA Filter View. If the SAA Altitude Override Filter setting in the SAA Filter View entry is set to inactive (i.e., display) for an active SAA with altitude ineligibility, the SAA becomes altitude eligible and the SAA is displayed on the Situation Display.

The SAA Filter View is populated with SAAs (both facility and neighbor SAAs), based on the following display eligibility rules:

- The SAAs must be in the list of R-position facility SAAs (locally owned and SAAs owned by neighbors).
- The SAA must be in the currently loaded R-position geomap.
- The SAA R-position display adaptation must match the sector number of the R-position or an FAV assigned to the R-position.

The following are the display eligibility rules for the SAA being displayed in the Situation Display:

- The SAA is eligible to be displayed in the SAA Filter View
- Inactive (cold) SAAs:
  - The SAA cold filter setting must be set to display boundary or boundary and labels.
  - If the SAA label is to be displayed (no tear-off), then it will be displayed at the SAA label default location.
  - If the SAA label is to be displayed (tear-off), then it will be displayed at the SAA label tear-off location.
- Active (hot) SAAs:
  - The SAA hot filter setting must be set to display boundary, boundary and altitude limits or boundary, label and altitude limits.
  - If the SAA limit is to be displayed (no tear-off), then it will be displayed at the SAA label default location.
  - If the SAA limit is to be displayed (tear-off), then it will be displayed at the SAA tear-off location.
  - If the SAA limit and label are to be displayed (no tear-off), then they will be displayed at the SAA label default location.
  - If the SAA limit and label are to be displayed (tear-off), then they will be displayed at the SAA tear-off location.

13.7.1 SAA Display Characteristics

When an SAA is cold, the following display characteristics can be set from the SAA Filter View for SAAs on the Situation Display:

- **Off**: No SAA boundaries or labels are displayed when the SAA is inactive.

- **Boundary**: The SAA boundaries are displayed, but not the SAA label, when the SAA is inactive.
- **Boundary-Label**: The SAA boundaries and label are displayed when the SAA is inactive.

When an SAA is hot, the following display characteristics can be set from the SAA Filter View for SAAs on the Situation Display:

- **Off**: No SAA boundaries, altitude limits, or labels are displayed when the SAA is active.
- **Boundary**: The SAA boundaries are displayed, but not the SAA label or altitude limits, when the SAA is active.
- **Boundary-Altitude**: The SAA boundaries and altitude limits are displayed, but not the SAA label when the SAA is active.
- **Boundary-Altitude-Label**: The SAA boundaries, altitude limits, and label are displayed when the SAA is active.

13.7.2 Filtering SAAs

Picking within the inactive (COLD) SAA filter setting pick area cycles through the following states:

- No SAA boundaries (outlines) or labels (blank)
- SAA Boundaries (B)
- SAA Boundaries and Labels (BL)

Picking within the active (HOT) SAA Filter setting pick area cycles through the following states:

- No SAA boundaries (outline) or labels (blank)
- SAA Boundaries (B)
- SAA Boundaries and Altitudes (BA)
- SAA Boundaries, Altitudes, and Labels (BAL)

13.7.3 Tear-Offs

The purpose of the SAA tear-off is to allow the controller to move SAA labels and altitude limits from the adapted location in the loaded geomap to a user specified location. When a tear-off is initiated, the SAA boundary (outline) is displayed in system brightness using the current color (white or orange). While the tear-off is in progress, the SAA information currently displayed in the SAA View remain displayed. Figure 13–15, SAA Tear-offs, shows various formats of tear-offs from the SAA Filter View as they would appear on the Situation Display.

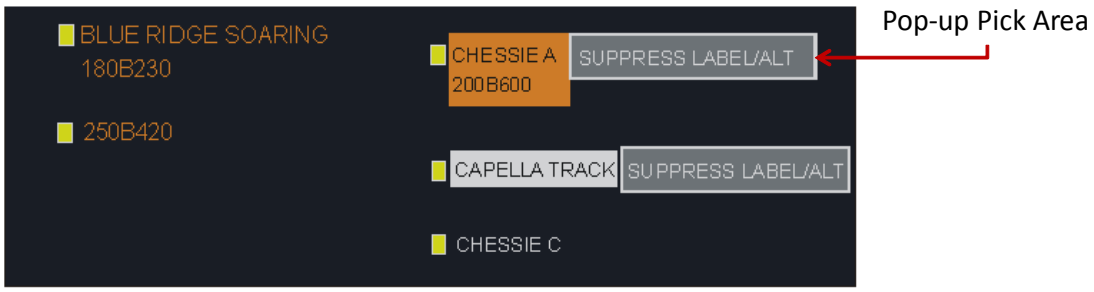


Figure 13–15. SAA Tear-offs

SAA settings cannot be changed while an SAA tear-off is in progress. When the SAA tear-off is completed (placed on the Situation Display), the SAA information is displayed at the tear-off location, the adapted SAA information is removed, and the tear-off control button in the SAA Filter View turns gray. If the SAA tear-off process is canceled, then the SAA boundary (tear-off outline) is removed and the SAA filter settings return to the previous setting prior to initiating the SAA tear-off process. The system will not automatically change the Situation Display range to display the SAA boundary; the user may have to range out first and then tear-off the label to see the SAA boundary feedback. The labels will be tied to the system (map) coordinates.

13.7.3.1 Suppressing a Tear-off

When a torn off label is selected from the Situation Display, the SUPPRESS LABEL/ALT pop-up pick area is displayed. If that pop-up pick area is selected, then the torn off label is suppressed. If a torn off label is inactive (white) when suppressed, then the associated SAA Filter View COLD button is set to “Boundary” (SAA boundary displayed, no SAA label); the HOT button is not affected in this case. If a torn off label is active (orange) when suppressed, then the associated SAA Filter View HOT button is set to “Boundary” (SAA Boundary displayed, no SAA label or altitude limits); the COLD button is not affected in this case. In both cases, the tear-off pick area for the associated tear-offs in the SAA Filter View remains gray (SAA suppressed state).

13.7.3.2 Deleting a Tear-off

A torn off SAA may be deleted when selected if the DELETE TEAR-OFF button on the R-position Menu Bar is active. In this case the state of the associated Hot or Cold setting is not changed but the gray tear-off pick area associated with the entry in the SAA Filter View changes to gold (not torn off state). When the tear-off is removed from the Situation Display, and if the current filter pick area for the current SAA state has settings indicating labels or altitude limits, that text is displayed at the default label location.

13.7.4 SAA Filter View Menu

The SAA Filter View Menu is displayed when the menu pick area (M) in the SAA Filter View header is selected. An example of the View Menu is shown in Figure 13–16, SAA Filter View Menu.

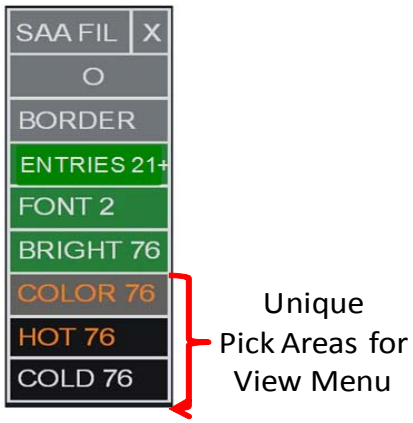


Figure 13–16. SAA Filter View Menu

In addition to the normal View Menu pick areas (i.e. opaque/semi-transparent, border, number of entries, font size, and brightness), there are three pick areas that are unique to the SAA Filter View Menu:

- Active Filter Button Text Brightness (COLOR)
- SAA Active Brightness (HOT)
- SAA Inactive Brightness (COLD)

The “Active Filter Button Text Brightness” pick area provides the brightness level for the orange characters in the Active SAA Filter setting pick area and the column header “HOT” in the SAA Filter View.

The “SAA Active Brightness” pick area provides the brightness level for the orange text for:

- the SAA Label and Altitude limits in the SAA Filter View
- the SAA label and altitude limits in the tear-off on the Situation Display
- the active SAA boundary on the Situation Display
- the active SAA label and altitude limits on the Situation Display (non-tear-off)

The "SAA Inactive Brightness" pick area provides the brightness level for the text for:

- the SAA label in the SAA Filter View
- the SAA label in the tear-off on the Situation Display
- the inactive SAA boundary on the Situation Display
- the inactive SAA label on the Situation Display (non-tear-off)

13.7.5 User Preference Sets

The following SAA Filter Menu information is saved in user preference sets:

- SAA Filter View Location
- SAA Filter View Menu Opaque/Semi-transparent Toggle setting

- SAA Filter View Menu Border setting
- SAA Filter View Menu Number of entries setting
- SAA Filter View Menu Font Size setting
- SAA Filter View Menu Brightness setting
- SAA Filter View Menu Active Filter Button Text Brightness pick area setting
- SAA Filter View Menu SAA Active Brightness pick area setting
- SAA Filter View Menu SAA Inactive Brightness pick area setting

The following SAA display filter information is saved in user preference sets:

- Inactive SAA filter setting
- Active SAA filter setting
- SAA tear-off setting (torn off or not torn off)
- SAA tear-off location, if any

When a user preference set is invoked, the SAA Filter View and the Situation Display are updated with SAA information based on the list of SAAs adapted in the facility, the map loaded, and the user preference settings.

When a user preference set is loaded with a different map than is currently loaded, the map will be loaded first and then the SAA filter settings in the user preference set will be processed.

13.8 Flight Event List (FEL) View

The FEL View provides the user with notification of the following conditions:

- **Duplicate 24-Bit Address**: When the reported 24-bit target address (represented as 6 hex characters) received in a published track update is shared with one or more flights in the same service volume, a duplicate 24-bit address condition exists for the flight.
- **Multiple Codes**: The existence of multiple surveillance sources introduces a second beacon code, as well as the target status, in a target report or track publish. A multiple codes condition exists when the beacon codes and target status map to multiple conflicting alerting or exception conditions.
- **24-Bit Address Mismatch**: When the reported 24-bit target address (represented as 6 hex characters) received in a published track update differs from the filed 24-bit target address (represented as 6 hex characters) for a flight, a 24-bit address mismatch condition exists for the flight.
- **ADS-B Aircraft Call Sign Mismatch**: When the reported callsign received in a published track update differs from the flight plan filed callsign for a flight, a callsign mismatch condition exists for the flight.

Duplicate 24-bit address entries are automatically added to the FEL view by the system when two flights are transmitting the same 24-bit address and if at least one of the flights in the pair is under the sector's control or the sector is being offered a handoff or the flight is in the sector's airspace, if not controlled. When the user dwells the 24-bit address in the view, the system applies dwell emphasis to each of the data blocks associated with that 24-bit address, including Limited Data Blocks (LDBs). A FDB or LDB is forced to the display for a duplicate 24-bit address condition. For unpaired flight entries (no ACID available) the word "UNPAIRED" is displayed in the ACID column. For unpaired flight entries (ACID available) the word

“-UNPAIRED” is suffixed to the ACID. Upon transfer of control, the entry will persist in the list for the previously controlled flight for as long as a FDB is displayed for the flight. An entry in the FEL view for a Multiple Code Condition consists of the following data:

- Computer ID (CID)
- Aircraft ID (AID) (or the text, “UNPAIRED”, for an unpaired flight)
- Assigned Beacon Code (will be blank for an unpaired flight)
- Beacon Code originating from the aircraft radar transponder
- Beacon Code originating from the ADS-B avionics
- Emergency/Priority Status Code from ADS-B avionics

For a 24-Bit MISMATCH entry, the CID is displayed first followed by the ACID. For a CALLSIGN MISMATCH entry, the CID is displayed first followed by the first and second ACID involved in the duplicate condition, and ending with the ADS-B label.

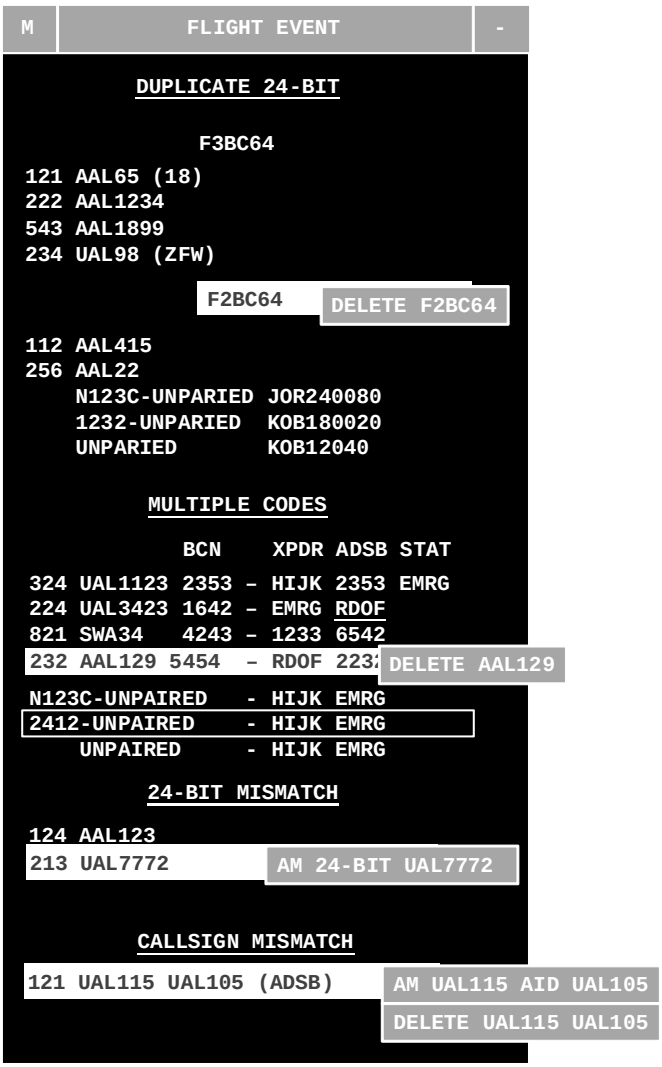


Figure 13–17. Flight Event List View

The FEL view may be displayed even if it contains no entries. When displayed, the view automatically expands and contracts as entries are added and removed. When the number of lines to be displayed in the view exceeds the number specified in the LINES pick area of the associated FEL View Menu, a scroll bar is displayed for paging the view. If no FEL view entry is selected, then the color coding for an entry is white text on black background. When the user selects anywhere in a FEL entry the color coding for the entry changes to black text on white background. The user can suppress the FEL view at any time when it contains entries and the view is automatically suppressed when the last entry is removed.

The FEL view is forced at the R-Position (or raised if already displayed) when the following conditions exist:

a. Multiple Codes condition: when multiple emergency conditions exist. For example HIJK and RDOF exist, else the view will not be forced.

b. 24-bit mismatch condition: when there is an Exception Beacon Code and a 24-bit mismatch, or when there is a callsign mismatch and a 24-bit mismatch, or when there is a callsign mismatch and

an Exception Beacon Code and a 24-bit mismatch. The concern is that someone is on the wrong flight plan.

c. For a duplicate 24-bit case: if the display criteria are met and if an adapted threshold is violated for any pair in a sublist, then all flights sharing that 24-bit address are displayed. A pick area is added to the FEL View to allow the user to specify whether the FEL View entry and the FEL symbol in the data block should be shown always for all flights in a duplicate 24-bit condition or only show the symbol when there is a violation of the adapted threshold. Data blocks are forced to the display for all flights in the FEL View entry for a duplicate 24-bit condition.

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14. SYSTEM STATUS

This chapter describes the components of the Status View and the Outage List.

14.1 STATUS View

The Status View contains system information. The first row of the status view always contains the current channel ID and the channel mode information. When the alternate channel is in backup mode, the Status View also displays the alternate channel ID and BACKUP. If the alternate channel is not in backup, the user must select the alternate channel to determine its mode. Figure 14–1, Pending Mode Banner, shows the STATUS button indicating the selected channel is in Pending Mode. The STATUS button can be located anywhere on the display; however, no tear-off (copy) can be made. The STATUS button displays the mode of the selected channel (ACTIVE, BACKUP, PENDING, or TEST). When there is a change to the Status View, the button turns yellow.

Figure 14–1. Pending Mode Banner

CAUTION

A banner appears across the display if the currently selected channel is in PENDING or TEST mode.

To access the Status view, left/middle-click the **STATUS** button to toggle the Status View ON and OFF.

The Status View in Figure 14–2 displays information relevant a user's sector. The display of a service volume outage and individual radio station outages are mutually exclusive; either a service volume outage is displayed or individual radio station outages are displayed but not both simultaneously. If the service volume itself is down, only the service volume outage is displayed, the individual radio stations are not displayed.

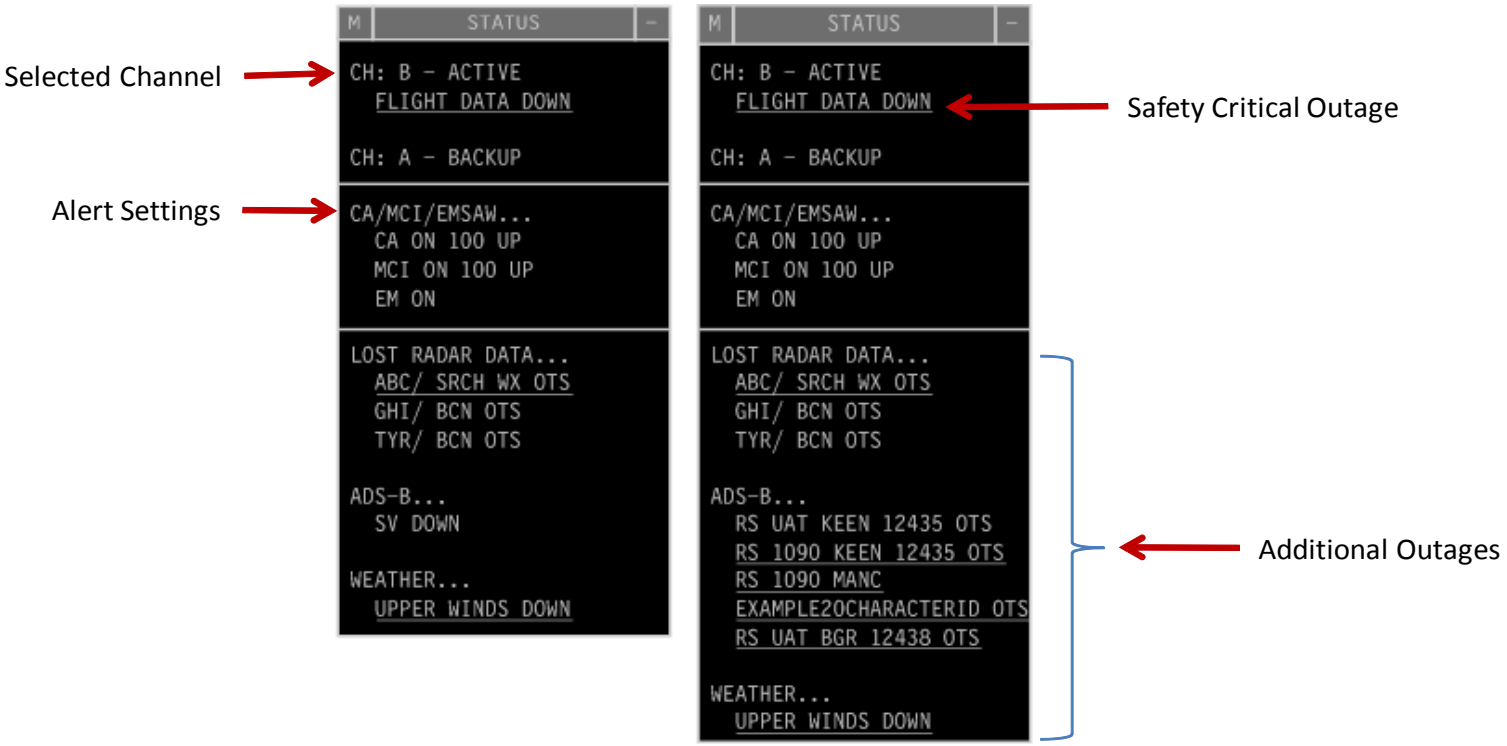


Figure 14–2. Status View

The Status View in Figure 14–3 displays changes underlined for emphasis. The unacknowledged (underlined) entry condition for an updated entry or for an entry that was added is displayed for a preset period of time (15 seconds) when the Status View is displayed.

The following is additional information about the characteristics of the Status View:

- Suppressing the Status View does not result in acknowledgement of any entry.
- The Status View is not automatically displayed if an entry is updated, deleted (alternate channel indicator entry), or added while the view is closed.
- If the Status View is displayed and the alternate channel indicator entry is added or the current channel mode information changes, the Status View entry is updated and coded as unacknowledged for a preset period of time (15 seconds).

NOTE: Changes to the channel ID and channel mode information in the Status View, caused solely by selecting the other channel, are not coded as unacknowledged.

- The alternate channel mode is removed when the alternate channel mode is no longer BACKUP.
- If the Status View is displayed and the ‘FLIGHT DATA DOWN’ message is added to the view, the message is coded as unacknowledged until it is acknowledged in the Outage View.
- When either ‘FLIGHT DATA DOWN’ message or the alternate channel indicator entry is removed, there is no special emphasis applied in the Status View itself.
- Channel changes are underlined for a preset period of time (15 seconds).
- If the Status View is displayed and the FLIGHT DATA DOWN message is added to the view, the FLIGHT DATA DOWN message is coded as unacknowledged until it is acknowledged in the Outage View.

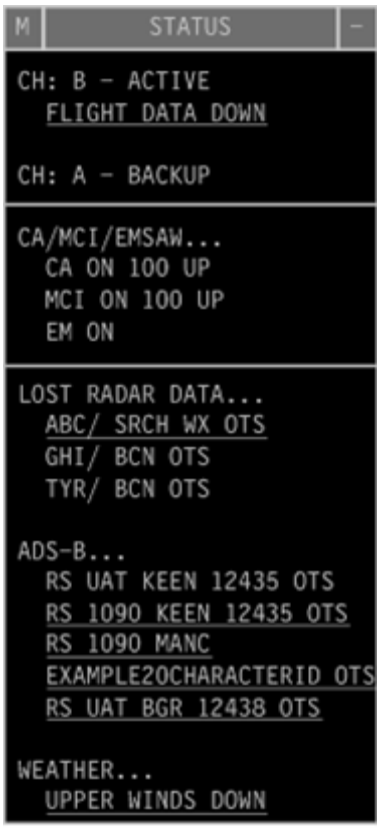


Figure 14–3. Status View - Underline Coding

To display/suppress the entries in a sublist, left/middle-click the sublist header to toggle the display of its entries.

NOTE: If the CA/MCI/EMSAW sublist is suppressed and a change to its contents occurs, the sublist will be automatically redisplayed.

When any other sublist is suppressed and a change to its contents occurs, the sublist will remain suppressed. Notification of the change will be seen on the Outage List only until the sublist is redisplayed.

Use the Outage Button to display the Outage List View. System outages in the Outage List View will be duplicated in the Status View.

CA/MCI/EMSAW outages are only shown in the Status View, not the Outage View.

14.2 Outage Button

The OUTAGE button can be moved and located anywhere on the display. The OUTAGE button cannot be copied, cannot be suppressed and can only be covered by the STATUS Button. Figure 14–4 shows examples of outage messages.

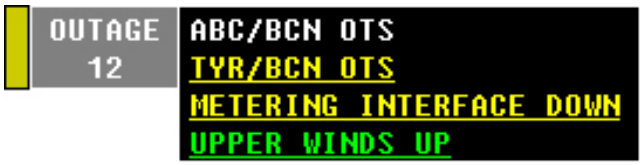


Figure 14–4. Outage Button

Table 14–1 shows the five states of the OUTAGE button along with color-coding convention for each outage. If an outage occurs when the Outage List is not displayed, the OUTAGE button will be emphasized according to the table.

Table 14–1. Outage Buttons Status

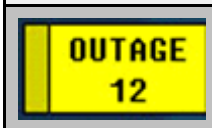
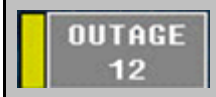
Outage Button Displayed	Definition
 (Gray text, black background, white border).	No outages and the list is suppressed.
 (Black text, yellow background, yellow border).	An outage change occurred and the list is suppressed.
 (White text, red background, white border).	Flight Data Down or a status change in a flight data message occurred. Red coding has precedence over yellow coding and will display when both types of outages exist.

Table 14–1. Outage Buttons Status (Continued)

Outage Button Displayed	Definition
 (White text, gray background, white border).	The list is displayed.
 (White text, black background, white border).	The list is suppressed while an acknowledged outage exists.

To access the Outage List, left/middle-click **OUTAGE** button in the Master Toolbar to toggle OFF/ON the Outage List View.

Figure 14–5 shows the Master Toolbar with Outages.

Figure 14–5. Master Toolbar

The Outage List shows system outages. The most recent entry in the Outage List is displayed on the top of the list.

Figure 14–6 shows color-coding which identifies a new FLIGHT DATA DOWN (highlighted in red), other new entries (yellow text and underlined) and services that have come back on line (green text and underlined). To acknowledge an outage, left/middle-click the entry.

Figure 14–6. Outage List

ADS-B outages are also displayed in the R-position Outage List (Figure 14–7, ADS-B Outages (Outage List)). The individual radio station status is not displayed. When the service volume is statused as down, ADS-B SV DOWN is displayed in the views. When the service volume is up, ADS-B SV UP is displayed along with radio station outages.

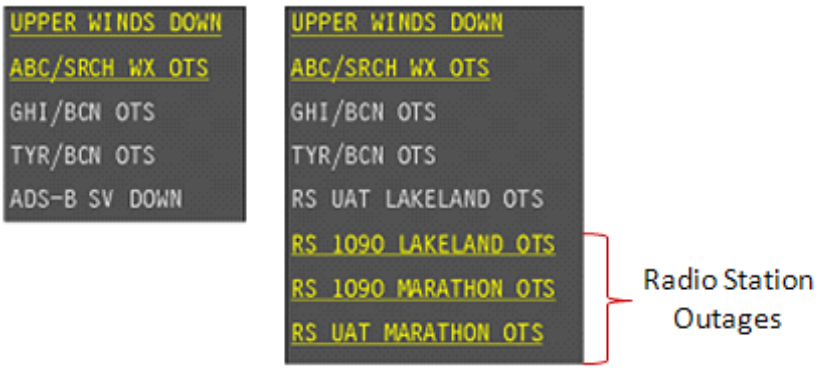


Figure 14–7. ADS-B Outages (Outage List)

NOTE: When the out of service item returns to service, the entry text will be displayed in green, underlined and placed at the top of the list. The entry remains until acknowledged or the Outage List View is closed.

Any entry with a status of DOWN, OFF, NOT IN SYNC, or OTS will remain as white text in the Outage view after being acknowledged.

The “telephone pole”  symbol is the ADS-B radio station outage indicator (alerting symbol) on the Situation Display.

The RA-Position Outage View will show outages specific to the RA Position (GIs Down, Conflict Probe Down, Flight Strip Printing, SIGMETs Down, etc.)

This following is a list of possible outages that will be displayed in the Outage List.

ADS-B SV	< DOWN / UP >
AIRSPACE SAA	< DOWN / UP >
ALTIMETER SETTINGS	< DOWN / UP >
FACILITY ID	< DOWN / UP >
FLIGHT DATA	< DOWN / STANDBY / UP>
FLIGHT MODELING	< DOWN / UP >
GROUP SUPPRESSION	< DOWN / UP >
METERING INTERFACE	< DOWN / OFF / ON >
NEXRAD	< DOWN / UP >
QUICK LOOK	< DOWN / UP >
SETTINGS	< NOT IN SYNC / IN SYNC >
SITE ID / BCN SRCH WX	< OTS / RTS >
UPPER WINDS	< DOWN / UP >
WX STATION REPORTS	< DOWN / UP >

Appendix A. Saved Settings

Table A–1. Saved View Settings

View	Object/Attribute
Altimeter Settings View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • TEAR-OFF pick area setting • LINES pick Area setting • COL pick area setting • FONT pick area setting • BRIGHT pick area setting • Reporting stations displayed in view • Reporting station arrangement in view • Altimeter Entry Tear Off State (Torn off or not) • Altimeter Entry Tear Off Location (if Altimeter Entry is torn off) **NOTE:** Tear Off preferences can only be set if tear off entry is present in the view at the time the preference set is being created.
Auto Handoff Inhibit List View	• View location • View Header State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • Facilities and sectors that should populate the view

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
Beacon Code View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • COL pick area setting • FONT pick area setting • BRIGHT pick area setting • SORT MAN pick area setting
Conflict Alert List View	• View Location • View Header State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • FONT pick area setting • BRIGHT pick area setting
Continuous Range Readout View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • BRIGHT pick area setting • LIST toggle setting • The four brightness color settings for the Range Readout Color BCGs • Current color selection (coral, green, white, yellow) • Group labels • Situation Display Location Group labels • Situation Display Location Group location • Situation Display Location Group assigned colors • Situation Display Location Group order

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
DCRD Update Area View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • FONT pick area setting • BRIGHT pick area setting • D-CRD MWL Indicator Area Suppression Setting • D-CRD Text Area Suppression Setting
Departure List View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • TEAR-OFF pick area setting • BRIGHT pick area setting • Order of sublists • Sublist suppression **NOTE:** Sublist suppression preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created. • Departure Sublist Tear Off State (Torn off or not) • Departure Sublist Tear Off Location (if Departure Sublist is torn off) **NOTE:** Tear Off preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created.

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
Emergency Checklist View **NOTE:** Current display setting (Displayed/Suppressed) is not saved in preference set. When a preference set is invoked the location of the Emergency Checklist may be changed but its current display state (displayed or suppressed) will not be changed.	• View location • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • BRIGHT pick area setting
Flight Plan Readout View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • Number of ENTRIES pick area setting • FONT pick area setting • BRIGHT pick area setting • RTE pick area setting • Column Heading Filter setting • Column Filter settings • CID Column Filter setting • Aircraft Data Column Filter setting • Beacon Code Column Filter setting • Airspeed Column Filter setting • Coordination Fix Column Filter setting • Coordination Time Column Filter setting • Altitude Column Filter setting • Route/Remarks Column Filter setting

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
Group Suppression View	• View Location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • BRIGHT pick area setting
Hold List View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • TEAR-OFF pick area setting • BRIGHT pick area setting • RVR pick area setting • ALA pick area setting • Order of sublists • Hold Sublist Tear Off State (Torn off or not) • Hold Sublist Tear Off Location (if Hold Sublist is torn off) **NOTE:** Tear Off preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created.
Inbound List View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • TEAR-OFF pick area setting • BRIGHT pick area setting • Sort factor: fix name vs boundary crossing time

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
	• Order of sublists (if manual ordering is chosen) • Sublist suppression **NOTE:** Sublist suppression preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created. • Inbound Sublist Tear Off State (Torn off or not) • Inbound Sublist Tear Off Location (if Inbound Sublist is torn off) **NOTE:** Tear Off preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created.
MRP List View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • TEAR-OFF pick area setting • BRIGHT pick area setting • MRP Sublist Tear Off State (Torn off or not) • MRP Sublist Tear Off Location (if MRP Sublist is torn off) **NOTE:** Tear Off preferences can only be set if the tear off sublist is present in the view at the time the preference set is being created.

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
Other adapted category checklist views **NOTE:** Current display setting (Displayed/Suppressed) is not saved in preference set. When a preference set is invoked the location of the other adapted category checklist views may be changed but the current display state (displayed or suppressed) will not be changed.	• View location • View Opaque/Semi-transparent setting • BORDER pick area setting • FONT pick area setting • BRIGHT pick area setting
Position Relief Checklist View **NOTE:** Current display setting (Displayed/Suppressed) is not saved in preference set. When a preference set is invoked the location of the Position Relief Checklist may be changed but its current display state (displayed or suppressed) will not be changed.	• View location • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • BRIGHT pick area setting
Range Slider Bar View	• View display location • View State (Displayed/Suppressed) • BRIGHT pick area setting • SD Range User Setting Toggle pick area range values (two) • Current range setting value of the Situation Display will become the range value indicated for current setting indicator in the trough of the slider bar (current range setting value that is saved may be the result of a preset value being selected or because the controller is in slider drag mode, dragging the indicator; the fact that the controller was in slider drag mode or that a preset value was selected is not saved as part of a preference set)

Table A–1. Saved View Settings (Continued)

View	Object/Attribute
Situation Display	• Situation Display Range Setting • Situation Display Map Offset • Situation Display Map (save currently displayed map to preference set)
Status View	• View location • View Opaque/Semi-transparent setting • BORDER pick area setting • FONT pick area setting
Time View	• View location • View Opaque/Semi-transparent setting • BORDER pick area setting • FONT pick area setting • BRIGHT pick area setting
Weather Station Report List View	• View location • View State (Displayed/Suppressed) • View Opaque/Semi-transparent setting • BORDER pick area setting • LINES pick area setting • FONT pick area setting • TEAR-OFF pick area setting • BRIGHT pick area setting • Weather Station List Entry Tear Off State (Torn off or not) • Weather Station List Entry Tear Off Location (if Weather Station Entry is torn off) • Reporting stations displayed in view **NOTE:** Tear Off preferences can only be set if tear off entry is present in the view at the time the preference set is being created

Table A–2. Saved Toolbar Settings

Toolbar	Object/Attribute
ALT LIM Input Boxes	• Altitude Limit – Targets Input Box value • Altitude Limit – LDBs Input Box value
ATC TOOLS Buttons	• WX button state (Open/Closed) • WX button tear off state (Torn Off/Not Torn Off) • WX button tear off location • Situation Display Location Group Label filter setting (CRR FIX) • SPEED ADVSRY button state (Open/Closed) • SPEED ADVSRY button tear off state (Torn Off/Not Torn Off) • SPEED ADVSRY button tear off location

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
BRIGHT Button	• BCKLGHT ddd button tear off state (Torn Off/Not Torn Off) • BCKLGHT ddd button tear off location • Backlight Brightness Control Group (BCG) brightness setting (BCKLGHT ddd button) • Target BCG brightness setting (TARGET ddd button) • Histories BCG brightness setting (HIST ddd button) • FDB BCG brightness setting • (FDB ddd button) • LDB BCG brightness setting • (LDB ddd button) • Weather BCG brightness setting (WX ddd button) • Line 4 (of the FDB) brightness setting (LINE 4 –dd button) • FDB Dwell Emphasis brightness setting (DWELL +dd button) • Cursor BCG brightness setting (CURSOR ddd button) • Button BCG brightness setting • (BUTTON ddd button) • Border BCG brightness setting (BORDER ddd button) • Situation Display Border and Toolbar Interior Border BCG brightness setting (TB BRDR ddd button) • Text BCG brightness setting (TEXT ddd button) • NEXRAD BCG brightness setting (NEXRAD ddd button) • Select Limited Data Block brightness setting (SLDB +dd button) • Situation Display background BCG setting (BCKGRD ddd button) • Toolbar (gray shading) brightness setting (TOOLBAR ddd button) • MAP BRIGHT button tear off state (Torn Off/Not Torn Off) • MAP BRIGHT button tear off location • MAP BRIGHT state (Open/Closed)

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
CHKLIST/MENUS Buttons	• POS CHECK button tear off state (Torn Off/Not Torn Off) • POS CHECK button tear off location • EMERG CHECK button tear off state (Torn Off/Not Torn Off) • EMERG CHECK button tear off location • RADAR button tear off state (Torn Off/Not Torn Off) • RADAR button tear off location • RNG BRG button tear off state (Torn Off/Not Torn Off) • RNG BRG button tear off location • CTAS LIST button tear off state (Torn Off/Not Torn Off) • CTAS LIST button tear off location • Other category checklist/category menu (if adapted) button tear off state (Torn Off/Not Torn Off) • Other category checklist/ category menu (if adapted) button tear off location
CRD Toolbar	• CRD Toolbar Location • CRD Toolbar State (Displayed/Suppressed) • CRD Toolbar State (Raised/Lowered)
CURSOR Buttons	• SPEED d (TB cursor speed) setting • SIZE d (TB cursor size)setting • VOLUME d (Audible Alarm Volume) setting
DB FIELDS Buttons	• DEST button tear off state (Torn Off/Not Torn Off) • DEST button tear off location • Destination filter setting • TYPE button tear off state (Torn Off/Not Torn Off) • TYPE button tear off location • Aircraft Type filter setting • NON-RVSM button tear off state (Torn Off/Not Torn Off) • NON-RVSM button tear off location • NON-RVSM filter setting • RDB button tear off state (Torn Off/Not Torn Off) • RDB button tear off location • RDB filter setting

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• FDB LDR d button tear off state (Torn Off/Not Torn Off) • FDB LDR d button tear off location • FDB Leader Line Default Length setting
DRAW Buttons	• The four brightness color settings for the Situation Display Annotation Color BCGs (coral, green, white, yellow) • Annotation Font Size setting • Annotation Anchor setting • Circle Annotation radius setting • Current color selection (coral, green, white, yellow)
FONT Buttons	• LINE 4 ss button tear off state (Torn Off/Not Torn Off) • LINE 4 ss button tear off location • LINE 4 ss button (FDB Line 4 Font Size) setting • FDB d button tear off state (Torn Off/Not Torn Off) • FDB d button tear off location • FDB d button (FDB Text Array Font Size)setting • RDB d button tear off state (Torn Off/Not Torn Off) • RDB d button tear off location • RDB d button (RDB Text Array Font Size) setting • LDB d button tear off state (Torn Off/Not Torn Off) • LDB d button tear off location • LDB d button (LDB Text Array Font Size) setting • TOOLBAR d button tear off state (Torn Off/Not Torn Off) • TOOLBAR d button tear off location • TOOLBAR d button (TOOLBAR Button Text Font Size) setting • CRD d button tear off state (Torn Off/Not Torn Off) • CRD d button tear off location • CRD d button (Preview/Feedback/RA Font) setting • OUTAGE d button tear off state (Torn Off/Not Torn Off) • OUTAGE d button tear off location

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• OUTAGE d button (Outage List Font) setting
Horizontal Support Toolbar	• Horizontal Support Toolbar Location • Horizontal Support Toolbar State (Displayed/Suppressed) • Horizontal Toolbar State (Raised/Lowered
Left Vertical Support Toolbar	• Left Vertical Support Toolbar State (Displayed/Suppressed) • Left Vertical Toolbar State (Raised/Lowered)
MAP BRIGHT Buttons	• 20 Map Feature BCG settings
Map Buttons	• 20 Map Feature Filter Button settings (Displayed/Suppressed) • 20 Map Filter button tear off states (Torn Off/Not Torn Off) • 20 Map Filter button tear off locations
Master Toolbar	• Master Toolbar location • Master Toolbar State (Displayed/Suppressed) • Master Toolbar State (Raised/Lowered) • Master Toolbar Parent Menu Buttons State (Opened/Closed) • DRAW button state (Open/Closed) • VIEWS button state (Open/Closed) • ATC TOOLS button state (Open/Closed) • CHKLIST/MENUS button state (Open/Closed) • RANGE ddd button state (Open/Closed) • Map button (e.g., 12 NORTH) state (Open/Closed) • CURSOR button state (Open/Closed) • ALTLIM dddBddd button state (Open/Closed) • BRIGHT button state (Open/Closed) • RADAR FILTER button state (Open/Closed) • FONT button state (Open/Closed) • DB FIELDS button state (Open/Closed) • PREF SETS button state (Open/Closed) • Status View filter setting (STATUS dd button) • VECTOR d button setting

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• Master Toolbar Parent Menu Buttons Tear Off State (Torn Off/Not Torn Off) • DRAW button tear off state (Torn Off/Not Torn Off) • VIEWS button tear off state (Torn Off/Not Torn Off) • ATC TOOLS button tear off state (Torn Off/Not Torn Off) • CHKLIST/MENUS button tear off state (Torn Off/Not Torn Off) • RANGE ddd button tear off state (Torn Off/Not Torn Off) • Map button (e.g., 12 NORTH) tear off state (Torn Off/Not Torn Off) • CURSOR button tear off state (Torn Off/Not Torn Off) • ALTLIM dddBddd button tear off state (Torn Off/Not Torn Off) • BRIGHT button tear off state (Torn Off/Not Torn Off) • RADAR FILTER button tear off state (Torn Off/Not Torn Off) • FONT button tear off state (Torn Off/Not Torn Off) • DB FIELDS button tear off state (Torn Off/Not Torn Off) • PREF SETS button tear off state (Torn Off/Not Torn Off) • STATUS dd button tear off state (Torn Off/Not Torn Off) • VECTOR d button tear off state (Torn Off/Not Torn Off) • DELETE TEAR-OFF button tear off state (Torn Off/Not Torn Off) • OUTAGE button tear off state (Torn Off/Not Torn Off) • Master Toolbar Parent Menu Tear Off Location (if torn off) • DRAW button tear off location • VIEWS button tear off location • ATC TOOLS button location) • CHKLIST/MENUS button tear off location • RANGE ddd button tear off location • Map button (e.g., 12 NORTH) tear off location • CURSOR button tear off location • ALTLIM dddBddd button tear off location • BRIGHT button tear off location • RADAR FILTER button tear off location • FONT button tear off location

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• DB FIELDS button tear off location • PREF SETS button tear off location • STATUS dd button tear off location • VECTOR d button tear off location • DELETE TEAR-OFF button tear off location • OUTAGE button tear off location
Preview/Feedback Area View	• Preview/Feedback Area location • FONT pick area setting • BRIGHT pick area setting
RADAR FILTER Buttons	• ALL LDBs button tear off state (Torn Off/Not Torn Off) • ALL LDBs button tear off location • ALL LDBs filter setting • SELECT LDBs button tear off state (Torn Off/Not Torn Off) • Select LDBs button tear off location • SELECT LDBs filter setting • STROBE LINES button tear off state (Torn Off/Not Torn Off) • STROBE LINES button tear off location • STROBE LINES filter setting • ALL PRIM button tear off state (Torn Off/Not Torn Off) • ALL PRIM button tear off location • All Primary Target filter setting • NON MODE-C button tear off state (Torn Off/Not Torn Off) • NON MODE-C button tear off location • Non Mode-C target filter setting • SELECT BEACON button tear off state (Torn Off/Not Torn Off) • SELECT BEACON button tear off location • Select beacon target filter setting • HISTORY d button tear off state (Torn Off/Not Torn Off) • HISTORY d button tear off location • Number of histories setting

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
RECORD button	• RECORD button location • RECORD button state (Open/Closed) • Recordable Child Button (up to 9) location • Recordable Child Button (up to 9) content
Response Area View	• RA initial location • FONT pick area setting • BRIGHT pick area setting
Right Vertical Support Toolbar	• Right Vertical Support Toolbar State (Displayed/Suppressed) • Right Vertical Toolbar State (Raised/Lowered)
SECTOR SETTING Buttons	• HOLD OPTIONS button state (Open/Closed) • HOLD OPTIONS button tear off state (Torn Off/Not Torn Off) • HOLD OPTIONS button tear off location
TOOLBAR Button	• TOOLBAR Button location • TOOLBAR Button State (Opened/Closed) • MASTER TOOLBAR Display/Suppress Setting • MASTER TOOLBAR tear off state (Torn Off/Not Torn Off) • MASTER TOOLBAR tear off location • CRD TOOLBAR Display/Suppress Setting • CRD TOOLBAR tear off state (Torn Off/Not Torn Off) • CRD TOOLBAR tear off location • HORIZ TOOLBAR Display/Suppress Setting • HORIZ TOOLBAR tear off state (Torn Off/Not Torn Off) • HORIZ TOOLBAR tear off location • LEFT TOOLBAR Display/Suppress Setting • LEFT TOOLBAR tear off state (Torn Off/Not Torn Off) • LEFT TOOLBAR tear off location • RIGHT TOOLBAR Display/Suppress Setting • RIGHT TOOLBAR tear off state (Torn Off/Not Torn Off) • RIGHT TOOLBAR tear off location • Master Toolbar Raise/ Lower Setting • MASTER LOWER(RAISE) tear off state (Torn Off/Not Torn Off)

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• MASTER LOWER(RAISE) tear off location • CRD Toolbar Raise/Lower Setting • CRD LOWER(RAISE) tear off state (Torn Off/Not Torn Off) • CRD LOWER(RAISE) tear off location • Horizontal Toolbar Raise/Lower Setting • HORIZ LOWER(RAISE) tear off state (Torn Off/Not Torn Off) • HORIZ LOWER(RAISE) tear off location • Left Toolbar Raise/Lower Setting • LEFT LOWER(RAISE) tear off state (Torn Off/Not Torn Off) • LEFT LOWER(RAISE) tear off location • Right Toolbar Raise/Lower Setting • RIGHT LOWER(RAISE) tear off state (Torn Off/Not Torn Off) • RIGHT LOWER(RAISE) tear off location
VIEWS Buttons	• FR button tear off state (Torn Off/Not Torn Off) • FR button tear off location • Flight Plan Readout View filter setting • DCRD button tear off state (Torn Off/Not Torn Off) • DCRD button tear off location • DCRD Mirror View filter setting • CRR button tear off state (Torn Off/Not Torn Off) • CRR button tear off location • Continuous Range Readout View filter setting • ALTIM SET button tear off state (Torn Off/Not Torn Off) • ALTIM SET button tear off location • Altimeter Settings View filter setting • GROUP SUP button tear off state (Torn Off/Not Torn Off) • GROUP SUP button tear off location • Group Suppression View filter setting • CONFLCT ALERT button tear off state (Torn Off/Not Torn Off) • CONFLCT ALERT button tear off location

Table A–2. Saved Toolbar Settings (Continued)

Toolbar	Object/Attribute
	• Conflict Alert View filter setting • VFR INHIB button tear off state (Torn Off/Not Torn Off) • VFR INHIB button tear off location • VFR Inhibit View filter setting • CODE button tear off state (Torn Off/Not Torn Off) • CODE button tear off location • Beacon Code List View filter setting • HOLD LIST button tear off state (Torn Off/Not Torn Off) • HOLD LIST button tear off location • Hold List View filter setting • INBND LIST button tear off state (Torn Off/Not Torn Off) • INBND LIST button tear off location • Inbound List View filter setting • DEPT LIST button tear off state (Torn Off/Not Torn Off) • DEPT LIST button tear off location • Departure List View filter setting • AUTO HO INHIB button tear off state (Torn Off/Not Torn Off) • AUTO HO INHIB button tear off location • Auto Handoff Inhibit View filter setting • WX REPORT button tear off state (Torn Off/Not Torn Off) • WX REPORT button tear off location • Weather Station Report List View filter setting • MRP LIST button tear off state (Torn Off/Not Torn Off) • MRP LIST button tear off location • MRP List View filter setting
WX Buttons	• NEXRAD altitude strata (NX ddd ddd) setting • NEXRAD intensity level (NX LVL ddd) setting • ATC Radar Low Intensity WX (WX1) filter setting • ATC Radar Medium Intensity WX (WX2)filter setting • ATC Radar High Intensity WX (WX3) filter setting

Appendix B. Eligible Aircraft Commands

The following table presents a complete list of Aircraft Commands with syntax examples.

Table B–1. Eligible Aircraft Commands

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
QA - Select Auto Handoff	none	QA UAL36 QA /UAL36 QA JFK ABC QA UAL22/UAL212 QA 213/654 QA /123/345
QB - Discrete Code Request	/OK (logic check override)	QB 367 QB /367 QB /OK AAL12 QB 367/234 QB AAL123/UAL345 QB /123/654
QB - Qualifier Modification	/OK (logic check override)	QB A UAL545 QB A 362 QB 0 UAL135 QB 0 124 QB 0 /123 QB A UAL545/675 QB A 362/651 QB 0 UAL135/AAL767 QB 0 124/543 QB A /123/765
QF - Flight Plan	none	QF 123 QF R 123 QF UAL123 QF /123 QF /UAL123 QF 123/456 QF /123/456 QF UAL123/AAL456 QF /UAL123/AAL456 QF R 123/456

Table B–1. Eligible Aircraft Commands (Continued)

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
QH - Hold	/OK (logic check override), Hold Data (fix/time, for example, COL/2235)	QH C /OK UAL212 QH ABC UAL112 QH ABC 123 QH ABC/1450 /123 QH 347 QH C UAL112/AAL234 QH C !23/256 QH ABC UAL123/AAL222 QH ABC 123/299 QH ABC /123/455 QH ABC/1450 /123/199 QH ABC/1450 123/1126 QH 347/123 QH /123/456
QN,QZ - Initiate Handoff	/OK (logic check override)	QZ 08 /OK 122 JFK 122 08 /122 QZ L31 /122 21 /OK 123 QZ JFK UAL123 08 UAL365 L31 /UAL365 QZ 08 /UAL365 QZ 08 122/187 QZ JFK UAL123/AAL655 08 122/187 L31 UAL123/UAL887 08 122/234 08 /UAL123/AAL877
QN,QZ - Offset Data Block	Direction/Length or /Length where direction = 1-9 and length = 0-3,5	QZ 8 122 8/3 122 8 /122 QZ /3 /122 2/1 123 QZ 3 UAL123 8 UAL365 1 /UAL365 QZ 8 /UAL365 QZ 8 122/187 QZ 8 UAL123/AAL655 8 122/187 1 UAL123/UAL887 8 122/234

Table B–1. Eligible Aircraft Commands (Continued)

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
		8/3 /UAL123/AAL877 /3 /123/145
QP - Pointout	none	QP 08 122 QP 08 /122 QP 08 UAL112 QP 31 /UAL123 QP 08 122/187 QP 08 UAL123/AAL655 QP 08 /122/187 QP 23 /UAL123/UAL887
QP - Request/Suppress Data Block	none	QP 122 QP /122 QP UAL112 QP /UAL123 QP 122/187 QP UAL123/AAL655 QP /122/187 QP /UAL123/UAL887
QP R - Suppress MRP View Entry	none	QP R UAL110 QP R 312 QP R UAL110/AAL123 QP R 312/122 QP R 213/UAL123
QP J -Halo	none	QP J 122 QP J /122 QP J UAL112 QP J /UAL123 QP J 122/187 QP J UAL123/AAL655 QP J /122/187 QP J /UAL123/UAL887
QQ - Enter/Update Interim Altitude	/TT or other adapted two characters	QQ 130 312 QQ 130 /TT 312 QQ 170 /UAL456 QQ 190 2135 QQ R350 514 QQ 130 312/443 QQ 170 UAL456/AAI234 QQ 190 2135/145 QQ R350 514/777

Table B–1. Eligible Aircraft Commands (Continued)

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
QQ - Delete Interim Altitude	/TT or other adapted two characters	QQ /514 QQ 312 QQ UAL888 QQ /514/234 QQ 312/676 QQ UAL123/UAL998
QQ L- Enter/Update Local Interim Altitude	/OK (logic check override) — when flight is controlled in local facility, non-controlling sectors require an override	QQ L 290
QQ L- Delete Local Interim Altitude	/OK (logic check override) — when flight is controlled in local facility, non-controlling sectors require an override	QQ L
QS - 4th Line Speed/Heading/Free Form Text	Heading/speed; deletion of 4th line data (*/,/*	QS 330/81 UAL110 QS 330/81 312 QS 330 312 QS /330 312 QS */ 312 QS /* 312 QS 0ABCDEF 312 QS 330/81 UAL110/UAL234 QS 330/81 312/454 QS 330 312/453 QS /330 312/453 QS */ 312/453 QS /* 312/453 QS 0ABCDEF 312/453
QU - Route Display	none	QU QU 312 QU 30 312 QU /312 QU /UAL123 QU AAL123 QU 312/767 QU 30 312/555 QU /312/454 QU /UAL123/AAL565 QU 30 AAL123/AAL167

Table B–1. Eligible Aircraft Commands (Continued)

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
QZ - Assigned Alt	/OK (logic check override), Altitude (values = OTP/ddd,VFR/ddd,ABV/ddd, ddd/fix/ddd	QZ 130 312 QZ 130 /312 QZ 170 /UAL456 QZ 190 2135 QZ 190/ABC/210 556 QZ 350B390 514 QZ OTP/350 455 QZ VFR/100 455 QZ ABV/390 455 QZ 130 312/454 QZ 130 /312/987 QZ 170 /UAL456/AL234 QZ 190 2135/234 QZ 350B390 514/567 QZ OTP/350 455/UAL123 QZ VFR/100 455/450 QZ ABV/390 455/2312 QZ OTP/190 A1/UAL123 QZ 190/ABC/210 556/UAL11
SG - Suppress	none	SG A NERD2/REF3 SG A 097/352 SG A 4324/2747(change from existing syntax because the / delimiter replaced the space that was previously used as a delimiter)
DM - Departure Message	Altitude (values = OTP/(d)dd,VFR/(d)dd,ABV/(d)d d, (d)dd/fix/(d)dd), Departure point, for example, /IND, /OK (logic check override) where /OK must be suffixed at the end of flight id field if used	DM AAL320 DM 035 DM AAL320 STL DM AAL320* DM 035* DM AAL230 SFO* DM AAL320 SFO* 1845 230 DM AAL320 SFO*/OK 1845 230 DM 030 150 DM 030 1645 DM 1146 1500 160 DM 351/353 DM 342*/333

Table B–1. Eligible Aircraft Commands (Continued)

Command	Existing Parameters in Command that are Preceded by a Slant	Syntax Examples with Single and Multiple FLIDS
		DM 312*/234* DM UAL123*/UAL887
CO - Suppress Conflict Alert Pair	none	CO UAL110/UAL312 (change from existing syntax because the / delimiter replaced the space that was previously used as a delimiter)

Appendix C. Viewing Electronic Technical Manuals

C.1 Viewing Technical Manuals on the ESSP or MISMCP

If PDF files of the ERAM Technical Manuals (TMs) have been loaded on the ESSP and MISMCP, they can be viewed using the following procedure.

NOTE: PDF TM files can include ERAM Technical Manuals, Security Manuals, COTS Manuals, and CAS documents.

1. Log on to a SupWS.

   NOTE: For detailed procedures, refer to Log In Procedures in Section 2.4.3 of the *En Route Automation Modernization (ERAM) System Administration and Security Manual (SASM)*.

2. Using SSH Tectia Client, bring up a connection to the ESSP01 or MISMCP01 with a valid maintainer account user ID and password.

   NOTE: For detailed procedures, refer to Access Using Existing Maintainer Account in Section 2.5.2.1 of the *En Route Automation Modernization (ERAM) System Administration and Security Manual (SASM)*.

3. If viewing a *System Administration and Security Manual* or other security-sensitive document, from a user ID in the “Wheel” group, switch user to Root as follows, otherwise skip this step:

   a. Type:

      su – root <Enter>

   b. When prompted, type:

      ***<root password>* <Enter>**

4. Type:

   export DISPLAY=<IP address>:0 <Enter>

   where <IP address> is the IP address of the SupWS being used. If the IP address is unknown, it can be determined as follows:

   a. Select **Start→Run** on the windows desktop.

   b. Type **cmd** in the Open: field of the displayed **Run** dialog box, then click on the **OK** button.

   c. In the displayed cmd.exe window, type:

      ipconfig <Enter>

   d. Note the IP Address listed as part of the Local Area Network information.

   e. Close the cmd.exe window.

5. To find the complete path name for the file to be viewed, use the following steps:
   a. Type:

      cd /technical_manuals/<*ti_issue*> <Enter>

      where <*ti_issue*> is the name of the sub-directory for the desired version of the TMs (e.g., EAA121V0, EAB100A, etc.).

   b. To list the manuals in the sub-directory of the desired version, type:

      ls <Enter>

      Note the title of the sub-directory that contains the TM to be viewed (e.g., ti_manuals).

   c. Type:

      cd <sub-directory title> <Enter>

      where <sub-directory title> is the title of the sub-directory noted in the previous step.

   d. To list the groups of manuals or documents within the sub-directory, type:

      ls <Enter>

      Note the title of the TM group that contains the TM to be viewed (e.g., 100_109_air_traffic_manual).

      NOTE: Some of the TM group names appear to be incomplete because the titles cannot exceed 30 characters, including underscores.

   e. Type:

      cd <group title> <Enter>

      where <group title> is the title of the TM group noted in the previous step. Note the title of the .pdf file for the technical manual or document to be viewed. Once the .pdf files are listed, the entire path can be defined.

6. Type:

   /usr/lpp/Acrobat5/bin/acroread <tm_pathname> <Enter>

   where <*tm_pathname*> is the complete path to the .pdf file for the manual to be viewed (e.g., /technical_manuals/EAB000W0/ti_manuals/100_109_air_traffic_manual/era_ti_6110_106_eab000w0.pdf).

   If presented with the ADOBE SYSTEMS INCORPORATED End User License Agreement, click on the **Accept** button and proceed.

When finished viewing the TM, perform the following steps:

1. Select **File→Exit** from the taskbar at the top of the viewer display.
2. Click the cursor inside the SSH Tectia Client window.
3. Type:

exit <Enter>

NOTE: If viewing a security-sensitive document, type **exit <Enter>** a second time.

4. Close the SSH Tectia Client window.
5. Log off the SupWS.

C.2 Viewing Technical Manuals on the Maintenance Laptop

If PDF files of the ERAM Technical Manuals (TMs) have been loaded on the Maintenance Laptop (MaintLT), they can be viewed using the following procedure.

The manuals stored in the **/technical_manuals** folder on the Windows Desktop of the MaintLT are to be viewed manually. To view them:

1. Navigate throughout the **/technical_manuals/<*ti_issue*>** folder until the document to be viewed has been located
   (i.e. /technical_manuals/<*ti_issue*>/100_109_air_traffic_manual/era_ti_6110_100_eab000V5.pdf).
2. Left double-click on the pdf file.
3. An Adobe Acrobat window will open displaying the document.

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Appendix D. System Messages Associated with User Input Actions

This section contains all CHI Error messages associated with user input actions.

Table D–1. CHI Error Messages

Menu/Action	Condition	Message
Display: Altitude Menu Speed Menu Route Menu Trial Restriction Menu Current Restrictions Menu Trial Departure Menu Stop Probe Menu Flight Data Previous Route On Plans Display TFM Reroute Menu	User selects <selected plan id> just as it is being deleted from database. It is impossible to construct altitude menu, speed menu, Route Menu, Trial Restriction Menu, Current Restrictions Menu, Trial Departure Menu, Stop Probe Menu, TFM Reroute Menu, or to display the previous route or flight data on the response display or display the flight on the plans display.	<Selected aircraft id>: Cannot display (Altitude Menu/Speed Menu/Route Menu/Trial Restriction Menu/Current Restrictions Menu/Trial Departure Menu/Stop Probe Menu/Previous Route/Flight Data/on Plans Display/TFM Reroute Menu); selected base plan deleted from database.
Create Trial Plan	User brings up Altitude, Route Menu or TFM Reroute Menu to create a Trial Plan for a category E aircraft and creates a Trial Plan. Trial Plan cannot be created.	<Selected aircraft id>: Could not create Trial Plan; no trajectory available.
Create Trial Plan	User tries to create a Trial Plan based upon <selected plan id>, but types an altitude <input altitude> which is below the system minimum altitude for Trial Planning (1000 ft.).	<Selected plan id>: Cannot create Trial Plan, <input altitude> is below minimum allowable altitude.
Create Trial Plan	User tries to create a Trial Plan based upon <selected plan id>, but types an altitude <input altitude> which is above the system maximum altitude for Trial Planning (60000 ft.).	<Selected plan id>: Cannot create Trial Plan, <input altitude> is above maximum allowable altitude.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Create Trial Plan	User has constructed a Trial Plan request, but underlying base plan <selected plan id> was deleted from database after user posted menu and before the system could construct the Trial Plan.	<Selected plan id>: Cannot create Trial Plan; selected base plan deleted from database.
Send AM	Controller has attempted to send a heading or speed amendment, but it cannot be sent because the aircraft is not yet under facility control.	<Selected plan id>: Cannot enter amendment; aircraft not controlled at your sector position; eligibility override not allowed.
Send AM	Controller has attempted to enter a Trial Plan, but the system disallows it because there is a handoff offer in progress.	<Selected plan id>: Cannot enter amendment; handoff in progress.
Send AM	Controller has attempted to enter an altitude, route, heading, or speed amendment from a menu, and the flight has been deleted since the menu was displayed.	<Selected plan id>: Cannot enter amendment; plan deleted from database.
Send AM	Heading/Speed cannot be entered because another flight plan amendment is still pending.	<Selected plan id>: Cannot enter amendment; previous amendment pending.
Send AM	Heading/Speed cannot be entered because the selected Heading or Speed is not a sector only value.	<Selected plan id>: Cannot enter amendment; Heading/Speed not a sector specific value.
Create Trial Plan	User tries to create a Graphic Trial Plan based upon <selected plan id>, but has selected too many points. Maximum number of points is 50.	<Selected plan id>: Graphic Trial Plan truncated; Maximum # of points (<max points>) exceeded.
Create Trial Plan	User tries to create a Graphic Trial Plan based upon <selected plan id>, but the generated route exceeds the maximum length allowable for a route string. Maximum length is 1020.	<Selected plan id>: Unable to create Trial Plan; Trial Plan Route exceeds maximum length (<max route length>).

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Create Trial Plan	Route conversion cannot process requested Trial Plan due to route having fewer than two recognizable elements.	<Selected plan id>: Unable to create Trial Plan; Route has fewer than two elements.
Create Trial Plan	Route conversion cannot process requested Trial Plan due to route having 'fix.airway' sequence where fix is not part of airway.	<Selected plan id>: Unable to create Trial Plan; Fix <fix name> not on route <route name>.
Create Trial Plan	Route conversion cannot process requested Trial Plan due to unrecognized route element.	<Selected plan id>: Unable to create Trial Plan; converted route incomplete after <route element>.
Show	User tries to show the route of a Flight Plan <selected plan id> on the GPD for a category E aircraft. No trajectory can be displayed.	<Selected plan id>: Could not be shown on Graphic Plan Display; no trajectory available.
Show	User tries to show the route of a Flight Plan <selected plan id> on the GPD for an aircraft which has run out of trajectory. For example, aircraft may not have actually landed yet, but there is no remaining trajectory based on the filed flight plan.	<Selected plan id>: Could not be shown on Graphic Plan Display; no remaining trajectory.
Display Speed Menu	User requests the Speed menu for a category E aircraft <selected aircraft id>, and the menu cannot be displayed.	<Selected aircraft id>: Cannot display Speed menu; no trajectory available.
Add/Find Aircraft	User enters an aircraft ID, CID or beacon code into the AC List or Departure List typing buffer, but the aircraft cannot be found in the system database.	(<ACID>/<CID>/<beacon code>): Could not add aircraft; no match found in database.
Add/Find Aircraft	User enters an invalid string into the AC List or Departure List typing buffer.	<String>: Invalid string for <Aircraft/Departure> List search.
Add/Find Aircraft	User enters a CID, ACID, or beacon code for which more than one entry is found.	<#> entries were found for (<ACID>/<CID>/<beacon code>) <applicable entries>.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Delete Aircraft	User tries to delete an aircraft from the AC List, but the aircraft is involved in an aircraft to aircraft alert assigned to the sector.	<ACID>: Could not remove aircraft; aircraft involved in an aircraft alert.
Change Airport Stream Filter Status	User attempts to change the Airport Stream Filter Status when: • The initial setting is blank • The status indicator box turns gray, or • There is an error message in the Response Display	Time out: Proposed change to <ASF Sector>, <ASF Type>, <ASF description> cannot be applied.
Increase/Decrease Volume	User attempts to decrease beyond the minimum volume or increase beyond the maximum volume.	Error tone sounds. (No Response Display message).
Recenter	User selects a point outside the geographic area defined for the GPD as the new center.	Error tone sounds. (No Response Display message).
Range Change	User attempts to decrease range below the minimum, or increase range above the maximum.	Error tone sounds. (No Response Display message).
Create Trial Plan	The selected flight has progressed beyond the specified start point of the maneuver.	<Selected Plan ID>: Unable to create Trial Plan; flight is beyond maneuver start point.
Create Trial Plan	The first selected fix is off the route and the turn angle exceeds an adapted value.	<Selected Plan ID>: Unable to create Trial Plan; Turn too sharp.
Change Current Restrictions	The user attempts to change current restrictions, but the selected plan has been deleted.	<Selected Plan ID>: Restriction not applied; Flight Plan does not exist.
Change Current Restrictions	The user attempts to change current restrictions, but the message fails due to non-response from the system.	<Selected Plan ID>: Time out; Flight Plan Restriction override failed.
Change Current Restriction	The user attempts to change current restrictions, but the message fails due to a processing error.	<Selected Plan ID>: Flight Plan Restriction override failed

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Remove UTM Coding	The user attempts to acknowledge a UTM, but the message fails due to non-response from the system.	<Selected Plan ID>: Time out: Acknowledge UTM Request failed.
Remove UTM Coding	The user attempts to acknowledge a UTM, but the message fails due to a processing error.	<Selected Plan ID>: Acknowledge UTM Request failed.
Resubmit Trial Plan	The user attempts to resubmit a trial plan, but the request fails due to a processing error.	<Selected Plan ID>: Unable to resubmit Trial Plan; <trial_plan_status_reason>.
Set WGD Altitude Level	User attempts to enter a flight level for which there is no weather data.	Flight level <Valid flight level>: No weather data available.
Display Route Menu	The user attempts to display the Route Menu, but the request fails because the flight or trial plan doesn't have a trajectory.	<Selected Plan ID>: Route Menu Request Failed; No Trajectory.
Display TFM Reroute Menu	The user attempts to display the TFM Reroute Menu, but the request fails because the flight or trial plan doesn't have a trajectory.	<Selected Plan ID>: TFM Reroute Menu Request Failed; No Trajectory.
Display TFM Quick View	The user attempts to display the TFM Quick View, but the request fails because the flight or trial plan doesn't have a trajectory.	<Selected Plan ID>: TFM Quick View Request Failed; No Trajectory.
Display Route Menu	The user attempts to display the Route Menu, but the request fails because there are no more fixes left in the trajectory.	<Selected Plan ID>: Route Menu Request Failed; No Fixes Remaining.
Display Route Menu	The user attempts to display the Route Menu, but the system cannot process the request.	<Selected Plan ID>: Route Menu Request Failed.
Display TFM Reroute Menu	The user attempts to display the TFM Reroute Menu, but the system cannot process the request.	<Selected Plan ID>: TFM Reroute Menu Request Failed.
Display TFM Quick View	The user attempts to display the TFM Quick View, but the system cannot process the request.	<Selected Plan ID>: TFM Quick View Request Failed.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Display Route Menu	The user attempts to display the Route Menu on a trial plan but the requests fails due to non-response from the system.	<Selected Plan ID>: Time out; Route Menu Request Failed.
Display Amendment Template	The user attempts to display the Amendment Template, and the conversion of the route information did not complete.	<Selected ACID>: Amendment Template Request Failed.
Send Route Amendment	The user attempts to send a route amendment, but the build amendment text request fails because the route cannot be converted.	<Selected Plan ID>: Amendment Formatting Failed; Cannot Convert.
Create Trial Plan	The user attempts to create a trial plan, but there are more than the upper limit of trial plans that currently exist.	<Selected Plan ID>: Cannot Create Trial Plan; No Room in Stores.
Response Display	The RPD catches an attempt to post string longer than the maximum size allowed.	System message posting attempt exceeds maximum string size.
Create Trial Plan	The user attempts to create a trial plan, but no response is received from the system.	<Selected Plan ID>: Time out: Create Trial plan request failed.
Create Trial Plan	The user attempts to create a departure trial plan, but while the system is processing the message, the flight departs.	<Selected Plan ID>: Cannot create Trial Plan; Flight departed.
Create Trial Plan	The user attempts to create a trial plan, but the system cannot generate a trajectory.	<Selected Plan ID>: Unable to create Trial Plan; Trajectory not valid.
Create Amendment	The user attempts to send an amendment, but there are more than the upper limit of amendments that currently exists.	<Selected Plan ID>: Cannot Create Amendment Plan; No Room In Stores.
Create Trial Plan	The user attempts to create a graphic trial plan, but the system cannot determine a calculated rejoin fix.	<Selected Plan ID>: Determine Rejoin Fix request failed.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Aircraft List/Departure List	The user attempts to acknowledge an AAR for a flight that has an ADR before the ADR is acknowledged.	<Aircraft ID>: Must acknowledge PDR before PAR.
Aircraft List/Departure List	The user attempts to acknowledge an adapted route or embedded route for a flight, but the request fails due to a non-response from the system.	<Aircraft ID>: Time out: acknowledgment failed.
Aircraft List/Departure List	The user attempts to acknowledge an adapted route or embedded route for a flight, but the request fails due to a processing error.	<Aircraft ID>: Acknowledgment failed.
Aircraft List	The user attempts to acknowledge an AAR, ADR, or ADAR for a flight that is not eligible due to track status.	<Selected plan id>: Cannot acknowledge route; aircraft not eligible.
Aircraft List	The user attempts to acknowledge an AAR, ADR, or ADAR for a flight that has a pending TFM reroute.	<Selected plan id>: Cannot acknowledge route; pending TFM reroute exists.
Create Trial Plan	The user attempts to create a trail plan, but the request fails because the pending TFM reroute has been deleted.	<Selected plan id>: Unable to create trial plan; pending TFM reroute deleted.
Display TFM Reroute Menu	The user attempts to display the TFM Reroute Menu, but the request fails since the pending TFM reroute has been deleted.	<Selected plan id>: TFM Reroute Menu failed; pending TFM reroute deleted.
Display TFM Quick View	The user attempts to display the TFM Quick View, but the request fails since the pending TFM reroute has been deleted.	<Selected plan id>: TFM Quick View failed; pending TFM reroute deleted.
Angulate	User tries to angulate a flight via the keyboard command and the entered flight does not exist in either the active or proposed flight database.	<ACID, CID or Beacon code>: Could not angulate aircraft; no match found in database.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Show, Show All	User tries to show or show all for a flight via the keyboard command and the entered flight does not exist in the active flight database.	<ACID, CID or Beacon code>: Could not be shown on Graphic Plan Display; Aircraft not found in active flight database.
Stop Probe	The user attempts to stop the probe for a flight, but the request fails due to a processing error.	<selected plan id>: Stop Probe Failed.
Stop Probe	The user attempts to stop the probe for a flight, but the request fails due to non-response from the system.	<Selected aircraft ID>: Time out; Stop Probe request failed.
Stop Probe	The user attempts to stop the probe for a flight, but the request fails because a hold is already in effect.	<selected plan id>: Hold currently in effect, Stop Probe Failed.
Stop Probe	The user attempts to stop the probe for a flight, but the request fails because the flight is commanded frozen.	<selected plan id>: Commanded Frozen, Stop Probe Failed.
Stop Probe	The user attempts to display the Stop Probe Menu, but the request fails because the flight does not have a trajectory.	<Selected Plan ID>: Stop Probe Menu Request Failed: No Trajectory.
Stop Probe	The user attempts to display the Stop Probe Menu, but the request fails because there are no more fixes left in the trajectory.	<Selected Plan ID>: Stop Probe Menu Request Failed: No Fixes Remaining.
Stop Probe	The user attempts to display the Stop Probe Menu, but the system cannot process the request.	<Selected Plan ID>: Stop Probe Menu Request Failed.
Display Hold Data Menu	The user attempts to display the Hold Data Menu, but the request fails because the server is down.	<Selected ACID>: Hold Data Menu request failed.
Pointout Display Request	The user attempts to acknowledge a Pointout indicator or remove a Pointout indicator, but the request fails due to a non-response from the system.	<Selected Plan ID>: Time out; Pointout display request failed.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Pointout Display Request	The user attempts to acknowledge a Pointout indicator or remove a Pointout indicator, but the request fails due to a processing error.	<Selected Plan ID>: Pointout display request failed.
Create Trial Plan	The user attempts to create a speed trial plan but the entered speed is outside the valid limits for the flight.	<Selected Plan ID>: Cannot create trial plan; <input speed/calculated speed> outside allowable speed range <lower range> to <upper range>.
Enter Coordination Data	The user attempts to display the Coordination Menu or enter Coordination data, but the request fails due to a processing error.	<Selected Plan ACID>: Coordination Request Failed.
Enter Coordination Data	The user attempts to enter or edit Coordination data, but the request fails due to entry of an invalid value.	<Selected ACID>: <Value> is not a valid value or (<Time><Altitude><Beacon Code>).
Select Plan ID	User selects <selected plan id> just as it is being deleted from the database. It is impossible to complete the selected command.	<selected plan id>: Cannot complete command; selected base plan deleted from database.
Graphic Trial Plan	User attempts to perform graphic trial planning on a flight whose trajectory does not continue long enough to assign a default MSP.	<selected plan id>: Cannot assign default MSP; not enough trajectory remaining.
Resubmit Trial Plan	User attempts to resubmit a trial plan, but the trial planning server is unavailable.	<selected plan id>: Time out; Trial Plan resubmit failed.
Create Trial Plan	Route conversion cannot process requested Trial Plan due to an incomplete route.	<Selected plan id>: Unable to create Trial Plan; converted route incomplete.
Create Trial Plan	User attempts to create a trial plan while the trial plan server goes down.	<Selected plan id>: Create Trial Plan request failed; Server is Down.
Create Trial Plan	User attempts to create a trial plan while the base trial plan is being turned invalid.	<Selected plan id>: Unable to create Trial Plan; Trial Plan not valid.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Create Trial Plan	User attempts to create a graphic altitude-only trial plan with a point that is not on the route.	<Selected plan id>: Unable to create Trial Plan; GPD altitude only point not on route.
Aircraft List/Departure List	User attempts to acknowledge an AAR, ADR, or ADAR for a flight that has an acknowledge pending.	<Aircraft ID>: Cannot acknowledge while an acknowledge is in process.
Show/Show All	User tries to show or show all for a flight via the keyboard command and the requested flight string cannot be parsed.	<entered string>: Invalid string for Graphic Plan Display Request.
Send Route Amendment	The user attempts to send a route amendment, but the build amendment text request fails due to a non-response from the system.	<Selected plan id>: Time out; Amendment formatting request failed.
Display Amendment Template	The user attempts to display the Amendment Template, and the request times out.	<Selected ACID>: Time out; Amendment Template Request failed.
Display Route Menu	The user attempts to display the Route Menu on a trial plan, but the request fails due to a non-response from the system.	<Selected plan id>: Time out; Route Menu request failed.
Clear Hold Data	The user attempts to clear the system cancelled hold reason, but the message failed due to a processing error.	<Selected plan id>: Clear cancelled hold failed.
Clear Hold Data	The user attempts to clear the system cancelled hold reason, but the message failed due to a non-response from the system.	<Selected plan id>: Time out; Clear cancelled hold failed.
Amendment Template / Flight Plan Template	The user attempts to enter an RNP or RNV value that is outside the range of 0 to 99.99.	<entered value> is not a valid value for RNV/RNP.
Apply Previous Route	The user attempts to apply the previous route, however the coordination time of the previous route is more than an adapted time in the past.	<Selected plan id>: Unable to apply Previous Route; coordination time expired.

Table D–1. CHI Error Messages (Continued)

Menu/Action	Condition	Message
Display Graphic Menu	The user attempts to display the Graphic Menu, but the request fails because the flight or trial plan doesn't have a trajectory.	<Selected Plan ID>: Graphic Menu Request Failed; No Trajectory.
Display Graphic Menu	The user attempts to display the Graphic Menu, but the request fails because there are no more fixes left in the trajectory.	<Selected Plan ID>: Graphic Menu Request Failed; No Fixes Remaining.
Display Graphic Menu	The user attempts to display the Graphic Menu, but the system cannot process the request.	<Selected Plan ID>: Graphic Menu Request Failed.
Display Graphic Menu	The user attempts to display the Graphic Menu on a trial plan, but the requests fails due to non-response from the system.	<Selected Plan ID>: Time out; Graphic Menu Request Failed.
TFM Reroute Menu	The user attempts to display the TFM Reroute Menu, but the menu fails due to a non-response from the system.	<Selected flight id>: Time out; TFM Reroute Menu request failed.
TFM Reroute Menu	The user attempts to reject the TFM Reroute, but the request fails due to a processing error.	<Selected flight id>: TFM Reroute Reject request failed.
TFM Reroute Menu	The user attempts to reject the TFM Reroute, but the request failed due to a non-response from the system.	<Selected flight id>: Time out; TFM Reroute Reject request failed.
TFM Quick View	The user attempts to display the TFM Quick View, but the menu fails due to a non-response from the system.	<Selected flight id>: Time out; TFM Quick View request failed.

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List of Acronyms and Abbreviations

A	
A	Airspace
A	Assistant
AAR	Adapted Arrival Report
AAR	Adapted Arrival Route
AAR	Application Activity Report
AATI	ARTS Active Transfer Interval
AAV	Aircraft Alert Volume
ABM	Atomic Broadcast Manager
AC	Aircraft
ACARS	Aircraft Communications Addressing and Reporting System
A+CC	Authentication and Critical Confirmation
Achar/ACHR	Aircraft Characteristic
ACID	Aircraft Identification
ACL	Access Control List
ACL	Aircraft List
ACP	Azimuth Change Pulses
ACR	Aircraft Conflict Report
ADAR	Adapted Departure/Arrival Route
ADC	Active Directory Domain Controller
ADCCP	Advanced Data Communication Control Procedures
ADE	Application Detection Error
ADF	Automatic Direction Finding
ADP	Automated Problem Detection
ADR	Adapted Departure Route
ADS-B	Automatic Dependent Surveillance-Broadcast
AER	Application Error Report
AERO	Aeronautics CSCI
AF	Airway Facilities

AFI	Abbreviated Flights Interface
AFILC	AFI from the ARTCC channel to the ZLC NAP Subsystem
AFITL	AFI from the ARTCC channel to the ZTL NAP Subsystem
AFMP	Arrival Flow Management Point
AFN	Air Traffic Services (ATS) Facilities Notification
A/G	Air/Ground
AGL	Above Ground Level
AID	Aircraft Identifier
AIM	Aeronautical Information Management
AIT	Automatic Information Transfer
AIX	Advanced Interactive Executing Operating System
ALOR	All Others
ALT	Alternate
ALT	Altitude
ALTIM SET	Altimeter Setting
ALT LIM	Altitude Limits
AM	Amendment
ANP	Asynchronous Notification Processing
AOC	Aeronautical Operational Control
AOI	Area of Interest
AOR	Area of Responsibility
APC	Aprobe Source Files
APD	Automated Problem Detection
APDIA	Automated Problem Detection Inhibited Area
API	Application Programming Interface
APL	Application
APL	Aprobe List Files
APPL	Application
APR	Aircraft Performance Report
APR	ATC Preferred Route
APRL	ATN Profile Requirements List
APS	A-position Support
APX	Aprobe Executable Files

ARINC	ARINC, Inc. (formerly Aeronautical Radio, Inc.)
ARSR	Air Route Surveillance Radar
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
AS	Address Space
AS	Altimeter Setting
AS	Applications System
ASCII	American Standard Code for Information Interchange
ASF	Airport Stream Filter
ASM	Advanced System Management
ASOSE	Address Space Operating System Extension
ASSM	ARTCC System Support Manual
AT	Air Traffic
ATC	Air Traffic Control
ATC	Air Traffic Controller
ATCBI	Air Traffic Control Beacon Interrogator
ATCS	Air Traffic Control Specialist
ATCS	Air Traffic Control System
ATM	Air Traffic Management
ATM	Air Traffic Manual
ATMA	Air Traffic Management Application CSS
ATN	Aeronautical Telecommunications Network
ATNPKT	ICAO Doc 9896 Dialog Service Protocol Data Unit
ATOP	Advanced Technologies and Oceanic Procedures
ATS	Air Traffic Services
ATS	Air Traffic Systems
ATS	Air Traffic Specialist
ATSC	Air Traffic Services Communications
ATSS	Airway Transportation System Specialist
ATT	Application Technology Type
AUD	Application Untyped Data
AUDIO	Audio adapter of processor
AUTO HO INHIB	Auto Handoff Inhibit (View Header)

B	
B&C	Builds and Controls
BC	Bus Connector
BCG	Brightness Control Group
BCN	Beacon
BCP	Backup Channel Processor
BEP	Back End Processor; see DCGS BEP
BERC	Beacon Radar Data Count
BFTA	Beacon False Target Analysis
BG	Backup Generator/Below Ground
BGS	Global System Monitor, Mode Manager
BIDI	Bi-Directional Interface
BIP	Backup Interface Processor
BIS	Boundary Intermediate System
BLKQC	Blocked List/Log On Query - Channel
BLKQN	Blocked List/Log On Query - NAP
BOM	Bill of Materials
BPR	Build Packaging Request
BS	Basic Services
BSDU	Broadcast Services Data Unit
C	
C	Conformance
CA	Conflict Alert
CAS	Calibrated Airspeed
CAS	Commercially Available Software
CASE	Computer-Assisted Software Engineering
CASM	COTS Software Management Processor (AIX)
CASMA	AIX CAS Management Processor
CASMP	COTS Software Management Processor (AIX)
CASMS	Solaris CAS Management Processor
CAT023	FAA ASTERIX Category 23 report
CAT033	FAA ASTERIX Category 33 report
CBP	CMAP Base Processing
CBTP	CMS Block Transmission Protocol

CCB	Change Control Board
CCU	Central Control Unit
CD	Change Document
CD	Chief Designer
CD	Compact Disc
CDA	Current Data Authority
CDB	Conflict Data Block
CDE	Consolidated Development Environment
CDG	Direct Console Display Generation
CDP	CMAP Data Proxy
CD-ROM	Compact Disc – Read-Only Memory
CDRW	Compact Disc-Rewritable
CE	Chief Engineer
CENRAP	Center Radar Approach Control
CERA	Controller-Entered Reported Altitude
CFAD	Composite Flight Data Processing
CFR	Configuration Report
CFR	Continuous Flight Plan Readout (View Header)
CFR	Continuous Flight Readout
CHI	Computer Human Interface
CI	Change Instrument
CID	Computer Identification
CLNP	Connectionless Network Protocol
CM	Configuration Management
CMA	Context Management Application
CMAP	Context Management Application Processing CSCI
CMBR	Configuration Management Build Request
CMD	Command
CMI	Command Message Injector
CMS	Common Message Set
CMSRV	Configuration Management Server
CMU	Communications Management Unit

CODE	Beacon Code (View Header)
COMDIG	Common Digitizer Data Reduction
COMM	Communications CSCI
CONUS	Continental United States
COORS	Coordinating Task
COR	Correlated
COTS	Commercial-Off-The-Shelf
CP	Conflict Probe
CPB	Conflict Probe Processing
CPDLC	Controller Pilot Data Link Communications
CPP	Conflict Probe Processor
CPR	Conflict Probe Reports
CPU	Central Processing Unit
CR	Change Request
CRAD	Composite Radar Data Processing
CRD	Computer Readout Device
CRL	Control Room View
CRR	Continuous Range Readout (View Header)
CS	Central Services
CSCI	Computer Software Configuration Item
CSMA/CD	Carrier Sense Multiple Access with Collision Detection
CSP	Constraint Satisfaction Point
CSR	Command Syntax Report
CSRD	Central System Release Depository
CSS	Common Shared Service
CSV	Comma Separated Values
CT	Component Trace
CTAS	Center TRACON Automation System
CTS	Clear To Send
CTS	Coded Time Source
CTXSRVW	Citrix Server
CU	Console User
CUT	Coordinated Universal Time
CWA	Center Weather Advisory

CWP	Controller Workstation Processor
CWSU	Central Weather Service Unit
CXSS	Common System Services CSCI
D	
D	Data
DA	Data Accept
D/A	Data/Assistant
D/A-Con	D/A-Position Console
DACS	Digital Aeronautical Chart Supplement
DARC	Direct Access Radar Channel
DASD	Direct Access Storage Device
DASNT	D/Assistant Position Processor
DAU	Distributed Adaptation Update
DB	Data Blocks
DBG	Debug Report
DBUG	Debug
DC	Display Controls
DCAT	Distribution and Cutover
DCM	Desired Configuration Monitoring
D-Con	D-Position Console
DCR	Design Change Request
DCRD	Data Computer Readout Device
DCS	Display Command Simulator
DCT	Delayed Countdown Time
DCX	Comma Display Generator to the R-Position
DDSP	Data-Position Departure Spacing Program Processor
DEP	Departure List (Toolbar Display)
DEPT	Departure List (View Header)
DER	Debug Extraction Report
DESP	Design Recording Processor
DEV	Development
DGN	Diagnostics
DISK	Hard disk of processor

DL	Departure List
DLIC	Data Link Initiation Capability
DME	Distance Measuring Equipment
DMZ	Demilitarized Zone
DNS	Domain Name Server
DOORS	Dynamic Object Oriented Requirements System
DP	Departure Procedure
DPD	Display Processor – D-Position
DPDA	Display Processor – D/A-Position
DPE	Data Parsing Engine
DPR	Display Processor – R-Position
DPS	Departure Procedures
DR&A	Data Reduction and Analysis
DRA	Data Reduction and Analysis
DRAP	Data Reduction and Analysis Processor
DREC	ECG DARC Radar Ethernet Coverage
DRI	Distance Reference Indicator
DRM	Development Release Manager
DRP	Display Recording and Playback (CSCI)
DS	Display System
DSL	Digital Subscriber Line
DSM	Display Services Management
DSP	Departure Spacing Program
DSPLY	Display
DSR	Display System Replacement
DSRV	Display Services CSCI
DSS	Display Support Services
DS-User	PGW Dialog Service User
DT	Data Test message
DVD	Digital Video Disc/Digital Versatile Disc
DVu	D-Position Views
DYSIM	Dynamic Simulation
E	
EADP	ERAM Adaptation Build Tool and CSCI

EAPP	Ethernet Port for Application LAN Connection
EBEM	Ethernet Port on NAP Subsystem for DCGS BEP M&C LAN Connection
EBEO	Ethernet Port on NAP Subsystem for DCGS BEP Operational LAN Connection
EBIP	Enterprise Business Intelligence Portal
EBUS	Enhanced Back-up Surveillance
ECCB	Engineering Change Control Board
ECG	En Route Communications Gateway
ECGIP	ECG Interface Processor
ECG RFW	En Route Communications Gateway Router/Firewall
ECS	External Communication Services
EDB	Enhanced Data Block
EDCT	Expected Departure Clearance Time
EDD	Enhanced Data Display
EDEV	ERAM Development CSCI
EDS	Electrostatic Discharge
EDSM	En Route Display Management CSCI
EECG	Ethernet En Route Communications Gateway
EEPROM	Electrically Erasable Programmable Read-Only Memory
EFC	Expected Further Clearance Time
EFEM	Ethernet Port on NAP Subsystem for PGW FEP M&C LAN Connection
EFEO	Ethernet Port on NAP Subsystem for PGW FEP Operational LAN Connection
EGIP	ERAM General Information Processing CSCI
EINF	ERAM Support System Infrastructure CSCI
E-LDB	Enhanced Limited Data Block
ELOM	ERAM Lab Operations Management
EM&C	Ethernet Monitor & Control
EM&C	Ethernet Port for M&C LAN Connection
E-MSAW	Enhanced Minimum Safe Altitude Warning
EMSAW	En Route Minimum Safe Altitude Warning

ENP RFW	ERAM National Processing Router Firewall (M&C and Ops)
ENPRM	Ethernet Port on NAP Subsystem for Connection to National Processing Router for M&C Data
ENPRO	Ethernet Port on NAP Subsystem for Connection to National Processing Router for Operational Data
ENS	ERAM National Site
ENV	Environment
EOD	Exceed onDemand
EOPD	ERAM Offline Problem Determination
EPROM	Erasable Programmable Read-Only Memory
EQUIP	Equipment
ER	Enhancement Request
ERAM	En Route Automation Modernization
ERFMP	En Route Flow Management Point
ERIDS	En Route Information Display System
ERRMON	Error Monitor
ES	Enterprise Storage
ESA	En Route Separation Analysis
ESAS	ERAM SWIM Application Services
ESATD	En Route Surveillance Airborne Target Display
ESET	Systems Engineering Requirements Management MCSC (EDEV)
ESIM	Ethernet Simulation
ESM	Environmental Service Module
ESR	Event Statistics Report
ESRM	ERAM System Release Management
ESS	Enterprise Storage Subsystem
ESS	Enterprise Storage System
ESSC	En Route System Support Complex
ESSM	ESSC System Support Manual
ESSP	Enhanced Site Support Processor
ESUB	ERAM Sub-System Simulation CSCI
ESYNC	Ethernet Synchronization

ETF	Electronic Transfer File
EVRI	Excessive Vertical Rate Indicator
EWDP	En Route Weather Data Processing CSCI
F	
FAA	Federal Aviation Administration
FAAAC	FAA Academy
FAATC	Federal Aviation Administration Technical Center
FACSFAC	Fleet Air/Area Control and Surveillance Facility
FAL	Facility Alert List
FANS	Future Air Navigation Service
FAV	Fixed Airspace Volume
FC	Fibre Channel
FC-AL	Fibre Channel-Arbitrated Backup
FDB	Full Data Block
FDD	IFPA/URET's Flight Data Distribution
FDDI	Fiber Distributed Data Interface
FDIO	Flight Data Input/Output
FDM	Flight Data Management
FDP	Flight Data Processing
FDPP	Flight Data Processing Processor
FDPS	Flight Data Processing Server
FDR	File Deletion Request
FDSIM	FlightDeck Simulation
FE	Fast Ethernet
FEL	Flight Event Listha h
FEP	Front End Processor; see PGW FEP
FG	Functional Group
FIFO	First In First Out
FIS	Flight Information Service
FLTS	Flight Services CSCI
FMA	Flight Monitor Agents
FMS	Flight Modeling Services
FN_AK	AFN Acknowledgement message (uplink)

FN_CON	AFN Contact message (downlink)
FOSS	Free and Open Source Software
FP	Flight Plan
FP	Front Panel
FPA	Fix Posting Areas
FPM	IFPA/URET's Flight Plans Management
FPMDM	Flat Panel Main Display Monitor
FPR	Flight Plan Report
FPS	Flight Planning Services
FPSA	FlightDeck Proxy Sub-Agent
FR	Flight Plan Readout Request Message
FRD	Fix Radial Distance
FRU	Floor-Replaceable Unit
FRZN	Frozen Indicator
FS	Facility Subsystem
FS	Flight Strip
FSE	Fail Safe Electronics
FSP	Flight Strip Printer
FT	Feet
FTI	FAA Telecommunications Infrastructure
FW	Firmware
G	
GB	Gigabyte
GBAS	Ground Based Augmentation System
GFE	Government Furnished Equipment
G/G	Ground/Ground
GHz	Gigahertz
GI	General Information
GIe	General Information Processing
GigE	Gigabit Ethernet
GIM-S	Ground-based Interval Management – Spacing
GMR	General Modification Request
GMS	Global Monitor Support
GPD	Graphic Plan Display

GPI	General Purpose Input
GPI/O	General Purpose Input/Output
GPO	General Purpose Output
GPR	General Purpose Registers
GPWS	Ghost Pilot Workstation
GPWxP	General Information Processing and Weather Processor
GROUP SUPP	Group Suppression (View Header)
GSGT	Graphical Simulation Generation Tool
GUI	Graphical User Interface
H	
HADDS	Host-ATM Data Distribution System
HCS	Host Computer System
Hdg/Spd	Heading/Speed
HERT	Host Embedded Route Text
HID	Host Interface Device
HMM	Hardware Maintenance Manual
HOLD	Hold List (View Header)
HP	Holding Pattern
HPG	Height Processor Group
HSF	Heading/Speed/FreeForm Text
HSL	High Speed Link
HW	Hardware
Hz	Hertz
I	
IAFDOF	Incorrect Altitude For Direction of Flight
IAR	Instruction Address Register
IAS	Indicated Airspeed
IAVP	Immediate Alert Verification Processor
IA1	Interfacility Interface (A1)
IA2	Interfacility Interface (A2)
ICAO	International Civil Aviation Organization
ICD	Interface Control Document
ICL	Inter Computer Link

ICMBR	Interim Configuration Management Build Request
ID	Identification
IDS	Intrusion Detection System
IERR	ICAO Equipment Restricted Route
IETF	Internet Engineering Task Force
I/F	Interface
IFA	Interfacility
IFB	Interfacility Interface Set B
IFCP	Interfacility Conflict Probe
IFPA	Interface Proxy Set A CSCI
IFPB	Interface Proxies Set B CSCI
IFR	Instrument Flight Rules
IFS	Interface Proxy SWIM
IID	Internal Interface Document
IIF	Integration and Interoperability Facility
ILS	Instrument Landing System
IMC	Initial Monitor and Control
IMI	Imbedded Message Identifier
INBND	Inbound List (View Header)
IND	Infrastructure Name Distribution
INS	Internal Navigation System
INTI	Interfacility Input
INTO	Interfacility Output
I/O	Input/Output
IOR	Input/Output Report
IP	Internet Protocol
IPC	Inter-Process Communication
IPF	Interface Proxy FlightDeck™
IPL	Initial Program Load
IPOP	Intermediate Point of Presence
IPSec	Internet Protocol Security
IS	Intermediate System
IS&GS	Information Systems and Global Solutions
ISO	International Organization for Standardization

ISTD	Infrastructure Shared Table Distribution
ITT	Integrated Test Tracking
IXA	xSeries Adapter
K	
KB	Kilobyte
KBYTES	Kilobytes
KSD	Keypad Selection Device
KVM	Keyboard, Video, Mouse
KYBD	Keyboard of Display Processor
L	
LA	Low Altitude
LABC	Lab Controller
LAN	Local Area Network
LC	Loosely Coupled
LCD	Liquid Crystal Diode
LCN	Local Communications Network
LDAP	Lightweight Directory Access Protocol
LDB	Limited Data Block
LED	Light Emitting Diode
LGSM	Local Group System Monitoring and Mode Management
LIB	Library
LLC	Lab Logical Control
LMT	Lightweight Memory Trace
LOA	Letter of Agreement
LOM	Lab Operations Management
LPA	Loudspeaker Panel Assembly
LPAR	Logical Partition
LPC	Lab Physical Control
LPP	Licensed Program Products
LPV	Localizer Performance with Vertical Guidance
LR	Link Register
LRM	Local Resource Manager
LRP	Last Recorded Position

LRU	Lowest Replaceable Unit
LSRM	Local System Release Management
M	
M	Mach
MAFA	Mode C Intruder Alert Filter Altitude
Maint	Maintenance
MaintLT	Maintenance Laptop
MaintWS	Maintenance Workstation
MAN	Manual
MAP	Maintenance Analysis Procedure
MAS	Message Assurance Service
MB	Megabyte
MBCT	Metering Boundary Crossing Time
M&C	Monitor and Control
MC	Moderately Coupled
MCA	Message Composition Area
MCD	Moderately Coupled Dependent
MCEB	Monitor, Control, and Events address space on DCGS BEP
MCEF	Monitor, Control, and Events address space on PGW FEP
MCEN	Monitor, Control, and Events address space on NAPP
MCG	M&C GUI
MCI	M&C Interface for exchange of M&C data
MCI	Mode C Intruder
MCILC	MCI ZLC – M&C interface from the ARTCC channel to the ZLC NAP Subsystem
MCITL	MCI ZTL – M&C interface from the ARTCC channel to the ZTL NAP Subsystem
MCP	M&C Processing
MCP	M&C Processor
MCSC	Major Computer Software Component (typically an executable)
MCWS	Monitor and Control Workstation
MDA	M&C Display Application
MDC	Modification Detection Code

MDM	Main Display Monitor
MDM	Multiprogramming Diagnostic Monitor
MEP	Maneuver End Point
METAR	Aviation Routine Weather Report
MFI	Message Function Identifier
MFSSS	Multi-Facility Subsystem State Service
MgW	MISMCP gateway
MHP	Message Handling Protocol
MHz	Megahertz
MI	Manual Intervention
MI	Moderately Coupled Independent
MIFT	Manage Internal Facility Time
MIG	Military Interface Group
MIPS	Master Instructor Pilot and Support
MIS	Meteorological Impact Statement
MISM	Mismatch Indicator
MISMCP	Master Instructor/Support M&C Processor
MITS	Merge Import Tool Suite
MLS	Microwave Landing System
MnC	M&C Monitoring and Commanding
MOA	Military Operations Area
MONF	Monitor Flights CSCI
MR	Map Request
MRP	Meter Reference Point List (View Header)
MS	Microsoft
MSAW	Minimum Safe Altitude Warning
MSG	Message
MSP	Maneuver Start Point
MSP	Message Service function within PGSV
MSR	Machine State Register
MST	Machine-State-Table
MTA	Minimum Track Altitude
MTI	Moving Target Indicator

MWA	Maximum Warning Altitude
N	
N/A	Not Applicable
NAC	Navigation Accuracy Categories
NACp	Navigation Accuracy Categories for Position
NACv	Navigation Accuracy Categories for Velocity
NACCG	Communication Congestion Report
NACK	Negative Acknowledge Status
NAD	National Adaptation Data
NADIN	National Airspace Data Interchange Network
NADP	National Adaptation Data Processing
NADR	National Adaptation Data Release
NAHFA	Facility Event Report
NAIP	Non-U.S. Acc/Automated
NAP	National Application (Subsystem)
NAPBC	LAN Adapter Utilization Report
NAPDF	Data File Utilization Report
NAPHF	Hardware Failure Report
NAPHU	Hardware Utilization Report
NAPP	National Application Processor
NAPPU	Processor Utilization Report
NAPSF	Software Failure Report
NAS	National Airspace System
NASD	National Adaptation Source Data
NAVAID	Navigational Aid
NC	Not Coupled
NCRC	Non-Valid Mode C Radar Data Count
NDS	NOTAM Distribution System
NEPM	National External Processing M&C LAN switch for M&C data
NEPO	National External Processing Operational LAN switch for Operational Data
NESG	NAS Enterprise Security Gateway
NEV	Network Event Viewer
NextGen	Next Generation Air Transportation System

NEXRAD	Next Generation Radar
NFDC	National Flight Data Center
NFS	Network File System
NLDB	Non-Limited Data Block
NIC	Navigation Integrity Categories
NICbaro	Navigation Integrity Categories for Barometric Altitude
NIM	Network Installation Management
NIPM	National Internal Processing M&C LAN switch for M&C data
NIPO	National Internal Processing Operational LAN switch for operational data
NIST	National Institute of Standards and Technology
NM	Nautical Mile
NMIP	Non-U.S. Acc/Manual
NOM	National Operations Manager
Non-RSVM	Non-Reduced Vertical Separation Minima
NOTAM	Notice To Airmen
NRRC	Non-Reinforced Beacon Radar Data Count
NRS	Notice to Airmen Retrieval System
NS	Network Service
NSA	National Security Agency
NSMS	National Systems Management Server
NSR	National System Release
NSRM	National System Release Manager
NTA	National Track Analysis
NTP	Network Time Protocol
NVRC	Non-Valid Mode 3/A Radar Data Count
NWS	National Weather Service
NX	NEXRAD
O	
OCS	Oceanic Control System
ODR	Online Data Reduction
OLC	Online Certification
OLS	Operational LAN Switch (ECG LAN switch)

OMIC	Operations Manager in Charge
OPEX	Operational Exerciser
OPS	Operational
OPSIM	Operational Simulation
OS	Operating System
OSD	Object Sequence Diagram
OSE	Operating System Extension
OSI	Open Systems Interconnection
OU	Operational Unit
P	
PAMRI	Peripheral Adapter Module Replacement Item
PAR	Preferred Arrival Route
PAS	Primary Address Space
PBP	Protocol Gateway Back End Processing
PB User	Play Back Workstation User
PBWS	Playback Workstation
PCI	Peripheral Component Interconnect
PD	Problem Determination
PDAR	Preferred Departure and Arrival Route
PDB	Power Distribution Board
PDF	Portable Document Format
PDR	Preferred Departure Route
PDU	Power Distribution Unit
PE	Permanent Echo
PELocate	Permanent Echo Locator
PEQA	Permanent Echo Quality Assurance
PFF	Protocol Gateway Front End FANS Processing
PGSV	Protocol Gateway Service and Verification CSCI
PGW	Protocol Gateway
PGW DS	Protocol Gateway Dialog Service
PGW FEP	Protocol Gateway Front End Processor
PH	Present Heading
PID	Process ID
PIP	Prime Interface Processor

PLANS	Plans Display (Toolbar)
PMF	Production and Maintenance Facility
PMO	Program Management Organization
PO	Point Out
POS	Position
POSIX	Portable Operating System Interface
POST	Power-On Self-Test
POV	Point of Violation
PPE	Pre-Programmed Events
PR	Problem Report
PREFSET	Preference Set
PRF	Pulse Repetition Frequency
PRI	Primary Search
PROC	Processor
PRODC	Product Control Copy Processor
PROM	Programmable Read-Only Memory
PRR	Problem Resolution Record
PRRC	Primary Radar Data Count
PS	Present Speed
PSIM	Prepare Simulation
PSR	Primary Surveillance Radar
PSVC	Processor Services CSCI
PSVC	Processor Services CSS (encapsulates infrastructure services)
PTR	Program Trouble Report
PVCS	Polytron Version Control System
Q	
QARS	Quick Analysis of Radar Sites
QoS	Quality of Service
QTS	Queuing and Timing Services
R	
R	Red
R/T	Return

RA	Radar Associate
RA	Response Area
RADAR	Radio Detection and Ranging
RAM	Restricted Airspace Monitoring
RAPPI	Random Access Plan Position Indicator
RARRE	Range-Azimuth Radar Reinforced Evaluation
RCC	Route Content Criteria
R-Con	R-Position Console
RCRD	Radar Computer Readout Device
RCU	Remote Control Unit
RDB	Range Data Block
RDP	Radar Data Processing
RDR	Radar Report
RefID	Reference Identification
REL	Release
REMON	Resource Monitor
RFSP	Remote Flight Strip Printer
RFSP	RFSmart Pointer
RFW	Router Firewall
RGL	R Programming Language
RIEE	Route ICAO Equipment Eligibility
RIO	Remote Input/Output
RM	Release Management
RMAN	Oracle Recovery Manager
RPC	Remote Procedure Call
RPD	R-Position Displays
RS	Radio Station
RSB	Range Sort Box
RSC	Remote System Control
RSI	Record Selector Indicator
RSP	Response Time Report
RSSC	Radar Site Status
RTF	Radar Training Facility
RTQC	Real Time Quality Control

RUC	Rapid Update Cycle
RUNLTH	Offline Run Length and Range Distribution
RVSM	Reduced Vertical Separation Minimum
S	
SA	Switch Activity
SAA	Special Activity Airspace
SADD	System Architecture Design Document
SAe	Safety Agents executable
sAER	sync AERO
SAFE	Safety CSCI
SAM	System Adaptation Manual
SAN	Storage Area Network
SAR	System Analysis Recording
SARM	Search and Rescue Mission
SARP	System Analysis Recording Processing CSCI
SAS	Standby Address Space
SASM	System Administration and Security Manual
SBI	Surveillance Broadcast Interface
SBS	Surveillance and Broadcast Services
SC	System Controller
SCAP	Security Certification and Authorization
SCD	Scenarios Datastore
SCDI	Site Control and Display Interface
SCDP	Scenario Development Processor
SCEN	Scenario
SCI	Simulated Command Injection
SCIP	Surveillance Communications Interface Processor
SCM	System Configuration Management
SCMADB	National Adaptation Development Processor
SCMB	Source Change Management Build Processor
SCTP	Stream Control Transport Protocol
SDA	Standard Display Application (Command Input at IMC)
SDCL	SAR Data Collection and Logging

SDD	Situation Data Display
SDD	System Design Document
SDE	Software Development Environment
SDE	Software Development Server
SDEA	AIX Software Development Server
SDES	Solaris Development Server
SDM	Security Device Manager
SDM	Standby Data Management
SDP	Surveillance Data Processing
SDPP	Surveillance Data Processing Processor
SDS	Specialist Display Application (AT Specialist Displays)
sDSM	sync Display Services Management
SDU	Signal Distribution Unit
SE	System Engineering
SecGW	Security Gateway
SecWS	Security Workstation
SEP	Sunhillo ECG Product
SET	Settings
SFGEN	SWAC Field Name Formatting
sFLS	sync FLTS
SFP	Small Formfactor Pluggable
SGET	Scenario Generation Tool
sGIP	sync GIP
SgW	SCDP gateway
SHR	System Health Report
sIFA	sync IFPA
sIFB	sync IFPB
SIGMET	Significant Meteorological information
SIL	Surveillance Integrity Levels
SIM	Simulation
SIM	Simulation Tool
sIMC	Sync IMC
SIMD	Display Processor – Simulated D-Position
SIMDA	Display Processor – Simulated D/A-Position

SIME	Simulation Engine CSCI
SIMP	Simulation Driver Processor
SIMR	Display Processor – Simulated R-Position
SIR	Screening Information Request
SIREAN	Site Registration
SIU	System Interface Unit
SLOC	Source Lines of Code
SMA	Site Maintenance Area
SMGT	System Management CSCI
SMI	Standard Message Identifier
SMIT	IBM System Management Interface Tool
SMM	System Management Manual
sMNF	sync MONF
SMS	Systems Management Server
SMT	Standard Message Text
SNMP	Simple Network Management Protocol
SOC	Service Operations Center
SOP	Systems Operation
SPCN	System Power Control Network
SPECWS	Specialist Workstation
SPI	Special Position Indicator
SPOT	Shared Product Object Tree
SQC	Surveillance Quality Control
SR	Service Request
SRC	Sample Rate Controller
SRC	Sample Rate Conversion
SRR	Service Request Response
SRTQC	Search Real-Time Quality Control
SSA	SAR SNMP Agent
sSAF	sync SAFE
SSC	Surveillance Sort Cells
SSD	System Specification Description
SSecWS	Support Security Workstation

SSF	Site Support Facility
SSH	Secure Shell
SSIM	Start Simulation
SSL	Secure Socket Layer
SSM	State Service Master
sSOP	sync SOP
SSR	Secondary Supplemental Radar
SSR	System Status Report
SSRV	Simulation Server
SupMCWS	Support Monitor & Control Workstation
ST	String Test
STA	Scheduled Time of Arrival
STAR	Standard Terminal Arrival Route
STARS	Standard Terminal Automation Replacement System
STBY	Standby
STC	String Test Case
STF	Support Test Facility
STP	String Test Plan
STP	Support Test Processor
STR	Strips
SUID	System Unique ID
SUM	Simple User Mode
SUP	Support Subsystem
SupWS	Support User Workstation
SURV	Surveillance CSCI
SV	Service Volume
SVC	Standard Message Identifier (SMI) for ACARS Service Messages
SW	Software
SWAC	System Wide Analysis Capability
SWAD	Software Architecture Design
SWCM	Software Configuration Management
SwHD	HADDS Switch
SWI	Simulated WARP/WINS Injection

SWIM	System Wide Information Management
SwMC	M&C Switch
SWMR	Software Modification Request
sWXP	sync WXP
SYNC	Synchronize/Synchronized/Synchronous
SYNCP	Data Sync Processor
T	
TAASC	Target Analyzer of Surveillance Sort Cells
TACAN	Tactical Air Navigation
TAI	TDLS Adapter Interface
TAR	Tape Archive
TAS	True Air Speed
TAV	Terrain Alert Volume
TB	Trackball
TBFM	Time-Based Flow Management
TC	Tightly Coupled
TCBT	Tracking Certification Beacon Tolerance
TCP	Transmission Control Protocol
TCPT	Tracking Certification Primary Tolerance
TCR	Tools Change Request
TDLS	Tower Data Link Service
TDP	Tivoli Data Protection
TDR	Table-Driven Recovery
TDS	Types Dictionary Services
TDT	Types Descriptor Tool
TDX	Target Data Extractor
T&E	Test & Evaluation
TEI	Text Element Identifier
TELCO	Telephone Company
TFM	Traffic Flow Management
TFMS	Traffic Flow Management System
TGF	Target Generation Facility
TI	Technical Instruction

TIMS	Tower Information Management System
TIMS BEP	Tower Information Management System Back End Processor
TJM	IFPA/URET's Trajectory Modeling
TJS	Trajectory Services
TKM	IFPA/URET's Tracks Management
TKS	Track Server
TLL	Terminate Logical Lab
TLSF	Test and Lab Support Facility
TM	Technical Manual
TMA	CTAS Traffic Management Advisor
TMA	Traffic Management Advisory
TMC	Traffic Management Coordinator
TMS	TCP/IP Message Service
TMU	Traffic Management Unit
TO	Technical Operations
TOA	Time of Applicability
TOC	Time of Correction
TOR	Time of Representation
TP	Trial Plan
TPC	Tivoli Storage Productivity Center
TPM	Trial Plan Management
TR	Test Message
TRACON	Terminal Radar Approach Control
TRR	Track Reports
TSIM	Terminate Simulation
TSM	Tivoli Storage Manager
TT	Test and Training
T&T	Test and Training
TTL	Test & Training Lab
TTR	Trajectory Track Report
TTS	Test and Training Services
U	
UA	Update Area

UA	User Acceptance
UART	Universal Asynchronous Receiver Transmitters
UAT	Universal Access Transceiver
UCWA	Urgent Central Weather Advisory
UDM	User Dialog Manager
UDP	User Datagram Protocol
UNC	Uncorrelated Targets
UPS	Uninterruptible Power Supply
URET	User Request Evaluation Tool
US	United States
USAF	United States Air Force
USB	Universal Serial Bus
USDOT	United States Department of Transportation
USYNC	Ethernet Port of Data Sync Processor for point-to-point to URET CP Server Connection
UT	Unit Test
UTC	Coordinated Universal Time
UTC	Unit Test Case
UTM	Unsuccessful Transmission Message
UTP	Unit Test Plan
V	
VFR	Visual Flight Rules
VFR INHIB	VFR Inhibit (View Header)
VHF	Very High Frequency
VLAN	Virtual Local Area Network
VOR	Very High Frequency Omni Directional Range
VPD	Vital Product Data
VPN	Virtual Private Network
W	
WAM	Wide Area Multilateration Service
WAN	Wide Area Network
WARP	Weather and Radar Processor
WIND	Wind Grid Display (Toolbar)

WINS	Weather Information Network Server
WINSRV	Windows Application Server
WJHTC	William J. Hughes Technical Center
WMSCR	Weather Message Switching Center Replacement
WX	Weather
WXP	Weather Processing
X	
XFER	Transfer
XML	Extensible Markup Language
Y	
Y	Yellow
Z	
Z	Zulu
ZLC	Atlanta ARTCC
Symbols	
“--”	View Suppression Pick Area
“M”	Menu Pick Area
“X”	Menu Close Pick Area
1090ES	1090 MHz Extended Squitter

Glossary

Activation Schedule	A designated schedule for activating and deactivating a restriction.
Active Channel	An ERAM channel that is used by the controllers to perform air traffic control.
Adaptable	The ability to update parameters associated with a software function and cause a system to enter a specified operating mode or enable it to perform specific operations upon initialization without software recompilation.
Adaptation	An external process of updating data parameters in one system which is independent of software recompilation. Adaptation may be either controlled at the national level (common to all sites) or locally (independently altered to fit the needs of a specific site).
Adapted Arrival Route (AAR)	An ATC applied routing that specifies a flight path to an airport.
Adapted Departure Arrival Route (ADAR)	An ATC auto route that replaces the filed route from the departure airport to the destination airport.
Adapted Departure Route (ADR)	An ATC auto route that replaces the route of flight from the departure airport to a designated transition fix.
ADS-B Report	Messages received by ERAM from SBS in one of two forms — Category 033 or Category 023.
Adapted Fix	A fix having an adapted definition in local CP adaptation.
Air Traffic Services Facilities Notification (AFN)	An Air Traffic Services (ATS) application which enables an ATS provider system to become aware of an aircraft's datalink capabilities and provides an exchange of address information. AFN is the Data Link Initiation Capability (DLIC) application for the FANS protocol.
Aircraft Address	Also known as Target Address. The 24-bit unique address assigned to Mode S and ADS-B equipped aircraft.
Aircraft Converted Route	The route from the aircraft's present position forward along the converted flight plan route and including reconformance maneuvers necessary to rejoin that route. Output from the Route Conversion function is used as input to build a trajectory.
Airport Stream Filter (ASF)	Inhibits conflict notification among flights to and from the adapted airports at the adapted sector.

Alarm	For M&C purposes, a visual indication that a monitored parameter is outside the specified acceptance range. The visual indication may be reinforced by an audio signal. A high priority (critical) event. For Maintainer CHI, an alarm is a Critical Event.
Alert	For M&C purposes, a visual indication of a change in an operational status/condition of a hardware device, software component, or interface. The device/component/interface is still capable of performing all of its functions at the required performance level, but some internal aspect of the device/component/interface has degraded or failed, and the functions may further degrade or even fail unless action is taken. The visual indication may be reinforced by an audio signal. For Maintainer CHI, an alert is a Warning event.
ALine	A line that, if intersected by an aircraft's route, forces that aircraft's flight plan onto an Adapted Arrival Route.
Angulation	Background shading from the start of the Flight ID through the end of the Route field of an Aircraft List or a Departure List entry. Such shading is used for aircraft entries the user deems may require special attention.
Application Program Tools	Tools used primarily for debugging individual applications. Using the core file and Aprobe tool allow users to analyze a particular application.
Arrival Stream Filter (ASF)	A capability that inhibits the conflict notification for aircraft-to-aircraft conflicts approaching destination airports.
ATC Preferred Routes (APR)	Used to place aircraft on controller preferred routes into airports.
Automatic Dependent Surveillance - Broadcast (ADS-B)	Name for broadcast self-reported position by equippage on board an aircraft. The current equippage supported are transponders equipped with 1090 Extended Squitter, based on industry standard Modes S transponders, and Universal Access Transceiver.
Backup Channel	An ERAM channel that is not used by controllers to perform air traffic control, but is being synchronized by data from the Active channel to allow it to become the new Active channel upon M&C command.
Blocked List/Log On Query – Channel (BLKQC)	The interface from the NAP Subsystem to both channel A and B at all 20 ARTCCs.
Blocked List/Log On Query – NAP (BLKQN)	The interface from an ARTCC to the Active NAP Subsystem.
Broadcast Services Data Unit	The presentation layer message format for FAA ASTERIX messages.
CAT023 Report	The FAA ASTERIX Category 23 format application message for SBS Service Volume monitoring.

CAT033 Report	The FAA ASTERIX Category 33 format application message for ADS-B position reporting.
Certification	The technical verification performed prior to commissioning and/or service restoration after a scheduled/unscheduled interruption affecting certification parameters and periodically thereafter, inclusive of the insertion of the prescribed entry in the facility maintenance log. The certification validates that the system is providing an advertised service to the AT operator and maintainer and/or that the system/equipment is capable of providing that advertised service. It includes independent determination about when a system/equipment should be continued in, restored to, or removed from service. **NOTE:** Certification parameters are selected indicators of the quality of the services being provided for systems, subsystems, and equipment.
Certification Parameter	Certification parameters are selected indicators of the quality of the services being provided for systems, subsystems, equipment, and service.
Clutter Zone	A region of clutter for certain primary radars.
CMAP Data Proxy (CDP)	The piece of CMAP running on CPP Server.
Code for Removal	Display action to indicate subject display records will be deleted after an adapted interval.
Coding	The coding of an object is the description of its physical characteristics including line style (solid, dotted, long dashed, short dashed, dots and dashes) and audible alarms. The coding information in display format definitions is expressed as semantically meaningful identifiers that are defined in display adaptation data outside of display format definitions.
Cold Start	System initialization without checkpoint data.
Collection	A SAR recording that contains a buffer of data that contain smaller items.
Collimation	An SDP function that calculates range and azimuth differences between beacon and primary radar data received from the same site. Collimation is applied to co-located primary and secondary radars that view the same target. Its purpose is to reconcile measurement differences between the sensors that are due to misalignments and biases.
Computer-Human Interface (CHI)	The means by which users interact with the system. It includes physical data entry devices (e.g., keyboard, trackball), physical displays, user commands, and presentation/formats of views.

Configuration	The manner in which the hardware and software of an information processing system are organized and connected.
Conflict Notification	A conflict that has been assigned to a designated sector position.
Conflict Notification Type/Level	Classes of conflict identified by CP that result in Conflict Notification. The three conflict notification types are defined as follows, from highest to lowest priority: Aircraft-to-Aircraft high criticality: Level 1 - The predicted loss of horizontal separation between aircraft trajectories is less than 5 miles. Level 2 - The predicted loss of horizontal separation between aircraft trajectories is less than 5 miles if loss of separation occurs on a portion of the route where an altitude transition is planned but not cleared. Aircraft-to-Aircraft low criticality: Level 1 - The aircraft-to-aircraft conflict is not considered high criticality, and the predicted loss of horizontal separation is between 5-12 miles. Level 2 - The aircraft-to-aircraft conflict is not considered high criticality, the predicted loss of horizontal separation between aircraft trajectory conformance bound is between 5-12 miles and loss of separation occurs on a portion of the route where an altitude transition is planned but not cleared.
Conflict Probe (CP)	An RA-Position strategic conflict detection application which detects both aircraft-to-aircraft and aircraft-to-airspace conflicts. It also provides the capability to check proposed flight plan amendment for conflicts prior to implementation.
Context Management Application Processing (CMAP)	Responsible for correlation of aircraft CPDLC logon requests with existing flight plan data.
Control	The ability to change the state of monitored system elements.
Controller Pilot Data Link Communications (CPDLC)	A method by which air traffic controllers can communicate with pilots over a data link system.
Converging Towards Route	The condition of laterally out of conformance aircraft whose Track Course indicates that the aircraft is returning to its Flight Plan Converted Route.
Converted Fix	A fix contained in the Aircraft Converted Route or the Flight Plan Converted Route.
Converted Flight Plan Route	A series of points in the horizontal dimension that describes a flight path over the surface of the earth, as indicated in the flight plan.
Coordination Fix	A point along the route of flight that is used as a common point of reference in a flight plan message coordinated with an external facility for the following interfaces.

Corrected Mode C Altitude	A point along the route of flight that is used as a common point of reference in a flight plan message coordinated with an external facility for the following interfaces. Transponded altitude corrected for local barometric pressure. ERAM applies this correction for all received Mode C altitudes below, nominally, 18,000 feet. Assuming the pilot and ERAM are both using the same local barometric pressure and ignoring instrumentation error, corrected Mode C altitude is identical with indicated altitude. ERAM provides corrected Mode C altitude to CP.
Critical	Services and data paths for which failure would prevent AT operators from exercising safe separation and control over aircraft.
cron-job	An AIX function that allows for scheduled execution of AIX commands on specific days and at specific times.
Current Plan	The plan that a flight is currently expected to fly. A Current Plan is used for modeling the trajectory and, when APD eligible, for detecting conflicts.
Current Plan Conflict	Conflict in which both trajectories involved in the conflict are Current Plan trajectories.
Data Parsing Engine	Parses input SAR data into individual records of data and passes the individual records to analysis routines. DPE has the ability to process records that only meet a certain filtering criteria, so as to limit the amount of information that needs to be processed. This filtering is specified through the use of environment variables.
Default	A displayed parameter value that represent the typical or most commonly used unit. This default value can be changed by the maintainer.
Degraded	Availability status of a resource, component, service, or interface indicating that it is functioning with loss of some capability or loss of redundancy.
Disabled	A commanded state of an interface indicating ERAM is not supposed to be communicating with it or of a capability that ERAM is not executing.
Distance Reference Indicator	A Distance Reference Indicator, also referred to as a halo, is a circle displayed around a target symbol on the air traffic controller's monitor to help maintain proper aircraft separation. The Standard distance reference indicator (nominally 5 nm) is a two-pixel wide, solid, yellow circle. The Reduced distance reference indicator (3 nm) is a two-pixel wide, yellow circle with 15-degree gaps centered at each of the 4 cardinal heading points (0, 90, 180 and 270 degrees).

Distribution and Cutover (DCAT)	A method used for updating the system releases.
Diverging From Route	The condition of laterally out of conformance aircraft whose Track Course is diverging from its Flight Plan Converted Route. An aircraft is considered to be diverging from Route if the following conditions are true. The aircraft's Track Course does not intersect Flight Plan Converted Route at a point forward of the aircraft's current Track Reported position as projected onto the associated Flight Plan Converted Route segment. The aircraft's Track Course does not pass within a preset distance.
DLine	A line that, if intersected by an aircraft’s route, forces that aircraft’s flight plan onto an Adapted Departure Route.
Down	Availability status of a resource, component, service, or interface indicating that it is no longer functioning or the M&C is no longer is receiving status from or about it and M&C is expecting to receive status.
Element	An addressable system or hardware unit such as disc drive, PC workstation, or LAN server. Redundancy management by the HCS is performed for elements. Typically refers to a hardware device (box or rack) and is the lowest level of equipment diagnostics.
Emergency codes	Special Mode 3/A codes used to indicate certain distress situations, i.e., code 7700 -emergency, code 7600 - radio communications failure, code 7500 - hijack.
Enabled	A commanded state of an interface indicating ERAM is supposed to be communicating with it or of a capability that ERAM is executing.
ERAM SWIM Application Services (ESAS)	Provides SWIM FIS and other SWIM services.
Eswim_A	Ethernet Port for connection to SWIM Channel A router.
Eswim_B	Ethernet Port for connection to SWIM Channel B router.
Eswim_Ap	Ethernet Port for SWIM Channel Apps.
Eswim_Db	Ethernet Port for connection to SWIM redundant database.
Event	Any state change or reportable condition (for example, abnormal conditions, faults, return to normal operation, operational messages, threshold transition, status change, software faults, and so forth). For Maintainer CHI, an event is a Critical, Warning, Information, or Recovery event.

External Interfaces	External interfaces are direct electronic connections where any portion lies outside the physically secure areas of the site. External interfaces include all electronic interconnections to other locations, including other FAA sites, the WJHTC, and the FAA Academy. This includes both permanent and temporary connections (for example, dial-in/dial-out connection over the public switched telephone network).
Fault	A condition of a configurable item which degrades or interrupts its ability to perform one or more of its designated functions.
Flight Plan Converted Route	A sequence of fixes derived from the Flight Plan that comprises the aircraft horizontal route.
Footprints	A FlightDeck mechanism used primarily for debugging QTS internals, collecting event information, and logging FlightDeck API calls for use by the FlightDeck Simulator.
Functional Group (FG)	A functional group is an address space that may be loaded on many processors in the ERAM system, but that does not have a primary or secondary address space within a processor group. That is, each instance of the FG does its own processing independently of other instances.
Future Air Navigation Service (FANS)	Supports ATC communications and surveillance capabilities.
Halo	See Distance Reference Indicator.
Horizontally Reasonable Track Report	A Track Report is Horizontally Reasonable for an aircraft if the estimated horizontal distance traveled between a previous Track Report and the currently received Track Report is less than a calculated maximum distance (based on trajectory-predicted speed) and greater than calculated minimum distance (based on trajectory-predicted speed).
Hypervisor	The hypervisor is a very low level software system that was initially the part of the AIX machines that helped handle logical partitions (i.e. running multiple operating systems). It has since increased functionality to also help handle CPU allotment and general OS overhead management. As of the P5s, the hypervisor is automatic. The hypervisor reserves a small amount of memory to allow it to function.

ICAO Codes

ICAO codes apply to fixes and airports, and are either imported from Jeppesen or set by EADP.

- K# - designates a geographical area of the United States as indicated in published data from ARINC 424.
- KN – designates an airport of fix published from NFDC and not in ARINC 424 data.
- KD – designates the fix was created as a result of importing DACS military route data.
- K<L> – If not an N or a D, the <L> is the last character of the computer ID of the ARTCC that created the definition. Since KN and KD are already used for DACS and NFDC, KZ is used for ZCN (New York) and KE for ZCD (Denver).
- All other ICAO codes are for non-US regions as indicated in published data from ARINC 424.

Inhibit

To prevent the operation of a function. When a function is “inhibited”, it is not performed.

Interface Proxy FlightDeck™ (IPF)

Control/support the MFSSS communication between NAP Subsystem and Channels.

Interfacility (IFA)

Between facilities or system within different facilities, for example between ARTCC and ARTCC or between CPs in different facilities.

Interfacility Current Plan (IFCP)

The plan that is sent from a CP in an owning ARTCC to the affected CPs. It contains flight and reconformance data that are used by affected CPs to model the trajectory and, for APD-eligible flights, to probe for conflicts.

Invalid Protocol Service

One of several varieties of errors detected by the router/firewall when data is received that violates its access list rules. The network protocol service used in the data packet, such as telnet, smtp, http, or ftp, is not permitted. Service refers to the application/port using the protocol. For example, the access rule may state that UDP is permitted, but only when the application is snmp.

Invalid Protocol Type

One of several varieties of errors detected by the router/firewall when data is received that violates its access list rules. The network protocol used in the data packet, such as IP (or the finer-grained TCP or UDP), DECnet or Appletalk, is not permitted.

Lateral Out of Conformance

The condition declared when an adapted number of consecutive track reports indicate that an aircraft is flying outside the conformance envelope adapted to either side of its trajectory model centerline.

Lightweight Directory Access Protocol (LDAP)	An AIX directory service used by operational support processors for user administration and authentication.
Longitudinal Out of Conformance	The condition declared when an adapted number of consecutive track reports indicate that an aircraft is flying outside the conformance envelope adapted ahead and behind its trajectory model along route distance point.
Look Up Table	Used to map numeric values to strings used in generated output.
M&C Position	Composed of two M&C subpositions. See definition for M&C subposition.
M&C Processor	Rack-mounted processors that provide centralized monitoring, controlling, and recording for the ERAM system.
M&C Subposition	Located in the SOC, it is composed of one M&C workstation, one KVM switch, and one M&C Processor.
M&C Workstation	Located in the SOC, it is composed of one M&C workstation processor, two displays, one keyboard, one mouse, and two speakers.
Maintainer	A person who performs maintenance tasks (e.g., diagnostics, maintenance, certification, software management) on the system components. This includes M&C and support personnel.
Maneuver End Point (MEP)	Symbology (asterisk) displayed on the projected route of flight to indicate when the altitude maneuver is predicted to be completed.
Maneuver Start Point (MSP)	Symbology (asterisk) displayed on the projected route of flight to indicate when an altitude maneuver is predicted to start. Also displays an Up or Down arrow to indicate the direction of the maneuver.
Manual Intervention (MI)	State of a processor indicating it has stopped initializing or stopped reloading after processor restart, and it is awaiting a maintainer command to proceed or to be shutdown.
Message Assurance Service (MAS)	A Standard Message Identifier (SMI) for Message Assurance Service.
Message Handling Protocol (MHP)	A message type of the ERAM to TDLS interface.
Modified M&C Subposition	Located in the equipment room, it is comprised of one M&C workstation (modified from that found in the SOC, with one less display) and one M&C processor.
Monitor and Control	A function that provides control over other systems and monitors system performance and status parameters.

National Airspace System	The U.S. flight environment. The NAS includes: air navigation facilities, equipment and services, airports and landing areas; aeronautical charts, information, and information services; rules, regulations and procedures; manpower; and material.
National Application Processor (NAPP)	The system processor type for the NAPP (processor) on the NAP Subsystem.
Navigation Accuracy Categories (NAC)	NAC is an umbrella term for both NACp and NACv.
Navigation Accuracy Categories for Position (NACp)	NACp is reported to permit a surveillance application to determine if a position report is sufficiently accurate for the intended use. The accuracy is one of 12 possible circle radii, such that the position report has a 5% probability of being outside the reported circle radius.
Navigation Accuracy Categories for Velocity (NACv)	NACv is reported to permit a surveillance application to determine if a position report's velocity is sufficiently accurate for the intended use. The accuracy is one of 5 possible horizontal and vertical velocity error values, such that the position report velocity error has a 5% probability of being beyond the reported velocity error.
Navigation Integrity Categories (NIC)	The NIC specifies one of 12 containment radius values for a position report in a FAA CAT033 message.
Navigation Integrity Categories for Barometic Altitude (NICbaro)	The NICbaro subfield specifies that the barometric pressure altitude has been cross-checked agaist another source of presure altitude in a UAT position report.
Neighboring Facility	A term used in CP interfacility processing in reference to other CP-equipped facilities whose airspace overlaps a given facility’s APD boundary.
Network File System (NFS)	An AIX function that provides access to disk drives on other processors, connected through the LAN or the SAN.
Network Installation Management (NIM)	An AIX tool that provides the capability to remotely install software from a server processor (the NIM server) to a client processor (the NIM client).
Network Tools	Are tools that deal with communication software and hardware. Uses of these tools include debugging communication problems and analyzing message traffic. This includes the iptrace, ipreport, tcpdump, and netstat commands.
Non-Conforming	A processor is executing a different APL release than that of the M&C processor on the same channel with the PAS (Rank 1) BGS address space.
Not Yet Heard From	The MCG Functional Group (FG) in the workstation has not yet received status, state, or performance information on a resource from the MnC Operational Unit (OU) in the M&C processors.

Notification	Information provided to the maintainer indicating the occurrence of an event.
Operational Unit (OU)	An operational unit consists of one or more instances (in ERAM, the maximum number of instances in an OU is two, which is also the maximum number of processors that can be in the same group) of an address space on processors in the same group. If there is more than one instance of the address space in the group, one will be the Primary Address Space (PAS) and the other will be the Secondary Address Space (SAS). The PAS does the actual data processing and provides whatever functionality is supported by the address space. The SAS is basically a hot standby. It may receive Standby Data Management (SDM) data from the PAS, or it may receive the same data as the PAS – for example, radar data – but buffer it rather than processing it and sending out the processed results. If the PAS should fail, the SAS is automatically promoted to be the new PAS and begins processing the data and sending out the results of its processing, while the address space reloaded on the other processor becomes the new SAS.
Oracle Recovery Manager (RMAN)	An Oracle component to perform backup and restore of Oracle databases.
Owning ARTCC	The ARTCC that owns a particular flight track; used in CP interfacility processing.
Performance Trip	A performance threshold has been exceeded.
Plan	Information about a flight as well as pilot and controller intentions regarding that flight. Such plans include Flight Plans, Current Plans, and Trial Plans. The term also is used to refer generically to all of the preceding.
Plan Processing	A capability that accepts processes, stores, maintains, and deletes plans.
Planned Action	An altitude or speed change which is planned for a future time. Planned Actions are listed in increasing ARD order and are used to guide the construction of a trajectory.
Processor Tools	Tools used to analyze problems affecting processors as they are utilized by ERAM software. Performing system dumps, traces, traps, and kernel debugger functions as well as using the vmstat, tprof, topas, rmss, and rmap commands allow users to gather information on processor status.
Protocol Gateway Back End Processing (PBP)	PGSV address space running on the BEP.

Protocol Gateway Front End FANS Processing (PFF)	PGSV address space running on the FEP.
Protocol Gateway Front End Processor (PGW FEP)	Interfaces with the FAA's security boundary external Demilitarized Zone (DMZ) and acts as the FEP for operational data traffic between the DCP and DCNS.
Radar Smoothed	The system overall computation for Registration Calculation Correction of range and azimuth for an individual radar. It uses all the individual radar pairs calculated values to that radar. Then calculates a recommended range and azimuth correction to optimize the correlation of surveillance data between that radar and all it's overlapping radars.
Radar Total Filter	A volume of airspace in which all radar reports are discarded by SURV.
Radio Station (RS)	Part of the ground segment of the SBS system that receives ADS-B messages from aircraft and test equipment that are forwarded to the SBS SDP for assembly into FAA CAT033 messages.
Redundancy	The addition of resources beyond those needed for normal operation of a data path to increase reliability and to allow scheduled maintenance to be performed without interruption or critical or essential services. A redundant resource is available during the intervals that is able to assume the functions of the corresponding non-redundant resource.
Registration (Radar-based)	An SDP function that calculates range and azimuth differences between beacon radar data received from two different radar sites. A registration error refers to two beacon radars reporting the same target at different positions. Its purpose is to reconcile measurement differences between the sensors that are due to misalignments and biases.
Registration (ADS-B-based)	An SDP function that calculates range, azimuth, and time differences between beacon data received from a radar site and ADS-B target data received from SBS. A registration error refers to the beacon radar reporting a target at a different position than the ADS-B data. Its purpose is to reconcile measurement differences between the sensors that are due to misalignments and biases.
Released to Test	Commanded state of an interface indicating that operational ERAM software is no longer communicating with the interface so that Test and Training channel can communicate with it.
Report	Formatted information intended to be printed. The formatting may be textual and/or graphical and may also be displayed electronically.

Reports	The analysis and presentation of data to maintainers or AT operators. This covers a very wide range of presentations that include: the presentation of faults by the lighting of fault indicators; the presentation of NAS service and infrastructure configuration and/or status; predefined format reports on any aspect of the NAS operation; reports whose format is controlled partially or completely by maintainer input; reports which are either completely textual or partially textual and partially graphics, as determined by maintainer input.
Restart	An event that initiates recovery.
rootvg	The disk volume group from which AIX boots, the rootvg volume group contains all the AIX operating system files.
SAR	The primary system analysis and debug collection mechanism for ERAM. It is a continual, system-wide recording to a permanent medium. Data recorded to SAR is normally type data meaning there is a data structure that defines the recorded data. The system continuously collects SAR data and saves it on the enterprise storage archive volume for 15 days.
Select	A single click with the left mouse button.
Service Volume (SV)	An airspace region that is defined for the provision of ADS-B services. Each ADS-B Service has defined Service Volume dimensions that identify the location and extent of the airspace covered by that Service. Each Service Volume carries a particular domain designation: Terminal, En Route, En Route High Update, or Composite Traffic Volume (CTV). A Composite Traffic Volume (CTV) is a type of Service Volume (SV) that provides ADS-B surveillance for the center's entire Area of Interest (AOI). Nominally the CTV area covers 50 miles beyond the AOR. Each SV is a set of one or more closed irregular polygonal volumes in which surveillance coverage is provided by a selected set of radio stations. ADS-B Service Volumes may overlap. The SBS system delivers ADS-B reports to each ARTCC for targets inside the applicable SV, and filters out target reports from outside the applicable SV.
SFGEN	A tool used to assist with the creation of field name formatters.
Simple Password	A password entered into a privileged command dialog box, along with a valid Maintainer ID, to enter a privileged command. A Simple Password is three to twelve characters long.
Small Display	The small display is the 20.1" display that is part of the M&C subposition located in the SOC. Additionally, it is the display for the modified M&C subposition located in the equipment room.

Stable Track History	A Track History whose course does not vary over time beyond an adapted tolerance.
State Change	A change in the administrative or availability status of a resource that is not a failure or degradation.
Status Change	A change in the administrative, environmental, operating, or performance condition of a resource or a change in its availability. Changes of status also include system interfaces, loss of surveillance source, interfacility communications, and data that affect decision support processing.
Status Operating	a. Normal – the system is fully capable of performing all of its functions at the ideal level of performance. All components/sub-elements of the system are operating normally and no corrective maintenance action is required. b. Warning – the system is capable of performing all of its functions at the ideal level of performance, but some internal aspect of the system has degraded or failed and the function of the system may degrade or fail unless management and/or maintenance action is undertaken. c. Degraded – the system is capable of performing at an acceptable but less than ideal level of performance. d. Failed – the system is incapable of performing at an acceptable level. e. Unknown – the capability of the system to perform at any level of performance cannot be determined.
Strong Password	A password entered into a channel logon dialog box, along with a Maintainer ID, to log in to a subposition. A Strong Password is eight to twelve characters long incorporating alphanumeric and special characters.
Subsystem	A subsystem is a component of a system (e.g. Surveillance Data Processing would be a subsystem of ERAM).
Surveillance	Detecting and monitoring an aircraft's position.
Surveillance and Broadcast Services (SBS)	The system that provides ADS-B data to ERAM. ADS-B reports are sent to ERAM in FAA CAT033 and FAA CAT023 ASTERIX formats.
Surveillance Broadcast Interface	A data stream that provides ADS-B data from SBS to ERAM.
Surveillance Data	Messages that report the position of aircraft in flight.
Surveillance Integrity Levels (SIL)	One of the measures of the quality of ADS-B data.

Surveillance Radar	A Surveillance Sensor type. Traditional ground-based Surveillance Sensors (including Air Route Surveillance Radar (ARSR), Fixed Pulse Search (FPS), and Airport Surveillance Radar (ASR)) that provide Surveillance Data input to ECG.
Surveillance Sensor	A type of equipment that produces Surveillance Data as input for NAS systems.
SWAC	A data formatter for SAR data. SWAC uses DPE to parse through binary SAR files and extract out records of data. It then determines if there are requests that the recording can be formatted and generates text output, if requested.
System-Wide Tools	Tools that act on, or collect data on, the system as a whole. This includes the Error Monitor tool, which is a data capture capability that facilitates the preservation of voluminous diagnostic data.
TAPELIB	The name of the SAN attached tape library, which is part of the ESS.
Threshold	Minimum or maximum acceptable operational value for system capability or characteristic that, in the maintainer's judgment, is necessary to provide an operational capability that satisfies the mission need.
Time of Applicability (TOA)	Time at which the target position is expected to be an accurate estimate of the true target state vector.
Time of Message Reception (TOMR)	Time at which an ADS-B message was received by SBS.
Time of Representation (TOR)	For a radar target, it is the time when the antenna of the radar that reported the target is pointed at the azimuth of the target relative to that radar's location. For an ADS-B track report, it is that time when the antenna of the highest ranking enabled radar within the current SSC is predicted to be pointing at an azimuth that will be coincident with the azimuth of the smoothed track position predicted to result from the next ADS-B track update.
Tivoli Data Protection (TDP)	A component of TSM. Only the TDP for Oracle product is used for backup and restore of operational support processors.
Tivoli Storage Manager (TSM)	An IBM CAS product to centralize and automate backup and restore procedures and schedules. TSM consists of multiple components: TSM Client, TSM Server, TSM Storage Agent, Tivoli Data Protection, and Tivoli SANergy.
Trajectory	A representation of the path an aircraft is expected to take based on a Plan. A ground-referenced representation, in x, y, z, and t, of the expected path; based on flight intent information recorded in the Plan.

Transition	The process of moving operations from a legacy system to a new system. The process frequently requires both systems to be in operational readiness simultaneously.
Trial Plan	Any plan created by the user from a Current Plan or existing Trial Plan that is used to test whether a proposed change to the Current Plan will be conflict-free.
Universal Access Transceiver (UAT)	Aircraft equippage used to transmit an aircraft's position, velocity and additional information, once a second. The UAT's position report message is used for ADS-B Surveillance.
Unreasonable Track Report	A Track Report that is: Not horizontally Reasonable and Vertically Reasonable, or Beyond the end of the Trajectory for both distance and time. Whether or not a Track Report is reasonable ultimately determines the overall quality of the track data for an aircraft.
Up	Availability status of a resource, component, service, or interface indicating that it is functioning normally and has full redundancy as applicable.
Wide Area Multilateration Service (WAM)	A service to the FAA that provides supplementary data that will improve the accuracy of multilaterated position reports.
Window	In context of CHI, a rectangular area displayed on a computer screen that provides the maintainer with a set of related data or queries for additional input information. A window may cover all or part of the displayed area. More than one window may be displayed at a time on a display surface.
Workstation	A hardware suite consisting of a monitor, keyboard, and input device(s), at a minimum that allows the maintainer to perform system tasks.
1090MHz Extended Squitter (1090ES)	Aircraft equippage used to transmit an aircraft’s position, velocity and additional information, once a second. The 1090ES message from a Mode S transponder is used for ADS-B Surveillance.