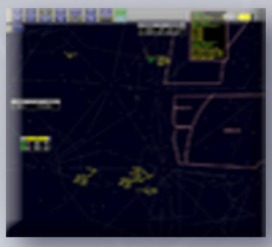
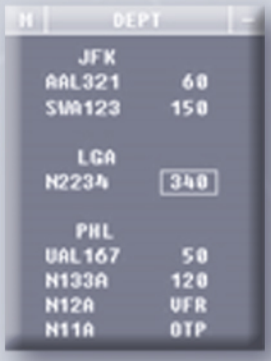
FAA Lesson Plan



En Route Stage 4
Radar Controller Training



Instructor

R-Position Command Entry
Lesson 4

55055
V.1.07

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LESSON PLAN DATA SHEET

COURSE NAME:	RADAR CONTROLLER TRAINING
COURSE NUMBER:	55055
LESSON TITLE:	R-POSITION COMMAND ENTRY
DATE REVISED:	2014-04
VERSION:	V.1.07
REFERENCES:	JO 7110.65V, Air Traffic Control; JO 7210.3Y, Facility Operation and Administration; TI 6110.100, En Route Automation Modernization Air Traffic Manual: R-Position User Manual; ERAM EDSM SRS 210.04 V1B1, En Route Automation Modernization (ERAM) En Route Display Management (EDSM) R-Position and General EDSM Requirements, Volume 1, Book 1; ERAM EDSM SRS 210.04 V1B2, En Route Automation Modernization (ERAM) En Route Display Management (EDSM) Appendices for R-Position and General EDSM Requirements, Volume 1, Book 2; ERAM AERO SRS 210.01, En Route Automation Modernization (ERAM) Aeronautics (AERO); ERAM FLTS SRS 210.14, En Route Automation Modernization (ERAM) Flight Services (FLTS); ERAM IFPA SRS 210.15, En Route Automation Modernization (ERAM) Interface Proxies Set A (IFPA); ERAM DS DD 240.07, En Route Automation Modernization (ERAM) Display System (DS) Data Dictionary (DD); TI 6110.141, En Route Automation Modernization System (ERAM) System Adaption Manual (SAM): Local Data Panels; ERAM ATCHI MISC 230.05, En Route Automation Modernization (ERAM) Air Traffic (AT) Computer-Human Interface (CHI); PRED 1094 (PR E61412), Warning Message for Logic Override in RS
HANDOUTS:	55055-HO4, PRACTICE EXERCISES
EXERCISES:	YES *PRACTICE EXERCISE 1: R-POSITION COMMAND CHECKLIST, PAGE 55; REFER TO 55055-HO04.PDF.* *PRACTICE EXERCISE 2: R-POSITION COMMAND CHECKLIST, PAGE 128; REFER TO 55055-HO04.PDF.* *PRACTICE EXERCISE 3: SETTING UP ERAM PREF SETS, PAGE 129, REFER TO 55055-HO04.PDF.* *LAB SCENARIOS ARE REQUIRED FOR THESE EXERCISES. EACH EXERCISE IS ESTIMATED TO TAKE 1 HOUR LAB TIME PER STUDENT.*
END-OF-LESSON TEST:	YES *(REFER TO 55055-ELT04.PDF)*
PERFORMANCE TEST:	NONE
MATERIALS:	NONE
OTHER PERTINENT INFORMATION:	THIS LESSON IS BASED ON ERAM BUILD EAC1500. THE LESSON HAS BEEN REVIEWED AND REFLECTS CURRENT ORDERS AND MANUALS AS OF APRIL 2014.

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INTRODUCTION

In previous lessons, you learned about the controls on the R-Position console and their effect on the Situation Display.

We will now learn computer command syntax and how these commands affect the information controllers see on the Situation Display.

Purpose

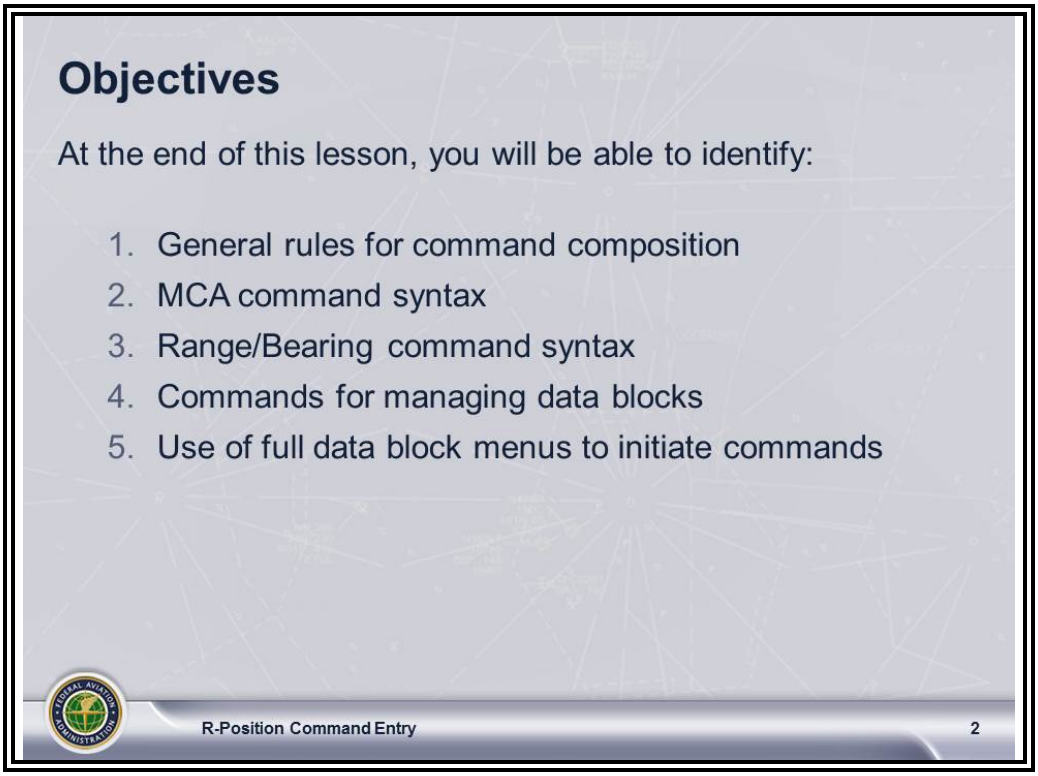
This lesson will cover composition, initiation, and entry of selected computer commands, as well as computer responses.

NOTE: There are many more commands available than the ones covered in this lesson. Consult the references listed on the Lesson Plan Data Sheet for more information on other commands.

To be an effective controller, you must become proficient in using automation. Understanding how to enter commands is vital to the successful completion of your training and to reaching Certified Professional Controller (CPC) status.

INTRODUCTION *(Continued)*

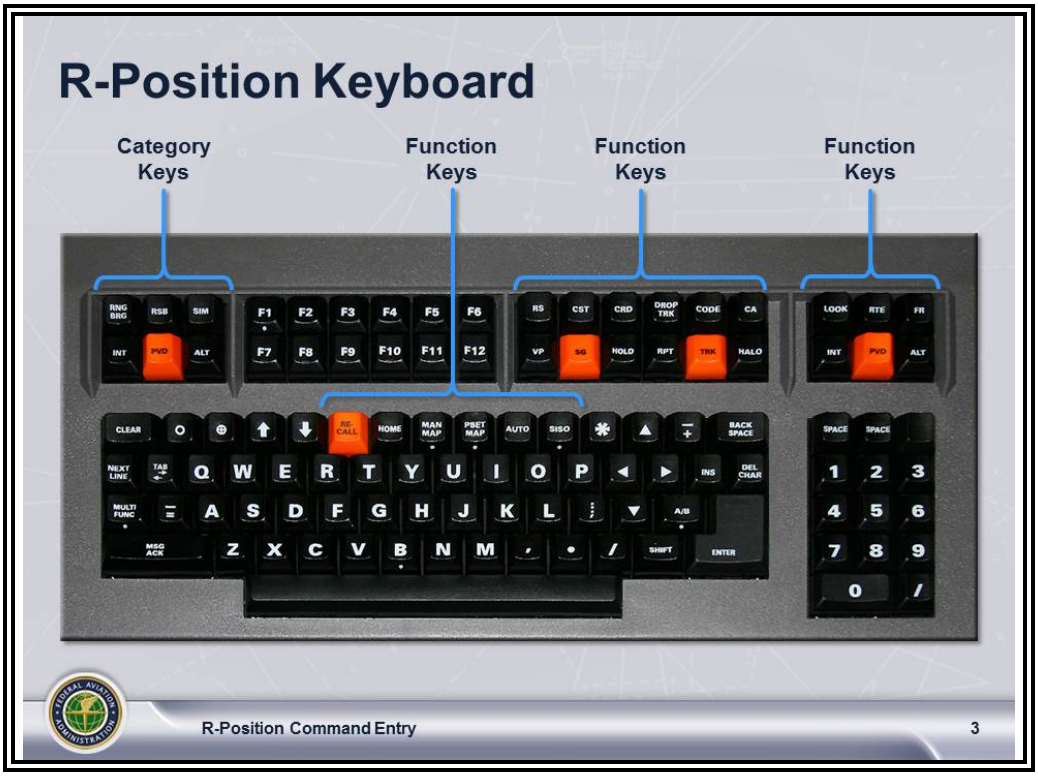
Objectives



☞ ***NOTE:*** *Review the lesson objectives.*

GENERAL RULES FOR COMMAND COMPOSITION

Command Entry Hardware
TI 6110.100, pars. 6.1.1, 1.3.1, 1.3.2, 1.3.3

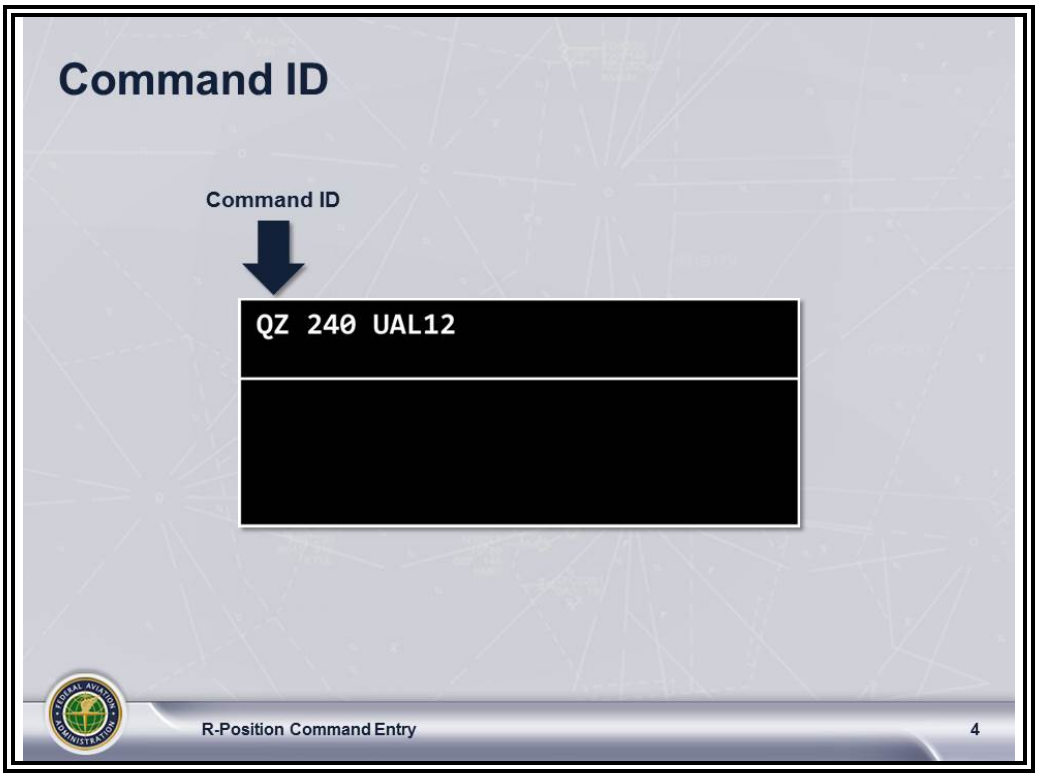


- Commands at the R-Position are entered in the Preview Area of the Message Composition Area (MCA) View.
- You can enter commands using the:
  - R-Position keyboard
  - Trackball
  - Keypad Selection Device (KSD)
- The R-Position keyboard has two sets of keys used to enter commands:
  - 24 hard-labeled function keys, which are used to enter the most commonly used commands

  NOTE: The exact keys present on the keyboard and their locations are facility adaptable.
  - Six locally-adapted category keys, which open a list of commands (category function menus)

GENERAL RULES FOR COMMAND COMPOSITION *(Cont)*

Command ID
ERAM EDSM SRS 210.04 V1B2, Appendix C, Sections C.1 and C.2

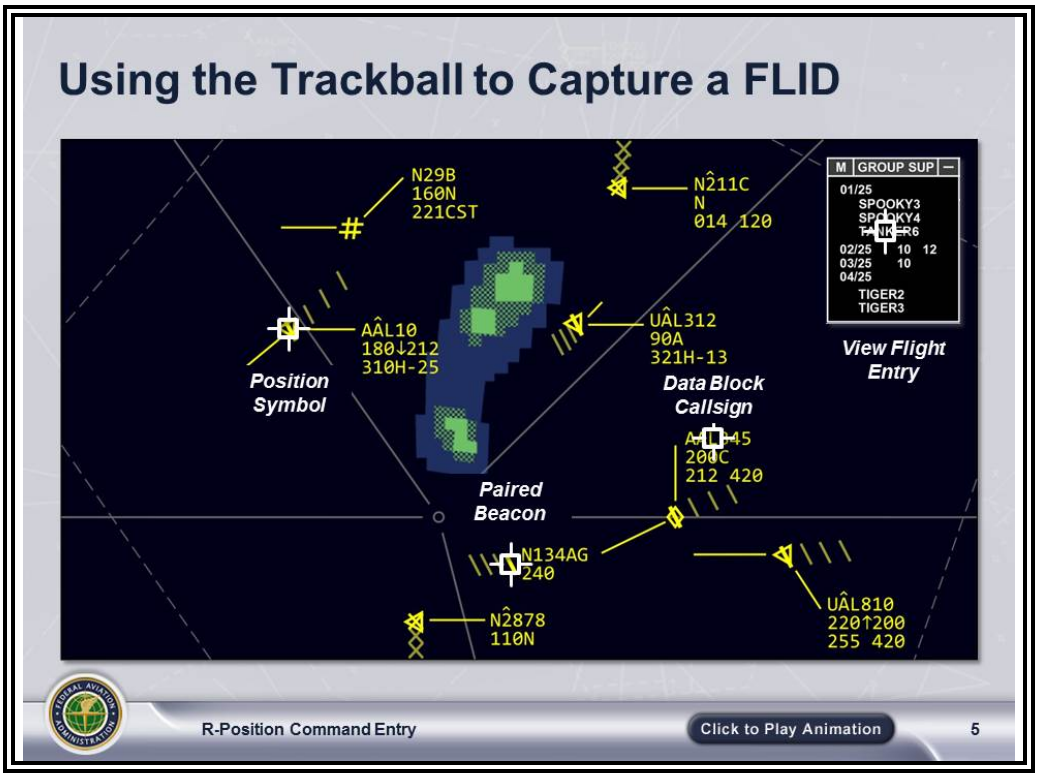


- A two-letter command ID must precede each command. Methods for entering a command ID:
  - Type the two-letter command ID (e.g., QZ) followed by a space.
  - Press a function key or category key, which inserts a two-letter command ID and a space.
  - For QN commands, simply begin typing.

NOTE: If you do not enter a two-letter command, the computer automatically inserts QN (NONE or implied). QN is used for many R-Position commands.

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Commands Relating to Specific Aircraft
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1



⊙ Commands must include a Flight Identification (FLID) in the proper position.

- You can select the following items with the trackball to capture a Flight ID:
  - Track position symbol for a paired flight
  - Track position symbol for an unpaired flight
  - Paired beacon target symbol
  - Unpaired beacon target symbol
  - Tear-off flight entry
  - View flight entry
  - Paired data block callsign

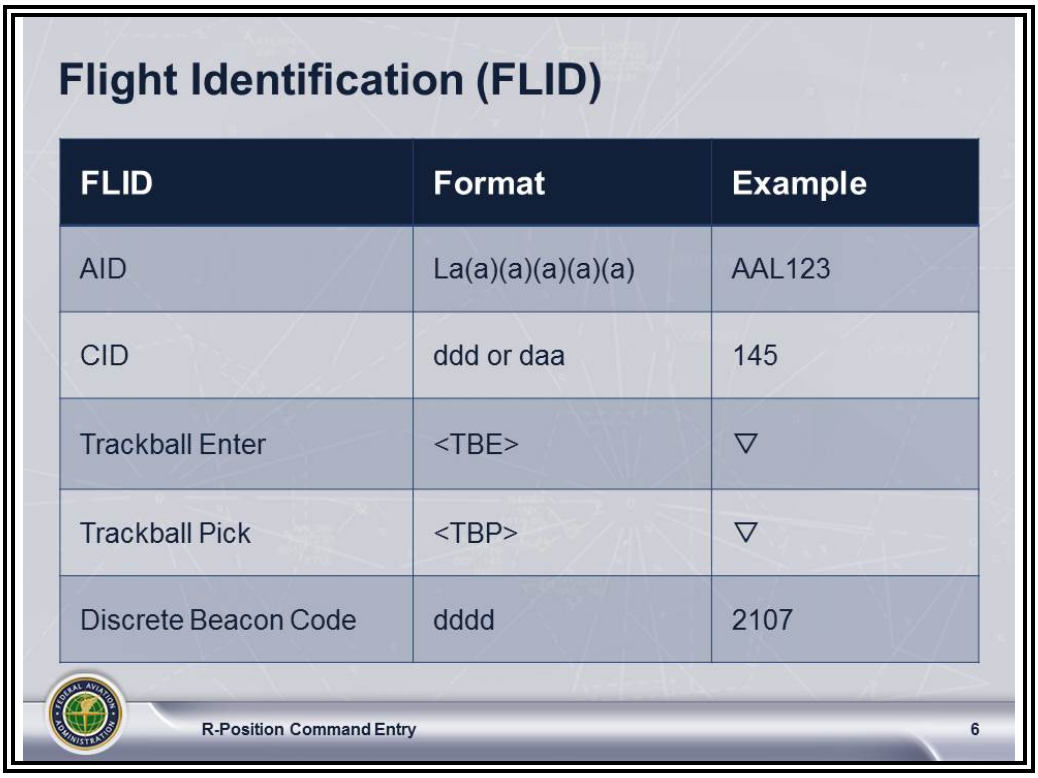
Click 4 times to highlight various options.

☞ ***NOTE:*** *Discuss each option. Point out and discuss the most common selections as presented on the slide, including position symbol, paired beacon, view flight entry, and FDB callsign.*

- Other FLIDs entered from the keyboard include:
  - Aircraft Identification (AID)
  - Computer Identification (CID)
  - Discrete beacon code

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Command Format
ERAM EDSM 210.04 V1B1, par. 3.2.3.2.1.2.1.5.1; ERAM EDSM 210.04 V1B2, Appendix C, Section C.1



- Command fields are typically separated by a space.

NOTE: When entering multiple CIDs, a forward slash (/) is required.

- Keyboard ENTER is usually used for commands starting with:
  - Track Function Key entry
  - Route Function Key entry

Continued on next page

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Command Format (Cont'd)

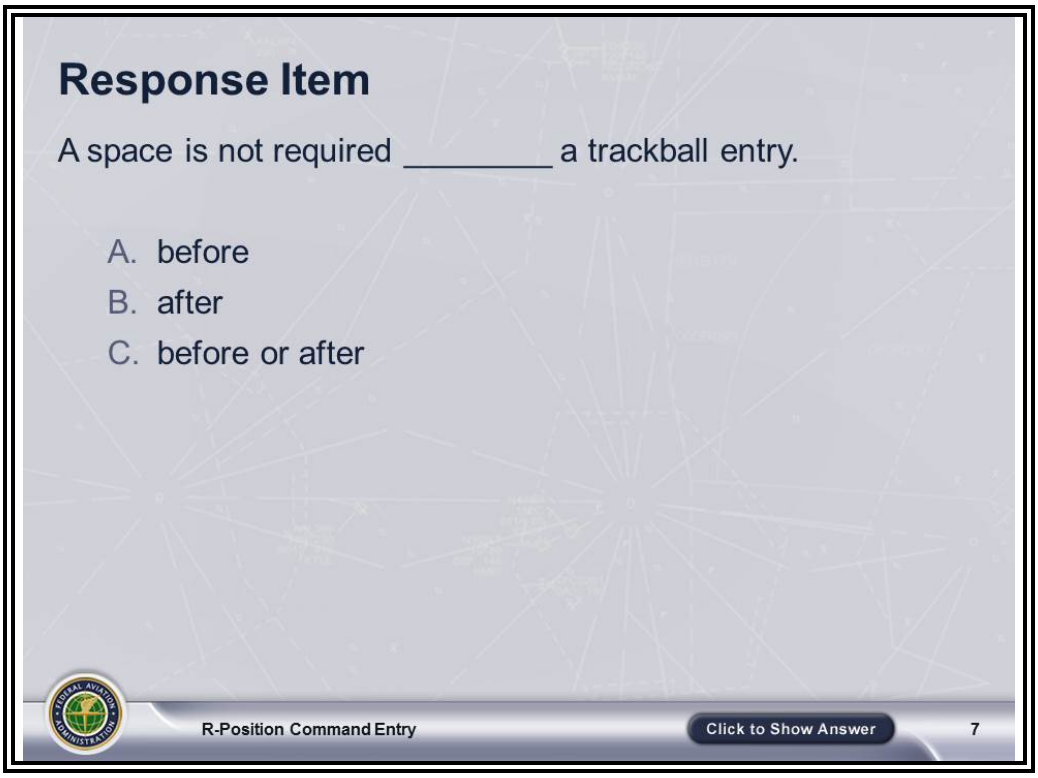
ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.6; ERAM EDSM 210.04 V1B2, Appendix C, Section C.1

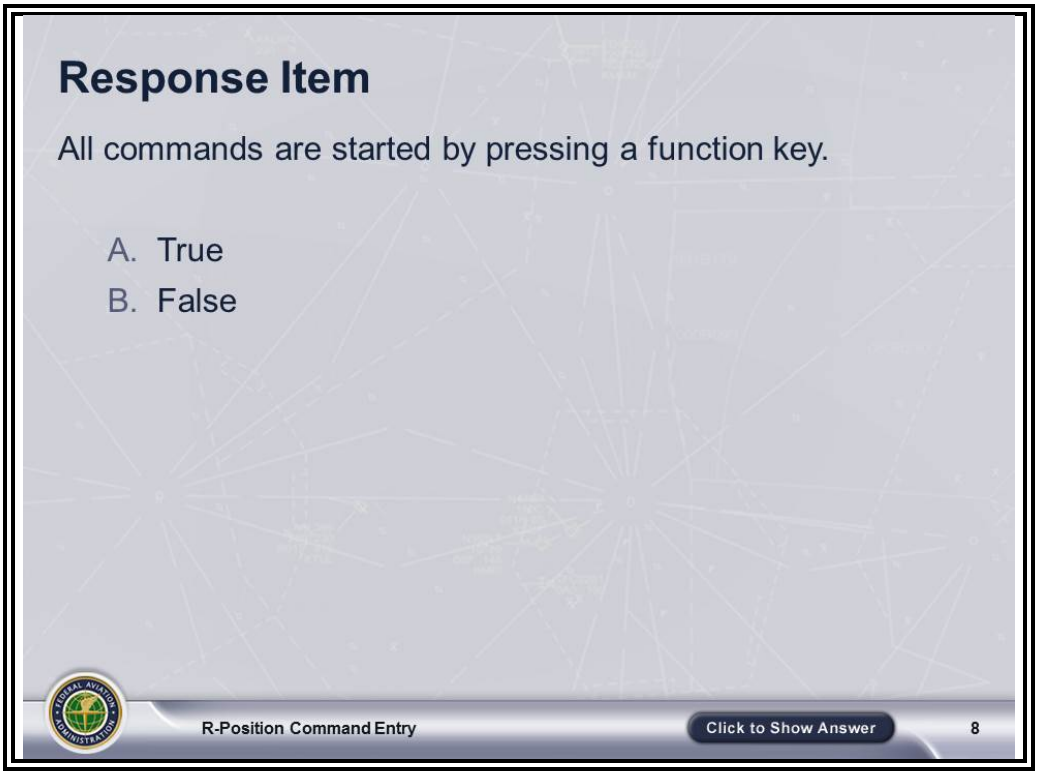
⊙ The trackball is used to select a Situation Display object when composing a command.

- When the Trackball Pick (TBP) button is pressed, the pick symbol (▽) is echoed in the MCA Preview Area.
- When the Trackball Enter (TBE) button is pressed, the pick symbol (▽) is echoed in the MCA Preview Area and command closure occurs (implied keyboard enter).
- When using the trackball to select multiple FLIDs in a command, you can select all of the flights using TBP on the aircraft position symbols followed by keyboard ENTER; or TBP on all but one aircraft and TBE on the final aircraft. The trackball pick symbols will automatically be separated by a space when echoed in the Preview Area.

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Review

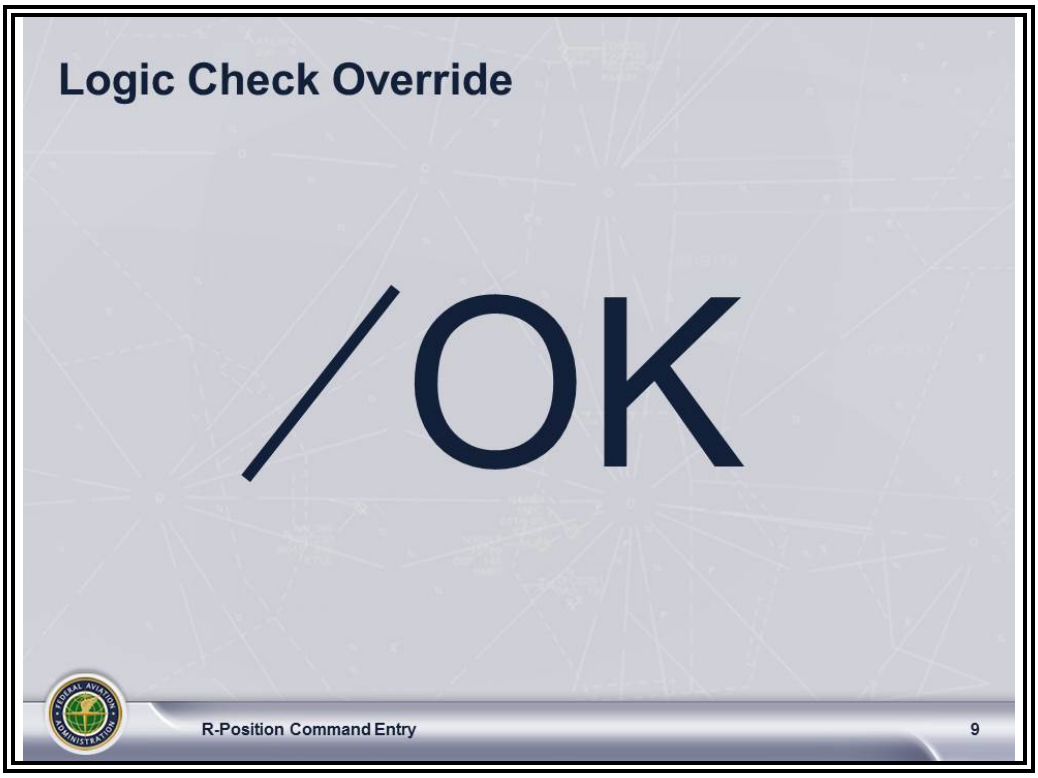




SLIDE ANSWERS: Slide 7 = C; Slide 8 = B

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Command Entry Eligibility
JO 7110.65, par. 5-14-6; ERAM EDSM SRS 210.04, V1B2, Appendix C, Sections C.1 and C.2



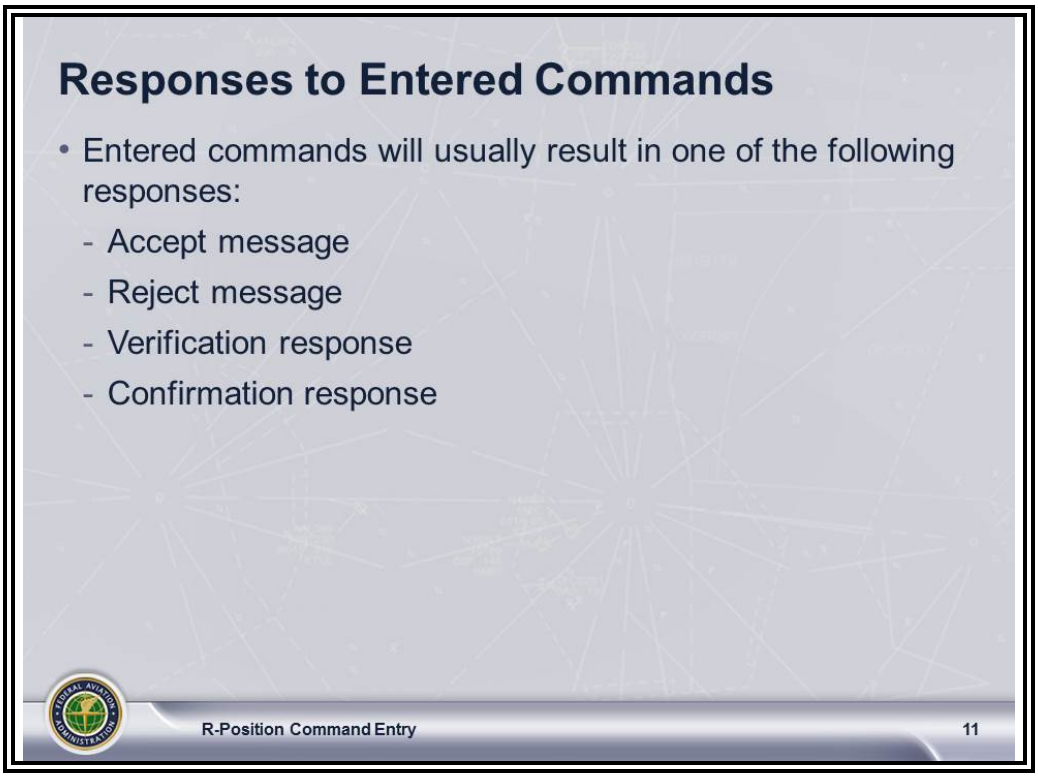
- Normally only the sector with control of an aircraft is eligible to enter a command.
- Logic Check Override (/OK):
  - May be used in **most** commands
  - Forces eligibility
  - Has restrictions on use
    - Prior coordination is required if the aircraft is outside your sector.
  - Is a separate field
    - Not suffixed to FLID as it is in Flight Data commands

Review

SLIDE ANSWER: B

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Responses to Entered Commands
TI 6110.100, pars. 1.4.1, 1.4.2, 1.4.3, 6.1.2; ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.1.6.2



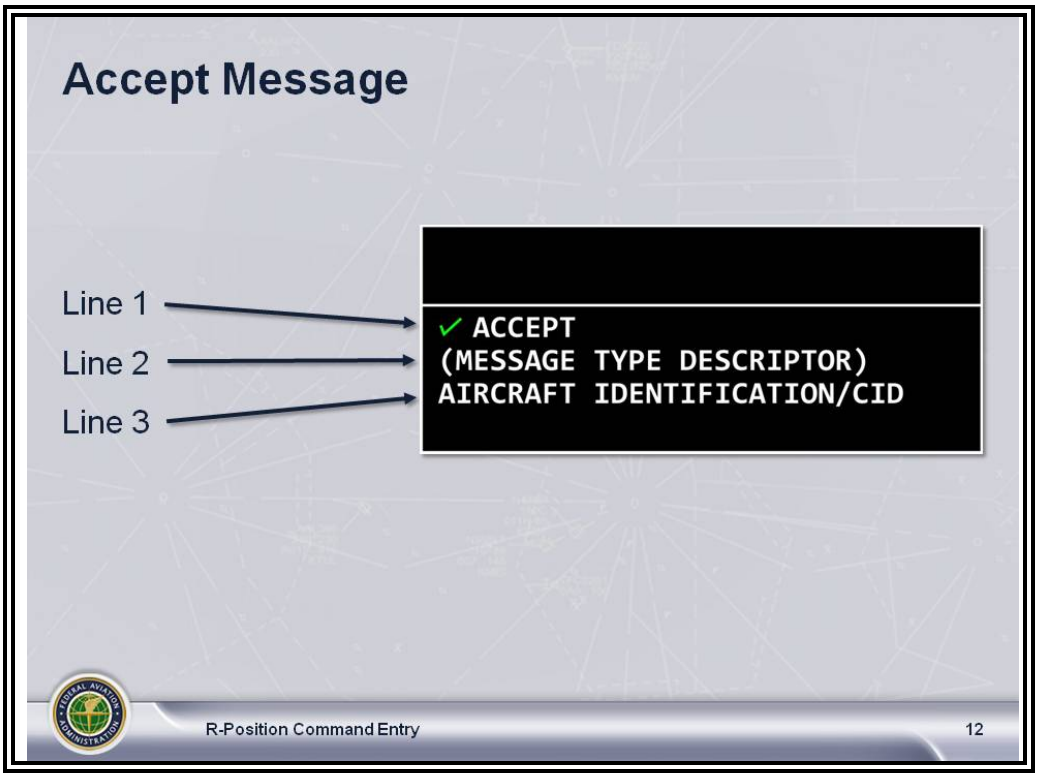
⊙ Entered commands will usually result in one of the following responses:

- Accept Message
- Reject Message
- Verification Response
- Confirmation Response

Continued on next page

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Accepted Commands
TI 6110.100, par. 6.1.2;
ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.1.6;
ERAM DS DD 240.07, Table 1170

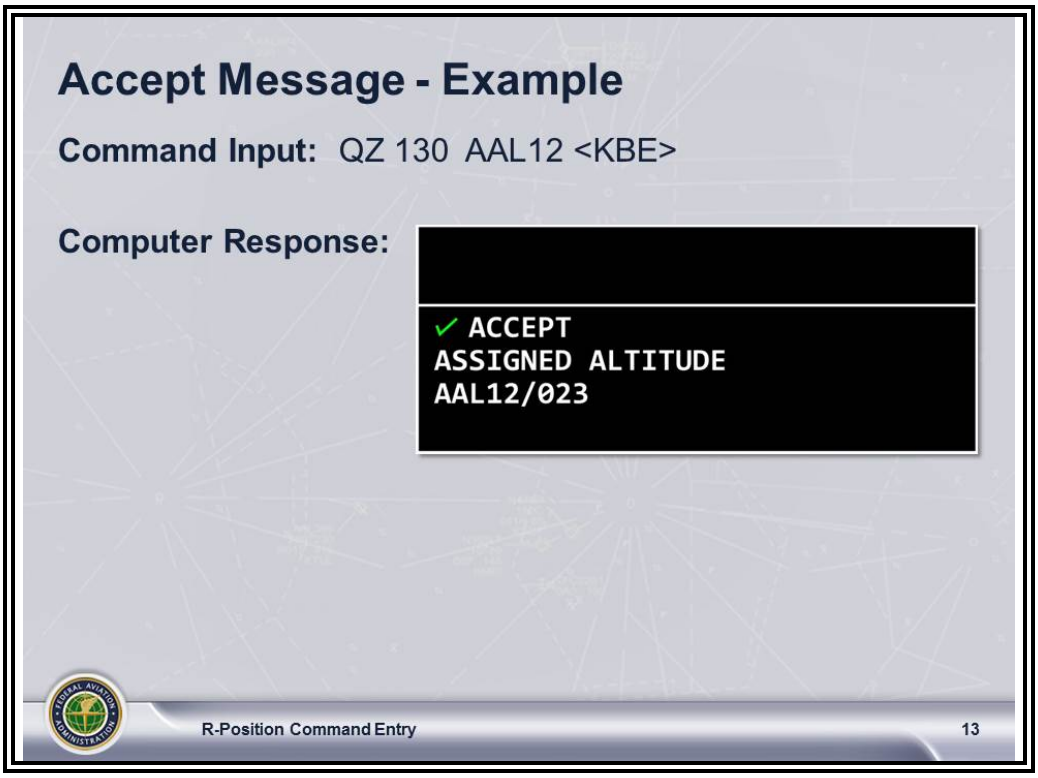


- When a command is accepted:
  - An Accept message is generated in the Feedback Area of the MCA View.

Continued on next page

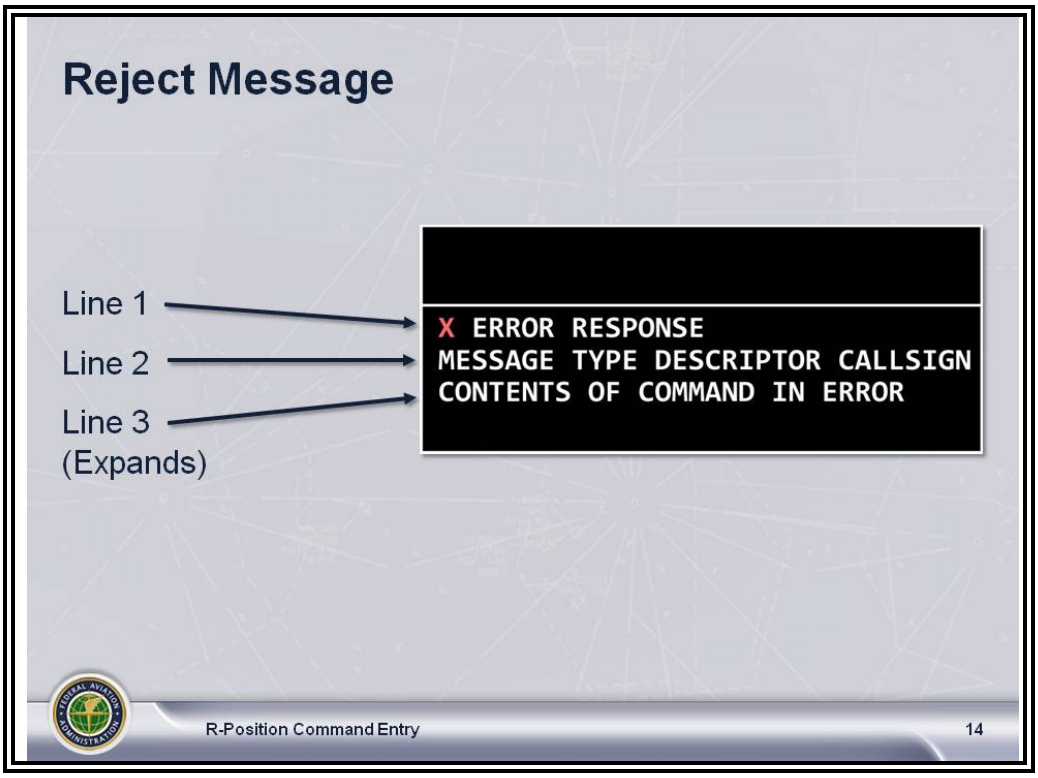
GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Accepted Commands (Cont'd)
TI 6110.100, par. 6.1.2; ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.1.6; ERAM DS DD 240.07, Table 1170



GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Rejected Commands
TI 6110.100, par. 6.1.2; ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.1.6; ERAM DS DD 240.07, Table 808

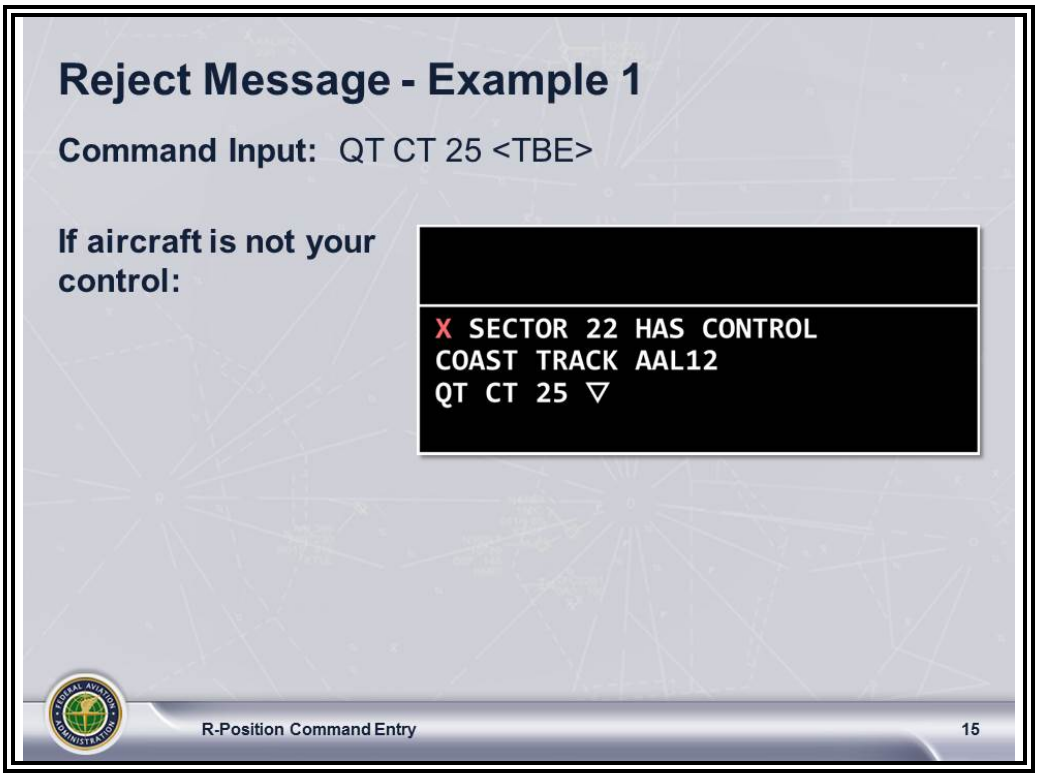


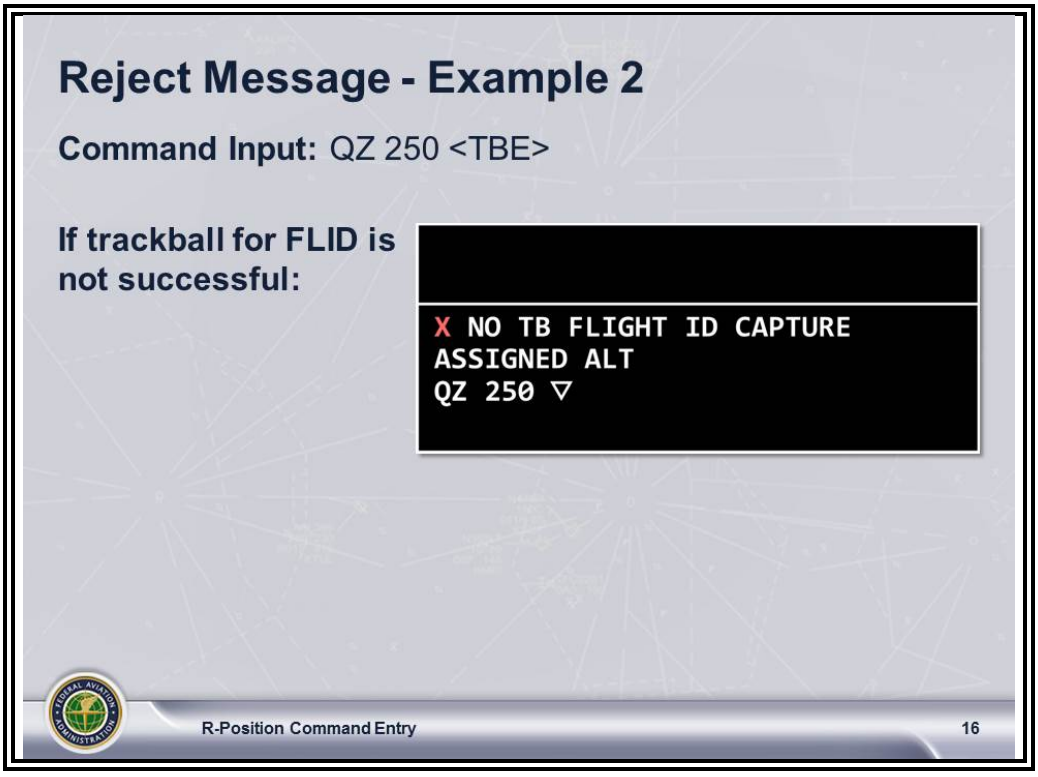
- A command may be rejected due to format or other requirements.
  - A Reject or Error message is generated in the Feedback Area of the MCA View.

Continued on next page

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Rejected Commands (Cont'd)
TI 6110.100, par. 6.1.2





☞ ***NOTE:*** *Discuss each example.*

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

Verification Response
ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.35

- Some commands allow verification of eligibility from the user in order to override the track control logic check.
  - In these cases, entering the command will result in a VERIFY ELIGIBILITY response.
  - You can either override the logic check (/OK) or cancel the command.

Confirmation Response
ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.34

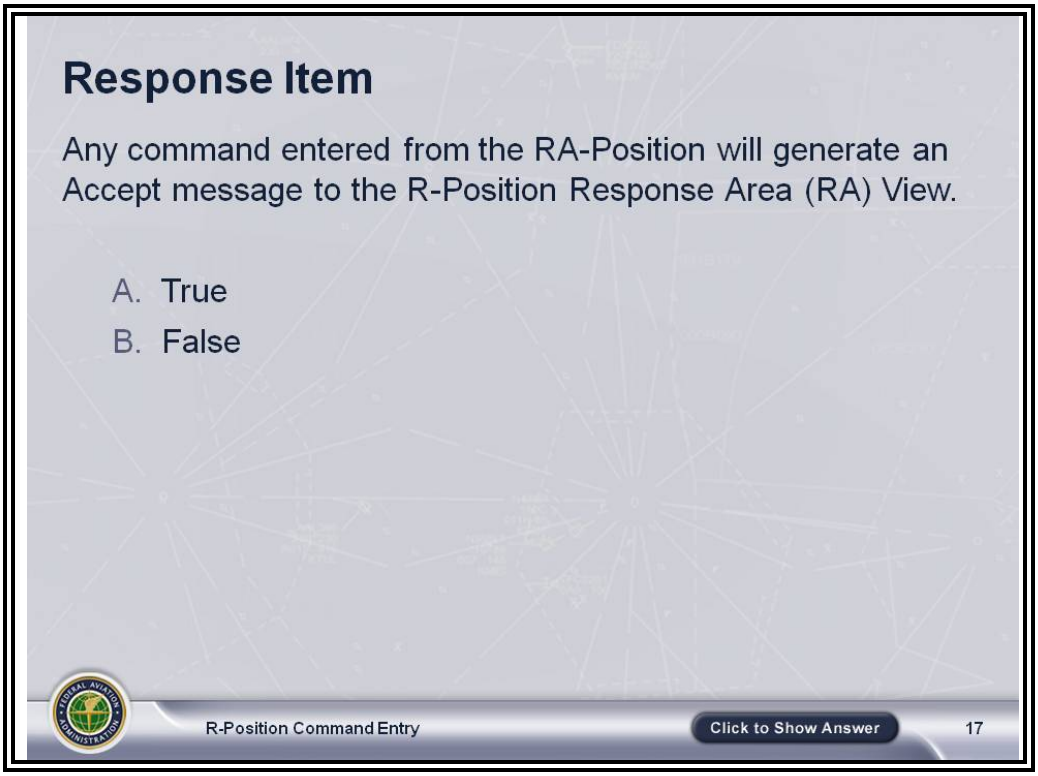
- Some commands require additional confirmation.
  - Example: The Remove Strip (RS) command will generate a CONFIRM BY ENTERING Y response.
  - Enter Y and the command will be accepted.
  - Entering something other than Y will be rejected.

GENERAL RULES FOR COMMAND COMPOSITION *(Cont'd)*

R Commands Entered from an RA Position
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

- Use QP, QT, QF, etc., typed on an RA keyboard:
  - An Accept message appears in the Feedback Area of the RA MCA View.
  - Data is displayed at the R-Position.

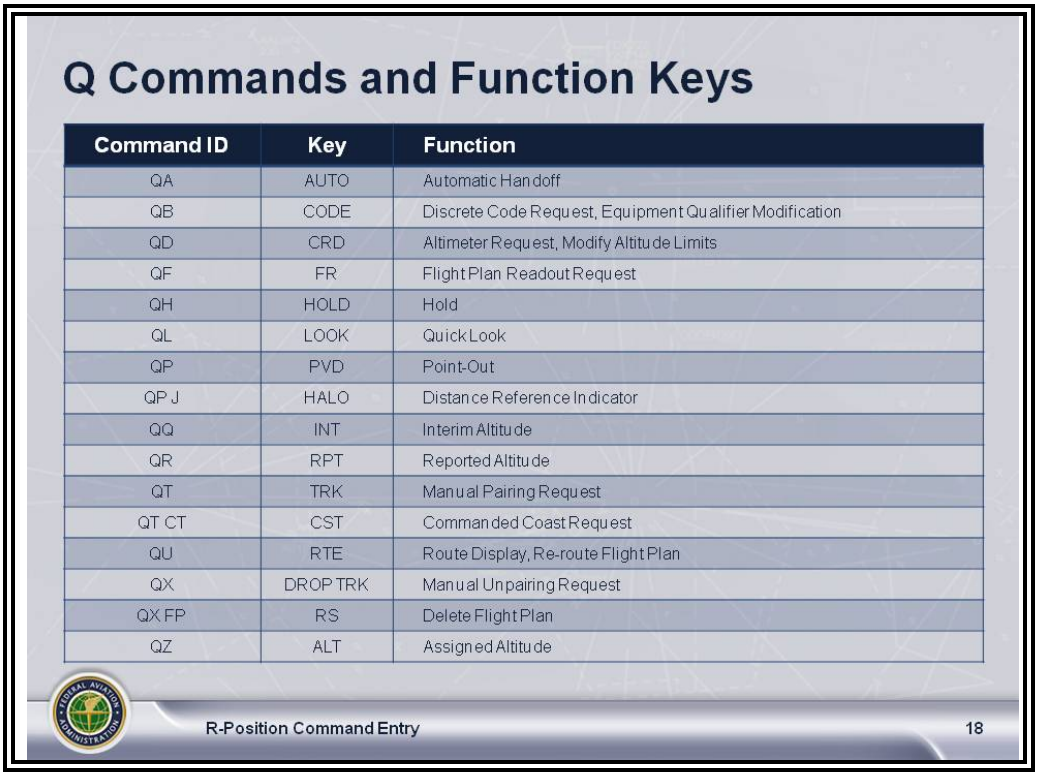
Review



SLIDE ANSWER: B

MCA COMMAND SYNTAX

Keyboard Shortcuts for Q Commands
TI 6110.100, par. 1.3.2



Q Commands and Function Keys

Command ID	Key	Function
QA	AUTO	Automatic Handoff
QB	CODE	Discrete Code Request, Equipment Qualifier Modification
QD	CRD	Altimeter Request, Modify Altitude Limits
QF	FR	Flight Plan Readout Request
QH	HOLD	Hold
QL	LOOK	Quick Look
QP	PVD	Point-Out
QP J	HALO	Distance Reference Indicator
QQ	INT	Interim Altitude
QR	RPT	Reported Altitude
QT	TRK	Manual Pairing Request
QT CT	CST	Commanded Coast Request
QU	RTE	Route Display, Re-route Flight Plan
QX	DROP TRK	Manual Unpairing Request
QX FP	RS	Delete Flight Plan
QZ	ALT	Assigned Altitude

R-Position Command Entry 18

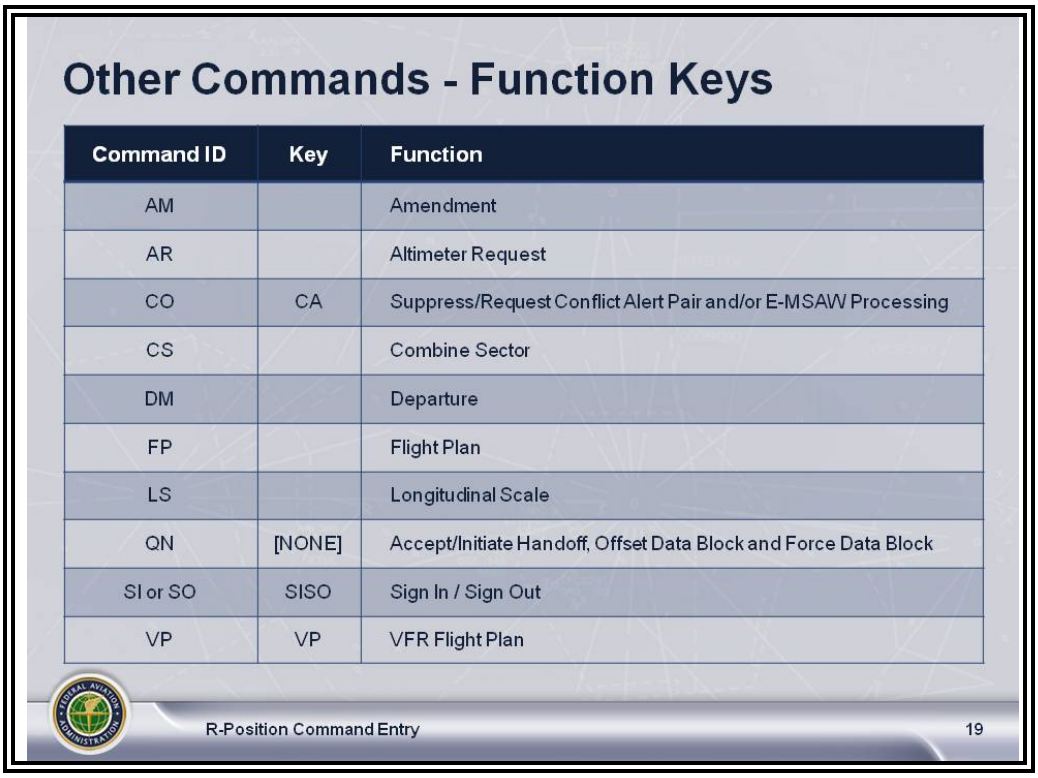
- This table contains a list of R-Position Q commands that have a corresponding Function Key.
- All entries require at least a FLID to complete the command, and most need additional fields between the Command ID and the FLID.
- There may be other ways to execute a command, but the Function Key is often the most efficient.

NOTE: Function keys are facility adaptable.

NOTE: Not all commands are discussed in this lesson.

MCA COMMAND SYNTAX *(Continued)*

Other Commands - Function Keys
TI 6110.100, par. 1.3.2



- This table contains a partial list of commands that can be input at the R-Position.
  - Some of these commands have Function Keys available.
  - If no key is available the command can be manually entered into the MCA, or an alternate method of command input may be available (for example, view menus).

MCA COMMAND SYNTAX *(Continued)*

QH - Hold Command
ERAM EDSM SRS 210.04 V1B1, par. 3.2.5.6.2; ERAM EDSM SRS 210.04 V1B2, Appendix C; Section C.2; TI 6110.100, par. 12.3.1

- The QH command adds the selected aircraft to the Hold View as soon as the hold command is entered.
  - Use the HOLD function key or type QH in the MCA.
  - The holding fix can be a fix name or a P for present position hold.
  - To include the EFC time, enter the fix followed by a forward slash (/) and the four-digit time.
  - If you want to include hold instructions, they must **ALL** be entered.
    - Direction is reference the eight cardinal compass points, such as NW.
    - Turns are RT or LT for right or left turn.
    - Leg lengths are 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.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

QH - Aircraft Hold Command (Cont'd)

ERAM EDSM SRS 210.04 V1B1, par. 3.2.5.6.2; ERAM EDSM SRS 210.04 V1B2, Appendix C; Section C.2; TI 6110.100, par. 12.3.1

Aircraft Hold Syntax Examples

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 Hold Instructions	QH P/EFC (Direction/Turns/ Leg Lengths) FLID	QH P/1234 NW/LT/20NM AAL236
Commanded Frozen	QH F <TBP> FLID	QH F ▽ AAL236

R-Position Command Entry 21

☞ ***NOTE:*** *Discuss the slide examples. Point out that there are many other QH commands. This lesson covers several of them.*

MCA COMMAND SYNTAX *(Continued)*

QH C - Cancel Hold Command

ERAM EDSM SRS 210.04 V1B1, par. 3.2.5.6.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1; TI 6110.100, par. 12.3.2

- The HOLD key or QH command can be used to cancel a hold.
- The hold is canceled and the text of the entry is grayed out in the Hold View.
  - Entering a route amendment will also cancel a hold for an aircraft and may immediately remove the entry from the Hold View.

MCA COMMAND SYNTAX *(Continued)*

QH - Update EFC Time Command

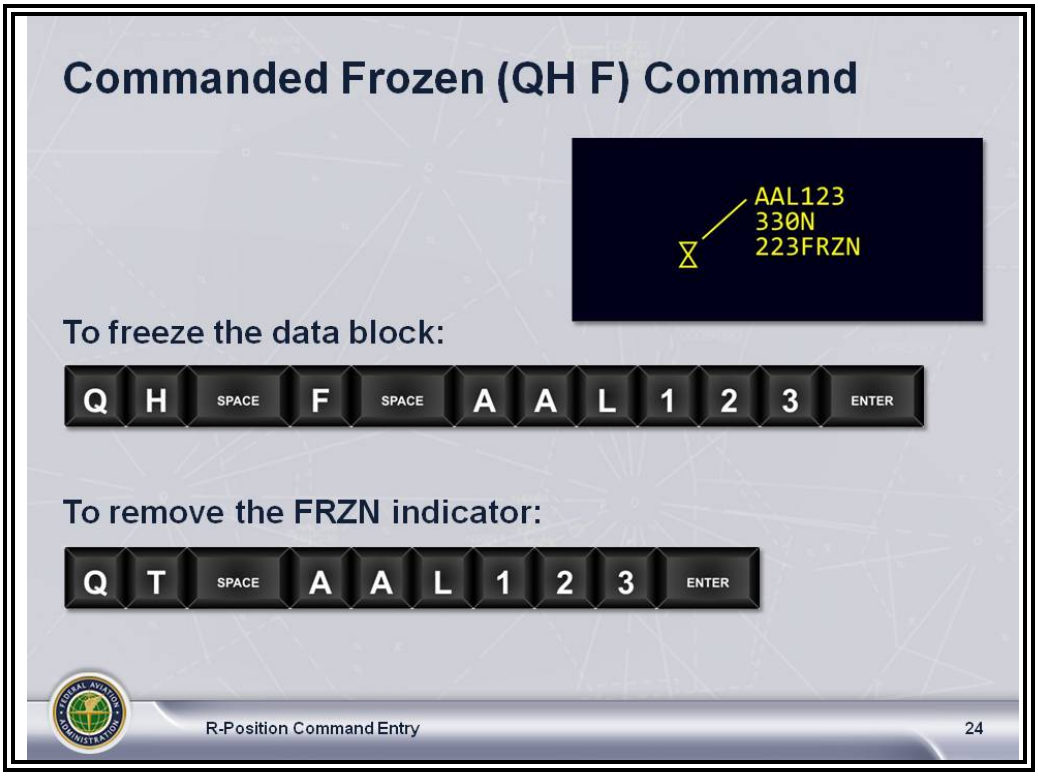
ERAM EDSM SRS 210.04 V1B1, par. 3.2.5.6.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, par. 12.3.5

- The HOLD key or QH command can be used to update an EFC time.

MCA COMMAND SYNTAX *(Continued)*

QH F - Commanded Frozen Command

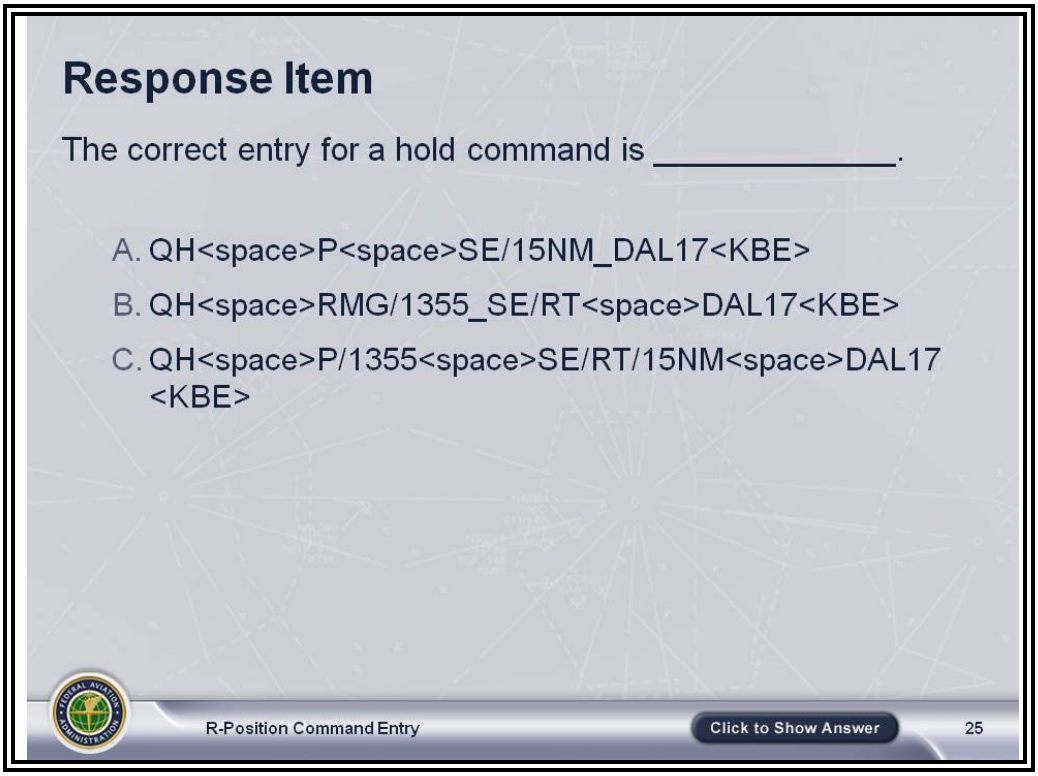
ERAM EDSM SRS 210.04 V1B1, par. 3.2.5.6.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, par. 4.3.6

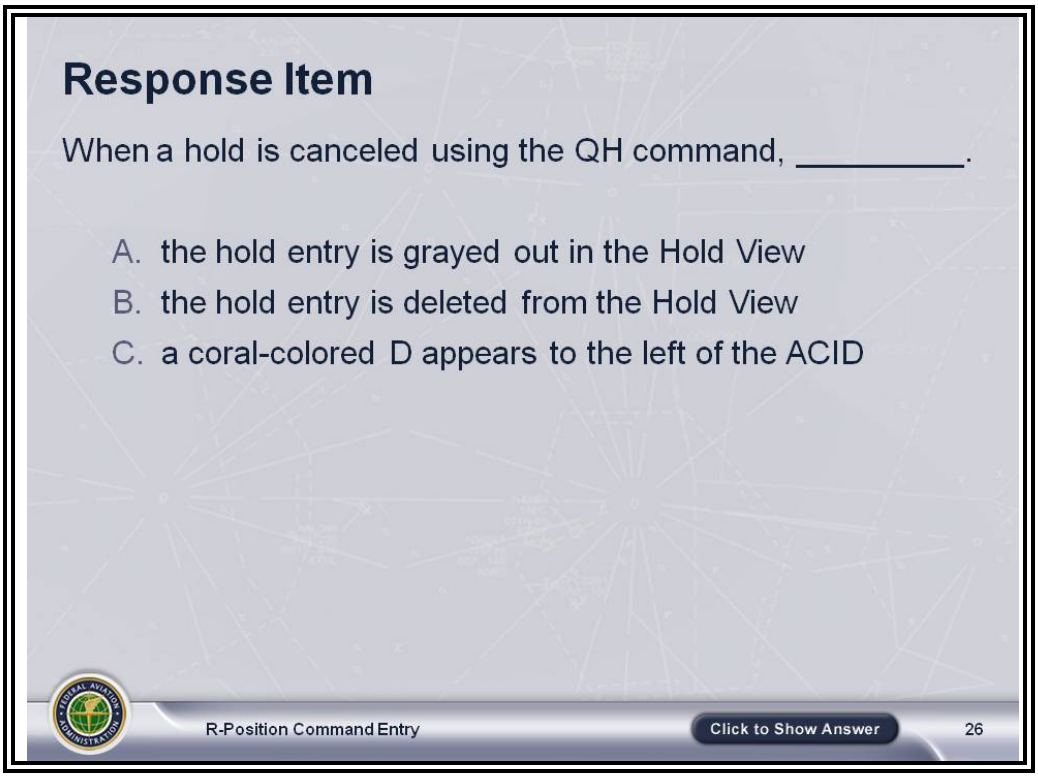


- The Commanded Frozen command (QH F) is used to unpair and freeze data blocks.
- The flight is placed in the frozen state to indicate that its position is not being updated.
  - The command syntax includes an optional identifier, which allows the controller to freeze the data block at a desired location, such as a fix, latitude/longitude, a fix radial distance (FRD), or a trackball pick, until it may be worked at a later time.
  - The position symbol changes to an hourglass.
  - This command works for both locally and non-locally controlled flights.
- To remove a FRZN indicator, enter QT (track) command for the aircraft.

MCA COMMAND SYNTAX *(Continued)*

Review

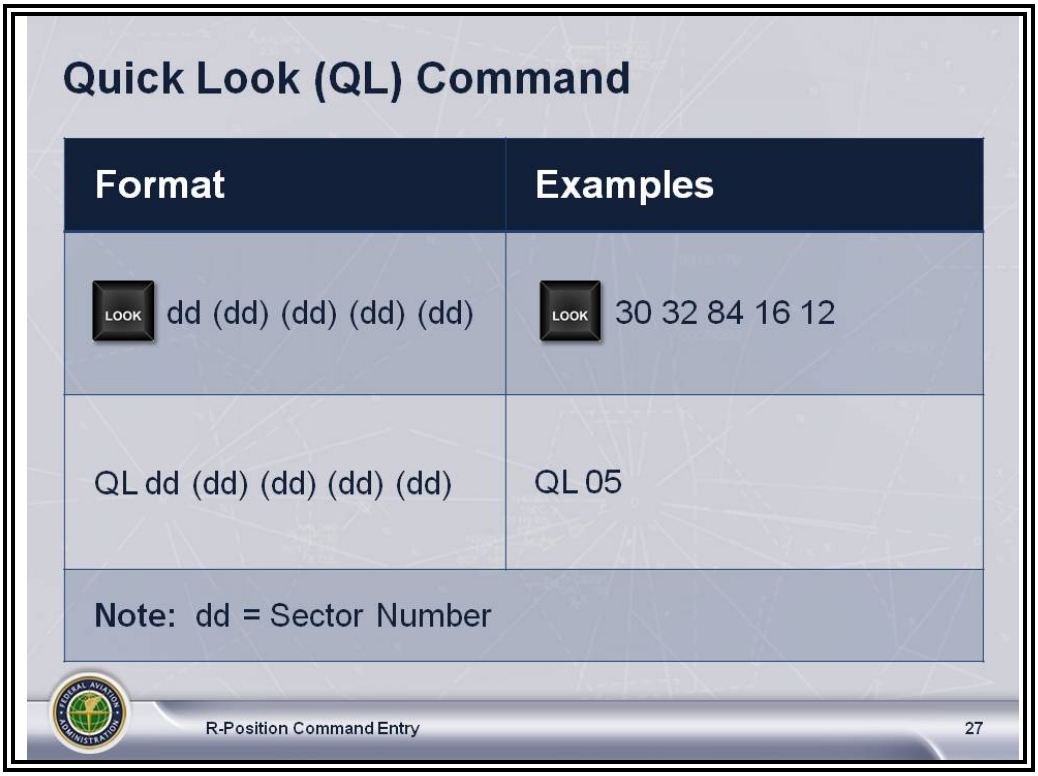




SLIDE ANSWERS: Slide 25 = C; Slide 26 = A

MCA COMMAND SYNTAX *(Continued)*

QL - Quick Look Command
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.10; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Appendix E



- The LOOK key or the command QL allows you to view other selected sectors' data blocks within the local facility.
  - You can request a maximum of five sectors.
  - Sector numbers are separated by spaces.
- The Situation Display will show all full data blocks (FDBs), conflict data blocks (CDBs), and associated targets being viewed on the selected sectors' Situation Displays.

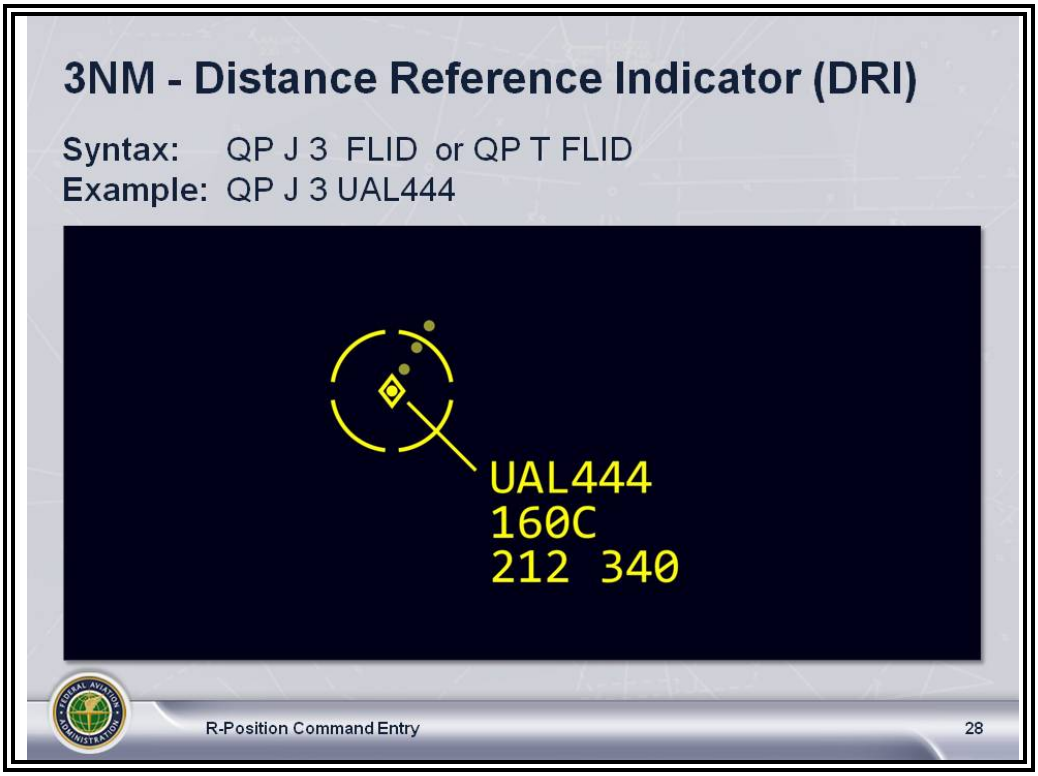
NOTE: A data block is eligible for display at the requesting sector if it is a local sector data block at the target sector; that is, it cannot be a quick look at the target sector.

- You can enter up to five Quick Look commands. After that point, you must clear the commands before a new Quick Look command can be entered. Press the Quick Look Function Key; then press ENTER.

NOTE: QL ENTER is also used to clear a Quick Look session when you are finished viewing another sector's traffic.

MCA COMMAND SYNTAX *(Continued)*

QP J / QP T - DRI Command
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.1.4.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Sections C.1 and C.2

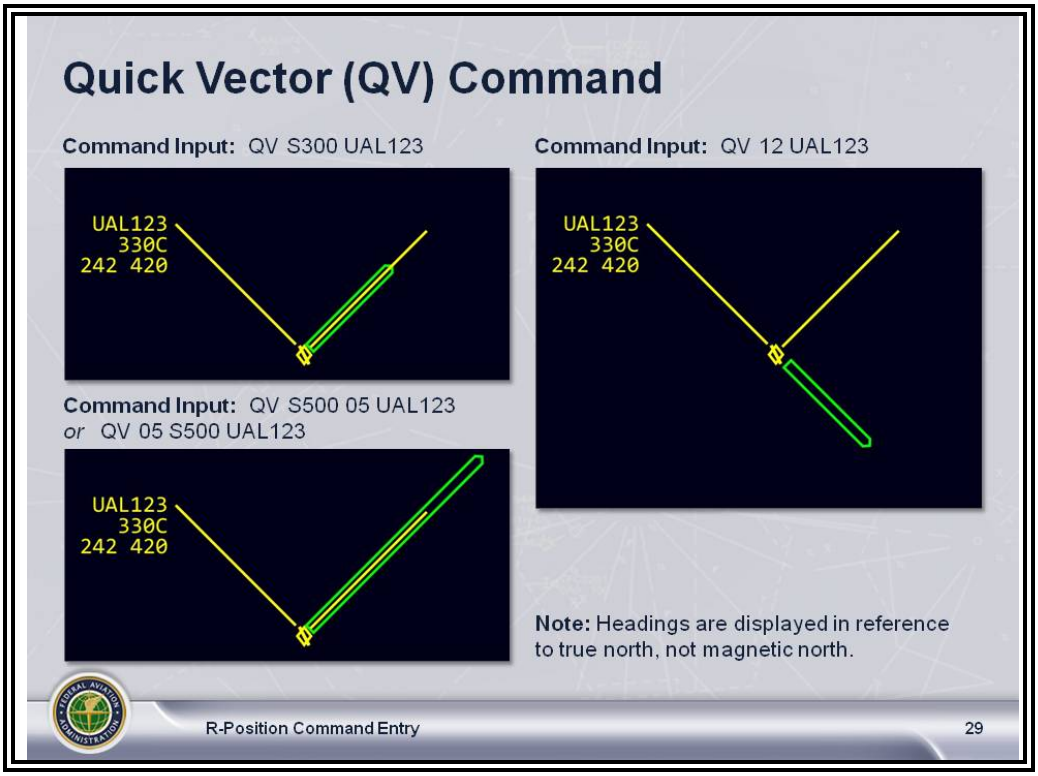


- The Distance Reference Indicator (DRI) is a separation reference displayed as a circle around a user selected target.
  - DRI is sector position specific.
  - DRI moves with the target, giving you a visual reference for surveillance separation.
- The DRI command allows you to request (or delete) one of two DRI radius sizes:
  - QP J: 5 nautical miles (standard separation)
  - QP J 3 or QP T: 3 nautical miles (reduced separation)
- The 3-mile DRI can only be requested on an aircraft eligible for reduced separation (i.e., displaying the 3-NM target symbol).
  - If the aircraft leaves the reduced separation area or becomes ineligible for reduced separation, the 3 NM DRI will automatically change to the 5 NM DRI.
  - In no case will a 5 NM DRI automatically change to the reduced separation DRI. The controller must make the change.

MCA COMMAND SYNTAX *(Continued)*

QV - Quick Vector Command

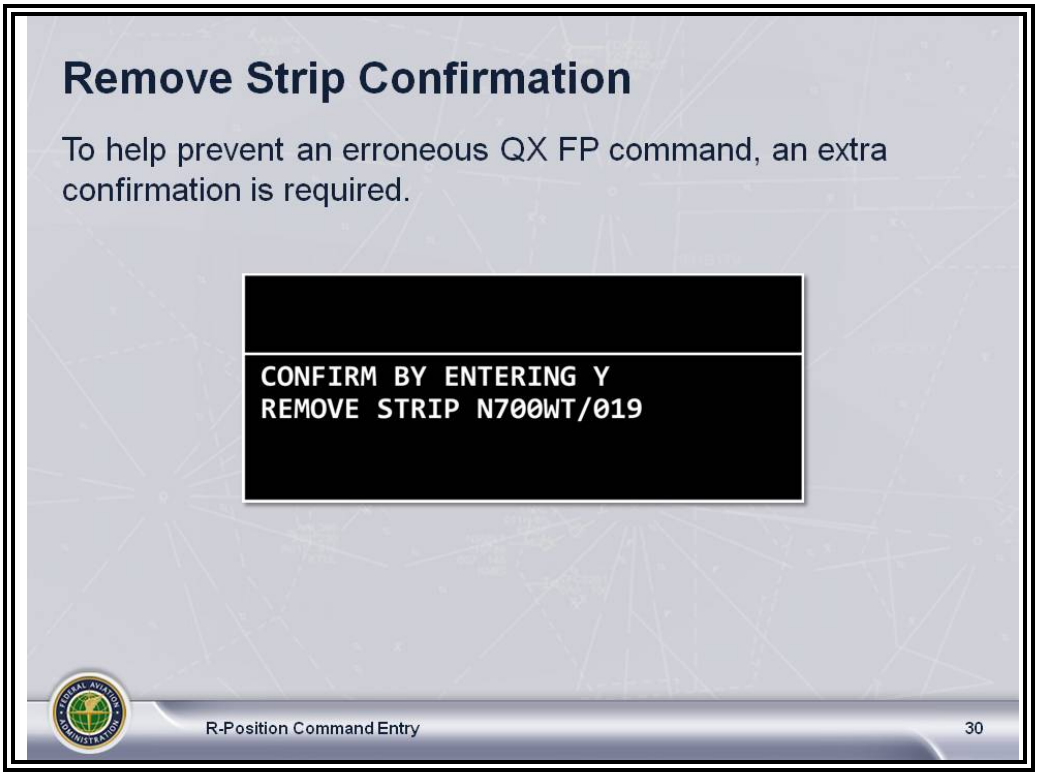
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.8; ERAM EDSM SRS 210.04 V1B2, Appendix C, Sections C.1 and C.2



- The Quick Vector (QV) command displays an additional track vector with a specified direction and length.
- You can input a heading, speed, or both for a selected target.
  - Enter QV, space, then the speed and/or the heading (in either order), space and the flight ID.
    - Syntax: QV S(d)(d)dd dd FLID
  - Speed is TAS and is preceded by the letter S, not MACH.
  - Headings are specified in 10-degree increments with the final zero dropped; for example, 05 = 050°.
  - Headings are displayed in reference to true north, not magnetic north.
- The displayed quick vector is automatically removed after an adapted period of time. The controller can also remove the displayed quick vector by entering the QV command without any parameters.
- Quick Vectors extend/retract with the Velocity Vector button.

MCA COMMAND SYNTAX *(Continued)*

QX FP - Remove Strip Confirmation
ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.34



- To help prevent an erroneous QX FP command, an extra confirmation is required.
  - After entering the QX FP command (on an aircraft under your control), you will see CONFIRM BY ENTERING Y in the Feedback Area of the MCA View.
  - Enter Y and the Remove Strips command will be accepted.
  - Entering something other than Y will be rejected.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

QX FP - Remove Strip Confirmation (Cont'd)
PR61412

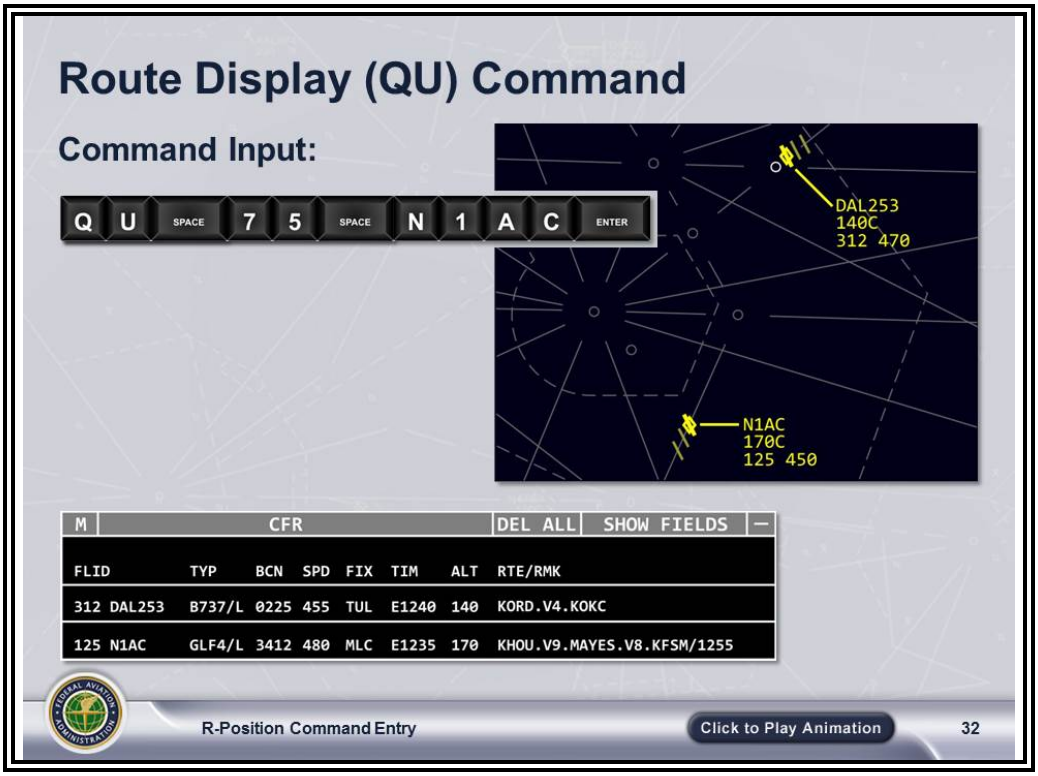
- After entering the QX FP command with /OK (an aircraft not in your control), you will see one of the three messages as displayed on the slide.

☞ ***NOTE:*** *Discuss the slide messages.*

MCA COMMAND SYNTAX *(Continued)*

QU - Route Display Command

ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.4; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, Table B.1



- The Route Display (QU) command displays a selected portion of an aircraft's route based on the flight plan trajectory.
  - Begins at aircraft's flight plan position
  - Extends a selected number of minutes along route
    - Center-adapted default number, or
    - Selected number up to 99 minutes
  - Based on the route stored in the computer

Click 1 to display route for DAL253.

- Example 1: Pressing the RTE key followed by a space and the CID displays the route to the center-adapted default.

Click 2 to display route for N1AC.

- Example 2: Enter the command QU followed by a space, then 75 followed by a space, then the aircraft identification to display the route 75 minutes.

Click 3 to remove route lines.

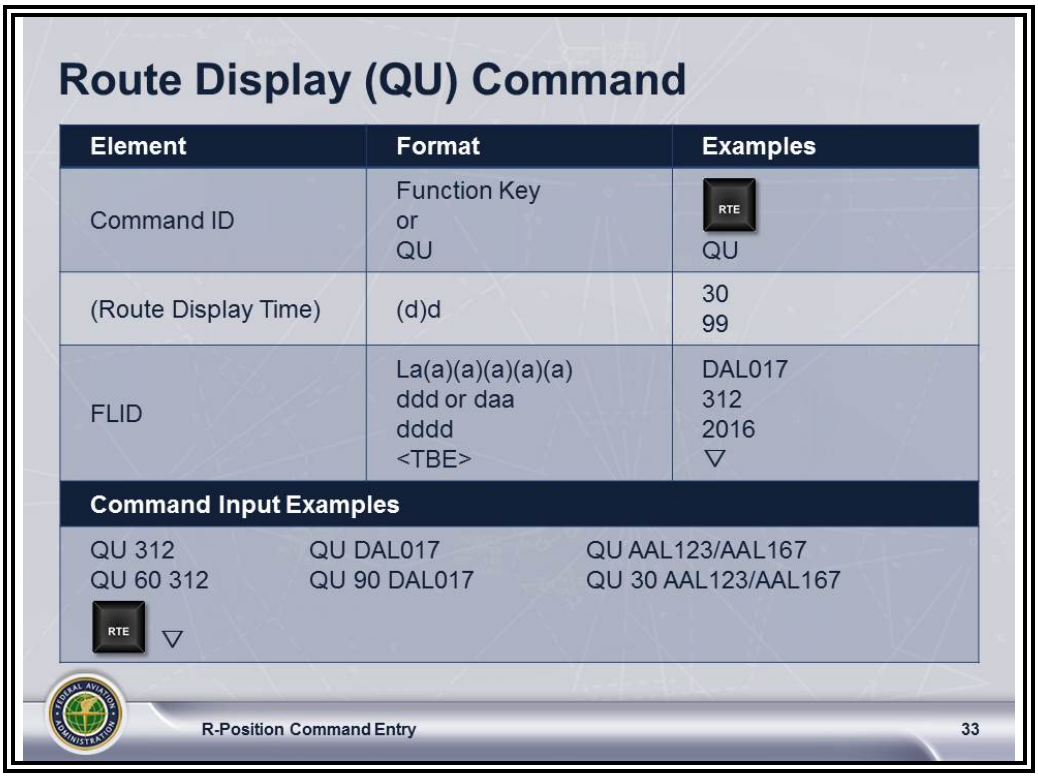
- Example 3: Enter the command QU and press keyboard ENTER to remove route.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

QU - Route Display Command (Cont'd)

ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.4.2.3;
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, Table B.1;
TI 6110.141, par. 2.1.76.1.2



- To display a single route:
  - Use the RTE function key or type QU in the MCA.
  - The route display time is optional.
    - One or two digits up to 99 minutes
    - If no digits are selected, facility-adapted time is automatically displayed.
  - Trackball Enter (TBE) on the position symbol.

NOTE: If you want to display the routes for multiple flight IDs, you must enter them by typing instead of using the trackball.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

QU - Route Display Command (Cont'd)

ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.4.2.3;
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, Table B.1;
TI 6110.141, par. 2.1.76.1.2

- To display a single route or multiple routes:
  - Use the RTE function key or type QU in the MCA.
  - The route display time is optional.
  - Type each FLID separated by a forward slash (/). There is no space between each FLID.
  - Press Enter (KBE).
- Up to 12 routes can be displayed on the Situation Display.
  - If a selected route is already being displayed, it will be deleted.
- Display routes time out (disappear) automatically after the facility-adapted time is reached (up to 60 seconds).
- To delete a route from the Situation Display:
  - For a specific route:
    - Press the route (QU) function key.
    - Enter the flight ID.
    - Press the ENTER key.
  - For all routes displayed:
    - Press the route (QU) function key.
    - Press the ENTER key.

Review

QUESTION: If you have pressed the Route (QU) function key, then centered the trackball over an aircraft position symbol and pressed trackball pick, will a route display occur for that aircraft? Explain your answer.

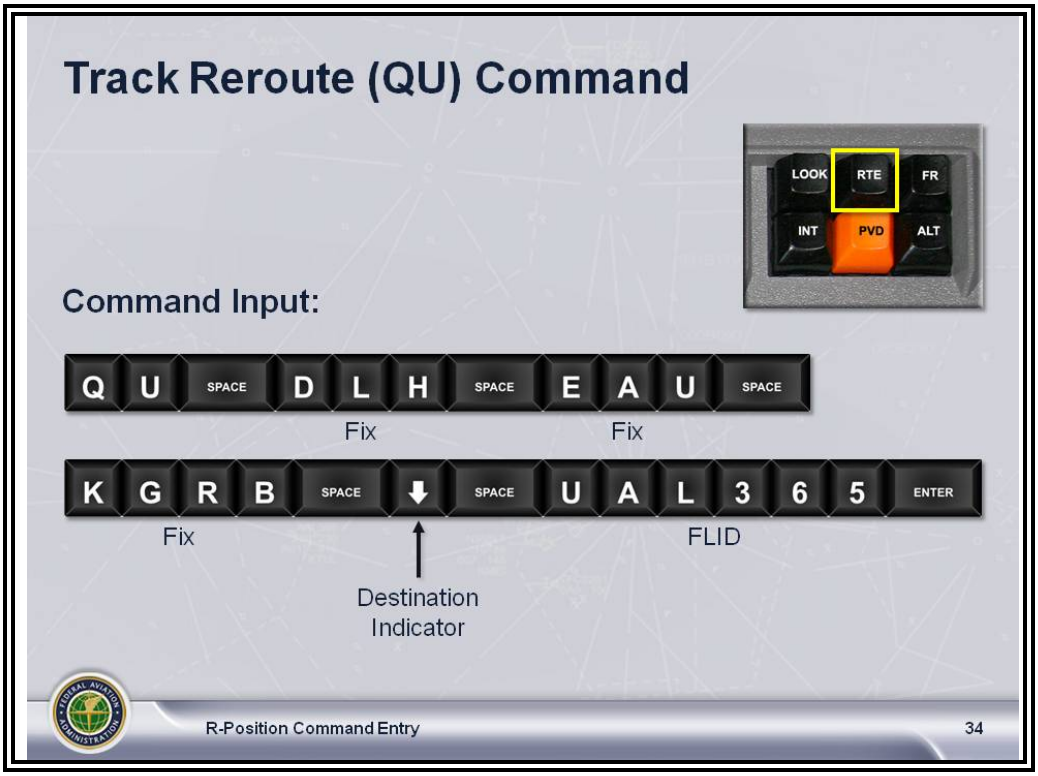
ANSWER: *No. After the trackball pick has been pressed to identify the aircraft, the ENTER key on the keyboard must be pressed to enter the command.*

QUESTION: What is the maximum number of routes that can be displayed on a Situation Display at one time?

ANSWER: *Twelve*

MCA COMMAND SYNTAX *(Continued)*

QU - Track Reroute Command
ERAM EDSM SRS 210.04 V1B2, Appendix C;
TI 6110.100, Table B.1



- A Track Reroute (QU) command changes the remaining route of flight of a displayed aircraft either completely or partially using fix points.
- To change a route:
  - Use the RTE function key or type QU in the MCA.
  - At least one trackball pick or fix must be entered.
    - A fix must be identified by one of the following:
      - → Fix name or airport name
      - → Fix radial distance (FRD)
      - → Latitude/Longitude
    - A maximum of 17 intermixed trackball coordinates and/or fixes is permitted.

Continued on next page

QU - Track Reroute Command (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C

- If necessary, include a destination indicator, which indicates that a new destination has been specified.
  - ↓ (down arrow) for a new destination only
  - * (asterisk) to inhibit Adapted Arrival Routes (AARs) and Adapted Departure/Arrival Routes (ADARs)
  - ⊕ (overcast symbol) to suppress ICAO Equipment Restricted Routes (IERRs)

NOTE: The destination indicator is only allowed after the last location specified (trackball pick location or fix).

- Enter the flight identification.
- If necessary, type /OK.
  - Entering the logic check override causes the eligibility checks to be bypassed.
- Press ENTER.

⊙ Track position becomes the coordination fix.

⊙ Current time becomes the coordination time.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

Track Reroute Command Syntax
ERAM EDSM SRS 210.04 V1B2, Appendix C

Track Reroute (QU) Command (cont.)

Element	Format	Examples
Command ID	Function Key or QU	RTE QU
(Logic Check Override)	/OK	/OK
(Trackball Coordinates)	<TBP>	▽
(Fix Name) (Fix Radial Distance) (Latitude/Longitude)	aa(a)(a)(a) aa(a)(a)ddd_1ddd_2 $dddd(L_1)/(d)dddd(L_2)$	SGR TPR123031 3950/09835
(Destination Indicator)	↓ or * or ⊕	↓ or * or ⊕
FLID	La(a)(a)(a)(a)(a) ddd or daa dddd <TBE>	DAL017 312 2016 ▽

Example: QU /OK TPR123031 TINGS310013 * 312

R-Position Command Entry 35

Track Reroute Command Examples
ERAM EDSM SRS 210.04 V1B2, Appendix C

Track Reroute Command

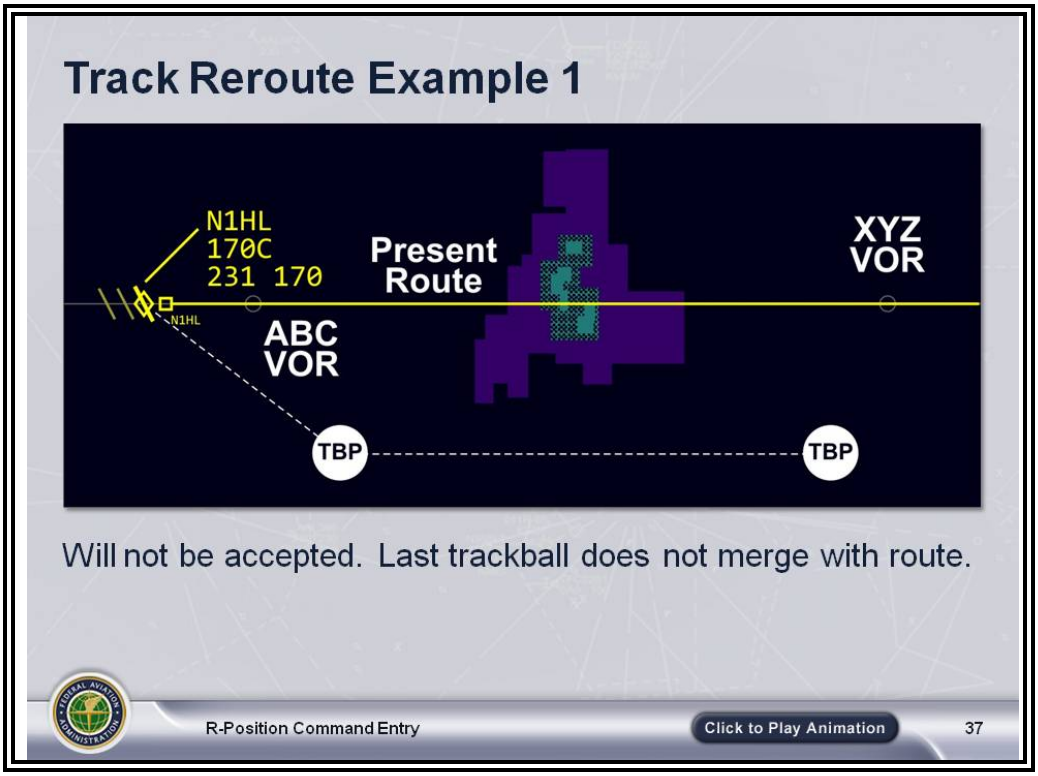
Examples
QU ▽ ▽ ▽ ▽ UAL365 *(Last TBP will only work if merged with the previous route)*
QU TUL PNC END KSGR /OK * 382
QU /OK TPR123031 ANR180450 KSEA ⊕ DAL089
QU 3940N/12719W 4535N/12611W KSEA 2016
QU ▽ ▽ GEP DLL ▽ KDTW AAL312

R-Position Command Entry 36

☞ ***NOTE:*** *Discuss the command format and the various examples provided.*

MCA COMMAND SYNTAX *(Continued)*

Trackball Entry
ERAM FLTS SRS 210.14, par. 3.2.1.2.13; ERAM AERO SRS 210.01, par. 3.2.1.10



- Trackball position:
  - If within a tolerance of one or more adapted fixes, then the fix name of the closest adapted fix is returned.
  - If within a tolerance of one or more adapted airports, the fix name of the closest adapted airport is returned.
- If the Fixed Airspace Volume (FAV) containing the point in space has a focal point fix, then a FRD based on the FAV's focal point fix is returned.
- In all other cases, the latitude/longitude is returned.

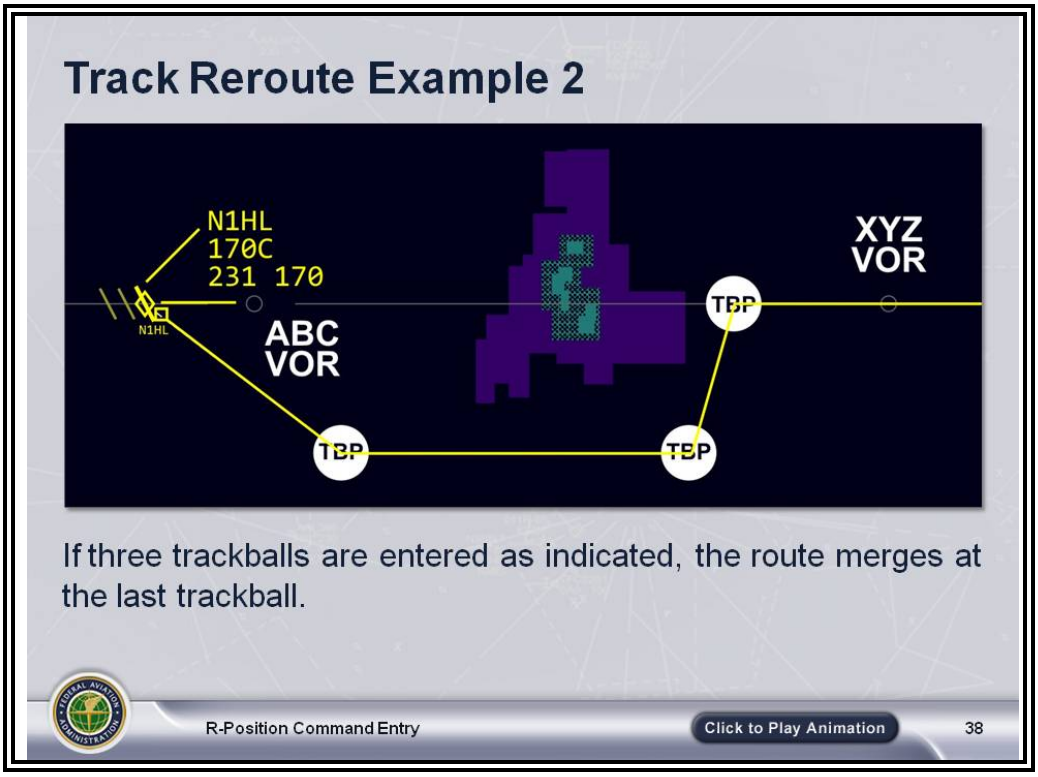
Click to display route.

- If the command is not entered properly, as shown in this example, the present route of flight is displayed on the Situation Display.

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

Trackball Entry (Cont'd)
ERAM FLTS SRS, 210.14, par. 3.2.1.2.13; ERAM AERO SRS 210.01, par. 3.2.1.10



☞ ***NOTE:*** *Click 1 to display TBPs for reroute.*

⊙ The last fix on a reroute:

- If trackball:
  - Must be within an adapted distance of a segment of the previous route to merge

  NOTE: Many controllers display the aircraft's current route of flight before composing the track reroute. This helps to ensure that the final trackball entry merges back onto the previous route.

- If adapted fix:
  - Must be on the original route

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

Trackball Entry (Cont'd)

ERAM FLTS SRS, 210.14. par. 3.2.1.2.13; ERAM AERO SRS 210.01, par. 3.2.1.10

Results

☞ ***NOTE:*** *Click 2 to display new route.*

⊙ If the command is accepted by the computer:

- New strips and/or time updates are processed.
- Remove Strips message is sent, if necessary.
- Revised route is displayed on Situation Display.
- Route of flight is changed in computer storage.

⊙ If the command is not entered properly:

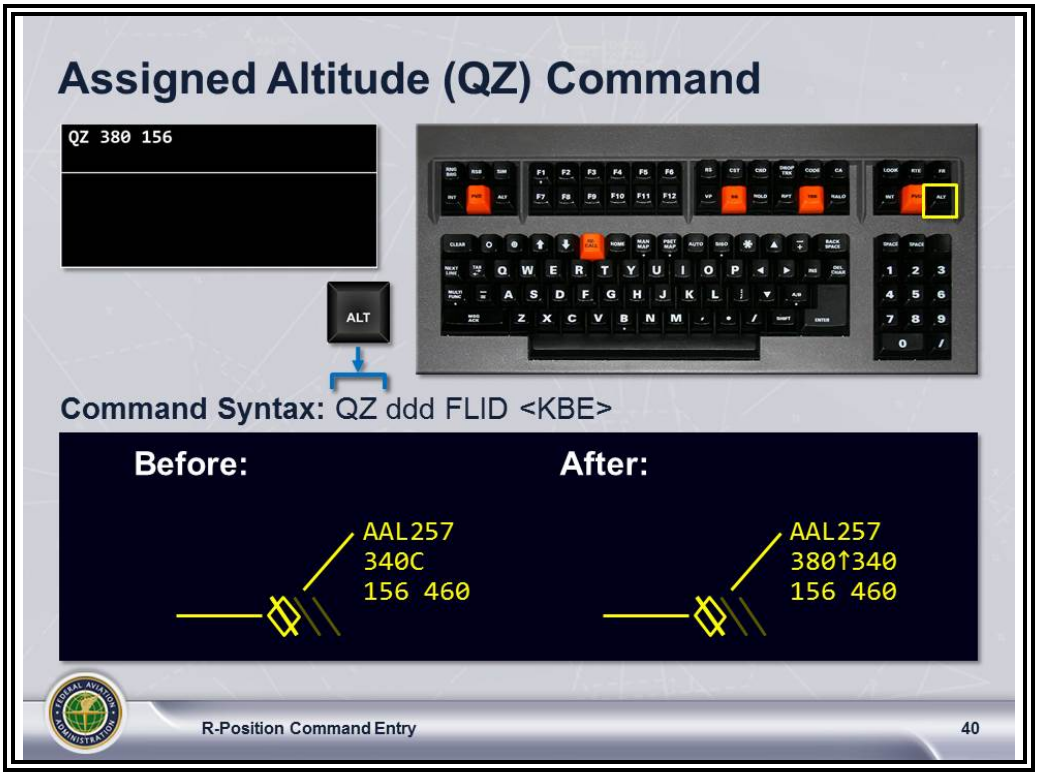
- The present route of flight is displayed on the Situation Display.

Review

SLIDE ANSWER: B

MCA COMMAND SYNTAX *(Continued)*

Assigned Altitude (QZ)
JO 7110.65, par. 5-14-3;
ERAM EDSM SRS 210.04 V1B2, Appendix C

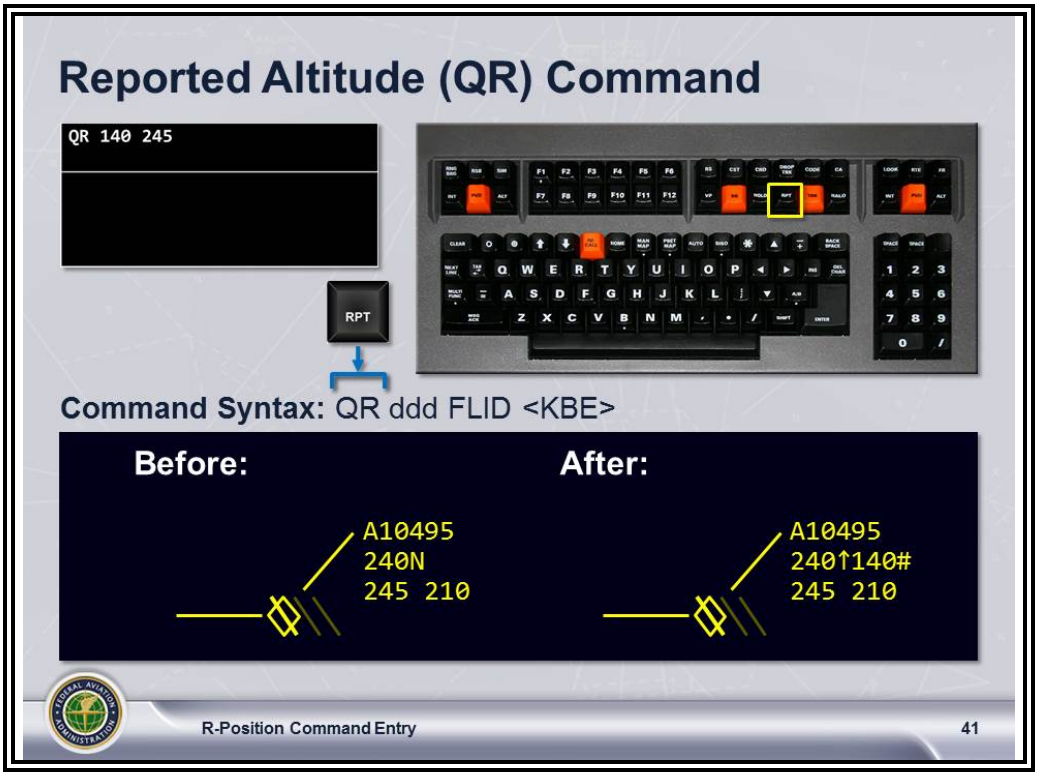


- The QZ command originates or changes the assigned altitude for a specific aircraft.
- Results:
  - Assigned altitude in full data block (FDB) changes.
  - View is updated, if one displayed.
  - Update is sent to appropriate sectors/facilities.
  - B4 character changes, if appropriate.
  - New strips are printed, if required.
    - Leading zeros are required.

      Example: 070, 090
    - /OK is allowed.

MCA COMMAND SYNTAX *(Continued)*

Reported Altitude (QR)
JO 7110.65, par. 5-14-4;
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.1;
ERAM EDSM SRS 210.04 V1B2, Appendix C



- The QR command inserts a controller entered reported altitude (CERA) into the FDB and assists in slant range target correction.
- Controller entered reported altitudes (CERAs) are required if Mode C data is not available or is unreliable:
  - When aircraft reaches assigned altitude
  - When aircraft at an assigned altitude is cleared to climb or descend
  - At least once every 10,000 feet during climb to or descent from FL180 and above
- The command syntax is QR, space, ddd (reported altitude), space, FLID.
  - Leading zeros are required in the altitude field.
  - The altitude field is optional (ddd) if aircraft reported at the assigned altitude.

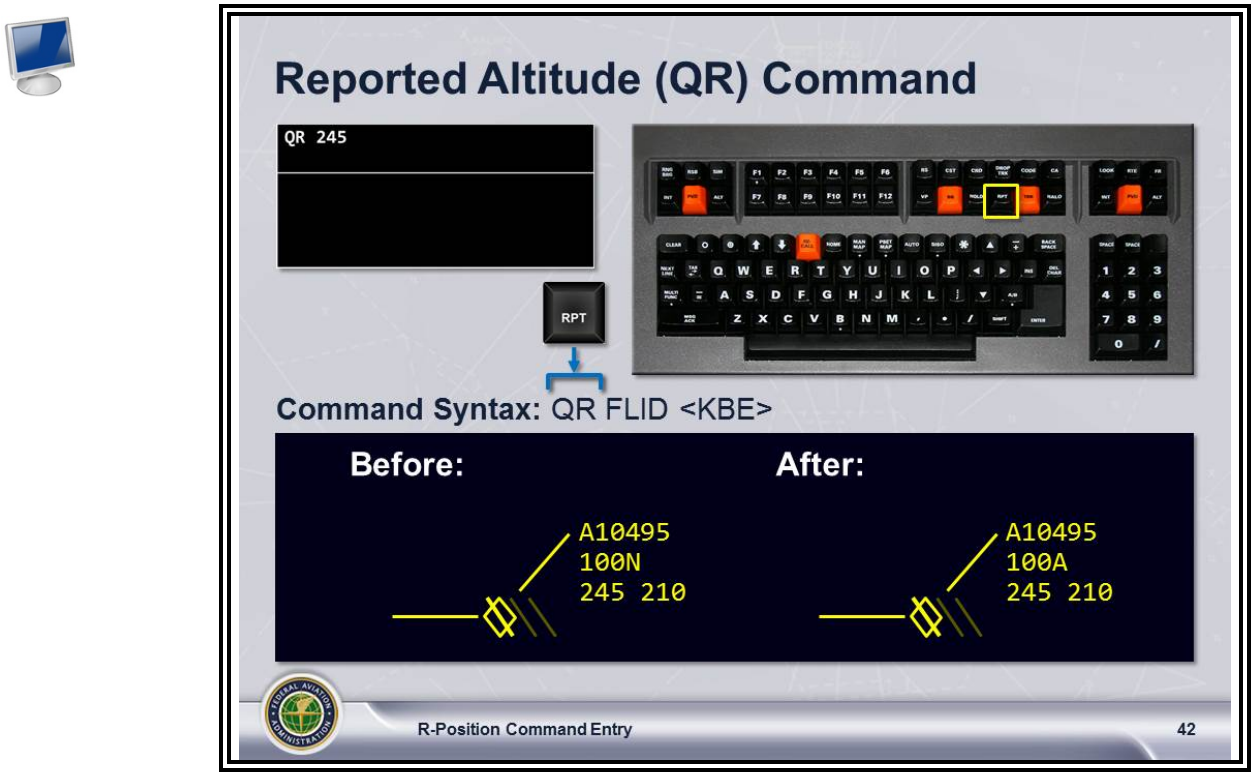
Continued on next page

MCA COMMAND SYNTAX *(Continued)*

Reported Altitude (QR) (Cont'd)
JO 7110.65, par. 5-14-4;
ERAM EDSM SRS 210.04 V1B2, Appendix C

⊙ **Results**

- FDB is updated.
- Field B4 character changes, if appropriate.
- The symbol # appears in field C4 if entered altitude does **not** equal single assigned altitude.
- Slant range correction is made.

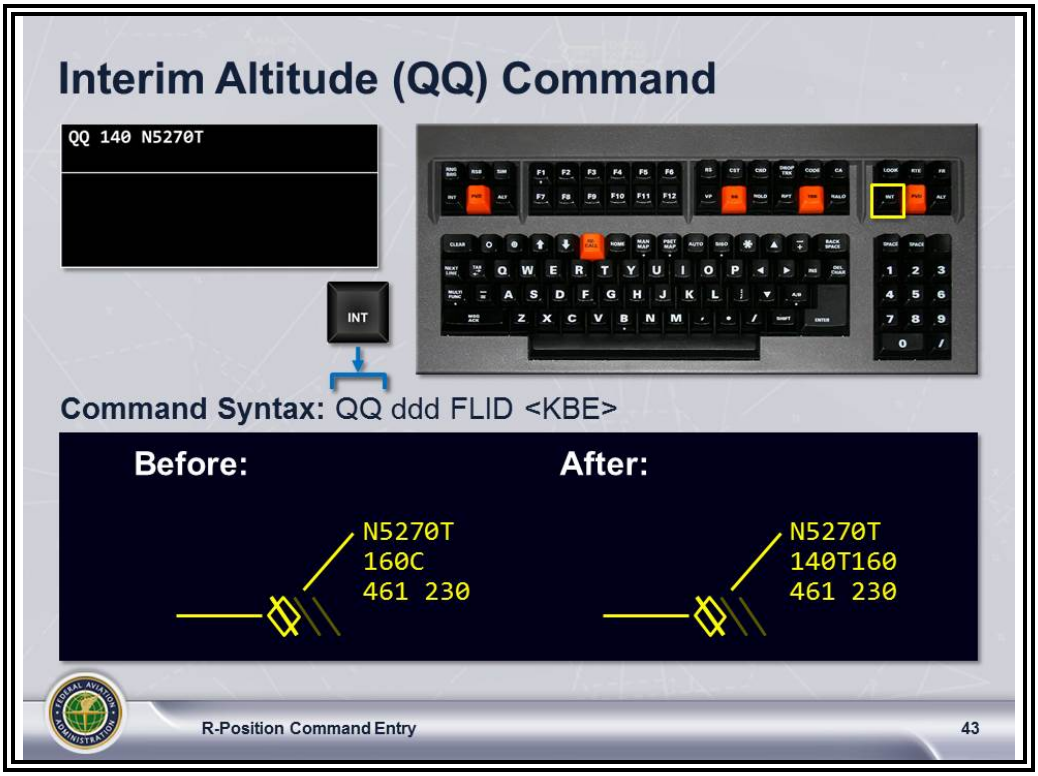


⊙ If the reported altitude is omitted in the command entry, the reported altitude will be considered the same as:

- Assigned altitude for a single assigned altitude aircraft
- Lower altitude for a block altitude aircraft

MCA COMMAND SYNTAX *(Continued)*

Interim Altitude (QQ)
JO 7110.65, pars. 5-4-3, 5-14-3;
JO 7210.3, par. 8-2-7;
ERAM EDSM SRS 210.04 V1B2, Appendix C



- The QQ command is used to keep the FDB updated without changing the altitude stored in the flight plan database.
  - Typically used when an aircraft will (climb or descend to, and) maintain an altitude for a short period of time and will be subsequently recleared to the assigned altitude or another interim altitude
  - Can also be used to enter a Local Interim Altitude (LIA). The LIA is used to reflect the actual status of the aircraft in the controlling facility while allowing the coordination of a different altitude with an external facility. You will learn more about LIA in a later lesson.
- An optional (facility adaptable) Logic Check Override can be used with the command when the sector does not have track control. Examples: /OK, /TT, ///, etc.

☞ ***NOTE:*** *Inform students if the Logic Check Override is available at your facility and the syntax for the override.*

Continued on next page

Interim Altitude (QQ) (Cont'd)
JO 7110.65, pars. 5-4-3, 5-14-3;
JO 7210.3, par. 8-2-7;
ERAM EDSM SRS 210.04 V1B2, Appendix C

⊙ May be transferred:

- Intrafacility (sector to sector)
- Interfacility

⊙ **Not** transferred between en route and ARTS facilities.

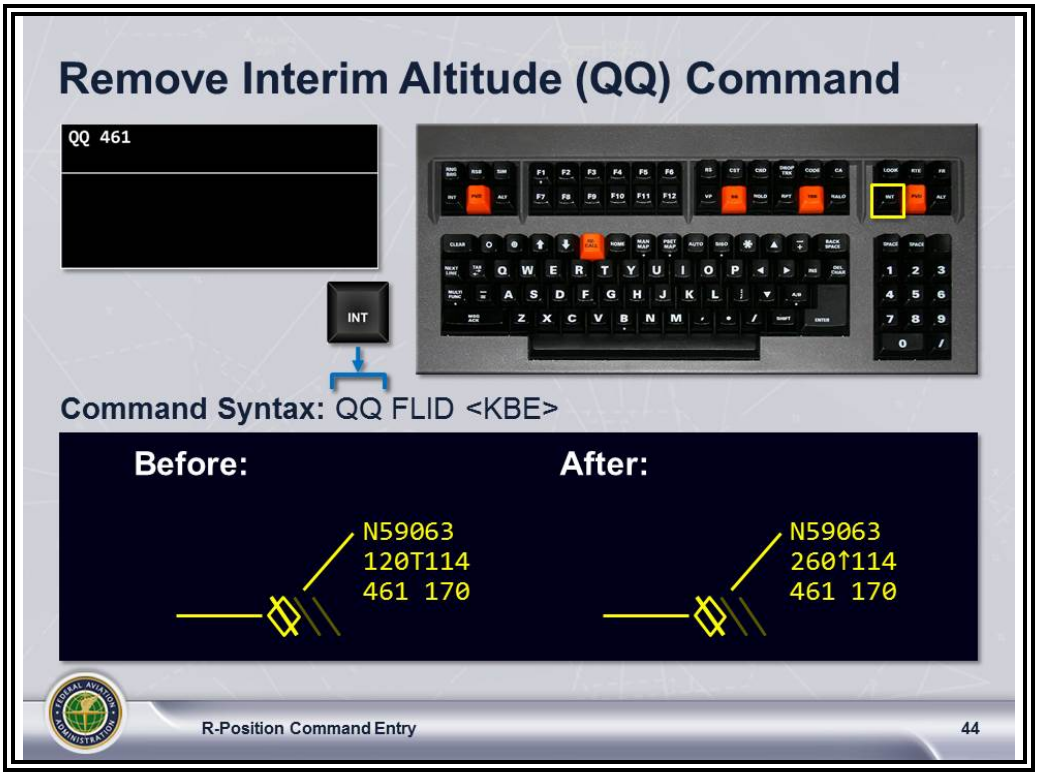
NOTE: In some cases, an interim altitude can be added/deleted (without the Logic Check Override) after transfer of control to an ARTS/STARS facility. This functionality depends on local adaptation. In any case, the ARTS/STARS facility never sees these changes.

⊙ Results:

- If ddd is used:
  - Interim altitude displays instead of assigned altitude.
  - B4 character changes to T.
- If Rddd is used:
  - Entry displays as both interim and reported altitude.
  - B4 character changes to T.

MCA COMMAND SYNTAX *(Continued)*

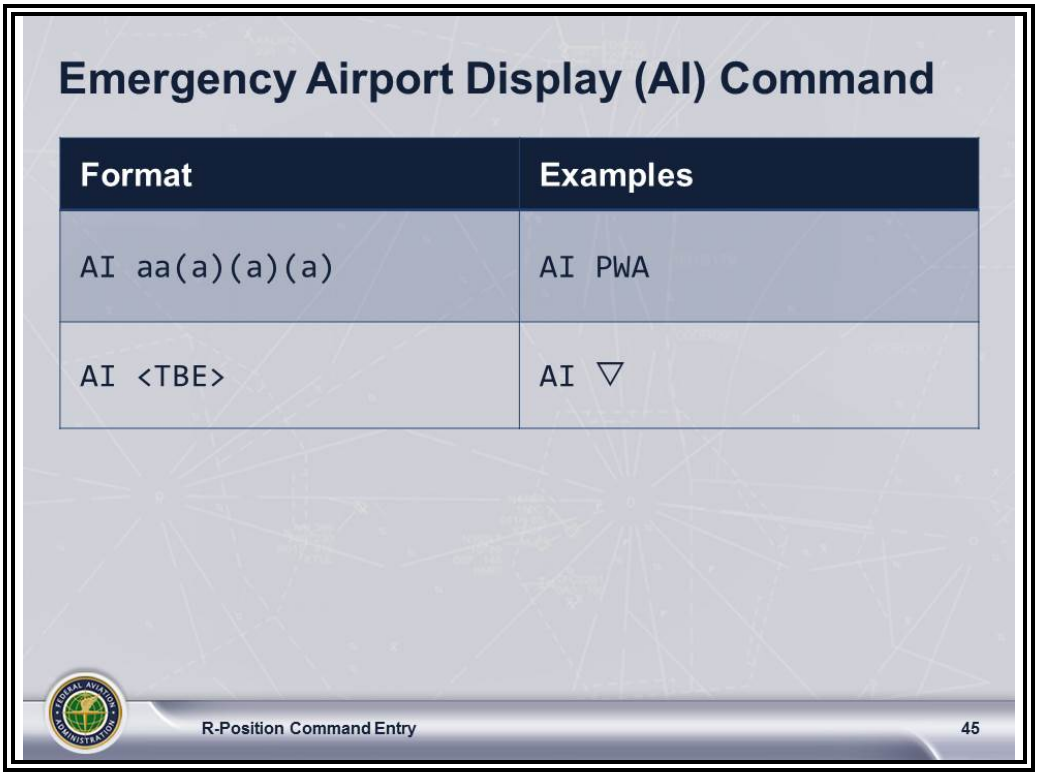
Remove Interim Altitude (QQ)
JO 7110.65, par. 5-14-3;
ERAM EDSM SRS 210.04 V1B2, Appendix C



- The QQ command is also used to delete the Interim Altitude when it is no longer required.
  - Deletes all Interim Altitude data from the FDB and Hold list
- Results:
  - Assigned Altitude displays instead of Interim Altitude.
  - T character is removed and the B4 character changes based on the assigned altitude.
  - Entry affects all displayed FDBs.

MCA COMMAND SYNTAX *(Continued)*

AI - Emergency Airport Display Command
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.3; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

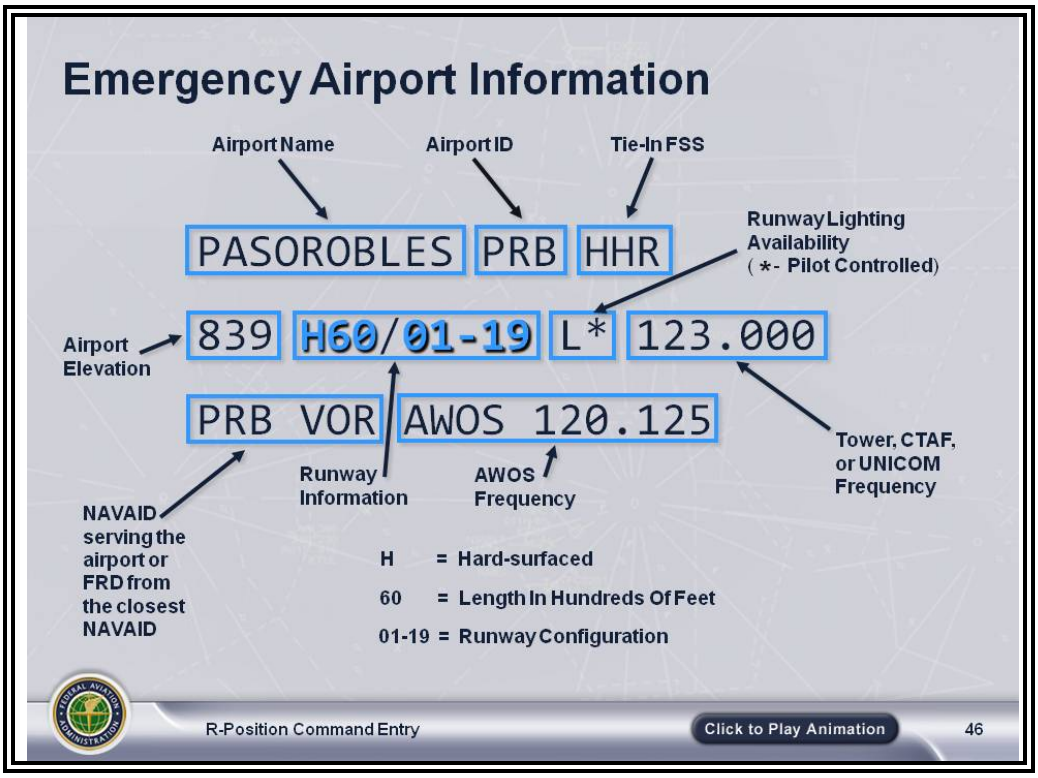


- The AI command displays information for adapted airports.
  - Airport must be adapted as an emergency airport
  - Command is started by typing AI on the keyboard
  - Airport identifier may be entered via the keyboard or the airport may be identified by trackball entry (TBE)
    - When using a trackball entry, the trackball selection must be within three nautical miles of an adapted emergency airport.
  - Airport information is displayed in the Response Area (RA).

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

AI - Emergency Airport Display Message (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.3; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



Click to emphasize each item as you explain it.

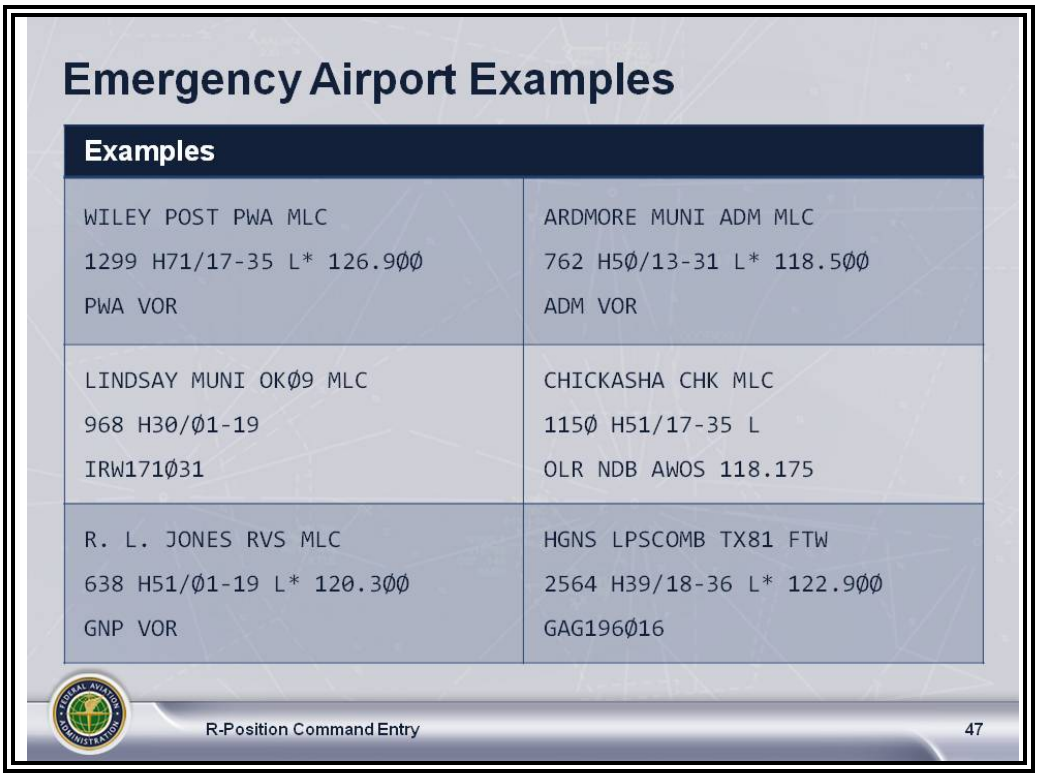
⊙ Typical information presented includes:

- Airport name
- Airport identifier
- Tie-in FSS
- Field elevation
- Runway surface and usable length
- Runway configuration
- Runway lighting availability
- Tower or Unicom frequency
- Navigational aid (NAVAID) serving the airport or, if there is no NAVAID service, a fix radial distance from the closest NAVAID
- Automated Weather Observation System (AWOS) frequency

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

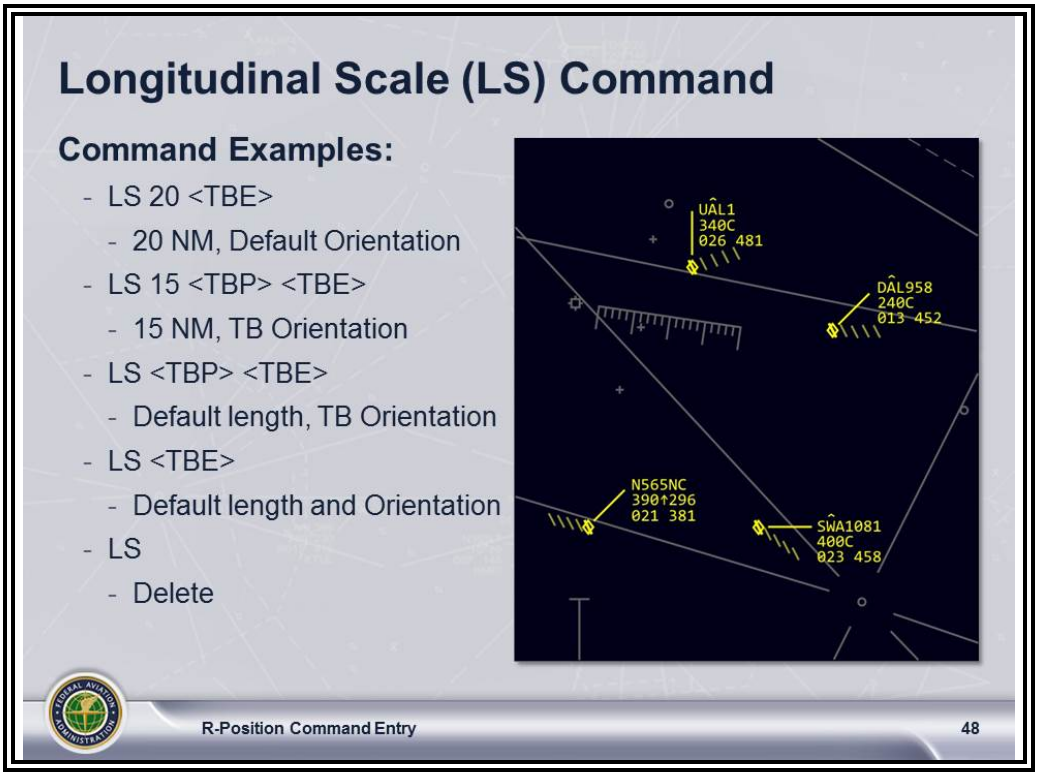
AI - Emergency Airport Display Message (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.3; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



☞ ***NOTE:*** *Discuss the slide examples.*

MCA COMMAND SYNTAX *(Continued)*

LS - Longitudinal Scale Command
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, par. 6.4



- The Longitudinal Scale command displays and deletes a movable longitudinal scale on the Situation Display.
  - The Longitudinal Scale may be extended past the Situation Display's boundaries.
  - 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 default location, orientation, and length, type LS and press enter.
  - To display a longitudinal scale specifying location and orientation:
    - Type LS.
    - TBP on the Situation Display where you want the anchor point of the scale to be located.
    - TBE on the Situation Display to specify the desired orientation.

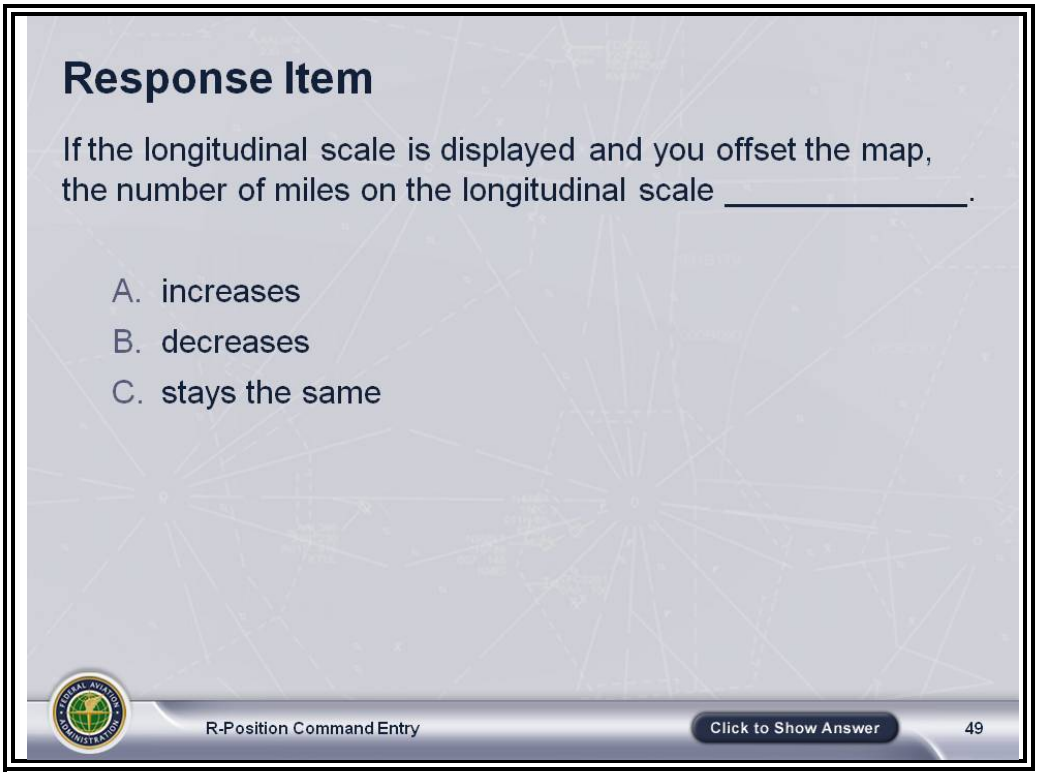
Continued on next page

MCA COMMAND SYNTAX *(Continued)*

LS - Longitudinal Scale Command (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, par. 6.4

- To modify the length of a displayed longitudinal scale:
  - Type LS.
  - Type the desired length numerically (0-20).
  - Press keyboard ENTER.
- To move a displayed longitudinal scale:
  - Type LS.
  - Position the trackball cursor on the display where the scale is to be relocated.
  - Press trackball ENTER.
- To delete a displayed longitudinal scale, type LS and press keyboard ENTER.

Review

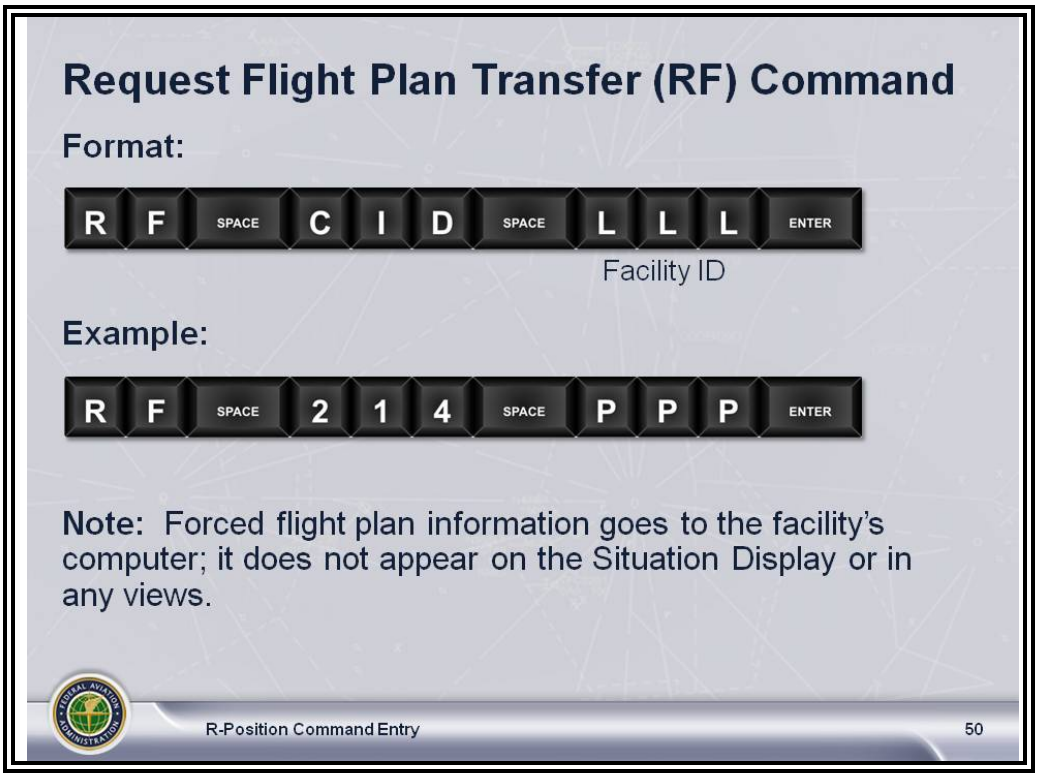


SLIDE ANSWER: C

MCA COMMAND SYNTAX *(Continued)*

RF - Request Flight Plan Transfer

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM IFPA SRS 210.15, par. 3.2.4.2.1.8



- The RF command is used to transfer flight data to a neighbor facility (ARTS/STARS, neighboring centers, CAATS, ATOP, etc.).

☞ ***NOTE:*** *Emphasize that a flight plan transfer can be made to almost any facility with which your facility has a flight data interface.*

- The forced flight plan does not appear on the facility's Situation Display or in views; but the plan data is entered in their computer.
- Type RF, space, CID, space, facility ID (e.g., ZSE, ZMP, PPP, ABQ).

MCA COMMAND SYNTAX *(Continued)*

EDST Keyboard Commands at the R-Position
ERAM ATCHI MISC 230.05, Section 25

R-Position EDST UU Commands - 1

Command	Description
UU	Display the Aircraft List (ACL)
UU ↑	Scroll to the top of the Aircraft List
UU ↓	Scroll to the bottom of the Aircraft List
UU <Flight ID>	Add/Find a flight on either the Aircraft List or the Departure List. <Flight ID> can be an ACID, beacon code, or CID.
UU A <Flight ID>	Perform the "Show All" function for a flight, displaying the route of flight on the Graphic Plan Display (GPD) along with all conflicts with that flight.
UU C	Clean up the Aircraft List by removing all entries that are coded for deletion, with the exception of those that are kept or overdue.
UU D	Display the Departure List (DL)
UU D ↑	Scroll to the top of the Departure List
UU D ↓	Scroll to the bottom of the Departure List
UU G	Display the Graphic Plan Display
UU H <Flight ID>	Highlight a flight on either the Aircraft List or the Departure List. Highlighting results in the entry being displayed with gray background shading.

R-Position Command Entry 51

R-Position EDST UU Commands - 2

Command	Description
UU Oa(a)	Change the sorting mode for the Aircraft List, where a = B, T, C, S, A, D, SB, ST, SC, SA, or SD. O = Sort by boundary time OB = Sort by boundary time OC = Sort by conflict status OT = Sort by conflict time OA = Sort by ACID OD = Sort by destination OS = Sort sector by sector OSB = Sort by sector/non-sector, then by boundary time OSC = Sort by sector/non-sector, then by conflict status OSA = Sort by sector/non-sector, then by ACID OSD = Sort by sector/non-sector, then by destination OST = Sort sector/non-sector, then by conflict time
UU P	Change Aircraft List posting mode. If the posting mode is "Automatic," change to "Manual." If the posting mode is "Manual," change to "Automatic."
UU R	Reset display size and locations of the following displays to default values: Aircraft List, Departure List, Plans Display, Graphic Plan Display, and Response Display. If the display is not currently displayed, it will be relocated upon the next invocation of the display.
UU S <Flight ID>	Perform the "Show" function for a flight, displaying the route of flight on the Graphic Plan Display along with all conflicts with that flight that are assigned to the sector position.
UU W	Display the Wind Grid Display
UU W ddd	Display the Wind Grid Display for the altitude ddd
UU X	Exit menus and templates

R-Position Command Entry 52

Continued on next page

MCA COMMAND SYNTAX *(Continued)*

EDST Keyboard Commands at the R-Position (Cont'd)
ERAM ATCHI MISC 230.05, Section 25

- En Route Decision Support Tool (EDST) UU commands can be entered from an R-Position.
  - These slides show the UU commands that are valid from the R-Position.

  ☞***NOTE:*** Briefly discuss the commands on the two slides.

- The UU command issued from the R-Position allows the R-Position controller to change and update the views on the Radar Associate EDST.

PRACTICE EXERCISE 1

Practice Exercise 1

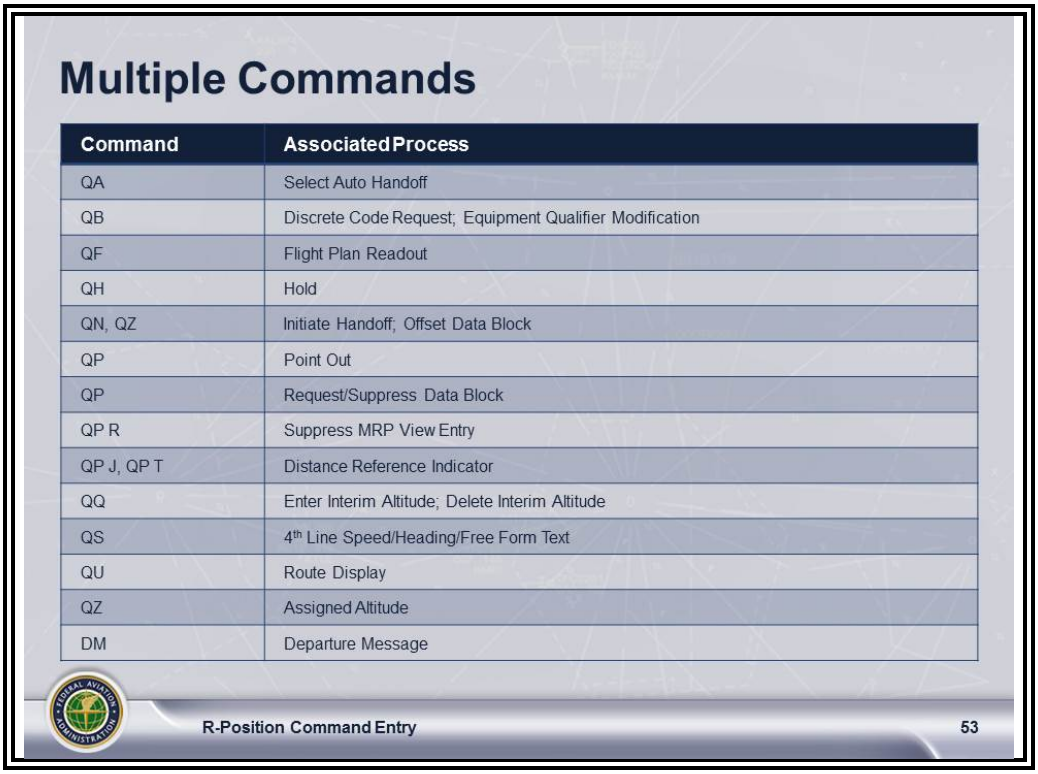
- Practice Exercise 1: R-Position Command Checklist, is located in 55055-HO4.
- You will complete this exercise in the lab.

☞ ***NOTE:***

- *Have students complete this practice exercise in the lab.*
- *The exercise is estimated to take 1 hour lab time per student.*
- *The recommended environment is in the TTL at a simulated position in the student's area of specialization with a scenario (e.g., labeled for Lesson 4, Exercise 1) running. No ghost pilots are required.*
- *An instructor must be present in the lab to assist.*
- *The student may refer to notes, user manuals and course materials.*

MULTIPLE COMMANDS AND MACROS

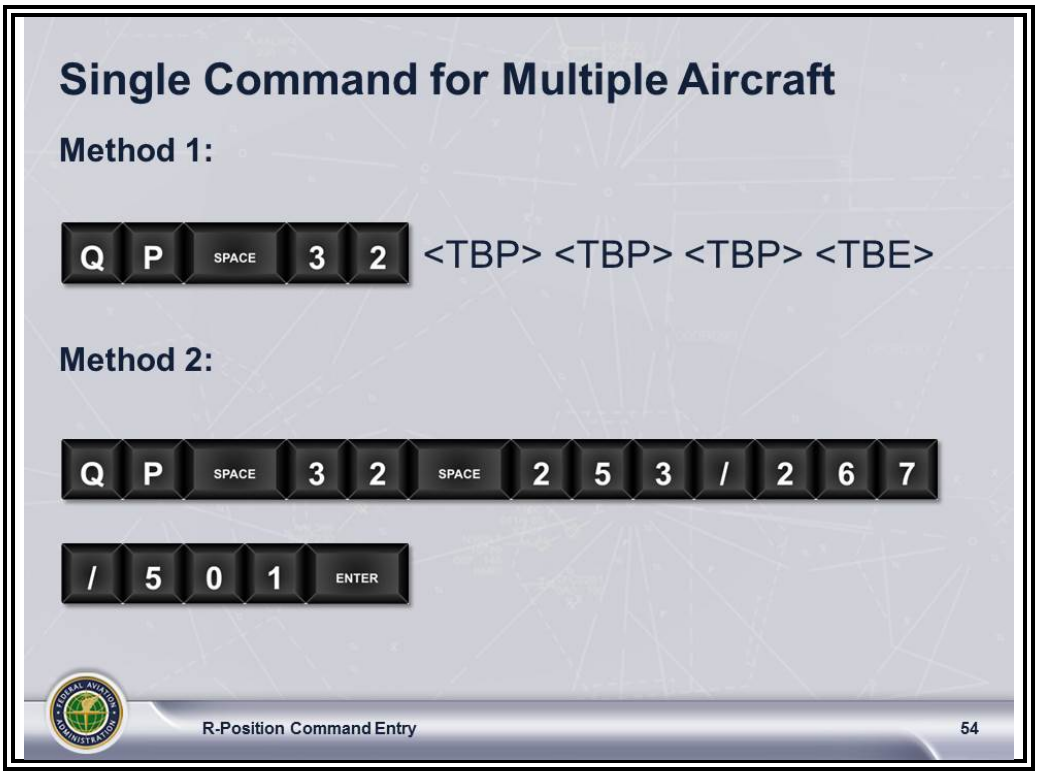
Multiple Commands
TI 6110.100, pars. 7.1, 7.1.1



- The system allows a single command for multiple aircraft, and multiple commands for a single aircraft.
  - A single command may be entered for up to 15 aircraft.
  - Up to six commands may be entered for a single aircraft.
- The table on the slide lists the eligible commands.

MULTIPLE COMMANDS AND MACROS *(Continued)*

Single Command for Multiple Aircraft
TI 6110.100, par. 7.1.2



- To compose a single command for multiple aircraft using the trackball:
  - Type the command in the MC.
  - TBP all desired track position symbols except the last one (call signs will highlight).
  - TBE the last track position symbol.
- To use keyboard entries to compose a single command for multiple aircraft:
  - Type the command in the MCA, followed by a space, FLID, forward slash, the next FLID, forward slash, etc. Note that there is no space between each FLID.
  - Press ENTER.
  - Enter /OK to complete the command as needed, when prompted.

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

Continued on next page

MULTIPLE COMMANDS AND MACROS *(Continued)*

Single Command for Multiple Aircraft (Cont'd)
TI 6110.100, par. 7.1.2

NOTE: The QU Route Display command for multiple aircraft requires a keyboard entry (versus trackball picks).

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

Multiple Commands for Single Flight ID
TI 6110.100, par. 7.1.3

⊙ To compose a multiple command for a single aircraft ID:

- Type or press a function key to input the first command in the MCA.
  - Subsequent commands need to be typed.
- Enter any parameter values for each command.
- End each command with a semicolon.
- Type the FLID of the desired aircraft.
- Press ENTER to complete the command.

MULTIPLE COMMANDS AND MACROS *(Continued)*

Macros
TI 6110.100,
par. 7.2

- You can create and store frequently used single or multiple commands as macros. Up to 9 macros can be saved with each Preference Set.

- The macro RECORD button is on the Message Composition (MCA) toolbar by default.

- To record a macro:

Click 1
- Click the RECORD button. The MSG 1 and MACRO DELETE buttons display.

Click 2
- Click the MSG 1 button. An input box displays.

Click 3
- Press a function key or type the Q command followed by the required parameters.
- Press ENTER. A semi-colon is inserted and the cursor moves to the next line of the input box.
- Continue entering command strings on separate lines. Up to 6 command strings can be entered. A 7th command will be rejected.

Click 4
- Left/middle-click SAVE MSG 1. A blank button displays with a blinking cursor.

Click 5
- Type a label for the button, or the system will use the first six characters of the macro as the label.
- Press ENTER. The input area closes and the MACRO button is ready for placement on the Situation Display.

Continued on next page

MULTIPLE COMMANDS AND MACROS *(Continued)*

Macros (Cont'd)
TI 6110.100, par. 7.2

⊙ A recorded macro is temporary until it is saved as part of a Preference Set.

- It can be placed anywhere on the display or a toolbar.
- Up to nine macros can be displayed. After that point one macro must be deleted to create a new macro.
- It stays on the display for all subsequent users until it is manually deleted or automatically deleted when invoking a Preference Set so that the total number of macros exceeds nine.

⊙ If you want a macro to be available in the Preference Set, re-save the Preference Set.

NOTE: Saved macros cannot be modified.

⊙ To invoke a macro for a single flight:

- Left/middle-click the MACRO button.
- Middle-click the track symbol.

NOTE: Macros with multiple commands can only be used for a single aircraft.

⊙ To invoke a macro for multiple flights:

- Left/middle-click the MACRO button.
- Left-click all desired track symbols except the last one.
- Middle-click the last track symbol.

NOTE: Only macros containing a single command can be used for multiple aircraft.

⊙ You can delete a macro using the RECORD button pull-down menu or DELETE tear-off button.

NOTE: Remember to save new macros to PREFSETS and delete the temporary macros for subsequent controllers.

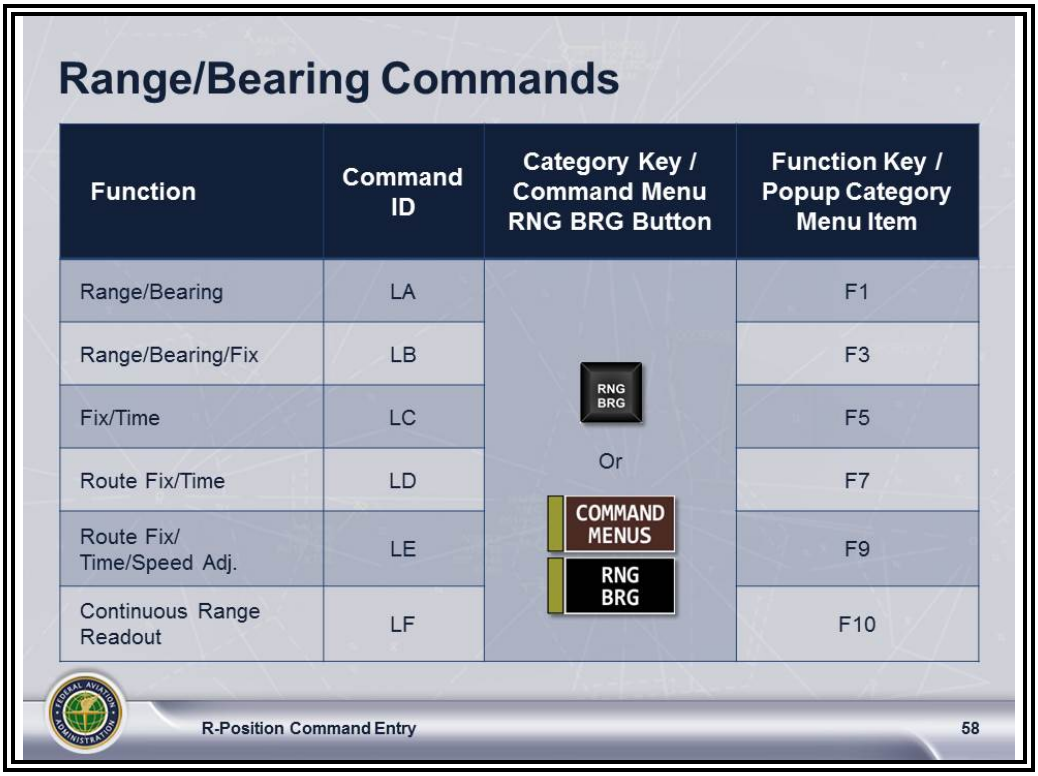
MULTIPLE COMMANDS AND MACROS *(Continued)*

Review

SLIDE ANSWER: A

COMMAND MENUS COMMAND SYNTAX

Range/Bearing Commands
ERAM EDSM FLTS SRS 210.04, pars. 3.2.2.2.2.6.1-4;
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.2



- Range/Bearing commands and their associated function keys:
  - Range/Bearing Readout (LA) – F1
  - Range/Bearing/Fix Readout (LB) – F3
  - Fix/Time Readout (LC) – F5
  - Route of Flight Fix/Time Readout (LD) – F7
  - Route of Flight Fix/Time/Speed Adjustment Readout (LE) – F9
  - Continuous Range Readout (LF) – F10
- There are several ways to enter Range/Bearing Commands.
  - Method 1:
    - Press the RNG BRG category key, then
    - Press the desired function key (F1, F3, F5, F7, F9, or F10), or
    - TBP the desired function on the popup category menu.
  - Method 2:
    - TBP the COMMAND MENUS button on the Master Toolbar.
    - TBP the RNG BRG button.
    - Press the desired function using the function keys or TBP on the popup category menu.
  - Method 3: Type the two-letter Command ID in the MCA.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

Range/Bearing Commands (Cont'd)

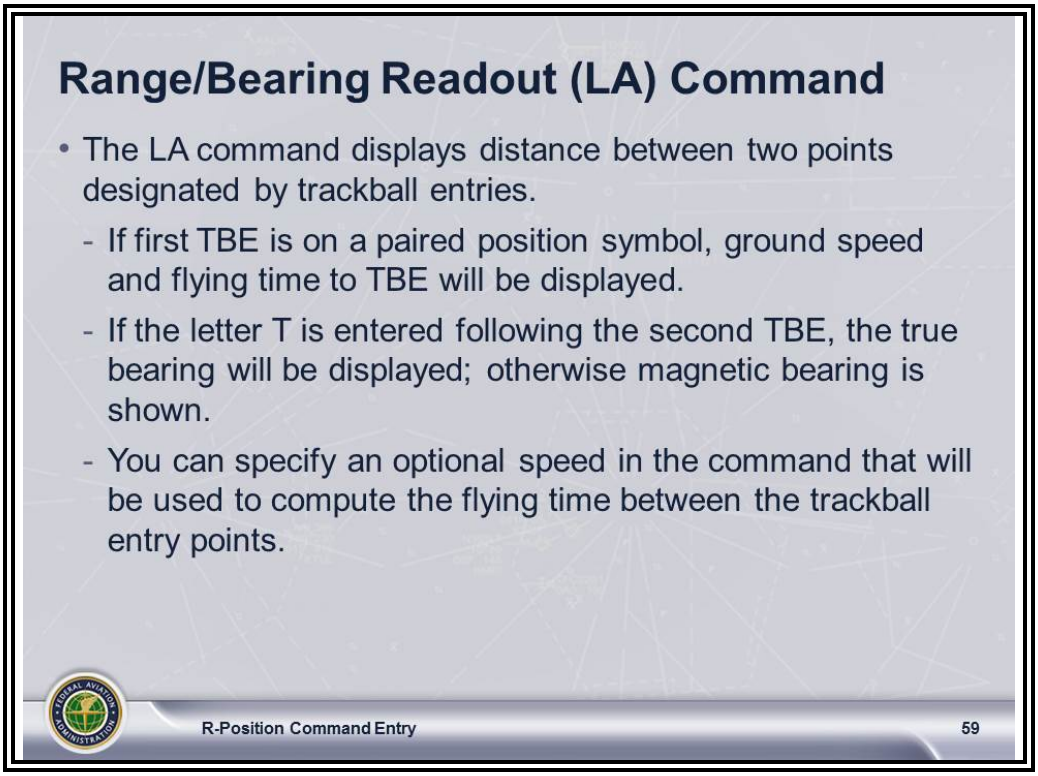
ERAM EDSM FLTS SRS 210.04, pars. 3.2.2.2.2.6.1-4; ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.2

NOTE: You might also have a RNG BRG button tear-off that can be used to execute Range/Bearing commands.

- ⊙ Inputs are displayed in the MCA Preview Area View.
- ⊙ Responses are displayed in the Response Area View.
- ⊙ Depending on the command, the controller is provided with:
  - Range (Distance)
  - Bearing
  - Speed
  - Flying Time
  - Speed Adjustment Information
  - Continuous Range Readout

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LA - Range/ Bearing Readout
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



⊙ The LA command displays distance and bearing between two points designated by trackball entries.

- If first trackball entry is on a paired position symbol, ground speed and flying time to second trackball entry will be displayed.
- If the letter T is entered following the second trackball entry, the true bearing will be displayed; otherwise, the magnetic bearing will be shown.
  - Syntax: LA <TBP> <TBP> T <KBE>
- You can specify an optional speed to be used in the command. If entered, it will be used to compute the flying time between the trackball entry points.
  - Entered speed must be between 55 and 9,999 knots (leading zeros are optional). Syntax:
    - → LA <TBP> <TBP> /055 <KBE>
    - → LA <TBP> <TBP> T/300 <KBE>

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LA - Range/ Bearing Readout (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4

Click to display output.

- If two points are identified by trackball entries:
  - Range and magnetic bearing of the second trackball entry is displayed in reference to the first trackball entry.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

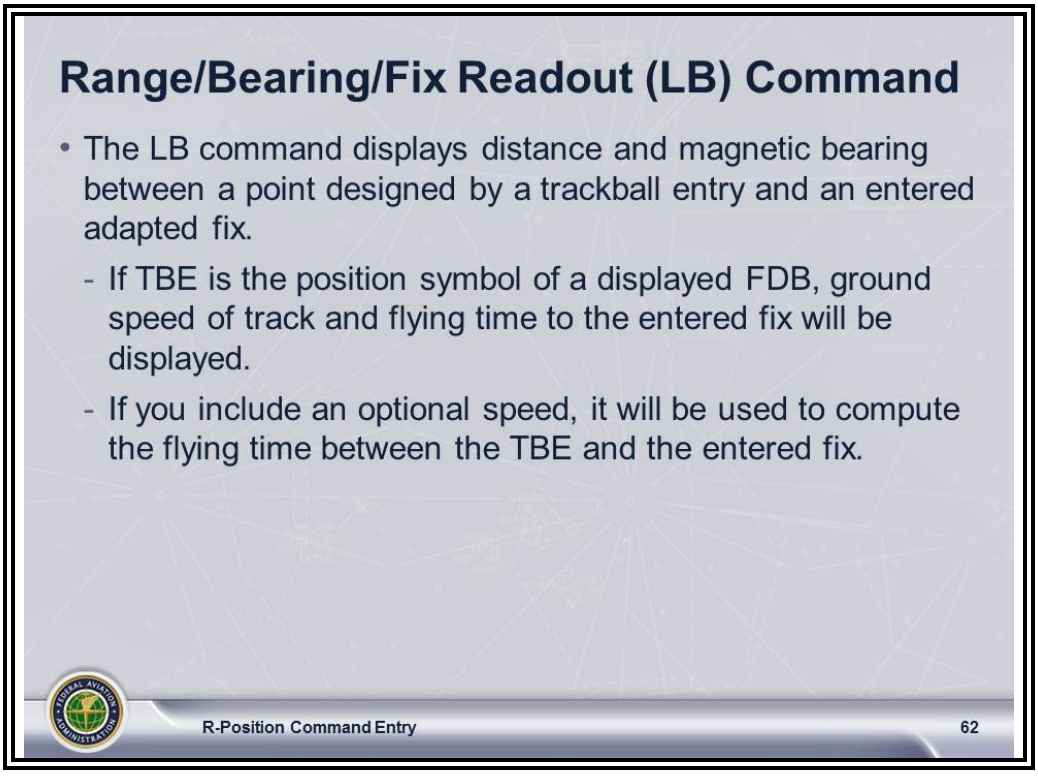
LA - Range/ Bearing Readout (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.04, pars. 3.2.2.2.2.6.1-4

Click to display output.

- If two points are identified by trackball entries and the first trackball entry is a paired position symbol:
  - Range and magnetic bearing of the FDB to the second trackball entry is displayed.
  - Fourth line contains actual track speed and flying time between entries.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LB - Range/ Bearing/Fix Readout
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



- The LB command displays distance and magnetic bearing between a point designated by a trackball entry and an entered adapted fix (2-11 alphanumerics).
  - If the trackball entry is the position symbol of a displayed FDB, ground speed of track and flying time to the entered fix will be displayed.
  - If an optional speed is included in the command, it will be used to compute the flying time between the trackball entry and the entered fix.
    - Entered speed must be between 55 and 9,999 knots (leading zeros are optional).

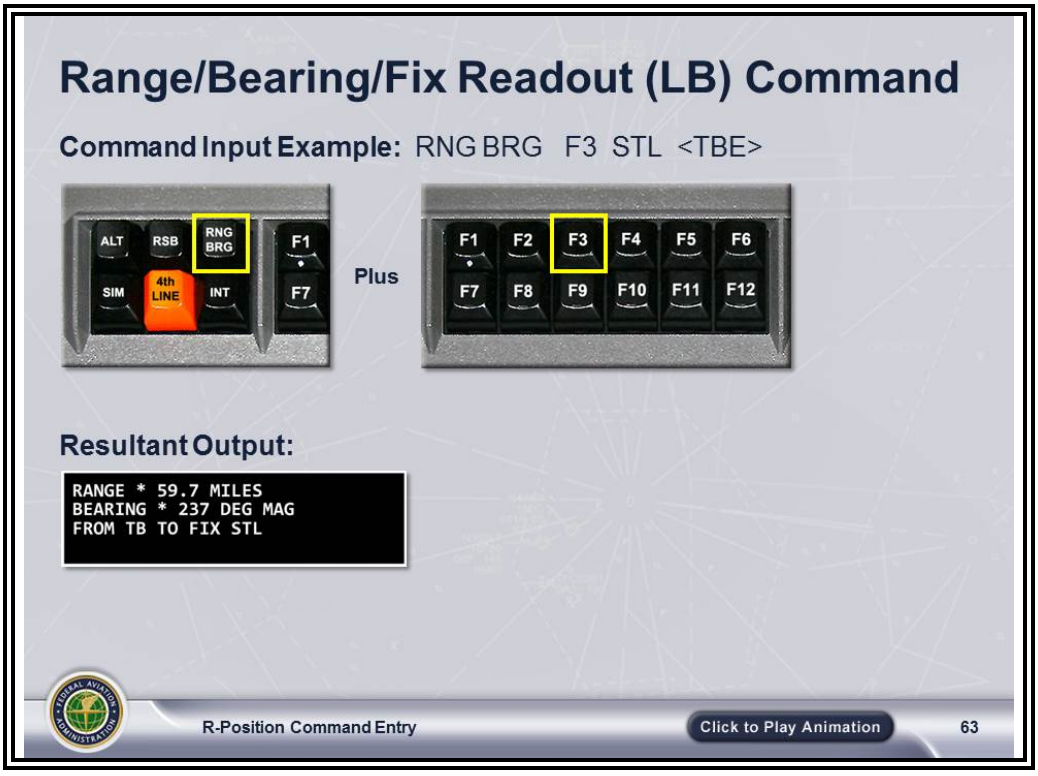
Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LB - Range/ Bearing/Fix Readout (Cont'd)

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4

Click to display output.

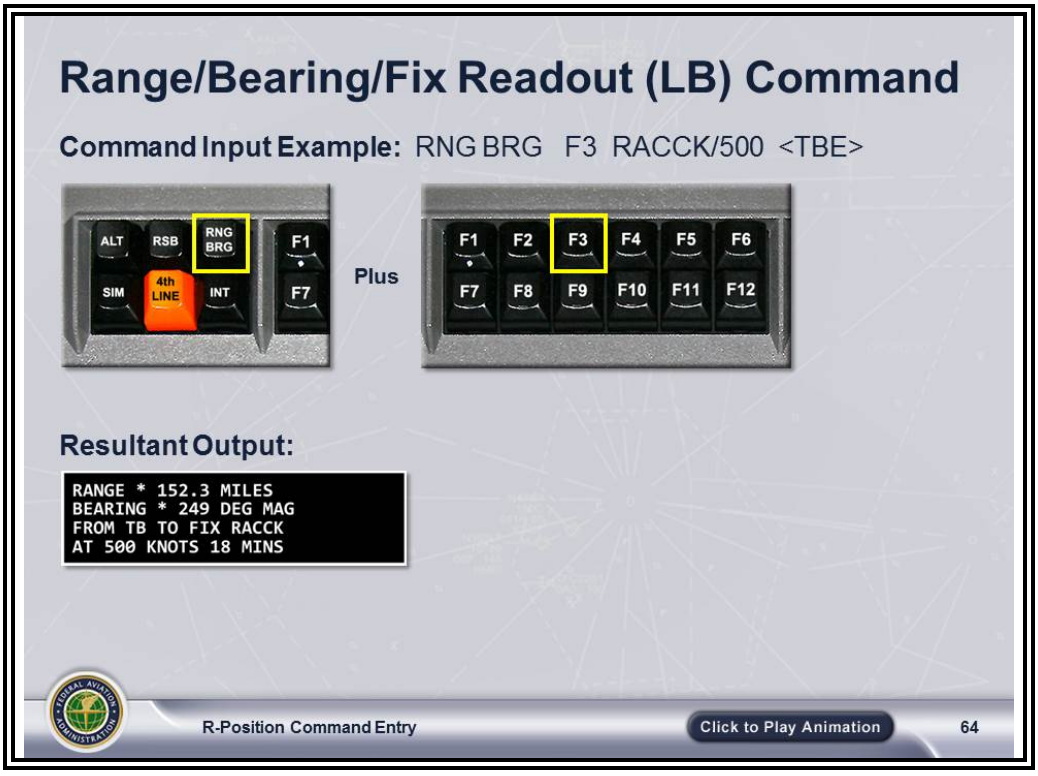


- If an adapted fix is entered using the keyboard and is followed by a trackball entry:
  - Range and magnetic bearing of the adapted fix is displayed in reference to the trackball entry.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LB - Range/ Bearing/Fix Readout (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



- If an adapted fix is entered using the keyboard and is followed by a speed entry and a trackball entry:

Click to display output.

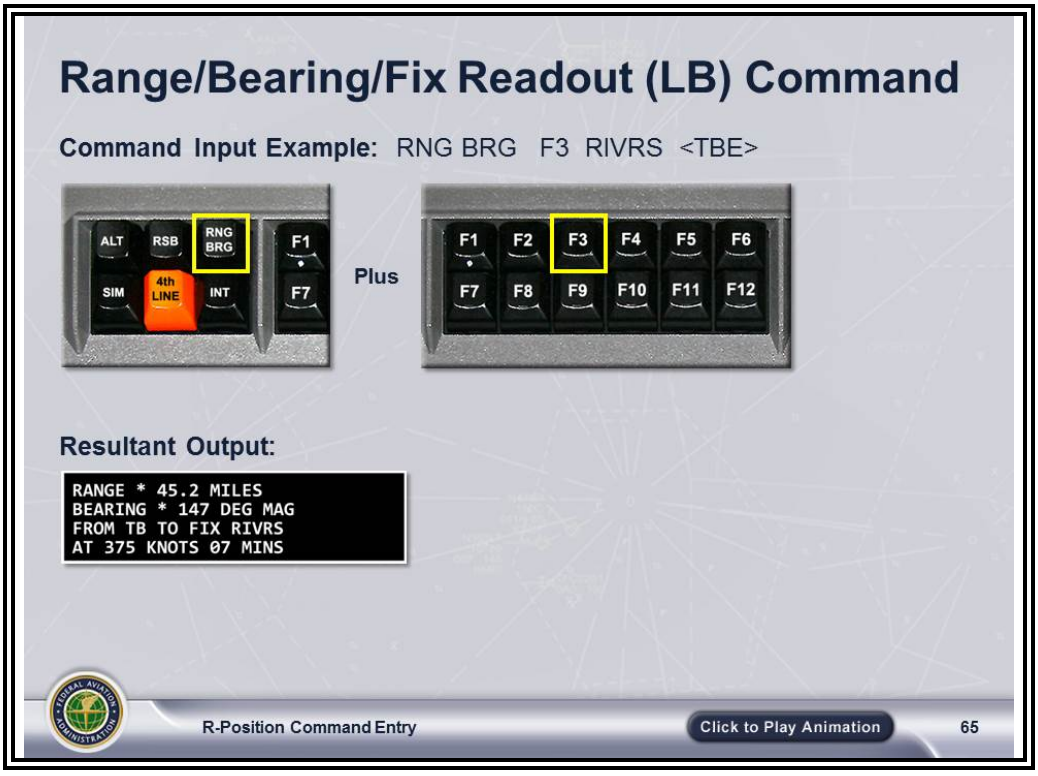
  - Range and magnetic bearing of the adapted fix is displayed in reference to the trackball entry.
  - Fourth line of the display contains the flying time between the adapted fix and the trackball entry at the entered speed.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LB - Range/ Bearing/Fix Readout (Cont'd)

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2 and Table 71;
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



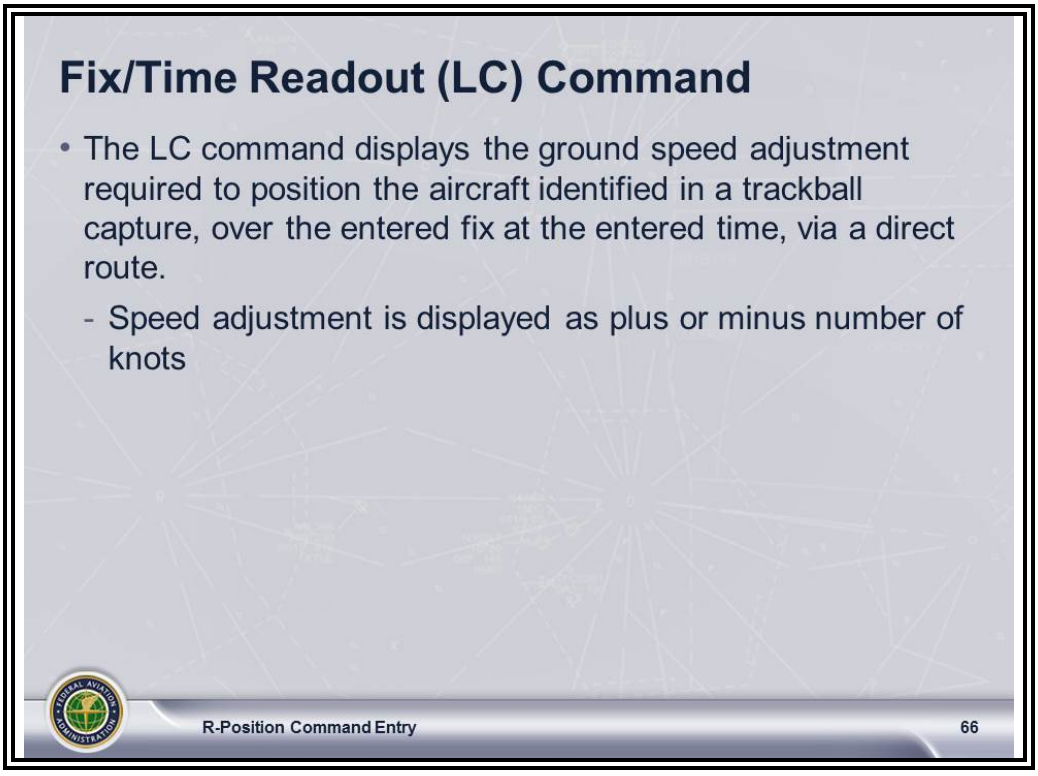
- If an adapted fix is entered using the keyboard and is followed by a trackball entry that captures a paired position symbol:

Click to display output.

  - Range and magnetic bearing of the adapted fix is displayed in reference to the trackball entry.
  - Fourth line of the display contains the flying time between the adapted fix and the trackball entry.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LC - Fix/Time Readout
EM-12,
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



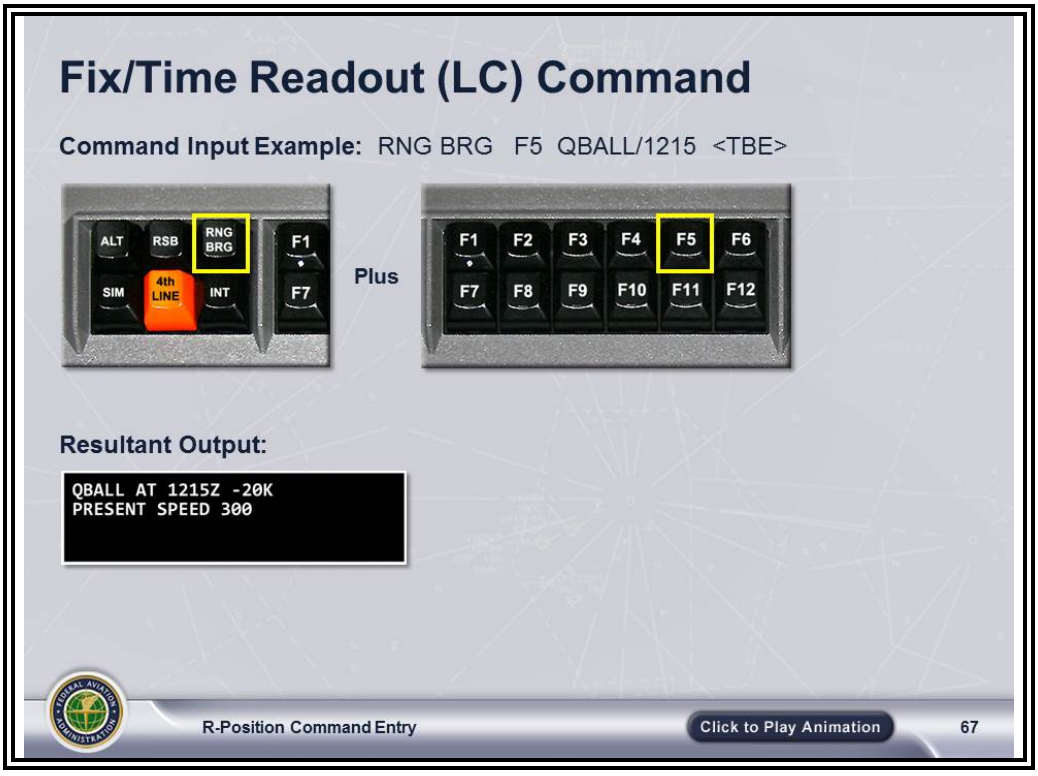
- The LC command displays the ground speed adjustment required to position the aircraft identified in a trackball capture, over the entered fix at the entered time, via a direct route.
  - Speed adjustment is displayed as a plus (+) or minus (-) number of knots.
  - Entered time must be at least three minutes in the future, but less than eight hours in the future.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LC - Fix/Time Readout (Cont'd)

EM-12,
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2
ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



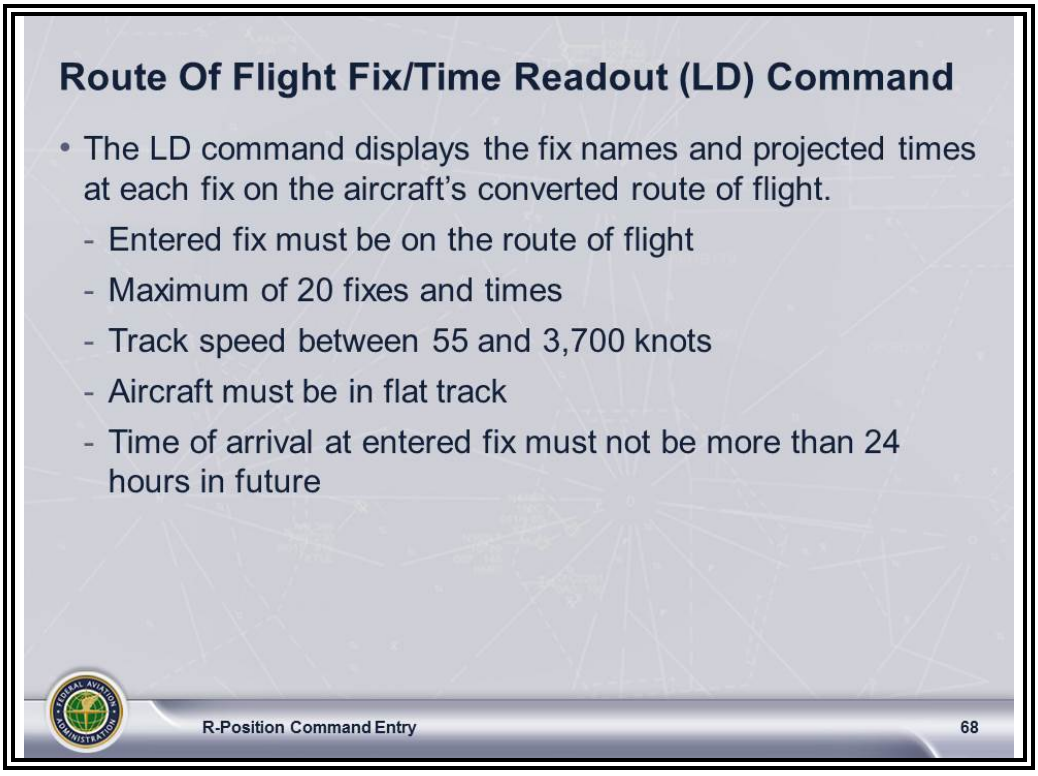
- If an adapted fix is entered using the keyboard and is followed by a selected fix time and a trackball entry that captures a paired position symbol:

Click to display output.

  - The RA displays the ground speed adjustment required to arrive over the entered fix at the entered time, as well as the present ground speed.
  - If the calculated speed adjustment for a Fix/Time Readout request exceeds +/- 999 knots, an error response will be received.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LD - Route of Flight Fix/Time Readout
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

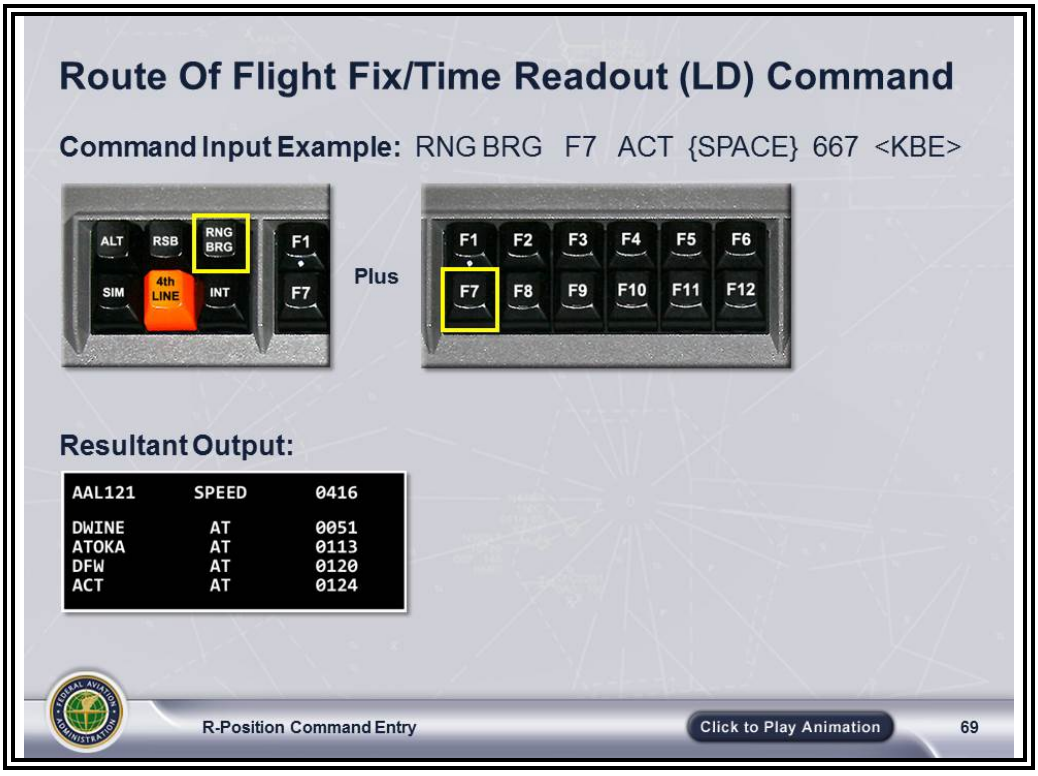


- The LD command displays the fix names and projected times at each fix on the aircraft's converted route of flight. It also provides the projected time and ARTCC ID of an adjacent facility boundary.
  - Entered fix must be on the route of flight.
  - A maximum of 20 fixes and times are displayed.
  - Track speed must be between 55 and 3,700 knots.
  - Aircraft must be in flat track.
  - Time of arrival at the entered fix must not be more than 24 hours in the future.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LD - Route of Flight Fix/Time Readout (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

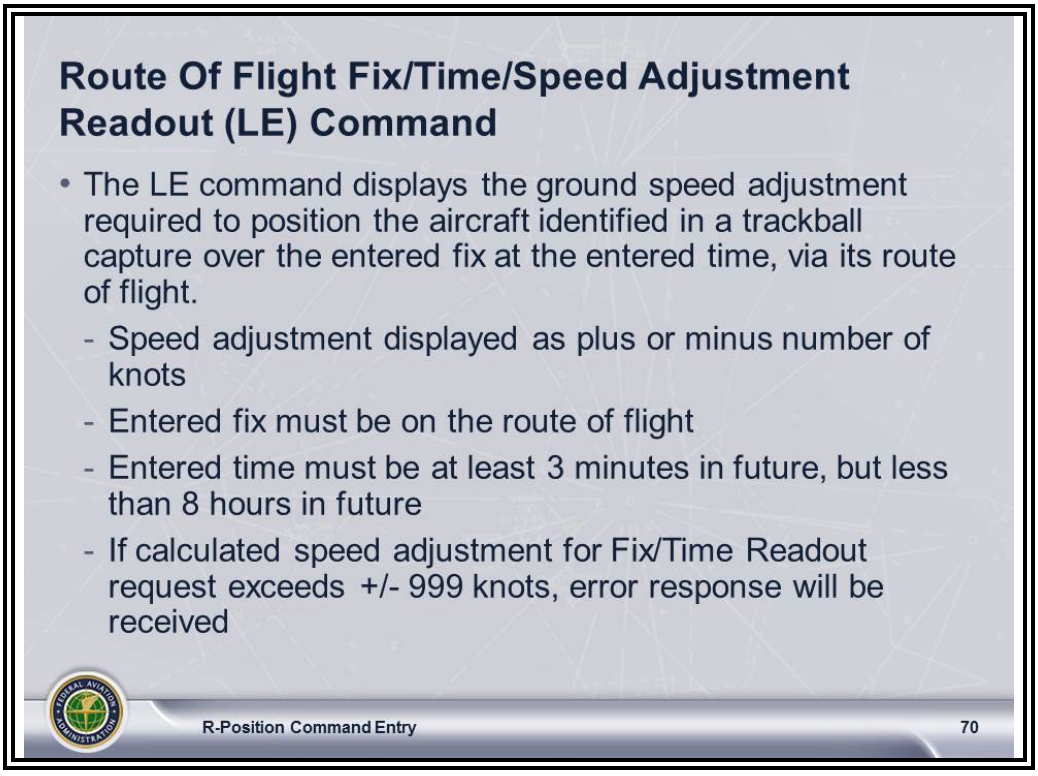


Click to display output.

- ⊙ If an adapted fix (2-11 alphanumerics) is entered using the keyboard and is followed by a FLID:
  - The RA displays the ACID, track speed, and projected times over each fix on the converted route of flight from the current track position to the entered fix.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LE - Route of Flight Fix/Time/ Speed Adjustment Readout
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



⊙ The LE command displays the ground speed adjustment required to position the aircraft identified in a trackball capture, over the entered fix at the entered time, via its route of flight.

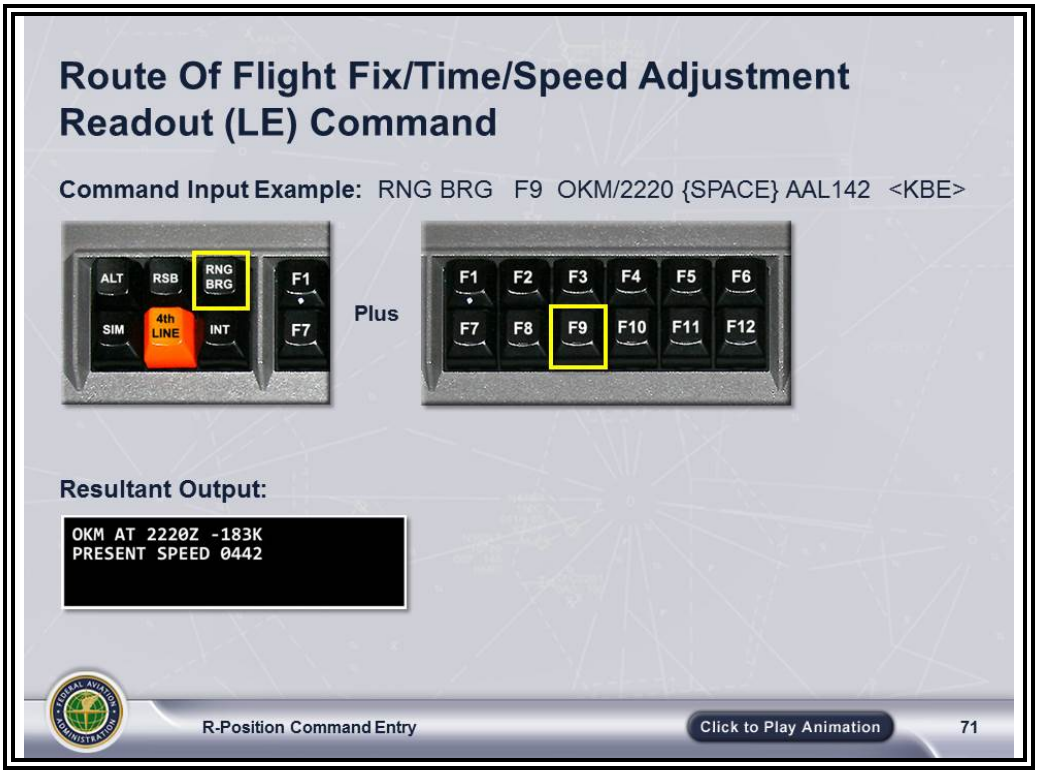
- Speed adjustment is displayed as a plus (+) or minus (-) number of knots.
- Entered fix must be on the route of flight.
- Entered time must be at least three minutes in the future, but less than eight hours in the future.
- If the calculated speed adjustment for a Fix/Time Readout request exceeds +/- 999 knots, an error response will be received.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LE - Route of Flight Fix/Time/ Speed Adjustment Readout (Cont'd)

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



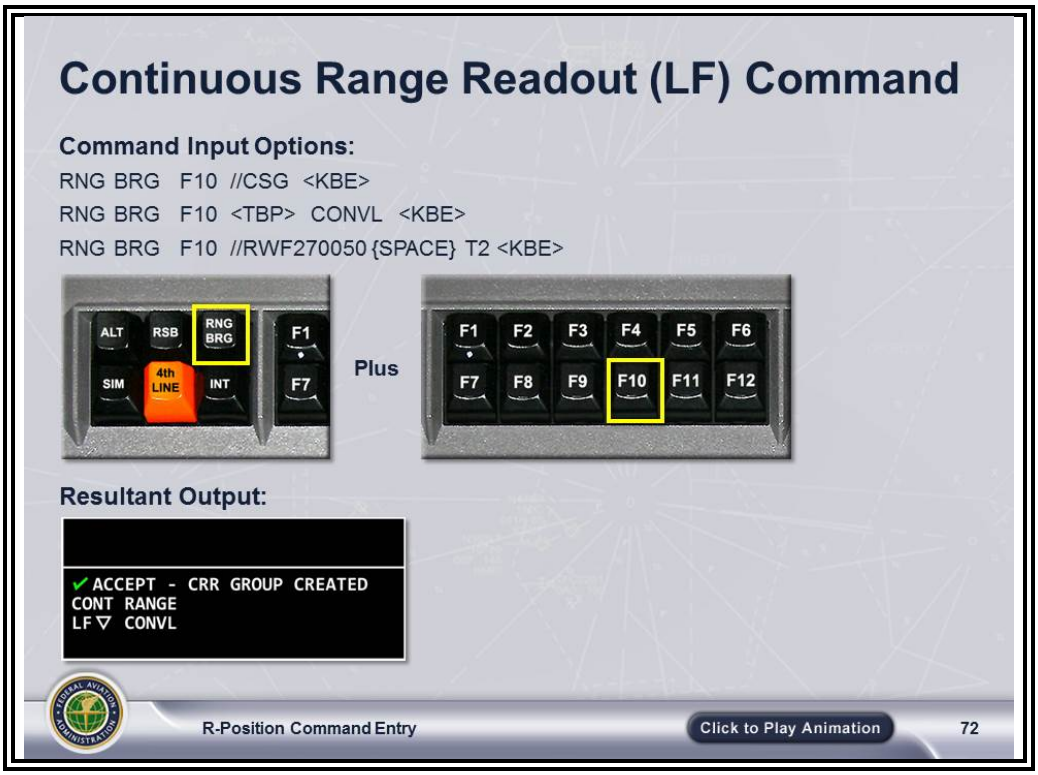
- If an adapted fix (2-11 alphanumerics) is entered using the keyboard and is followed by a selected fix time and a FLID:

Click to display output.

  - The RA displays the ground speed adjustment required to arrive over the entered fix at the entered time, as well as the present ground speed.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LF - Continuous Range Readout
TI 6110.100, pars. 9.3, 9.4, 9.5; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4



- The LF command displays the target distance from a controller determined fix or point on the Situation Display.

NOTE: In a previous lesson, you learned how to use the Continuous Range Readout View to manage and control the continuous range readout display to monitor aircraft spacing and sequencing.

- There are three ways to create a Situation Display Location Group (SDLG).
  - Specify a fix or airport and create a group with the same name.
  - Select a trackball point on the Situation Display and enter a group name.
  - Specify a fix or point on the Situation Display, and enter a group name.
- The group name must be 1-5 alphanumeric characters.
- A fix can be a fix name, fix radial distance, or latitude/longitude.

Click to display output.

- The result is an accept message that the group has been created.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

LF - Continuous Range Readout (Cont'd)
TI 6110.100, pars. 9.3, 9.4, 9.5; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4

- You can also create a group and add aircraft to it at the same time.
  - Enter the command using one of the methods previously described.
  - Include one or more FLIDs before the final keyboard ENTER.

Click to display output.

Continued on next page

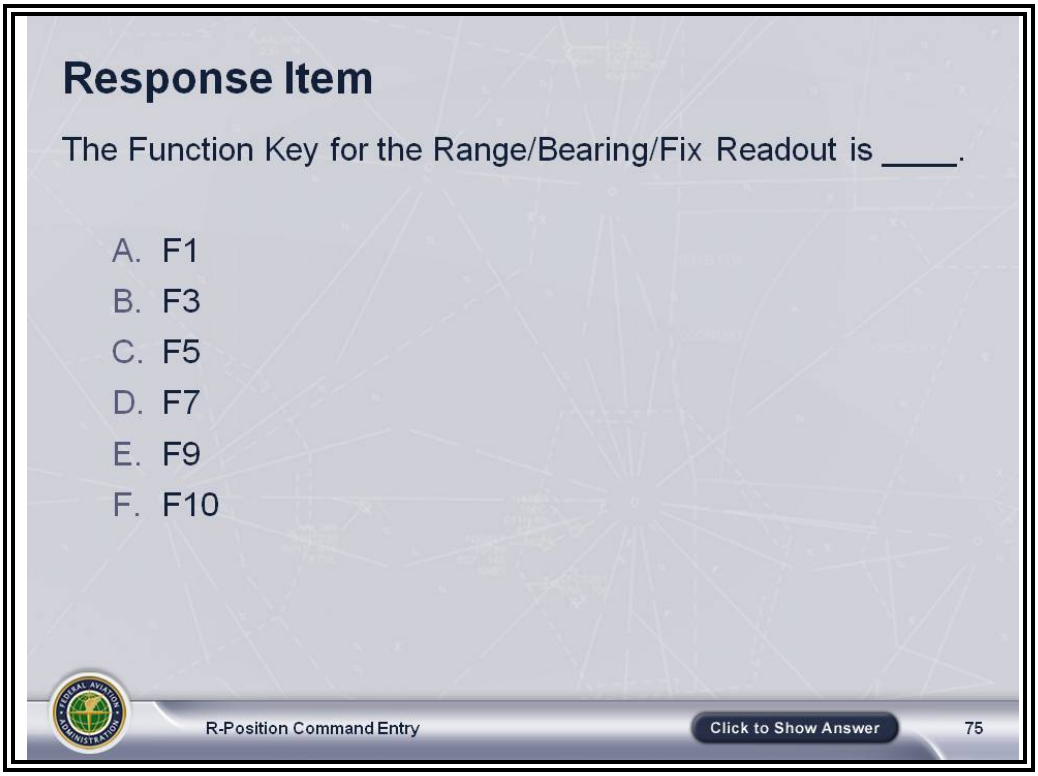
COMMAND MENUS COMMAND SYNTAX *(Continued)*

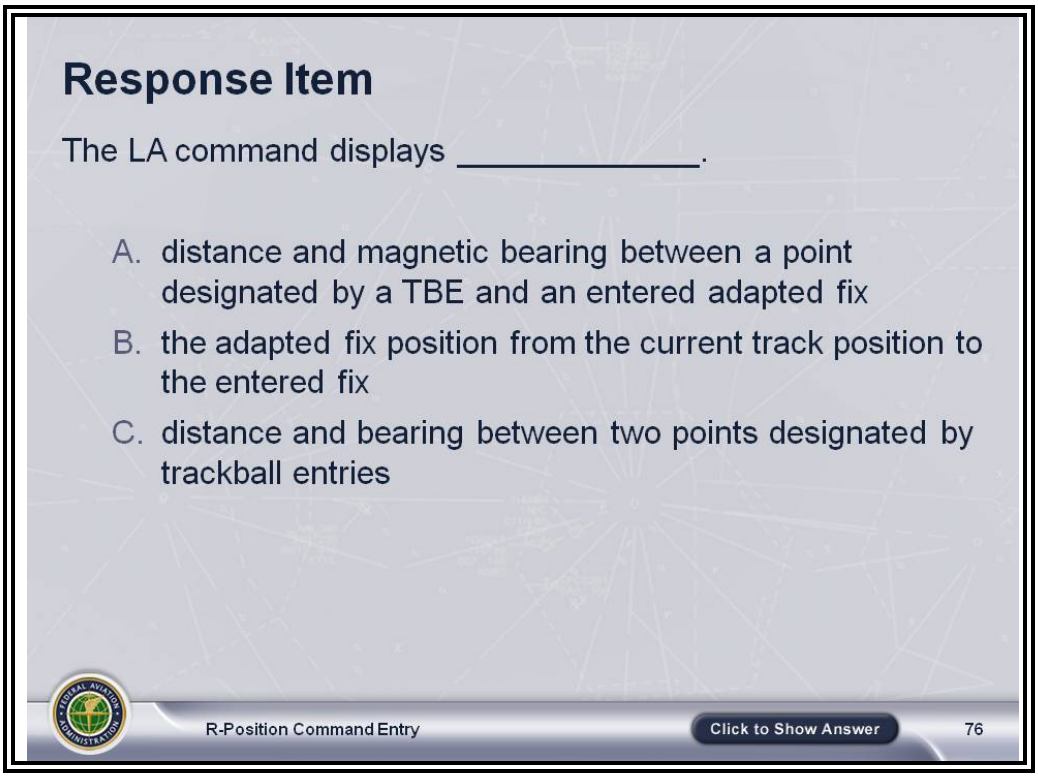
LF - Continuous Range Readout (Cont'd)
TI 6110.100, pars. 9.3, 9.4, 9.5; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; ERAM FLTS SRS 210.14, pars. 3.2.2.2.2.6.1-4

- Once a group is created, you can use the LF command to add or delete flights from the group.
  - If the FLID is not present, the flight will be added.
  - If the FLID is present, the flight will be deleted.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

Review

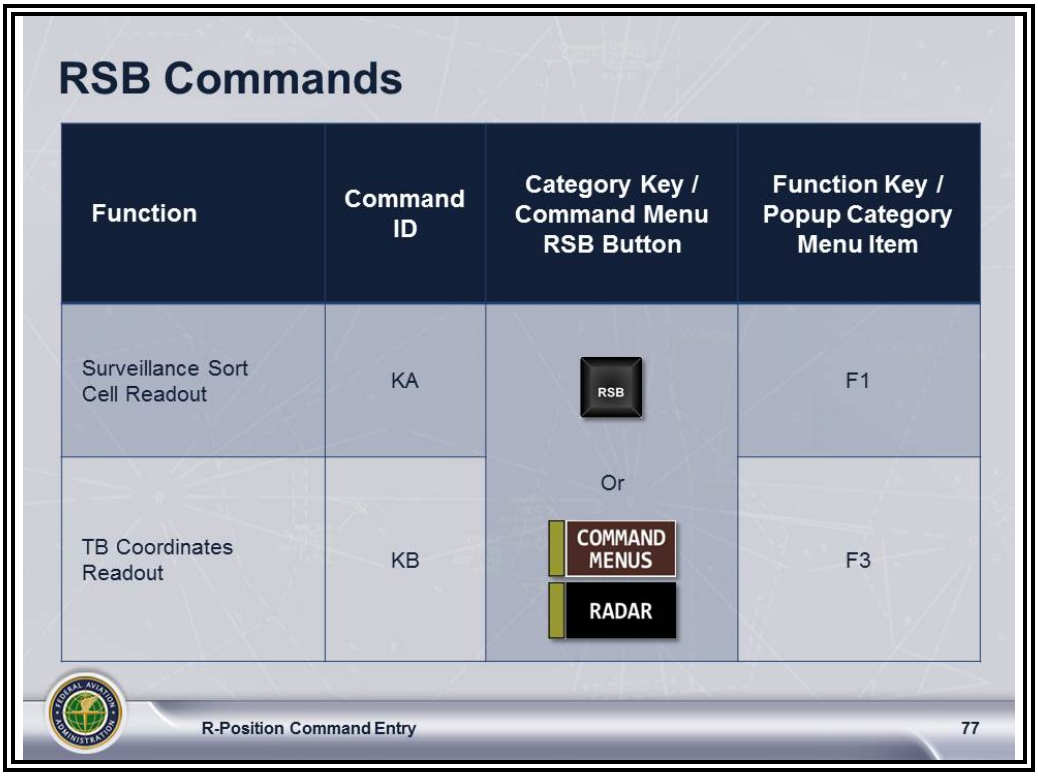




SLIDE ANSWERS: Slide 75 = B; Slide 76 = C

COMMAND MENUS COMMAND SYNTAX *(Continued)*

RSB Commands
ERAM EDSM SRS V1B1, pars. 3.2.9.2.1 and 3.2.9.2.12



- RSB commands and their associated Function Keys:
  - Surveillance Sort Cell Readout (KA) - F1
  - Trackball Coordinates Readout (KB) - F3
- There are several ways to enter RSB Commands.
  - Method 1:
    - Press the RSB category key.
    - Press the desired function key (F1, F3).
    - TBE on the Situation Display.

Continued on next page

COMMAND MENUS COMMAND SYNTAX *(Continued)*

RSB Commands
ERAM EDSM SRS V1B1, pars. 3.2.9.2.1 and 3.2.9.2.12

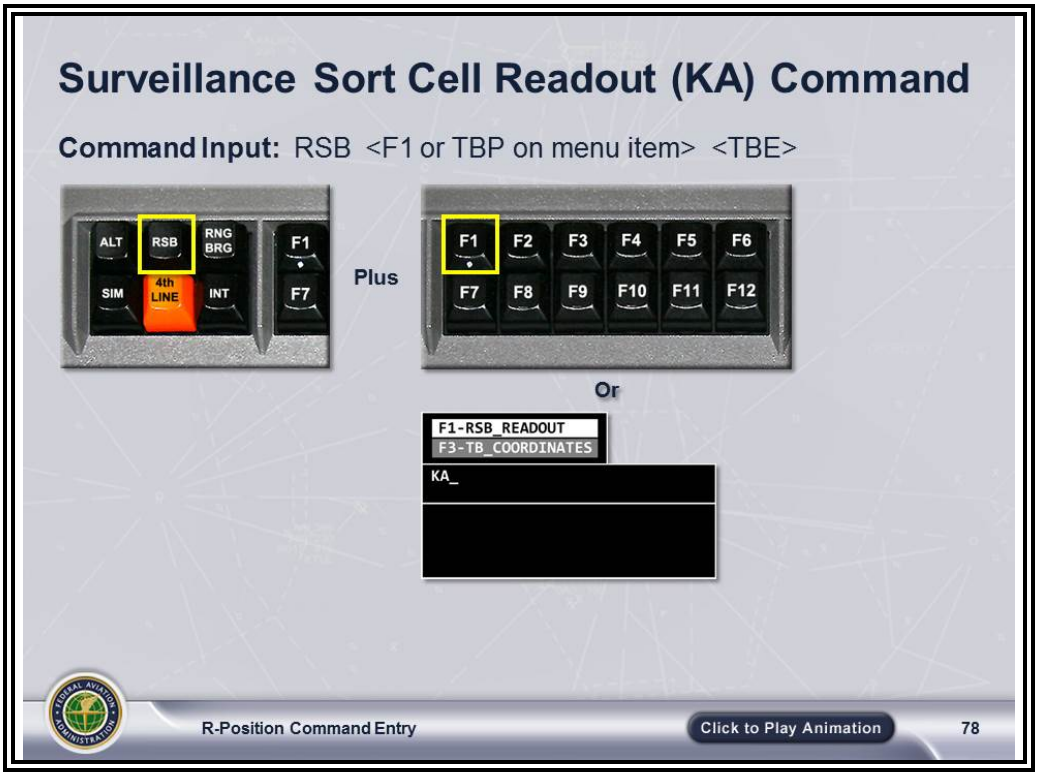
- Method 2:
  - TBP the COMMAND MENUS button on the Master Toolbar.
  - TBP the RADAR button.
  - TBP one of the category menu items.
  - TBE on the Situation Display.

NOTE: The COMMAND MENUS buttons are facility-adaptable. Therefore, the RADAR button may have a different name at your facility (e.g., RSB).

- Method 3:
  - Type the two-letter Command ID in the MCA.
  - TBE on the Situation Display.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

KA - Surveillance Sort Cell Readout
ERAM EDSM SRS V1B1,
pars. 3.2.9.2.1 and 3.2.9.2.12



- The Surveillance Sort Cell (SSC) Readout command provides the ability to display the status of ADS-B and all radars adapted to the SSC.

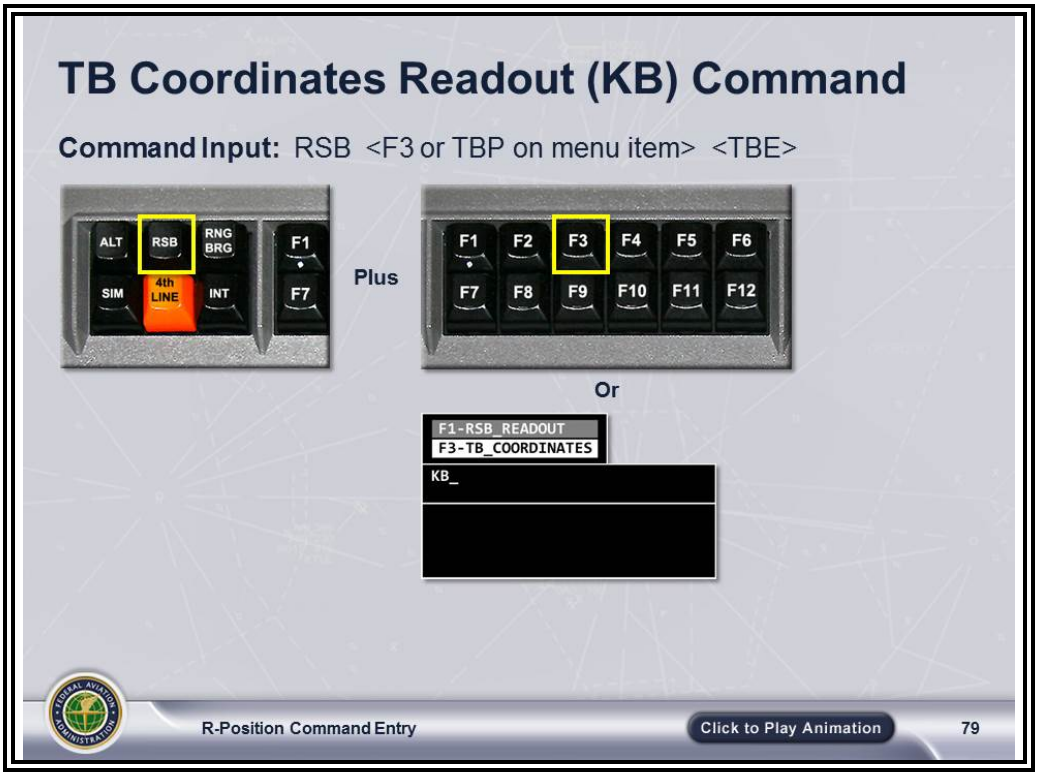
Click to display output.

- Each SSC will display data for up to five altitude tiers.
- For each tier associated with a sort cell, the readout will show the state of each of the surveillance sources, up to a maximum of nine, assigned to that tier (eight radars and ADS-B).

NOTE: When you press the RSB button, the pop-up menu above the MCA will display automatically. The menu choice for SSC Readout will be pre-selected. Note that the menu items are facility-adaptable, so they may have different names at your facility than the examples shown here.

COMMAND MENUS COMMAND SYNTAX *(Continued)*

KB - Trackball Coordinates Readout
ERAM EDSM SRS V1B1,
pars. 3.2.9.2.1 and 3.2.9.2.12

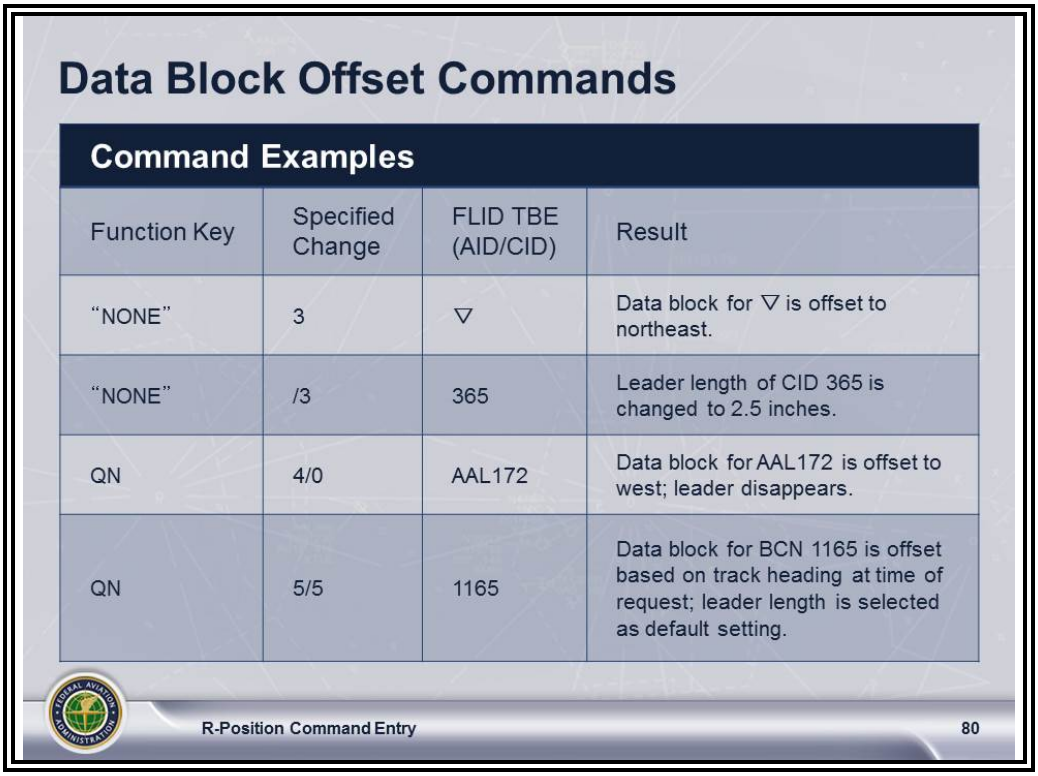


Click to display output.

- The Trackball Coordinate Readout (KB) command provides the Radar Controller with the ability to display the stereographic X and Y coordinates, and the latitude and longitude, of the selected trackball cursor position in the Response Area.

NOTE: When you press the RSB button, the pop-up menu above the MCA will display automatically. The menu choice for SSC Readout will be pre-selected. Again, note that the menu items are facility-adaptable, so they may have different names at your facility than the examples shown here.

Data Block Offset Commands
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.1;
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, par. 4.13



⊙ The controller can change the position and/or distance of the FDB relative to the position symbol.

- d determines the position of the FDB.
- /d determines the length of the leader.
- d/d offsets the data block *and* changes the leader length.

☞***NOTE:*** *Review that when the controller does not enter a two-letter command, the computer automatically inserts QN (NONE or implied). QN is used for many R-Position commands.*

Continued on next page

MANAGING DATA BLOCKS *(Continued)*

Data Block Offset Commands (Cont'd)

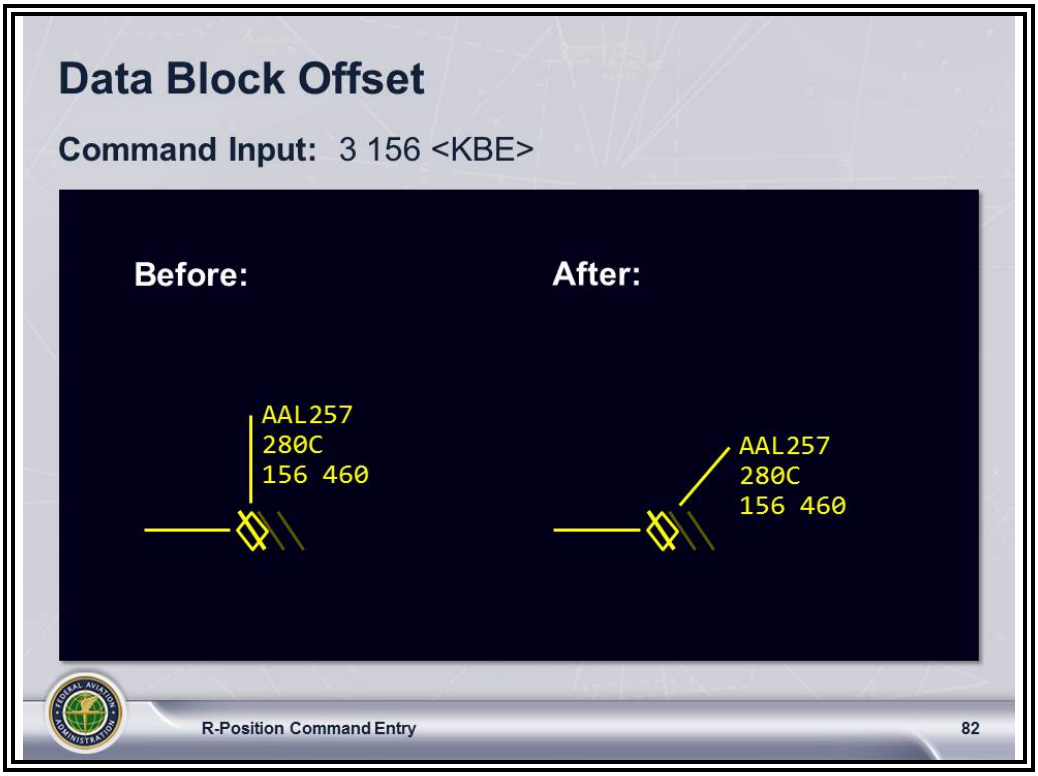
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.1; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, par. 4.13

- FDBs can be offset to any of eight compass directions.
  - The corresponding direction for each digit is displayed on the slide (shown above).
  - 5 repositions the data block based on the track velocity direction at the time of the request.

Continued on next page

MANAGING DATA BLOCKS *(Continued)*

Data Block Offset Commands (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.1;
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, par. 4.13



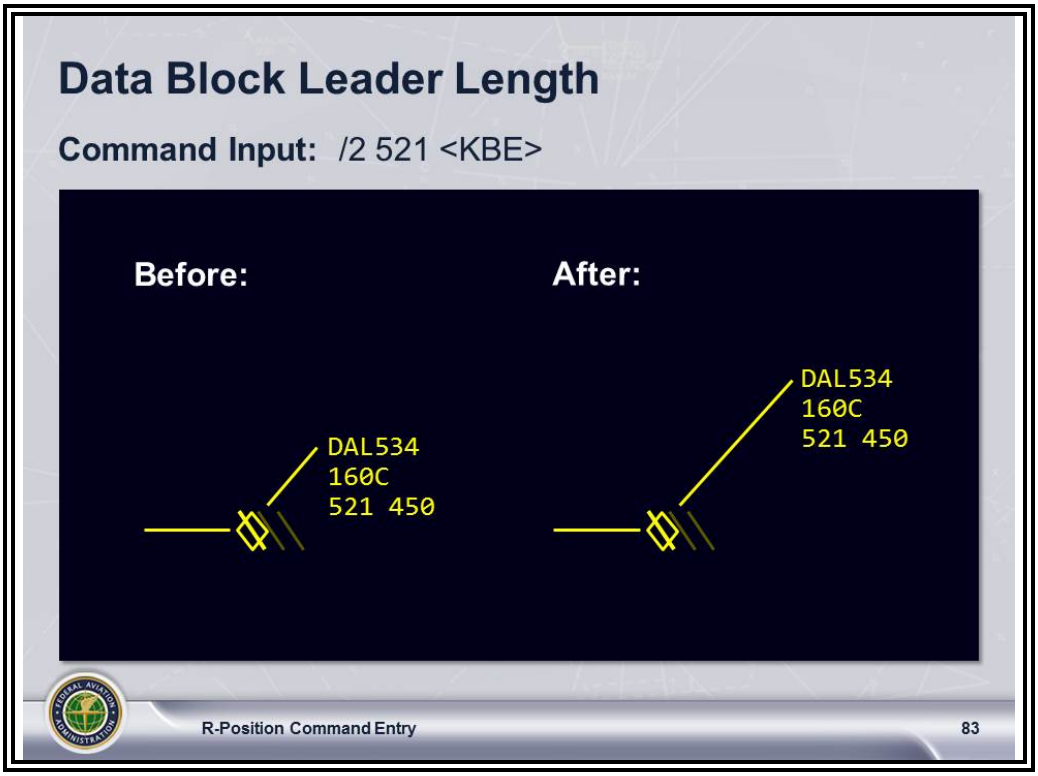
- The format for requesting a FDB offset is d space FLID ENTER.

NOTE: LDBs (paired, unpaired, enhanced) can be offset to the east or west only. To offset a LDB, type the number 4 (west) or the number 6 (east). Then middle-click the target symbol to complete the change. The default location for LDBs is east.

Continued on next page

MANAGING DATA BLOCKS *(Continued)*

Data Block Offset Commands (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.1;
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2;
TI 6110.100, par. 4.13



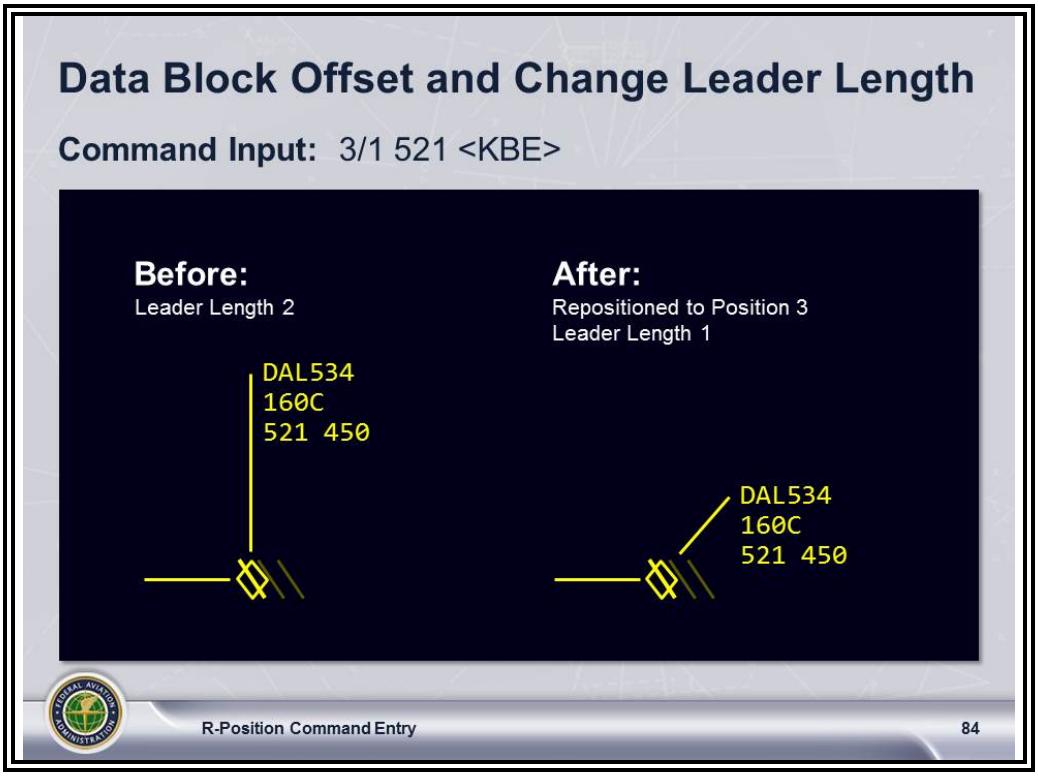
- /d determines the length of the leader. Leader length options are:
  - /0 - No leader
  - /1 - .625 inches
  - /2 - 1.25 inches
  - /3 - 2.5 inches
  - /5 - Length selected as default setting in the controller's preference set

NOTE: You can also use the FDB LDR button on the Data Blocks Fields Toolbar to change the line leader length for all FDBs.

Continued on next page

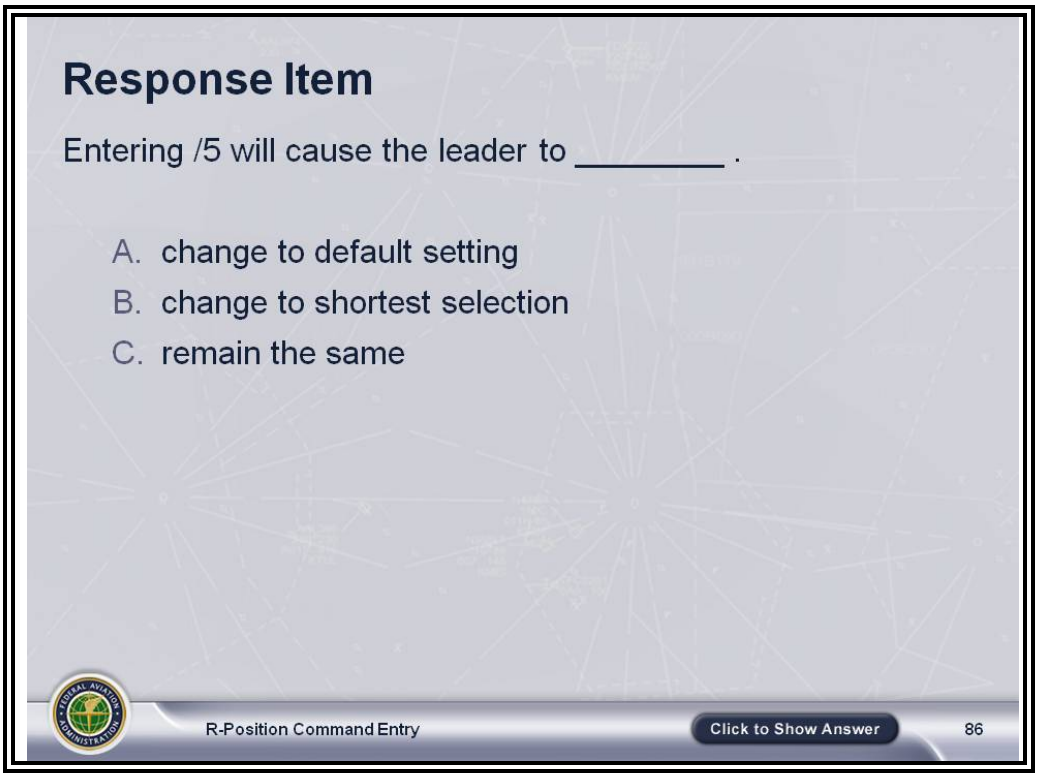
MANAGING DATA BLOCKS *(Continued)*

Data Block Offset Commands (Cont'd)
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2; TI 6110.100, par. 4.13



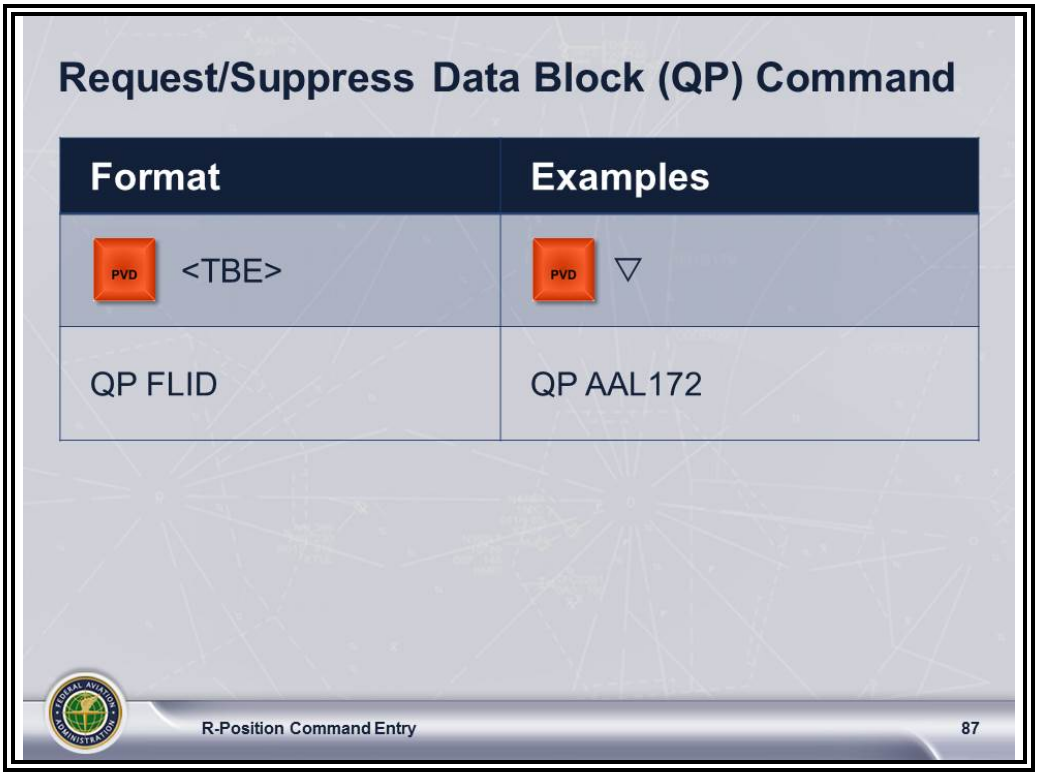
- d/d offsets the data block and changes the leader length simultaneously.
  - Entering 3/1 would accomplish the changes shown on the slide.

Review



SLIDE ANSWERS: Slide 85 = A; Slide 86 = A

QP - Request/ Suppress Data Block Command
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



- This command displays, deletes the display of, or temporarily inhibits display of a full data block.

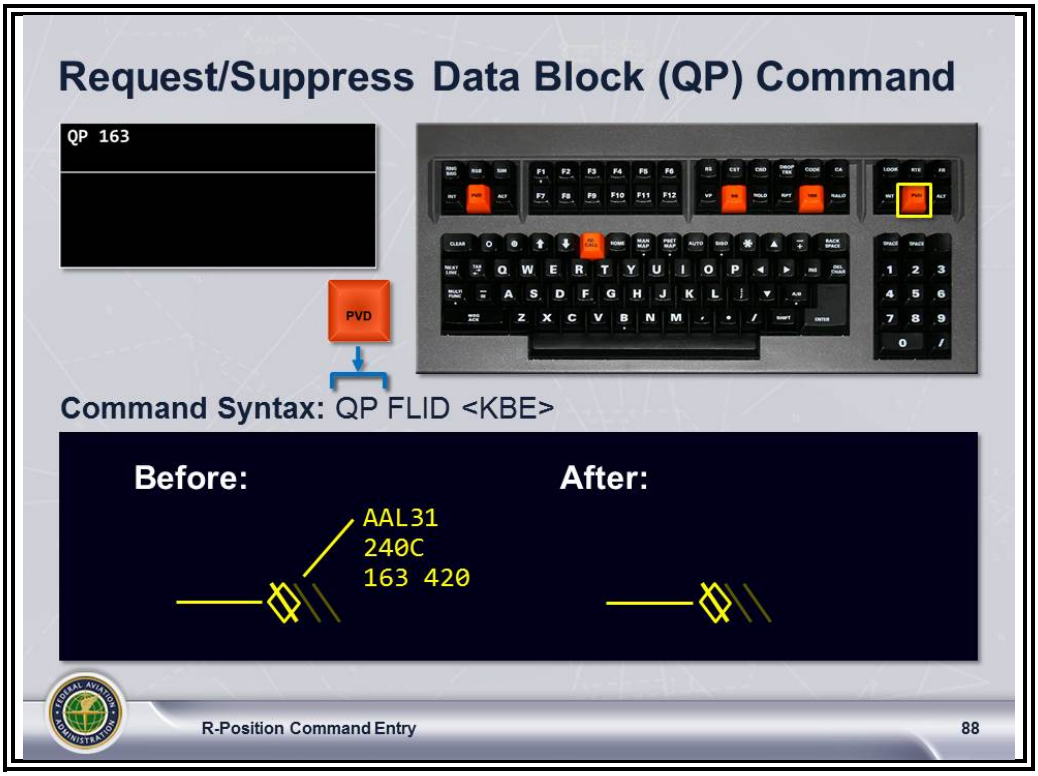
☞ ***NOTE:*** Discuss the examples on the slide.

Continued on next page

MANAGING DATA BLOCKS *(Continued)*

QP - Request/ Suppress Data Block Command (Cont'd)

ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.7.3; ERAM EDSM SRS 210.04 V1B2, Appendix C; TI 6110.141, par. 2.1.76



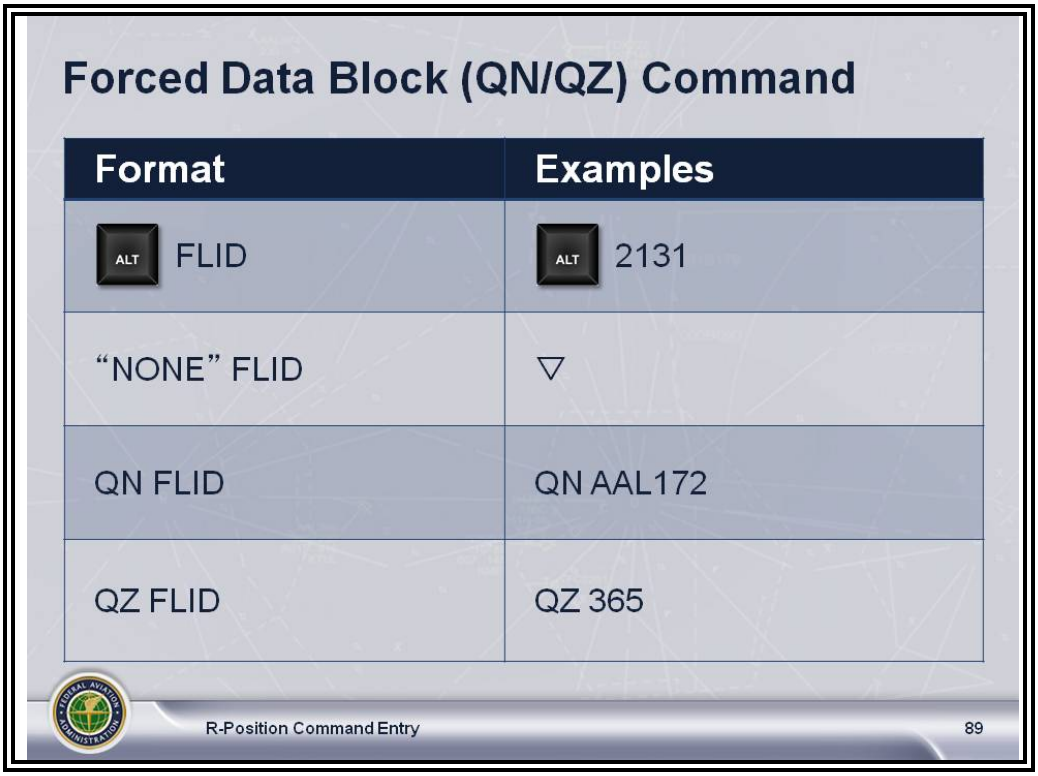
- Results
  - If the FDB is:
    - In a timeout process after the handoff, it is deleted
    - Under your sector's control or being handed off to an adjacent sector, it is reduced to vector length and position symbol
      - → After the time parameter (up to 120 seconds), the FDB returns to normal.

☞***NOTE:*** *Tell students the adapted time for the facility*.

    - Displayed because of a request, force, or point out, it will delete the display
    - Suppressed, it will return immediately
    - Not displayed, it will be displayed

MANAGING DATA BLOCKS *(Continued)*

QN/QZ - Forced Data Block Command
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.7.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



- This command is used to cycle data blocks from an E-LDB/LDB to an FDB and back to an E-LDB/LDB.
  - Can only be done at non-controlling sectors
  - Cannot be used at receiving sector during handoff as the QN/QZ will be interpreted as an accept handoff

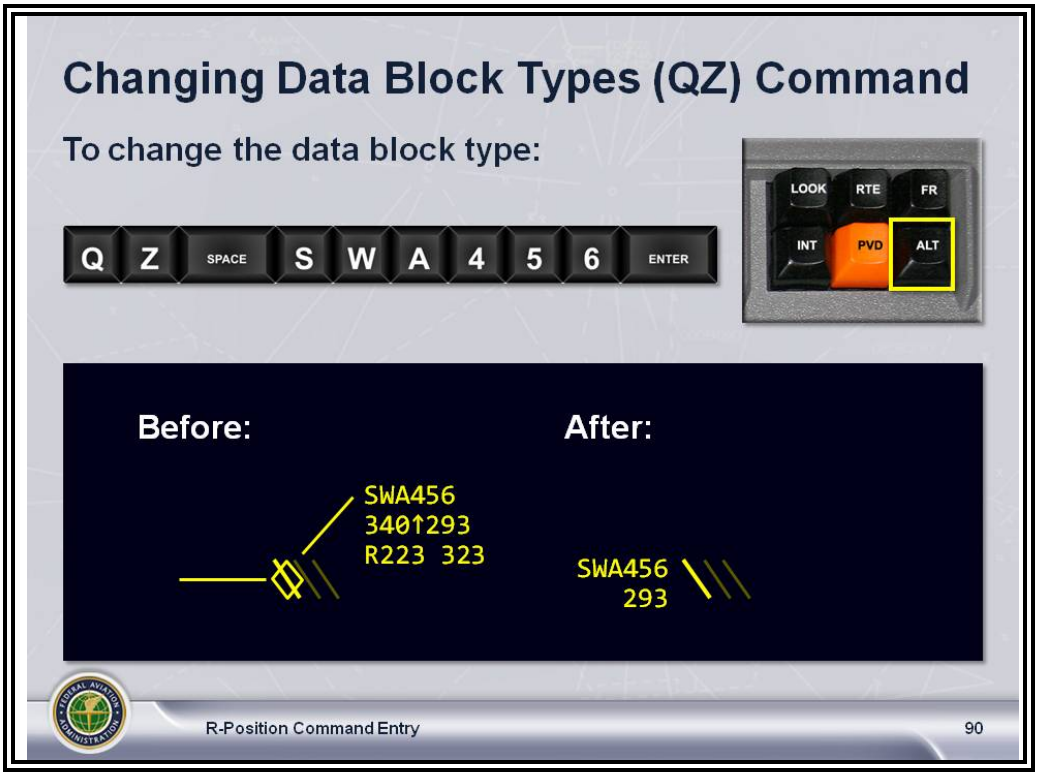
NOTE: This message is similar to a Request/Suppress command.

☞ ***NOTE:*** Discuss the examples on the slide.

Continued on next page

MANAGING DATA BLOCKS *(Continued)*

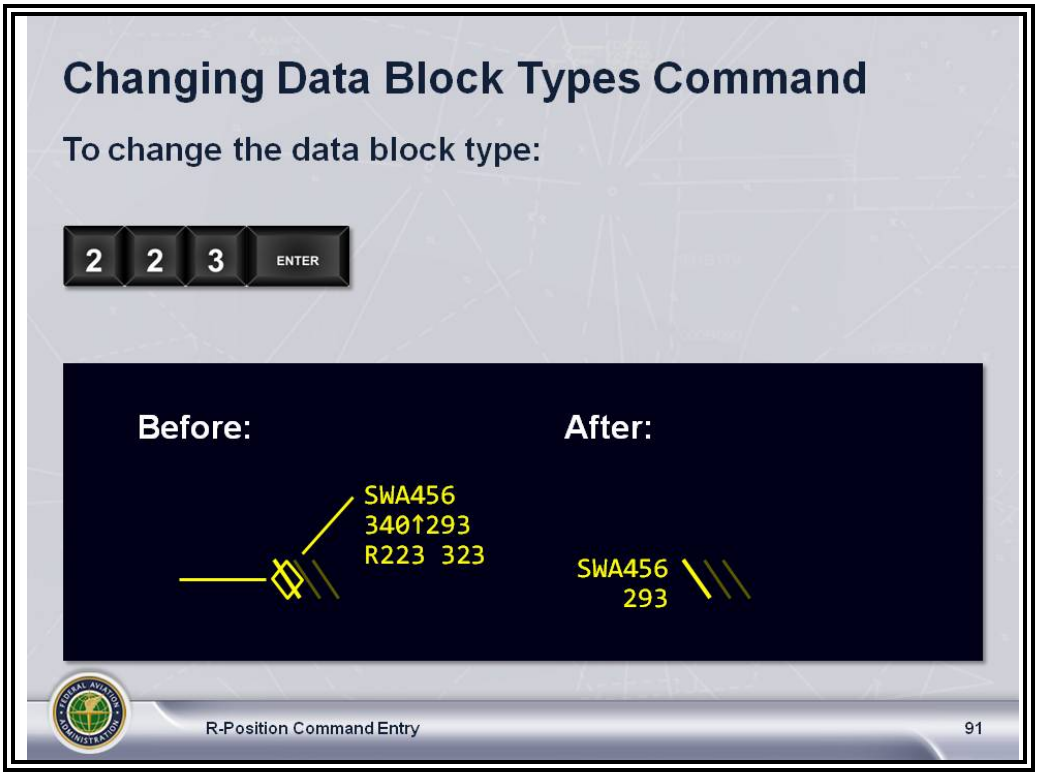
QN/QZ - Forced Data Block Command (Cont'd)
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.7.2; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



- Results - If the FDB is:
  - Not displayed:
    - It will force the display.
  - Displayed as a result of prior forced display:
    - It will delete the display.
  - Timing out after handoff:
    - It will delete the display.
  - Currently in unsuppressed Conflict Alert or in Point Out from another position:
    - It will **not** delete the display.
  - Being handed off to the sector, but is beyond sector display:
    - It will accept the handoff and the FDB will be present.

MANAGING DATA BLOCKS *(Continued)*

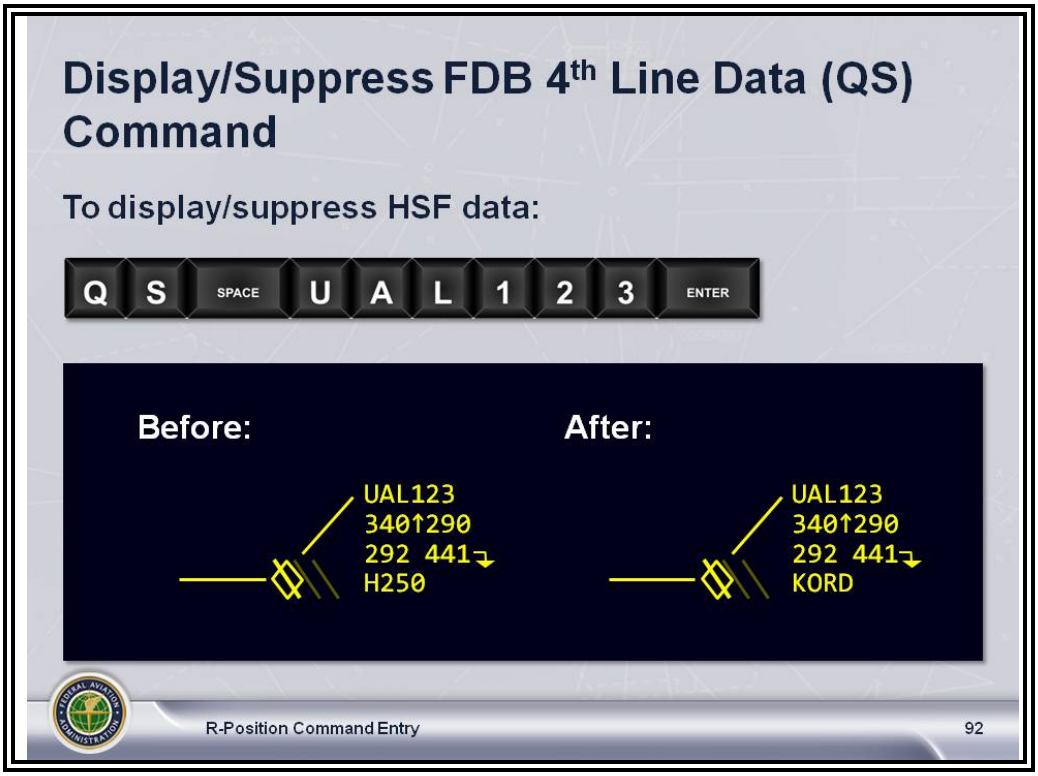
Changing Data Block Types Command
TI 6110.100, par. 4.4



- You can change the data block type of individual aircraft not under your control.
- Method 1: Toggle between:
  - FDBs and paired LDBs by middle-clicking the target symbol
  - Paired LDB and Enhanced LDB by left/middle-clicking the Altitude field
- Method 2: Type CID and press ENTER, as displayed on the slide above.

MANAGING DATA BLOCKS *(Continued)*

QS - Display/ Suppress HSF Data
TI 6110.100, par. 4.9.1



- The Heading/Speed/Free Form Text (HSF) indicator toggles the heading/speed/free form text in an associated FDB. Left- or middle-click the HSF indicator to toggle the data on or off.
- You can also display/suppress FDB 4th line data using the QS command.

Review

Response Item

The ___ command is used to display or suppress FDB 4th line (heading/speed/free from text) data.

A. QH
B. QS
C. QZ

R-Position Command Entry | Click to Show Answer | 93

Response Item

The Forced Data Block (QN/QZ) command can be executed only at non-controlling sectors.

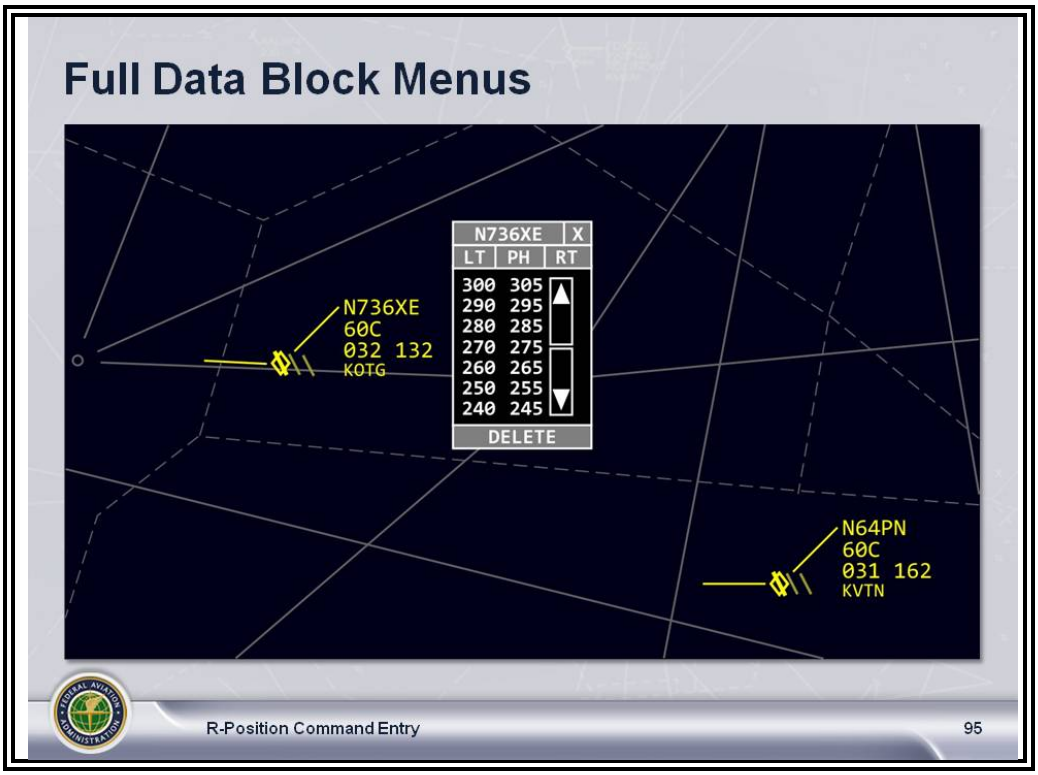
A. True
B. False

R-Position Command Entry | Click to Show Answer | 94

SLIDE ANSWERS: Slide 93 = B; Slide 94 = A

FULL DATA BLOCK MENUS

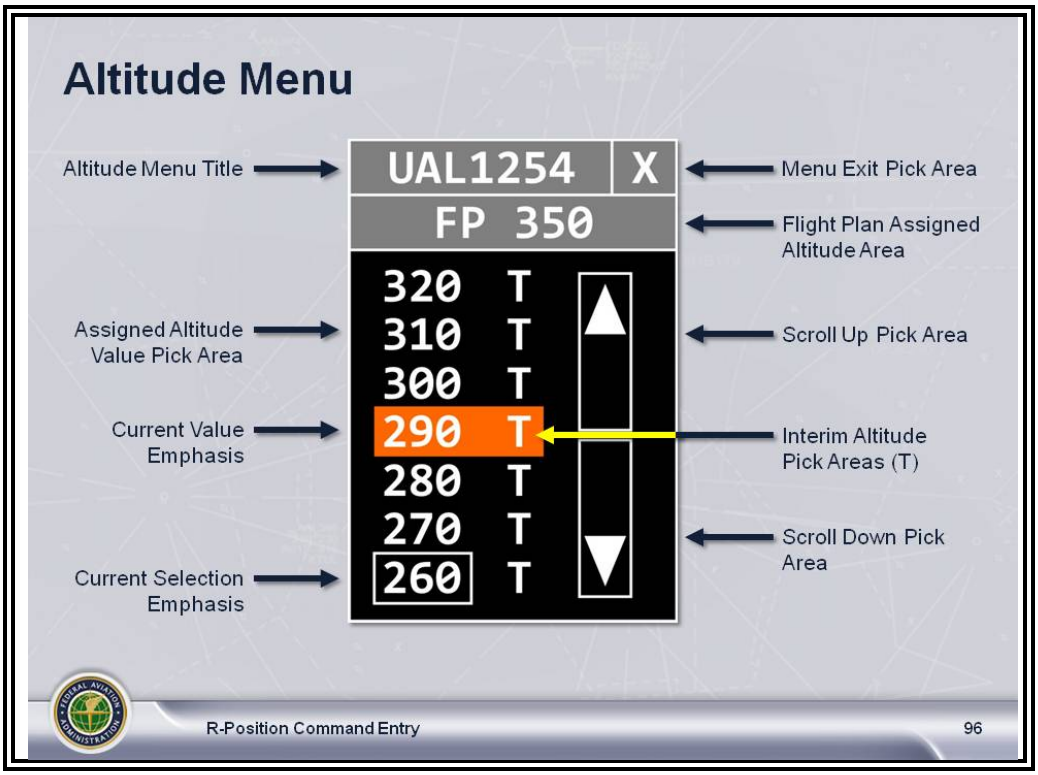
Full Data Block Menus - Introduction
TI 6110.100, par. 4.19



- FDB menus give you another method for composing commands.
- You can invoke menus by selecting the associated FDB field for:
  - Altitude - to update the assigned altitude for a flight plan, assign an interim altitude or remove an interim altitude for the selected FDB
  - Heading - to update/delete the compass heading, and/or assigned left or right turns in the 4th line of the selected FDB
  - Speed - to update the assigned speed or remove the current speed in the 4th line of the selected FDB
  - Free Form Text - to update and delete the free form text in the 4th line of the selected FDB
- A FDB menu appears to the right of the selected FDB. If it can't fit to the right side, it is displayed to the left side.

FDB MENUS - ALTITUDE

Altitude Menu
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.8.1; TI 6110.100, pars. 4.19.1, 4.19.2



⊙ The Altitude Menu allows the controller to:

- Update the flight plan assigned altitude.
- Assign an interim altitude.
- Remove the interim altitude for the selected FDB.

NOTE: The Altitude Menu cannot be used to update or delete a local interim altitude.

⊙ To invoke the Altitude Menu from an FDB, left/middle-click Field B or C of the selected FDB.

⊙ The areas of the Altitude Menu include:

- Altitude Menu Title (FDB call sign - AID)
- Altitude Menu Exit Pick Area
- Flight Plan Assigned Altitude Area
- Assigned Altitude Value Pick Areas
- Interim Altitude Pick Areas (T)
- Scroll Up Pick Area (scrolls list of altitude values)
- Scroll Down Pick Area (scrolls list of altitude values)

Continued on next page

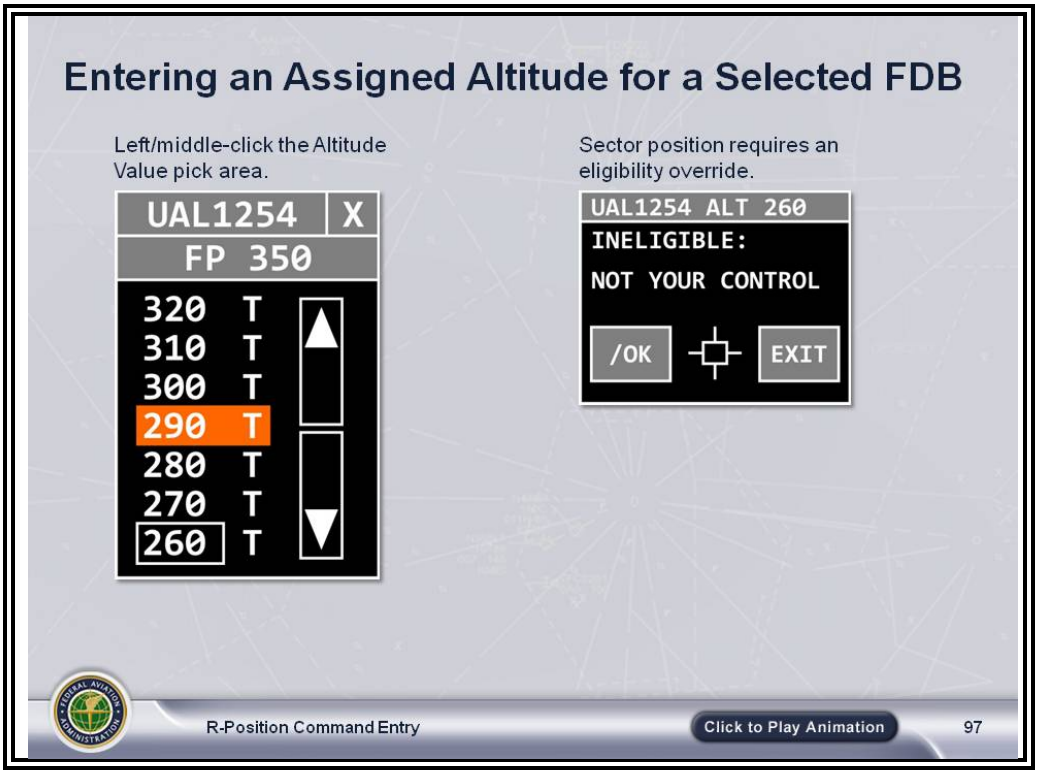
FDB MENUS - ALTITUDE *(Continued)*

Altitude Menu (Cont'd)
TI 6110.100, pars. 4.19.1, 4.19.2, 4.19.5

- The current altitude value emphasis is denoted with a colored block.
  - Three altitude values above and below the current altitude value are displayed initially. If the minimum or maximum altitude value is reached, additional altitude values are displayed above the minimum or below the maximum value.
- The cursor selection emphasis is denoted with a white box.
- The Altitude Menu displays seven entries per page, one page at a time.
  - You can use the scroll areas to scroll the menu, one page at a time, to see entries above and below the current entries.

FDB MENUS - ALTITUDE *(Continued)*

Entering an Assigned Altitude
TI 6110.100, pars. 4.19.7, 4.20



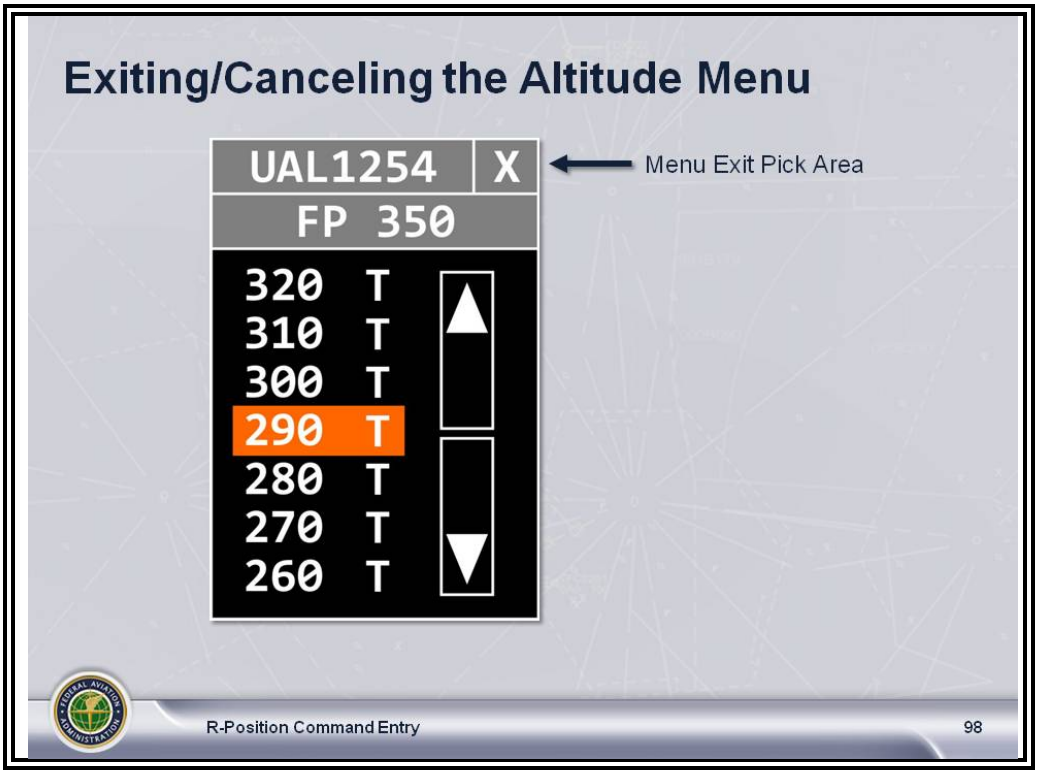
- You can enter a flight plan assigned altitude from the Altitude Menu.
- To assign an altitude:
  - Left/middle-click the Altitude Value (numeric value) Pick Area.
  - The Altitude Menu is removed from the display, and the new assigned altitude command is sent to the computer.

Click to display Altitude /OK Menu.

- If the sector position requires an eligibility override:
  - The Altitude /OK Menu displays.
  - Left/middle-click */*OK to enter the altitude or EXIT to cancel.

FDB MENUS - ALTITUDE *(Continued)*

Exiting or Canceling the Altitude Menu
TI 6110.100, par. 4.19.10



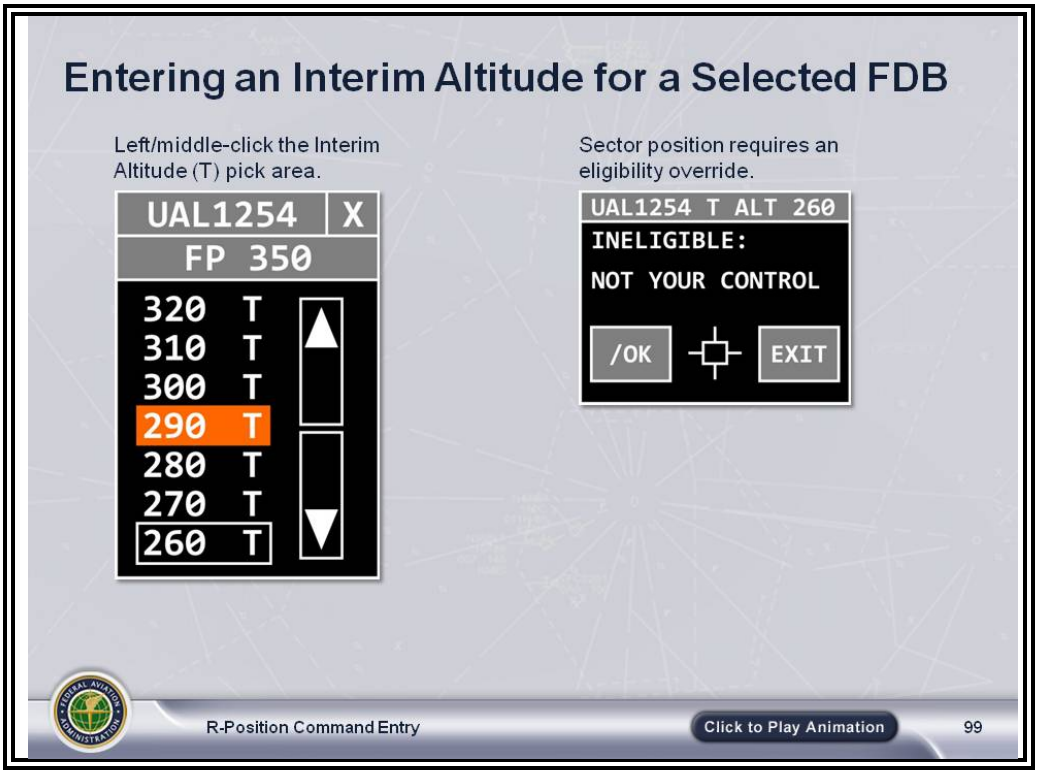
- To exit the Altitude Menu, left/middle-click the X. The menu is removed from the display.

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

NOTE: The Altitude Menu can also be canceled using a function or category key.

FDB MENUS - ALTITUDE *(Continued)*

Entering an Interim Altitude
TI 6110.100, pars. 4.19.3, 4.19.8, 4.19.9, 4.20



⊙ The Interim Altitude (T) Pick Area is used to assign an interim altitude to the selected FDB.

NOTE: Each Altitude Value Pick Area (ddd) has an associated Interim Altitude Pick (T) Area except for the 000 Altitude Value Pick Area.

- When the Trackball cursor moves over the Interim Altitude Pick Area (T), both the numeric value and T are highlighted with a white box. If the cursor is on the numeric value only, only the value is highlighted.

⊙ To assign an interim altitude to a selected FDB:

- Left/middle-click the Interim Altitude (T) Pick Area next to the desired altitude value.
- The Altitude Menu is removed from the display, and the Interim Altitude command is sent to the computer.

Continued on next page

FDB MENUS - ALTITUDE *(Continued)*

Entering an Interim Altitude (Cont'd)
TI 6110.100, pars. 4.19.3, 4.19.8, 4.19.9, 4.20

Click to display Altitude /TT Menu.

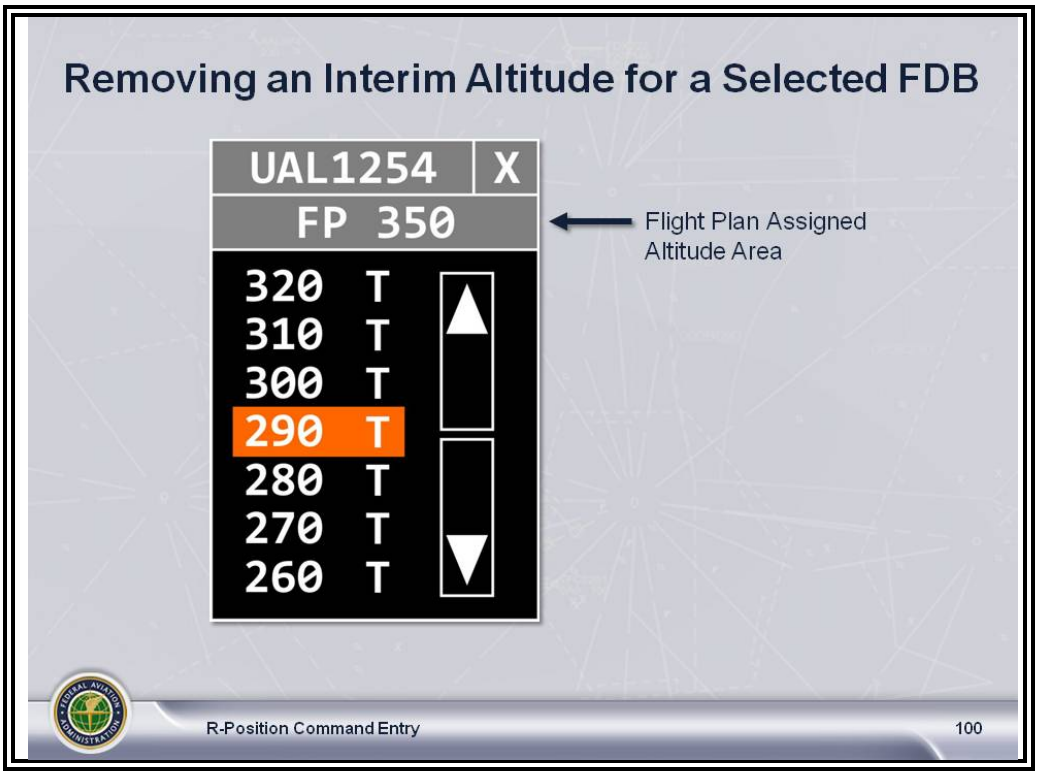
⊙ If the sector position requires an eligibility override:

- The Altitude /OK Menu displays.
- Left/middle-click **/**OK to enter the altitude or EXIT to cancel.

NOTE: The eligibility override characters are facility adaptable, so you may see either /OK, /TT, or other characters for interim altitude.

FDB MENUS - ALTITUDE *(Continued)*

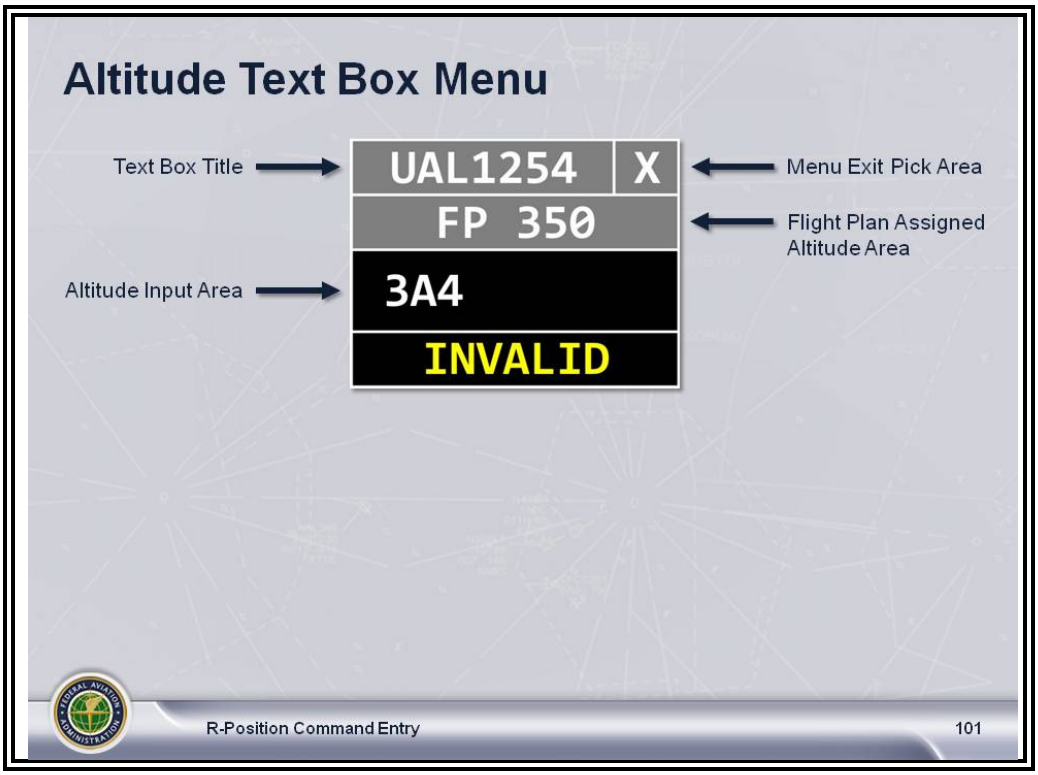
Removing an Interim Altitude
TI 6110.100, pars. 4.19.5, 4.19.6,



- The Flight Plan Assigned Altitude Area:
  - Displays the current flight plan assigned altitude information
  - Appears when the selected FDB contains an interim altitude or when the flight plan assigned altitude is a block altitude
- To remove an interim altitude for a selected FDB, left/middle-click the Flight Plan Assigned Altitude Area.

FDB MENUS - ALTITUDE *(Continued)*

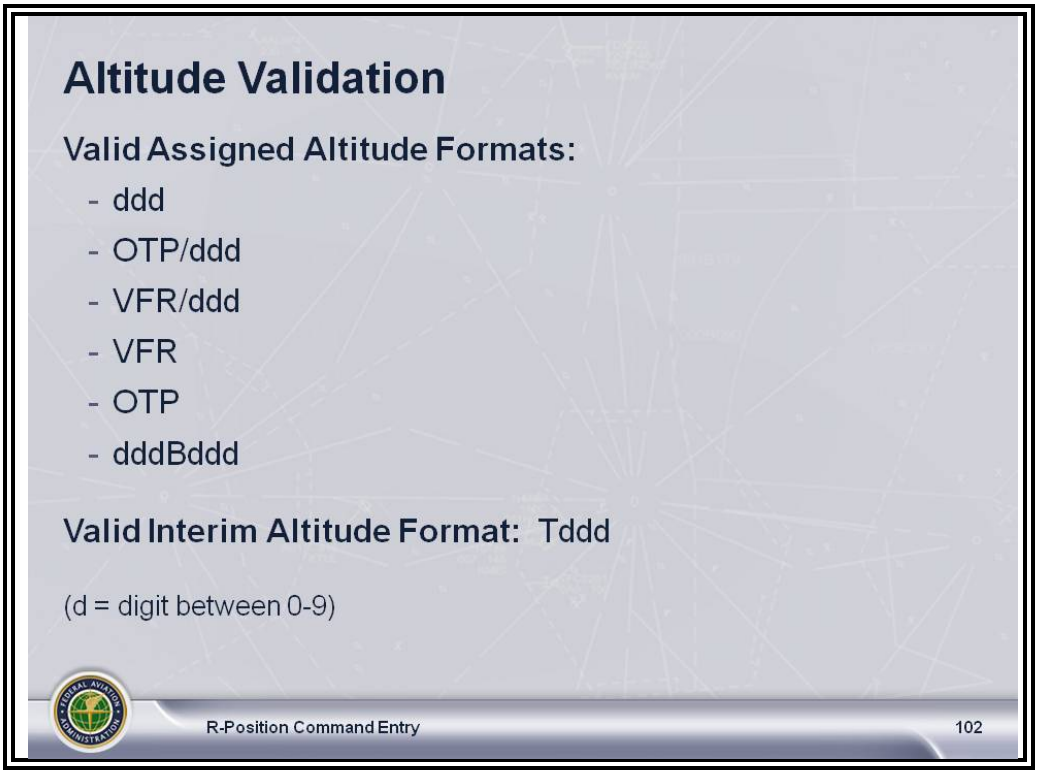
Altitude Text Box Menu
TI 6110.100, par. 4.21



- The Altitude Text Box Menu allows you to enter a flight plan assigned altitude or an interim altitude for the flight.
- To enter the altitude:
  - Click on the Altitude in the data block.
  - Type a value. The Altitude Menu is replaced with the Altitude Text Box and the typed value is displayed in the Altitude Input Area.
  - Press ENTER to close the menu.
- If you enter an invalid altitude value, an error tone sounds and INVALID appears in the Altitude Input Error Area.

FDB MENUS - ALTITUDE *(Continued)*

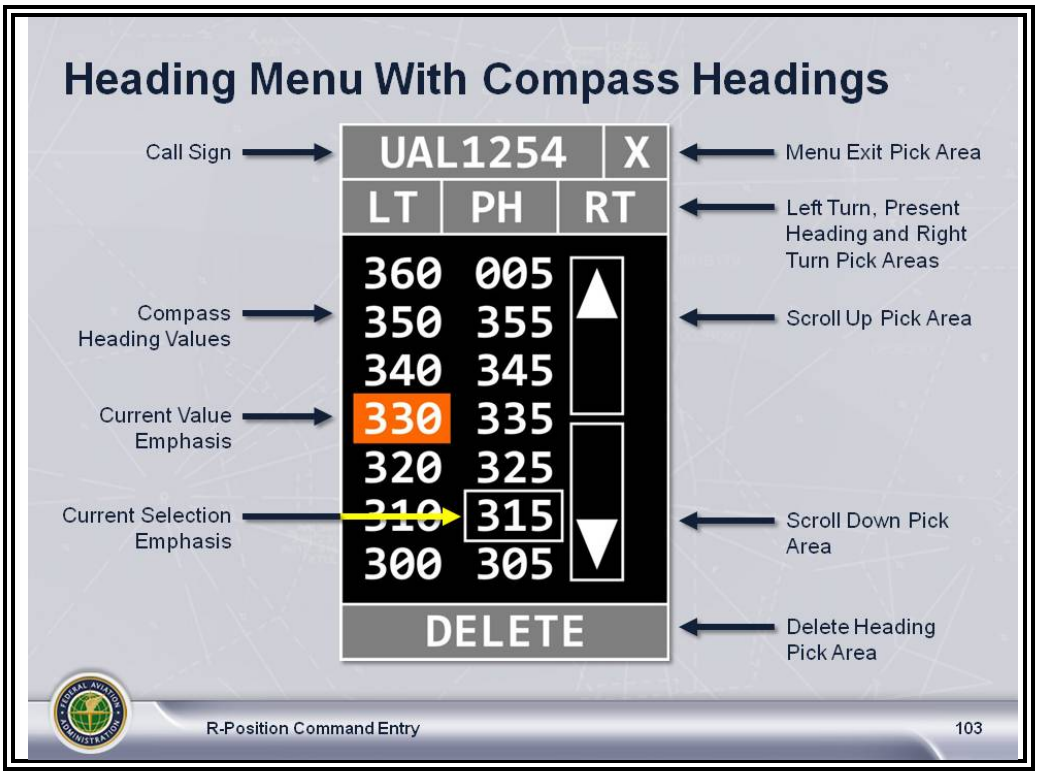
Altitude Validation
TI 6110.100,
pars. 4.21.1, 4.21.2



- The Altitude Text Box Menu contains a valid flight plan assigned altitude value when the form matches one of these examples.
- The Altitude Input Area contains an interim altitude when the text string contains the letter T in the **first** character position followed by three digits (0-9).

FDB MENUS - HEADING

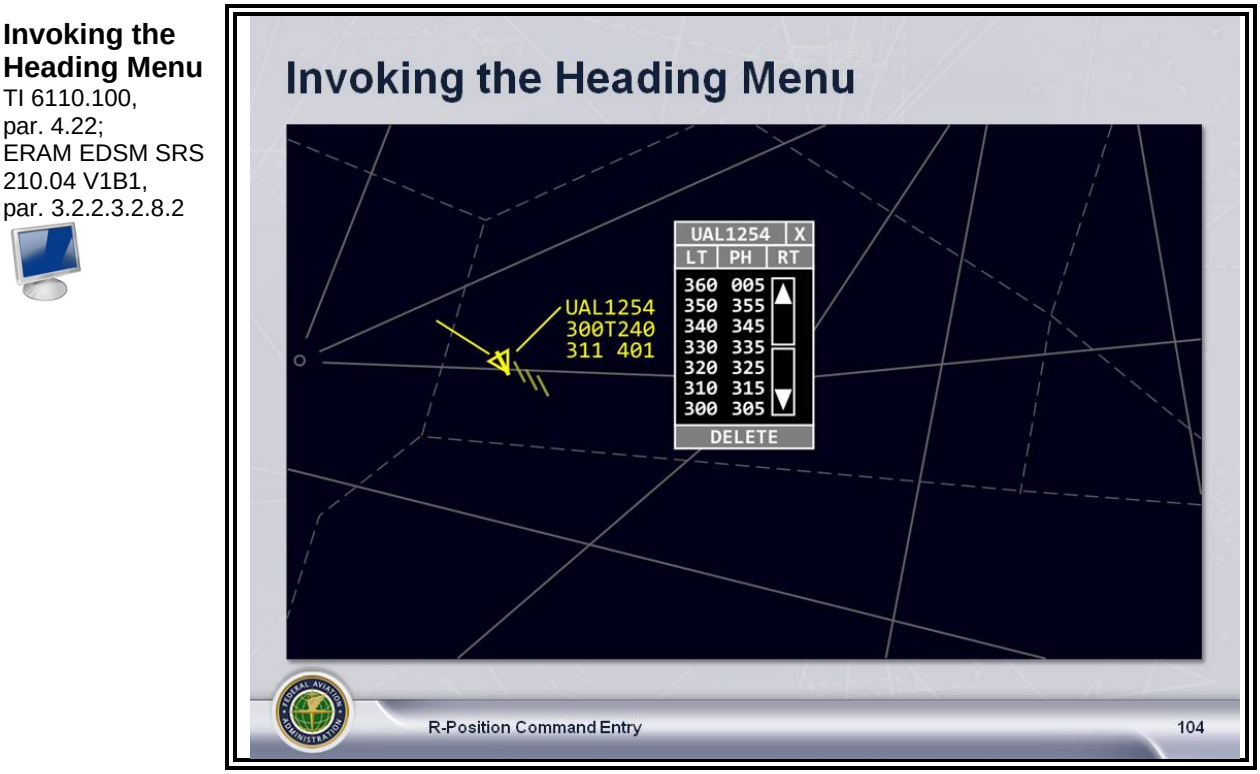
Heading Menu
TI 6110.100,
par. 4.22



- The Heading Menu allows controllers to update the 4th line data of an FDB with new heading information, including compass headings, left turns, and right turns.
- The Heading Menu also supports prompting for eligibility when the sector position does not have track control of the selected FDB.
- The Heading Menu consists of the following information:
  - Heading Menu Title (FDB call sign)
  - Heading Menu Exit Pick Area
  - Left Turn Pick Area
  - Present Heading Pick Area
  - Right Turn Pick Area
  - Heading Value Pick Areas
  - Scroll Up Pick Area (scrolls compass heading values)
  - Scroll Down Pick Area (scrolls compass heading values)
  - Delete Heading Pick Area

FDB MENUS - HEADING *(Continued)*

Invoking the Heading Menu
TI 6110.100, par. 4.22;
ERAM EDSM SRS 210.04 V1B1, par. 3.2.2.3.2.8.2

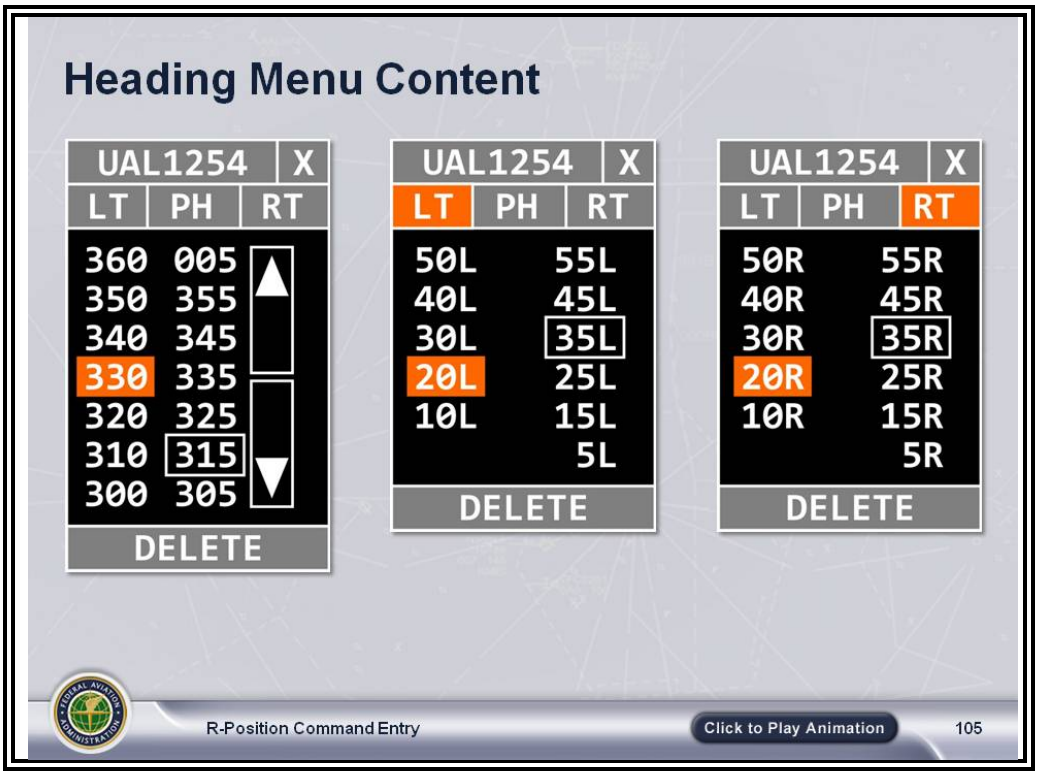


- To invoke the Heading Menu from an FDB:
  - Left/middle-click the Heading field in the 4th line of the FDB, or
  - If there is no 4th line heading data, left/middle-click Field D (CID) in the 3rd line of the FDB.

NOTE: The Preview Area must be clear.

FDB MENUS - HEADING *(Continued)*

Heading Menu Content
TI 6110.100, pars. 4.22.1, 4.22.2, 4.22.4, 4.22.5



- The content displayed in the Heading Menu depends on the content of the heading field in the 4th line of the FDB (compass heading, left or right turn values).

- Compass headings are displayed initially when:

  - The FDB heading field contains a valid compass heading (001-360 degrees), or

  - The heading field does not contain a compass heading, right turn or left turn value, or

  - There is no 4th line heading data.

Click twice to display additional Heading Menus.

- Left or right turn values are displayed when the FDB heading field contains left or right turn data.

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

Continued on next page

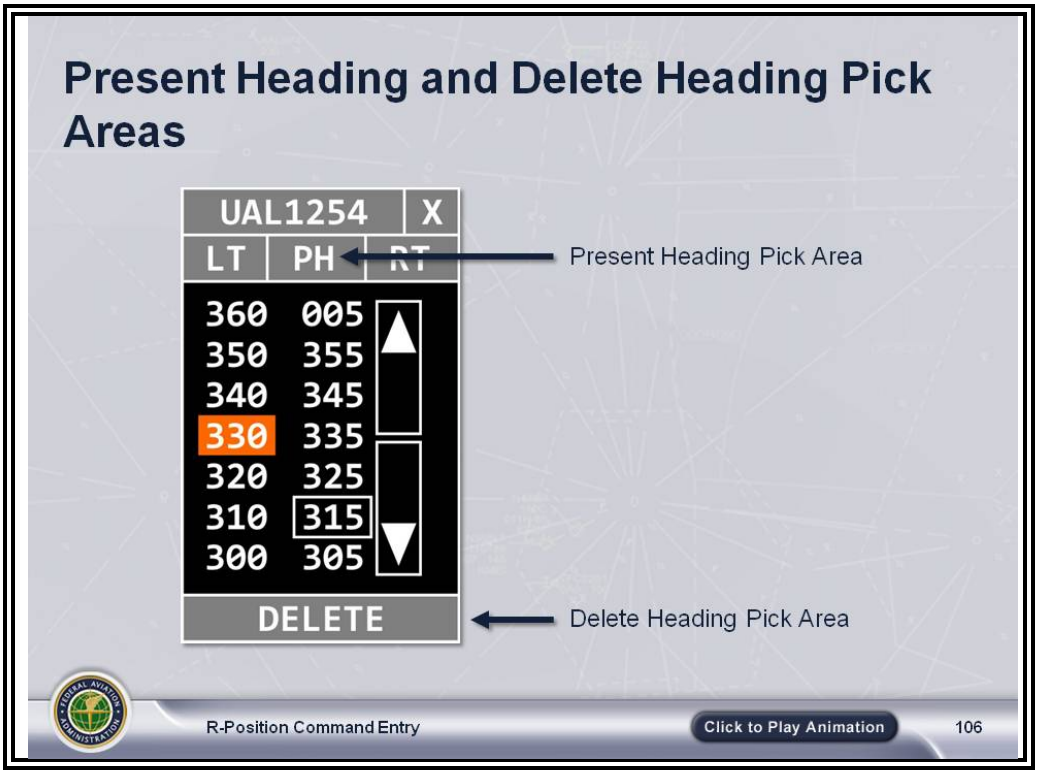
FDB MENUS - HEADING *(Continued)*

Heading Menu Content (Cont'd)
TI 6110.100, pars. 4.22.1, 4.22.2, 4.22.4, 4.22.5

- The Heading Menu is similar to the Altitude Menu.
  - When the heading value is displayed in the 4th line of the FDB, it is displayed with current value emphasis on the menu.
  - Cursor selection emphasis is a white box around the Pick Area.
- To display left/right turn values, left/middle-click the **inactive** LT or RT Pick Area.
- To display compass heading values, left/middle-click the **active** LT or RT Pick Area.
- To select a compass heading, left turn or right turn value, left/middle-click the desired value.

FDB MENUS - HEADING *(Continued)*

Present Heading and Delete Heading Pick Areas
TI 6110.100, pars. 4.22.3, 4.22.4

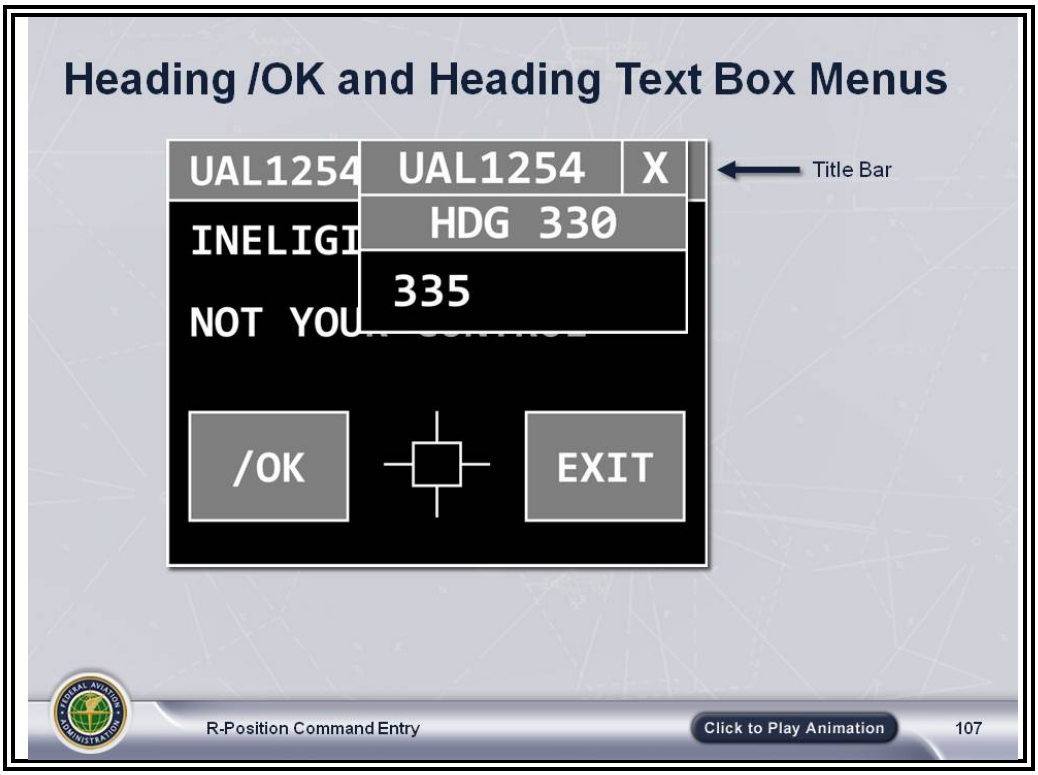


Click to display additional call out.

- The Present Heading Pick Area updates the heading field in the 4th line of the FDB with text PH.
- To select the present heading, left/middle-click the Present Heading Pick Area.
- The Delete Heading Pick Area deletes the heading value in the 4th line of the FDB.
- To delete a heading, left/middle-click DELETE.

FDB MENUS - HEADING *(Continued)*

Heading /OK Menu and Heading Text Box Menu
TI 6110.100, pars. 4.23, 4.24



- The Heading /OK Menu prompts you for an eligibility override when you do not have track control of a flight and you are specifying or deleting a heading.

Click 1 to display DEL HDG.

- When the system is prompting for an eligibility override to delete an FDB 4th line heading, the Heading /OK Menu title contains DEL HDG.

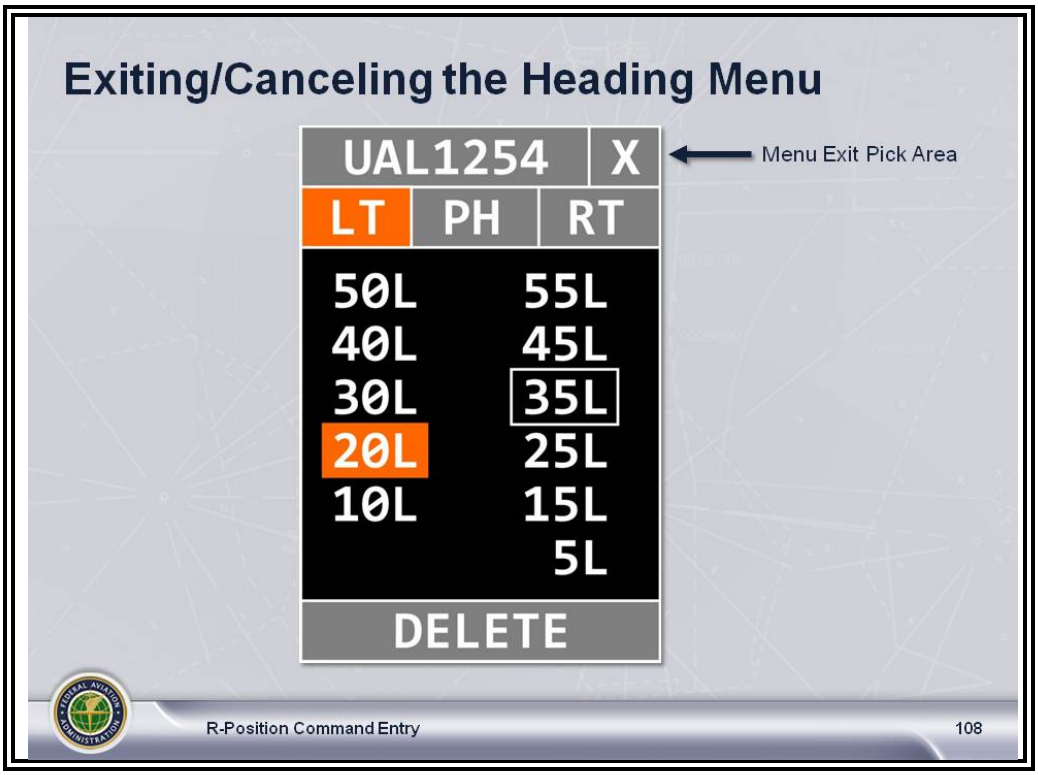
Click 2 to display Heading Text Box.

- The Heading Text Box Menu allows you to enter the heading for a flight. It works like the Altitude Text Box Menu:
  - Click on the data block.
  - Type a value up to four alphanumeric characters. The Heading Menu is replaced with the Heading Text Box and the typed value is displayed in the input area.
  - Press ENTER to close the Heading Text Box and execute the command.

NOTE: If you enter an invalid heading value, an error tone sounds and the word INVALID appears in the Heading Input Error Area.

FDB MENUS - HEADING *(Continued)*

Exiting or Canceling the Heading Menu
TI 6110.100, par. 4.22



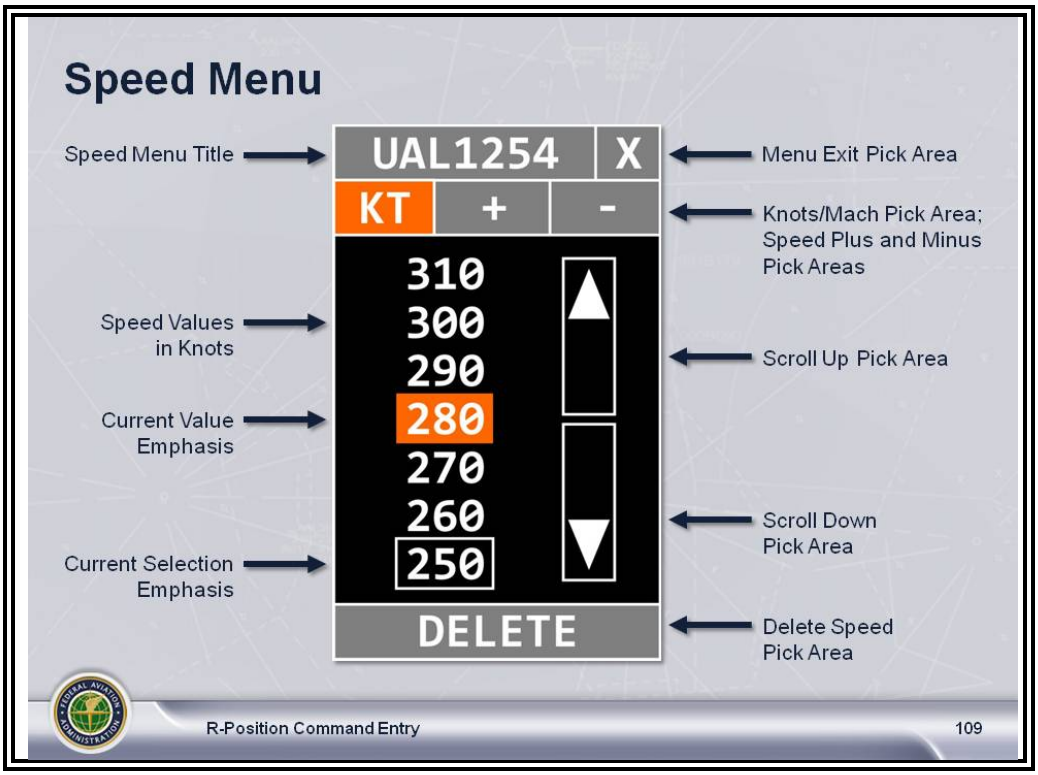
- To exit the Heading Menu, left/middle-click the X. The menu is removed from the display.

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

NOTE: The Heading Menu can also be canceled using a function or category key.

FDB MENUS - SPEED

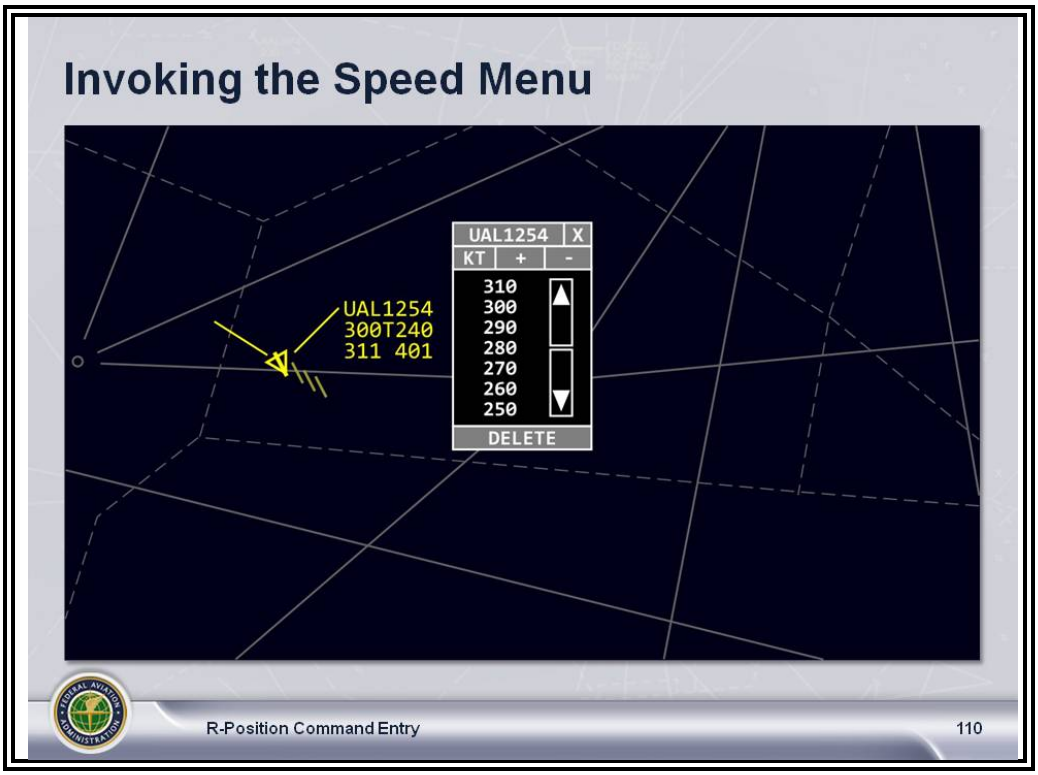
Speed Menu
TI 6110.100,
par. 4.25



- The Speed Menu allows controllers to update the 4th line data of a FDB with a new speed, or to remove the current speed value.
- Speed values - knots or Mach - can be selected from a menu list or entered using the Speed Text Box.
- The areas of the Speed Menu include:
  - Speed Menu Title (FDB call sign)
  - Speed Menu Exit Pick Area
  - Knots/Mach Pick Area
  - Speed Plus Pick Area
  - Speed Minus Pick Area
  - Speed Values Pick Area (in knots or Mach)
  - Scroll Up Pick Area
  - Scroll Down Pick Area
  - Delete Speed Pick Area

FDB MENUS - SPEED *(Continued)*

Invoking the Speed Menu
TI 6110.100, pars. 4.25, 4.25.1



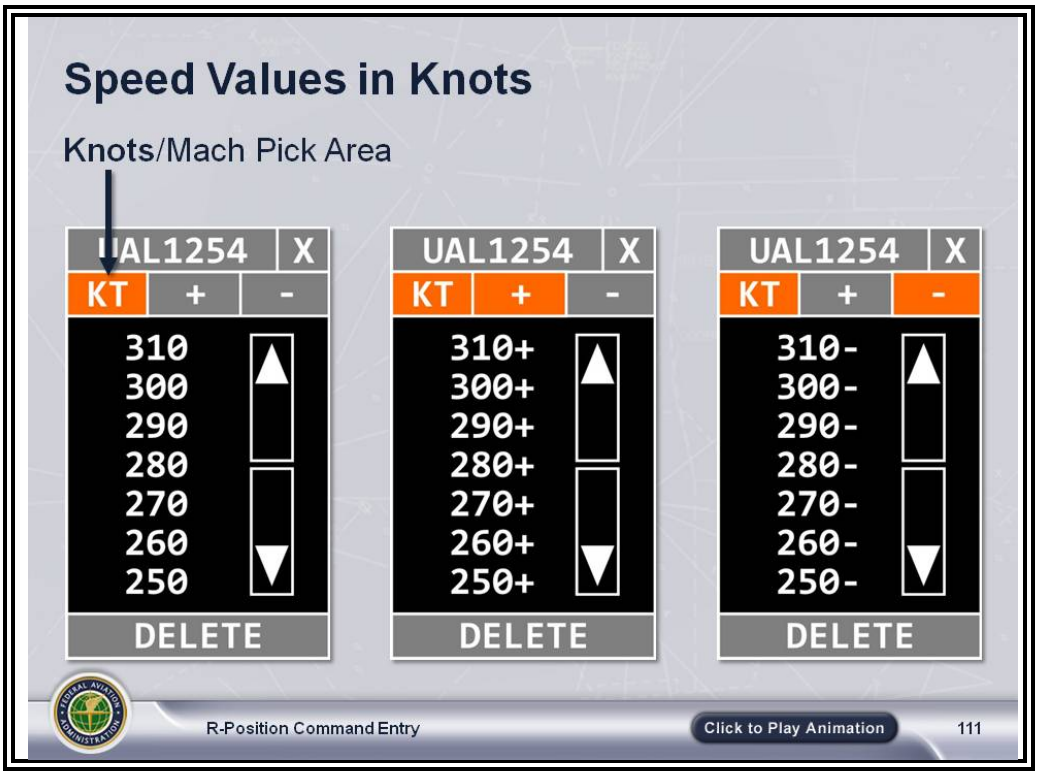
⊙ To invoke the Speed Menu from an FDB:

- Left/middle-click the Speed field in the 4th line of the FDB, or
- If there is no 4th line speed data, left/middle-click **Field E** (Ground Speed) in the 3rd line of the FDB.

NOTE: As with heading data, the 4th line of the FDB can contain data besides speed data. The Speed Menu can be invoked from the 4th line of the FDB only when speed data is displayed in the 4th line.

FDB MENUS - SPEED *(Continued)*

Speed Values in Knots
TI 6110.100, pars. 4.25.2, 4.25.4



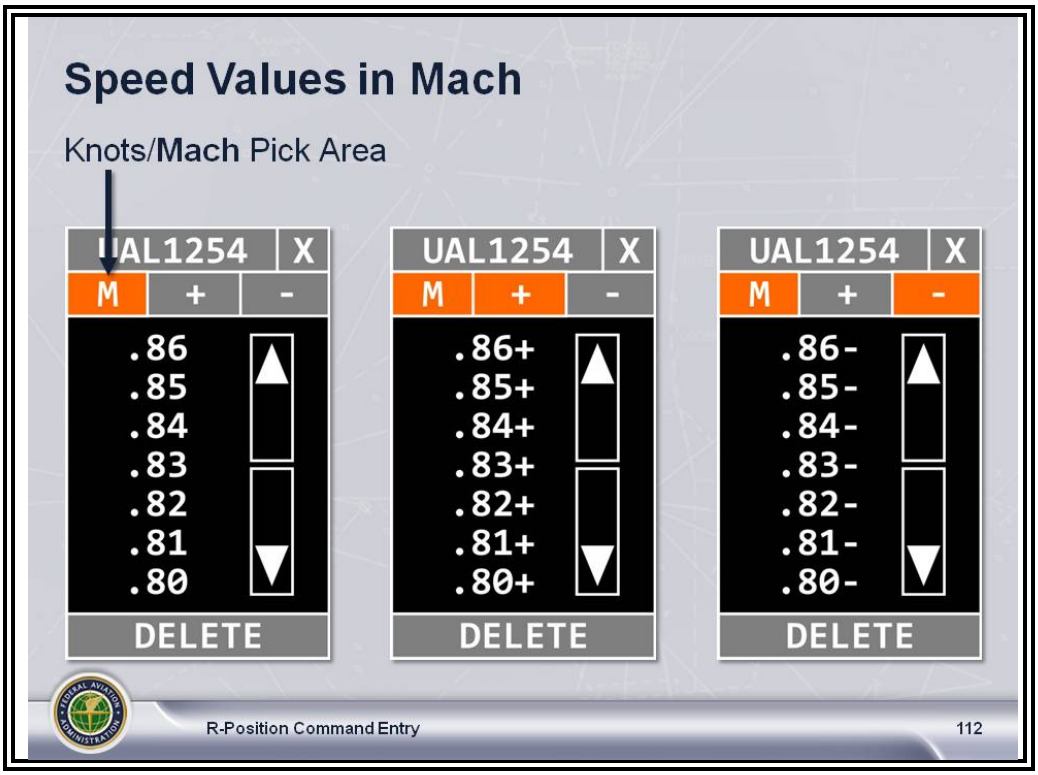
- The Speed Menu can display values in knots or Mach. You can toggle between the two by left/middle-clicking the Speed Knot/Mach Pick Area.
- The maximum and minimum speed values for knots are 110 and 400.
  - Any value between 110 and 400 in the 4th line speed field displays as the Current Speed Value in the Speed Menu.
  - When the value is less than 110, the menu displays the lowest seven values; when higher than 400, the highest seven.

Click twice to display menus with plus and minus signs.

- You can also toggle between the Speed Plus and Speed Minus Pick Areas.
  - 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.

FDB MENUS - SPEED *(Continued)*

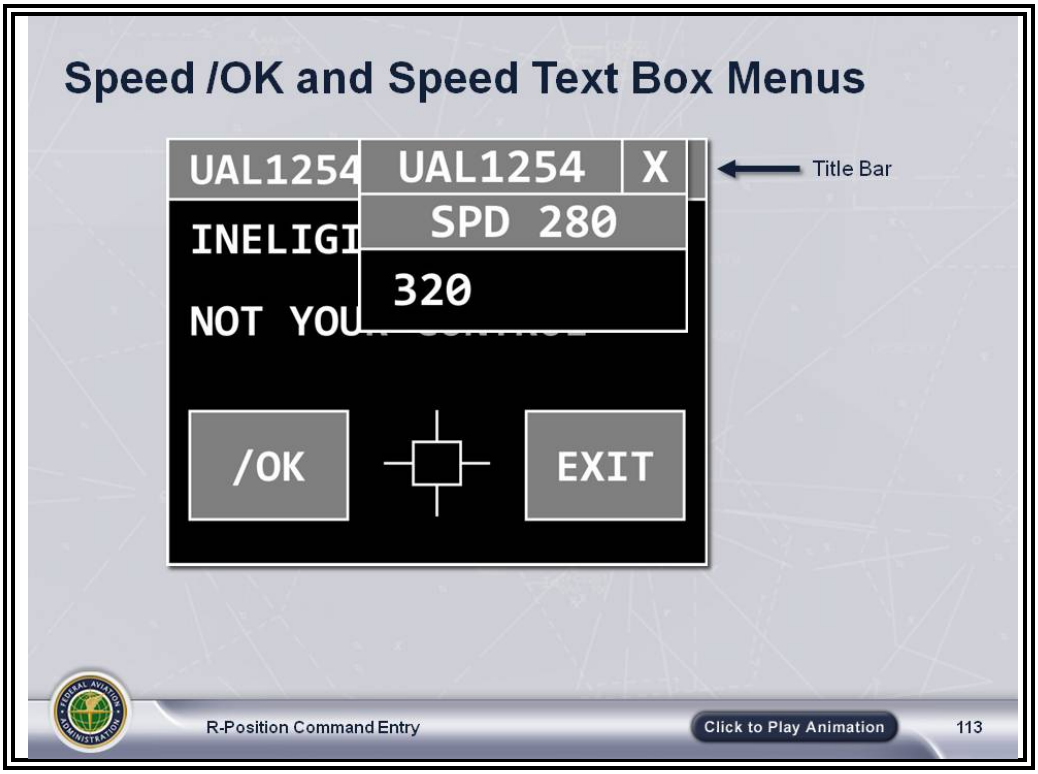
Speed Values in Mach
TI 6110.100, par. 4.25.3



- The maximum and minimum speed values for Mach are .62 and .96.
  - Any value between .62 and .96 in the 4th line speed field displays as the Current Speed Value in the Speed Menu.
  - When the value is less than .62, the menu displays the lowest seven values; when higher than .96, the highest seven.
- To delete a speed value in the 4th line of the FDB, left/middle-click DELETE.

FDB MENUS - SPEED *(Continued)*

Speed /OK and Speed Text Box Menus
TI 6110.100, pars. 4.25.5, 4.26



- The Speed /OK Menu prompts you for an eligibility override when you do not have track control of a flight and you are specifying or deleting a speed.

Click 1 to display DEL SPD.

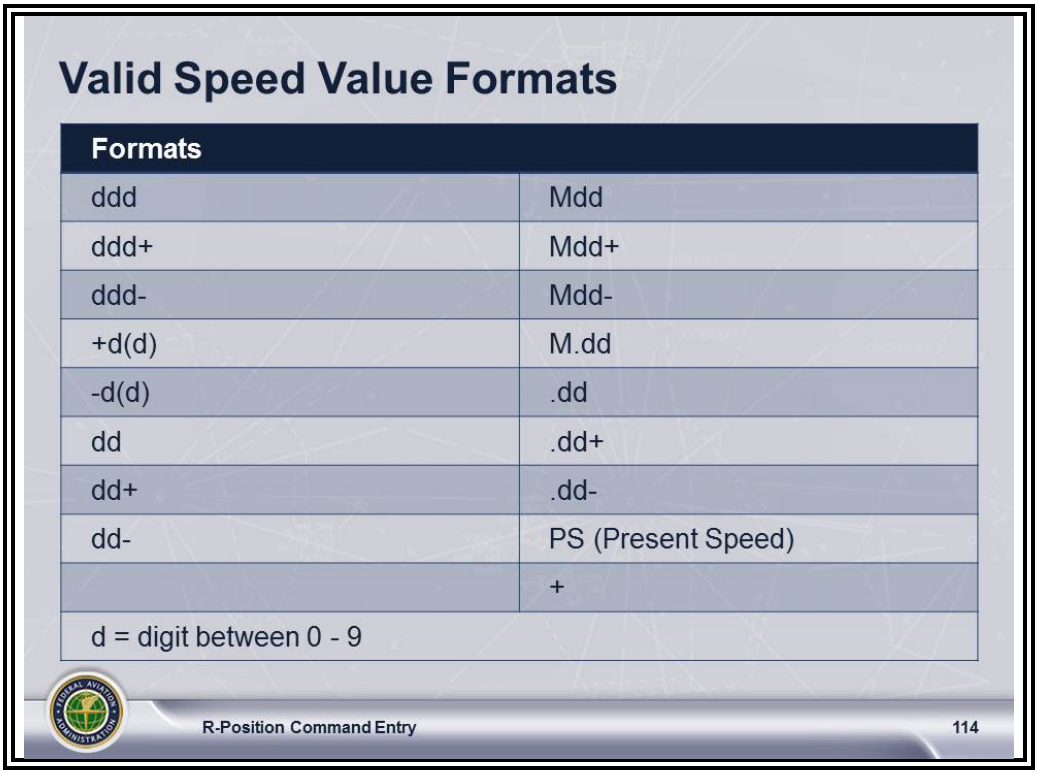
- As with the Heading /OK Menu, when the system is prompting for an eligibility override to delete an FDB 4th line speed, the Speed /OK Menu title contains DEL SPD.

Click 2 to display Speed Text Box.

- The Speed Text Box Menu allows you to enter an FDB 4th line speed command by entering a speed value.
  - Click on the data block.
  - Type a speed value.
  - Press ENTER to close the Speed Text Box and execute the command.

FDB MENUS - SPEED *(Continued)*

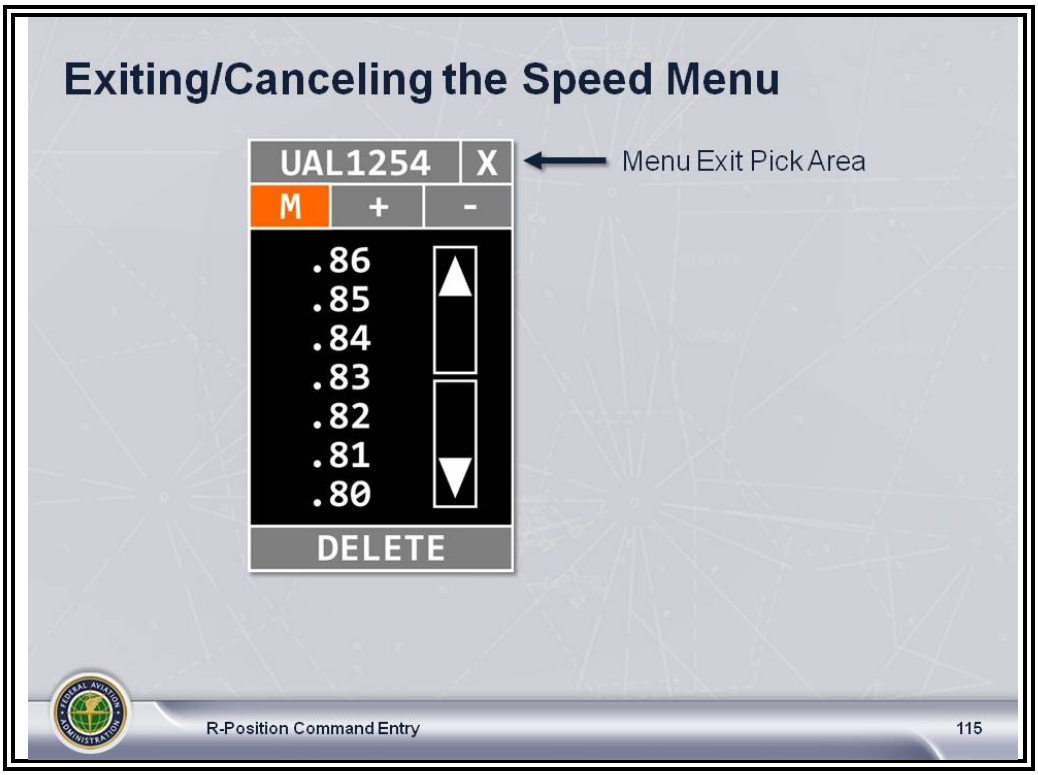
Valid Speed Value Formats
TI 6110.100, par. 4.26.1



- When you invoke the Speed Text Box Menu, you can enter speed values using any of these formats. The d is a digit between 0-9.
- If you enter an invalid speed, the Speed Input Error Area is displayed with the text INVALID.

FDB MENUS - SPEED *(Continued)*

Exiting or Canceling the Speed Menu
TI 6110.100, par. 4.26

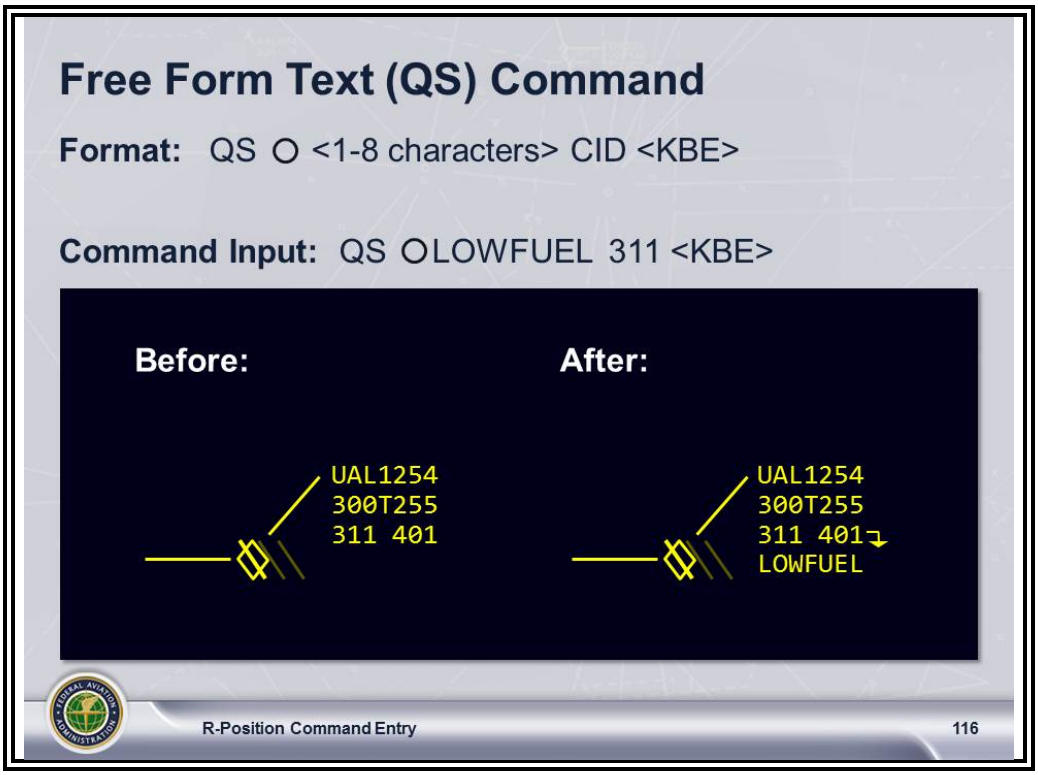


- To exit the Speed Menu, left/middle-click the X. The menu is removed from the display.
- To cancel the Speed Menu, left/middle-click outside the Speed Menu. The menu is removed from the display.

NOTE: The Speed Menu can also be canceled using a function or category key.

FDB MENUS - FREE FORM TEXT

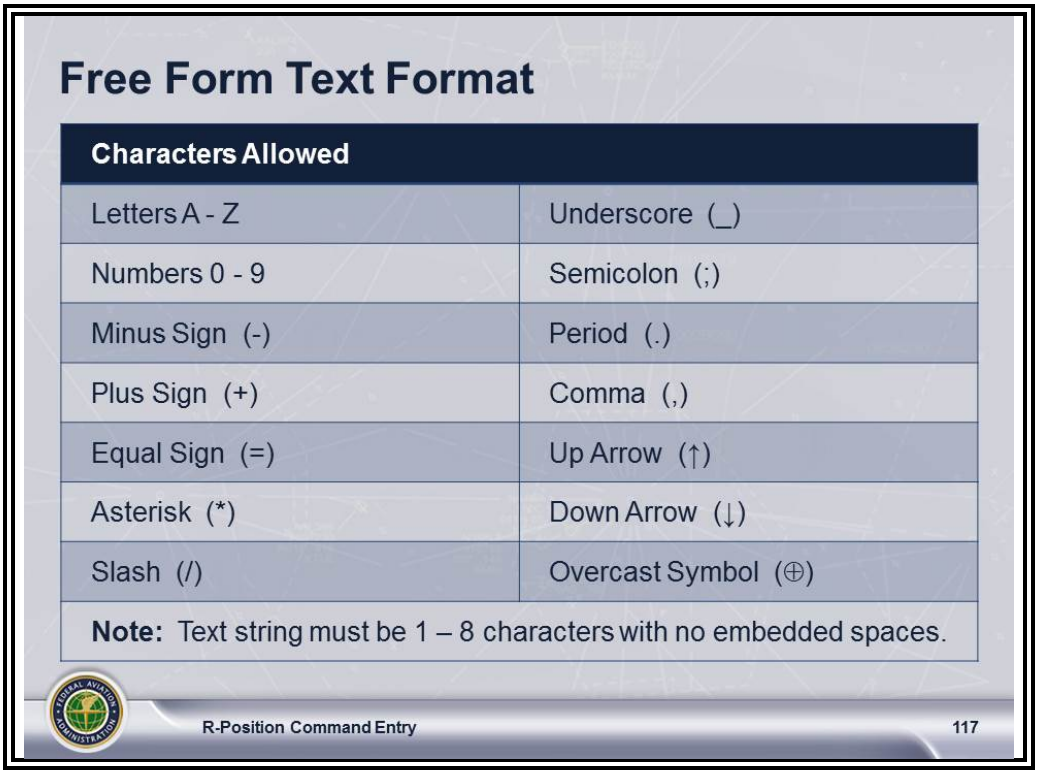
Entering Free Form Text
TI 6110.100, par. 4.27; ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2



- The QS command is used to enter free form text in the 4th line of the FDB.
  - Type QS followed by a space.
  - Type the clear weather symbol, followed by 1 to 8 characters of text (no embedded spaces in the text).
  - Click the space key.
  - Type the computer ID.
  - Press ENTER.

FDB MENUS - FREE FORM TEXT *(Continued)*

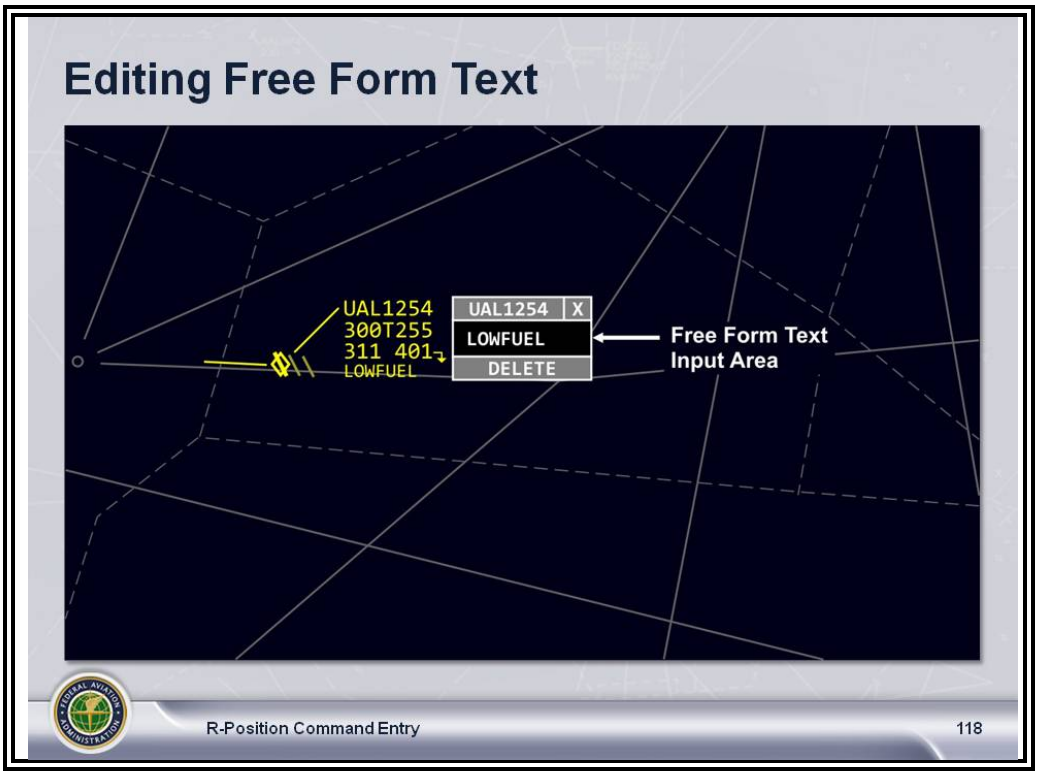
Free Form Text Format
TI 6110.100,
pars. 4.27, 4.27.1



- Free form text is considered valid when the following is true:
  - The text string entered is from 1 through 8 characters in length with no embedded spaces.
  - The text string entered contains only the characters displayed on the slide.
- After typing the text, press ENTER.

FDB MENUS - FREE FORM TEXT *(Continued)*

Editing Free Form Text
TI 6110.100, pars. 4.27, 4.27.1, 4.27.2

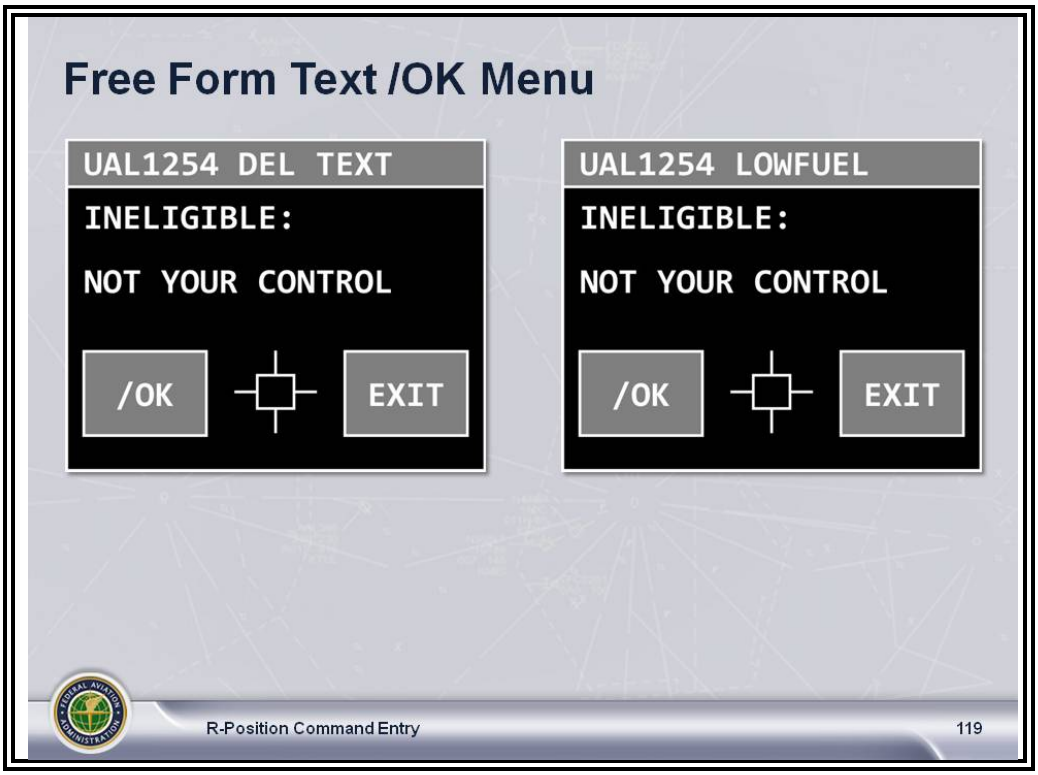


- The Free Form Text Box Menu allows the user to update the FDB fourth line free form text command for the selected FDB.
  - It also allows the user to delete free form data.
- To invoke the Free Form Text Box Menu from an FDB, left/middle-click a character in the free form text string in the 4th line of an FDB.
  - The Free Form Text Input Area will be pre-filled with the free form text from the 4th line of the FDB.
  - The trackball cursor will be automatically positioned on the Free Form Delete Pick Area.
  - Edit the text as necessary; then press ENTER.
- To delete free form text, invoke the Free Form Text Box Menu and left/middle-click the DELETE button.

NOTE: The FDB fourth line can contain other data besides free form text. You can invoke the Free Form Text Box Menu only when there is free form data in the 4th line of the FDB.

FDB MENUS - FREE FORM TEXT *(Continued)*

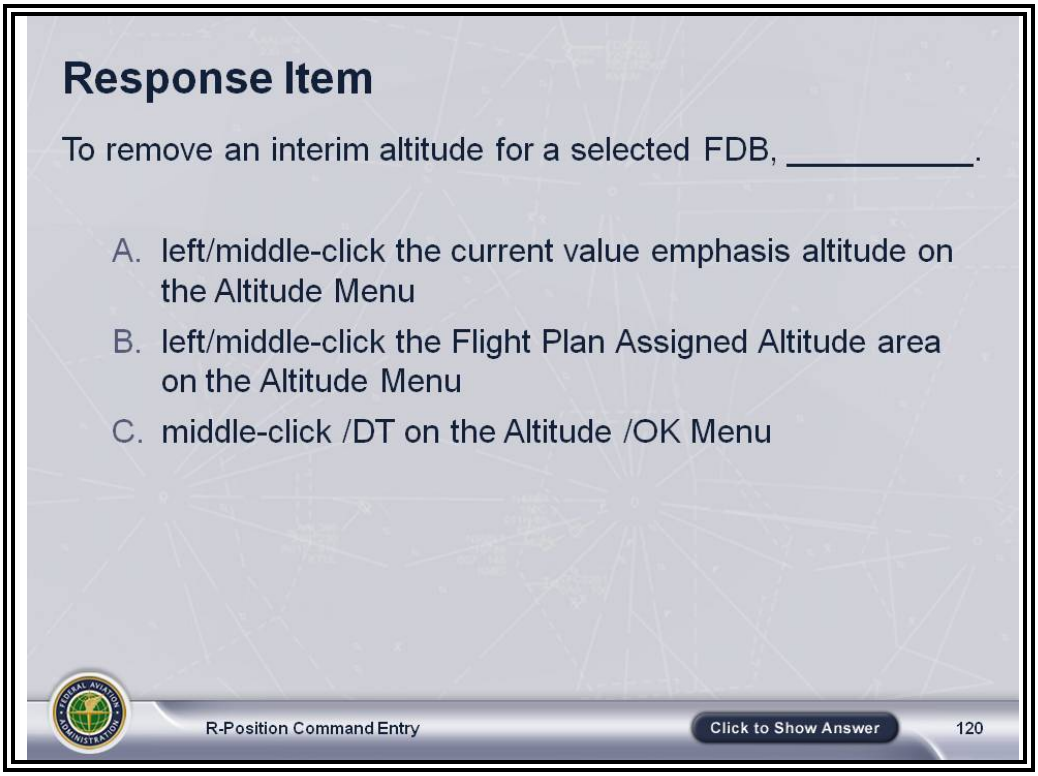
Free Form Text /OK Menu
TI 6110.100, par. 4.28

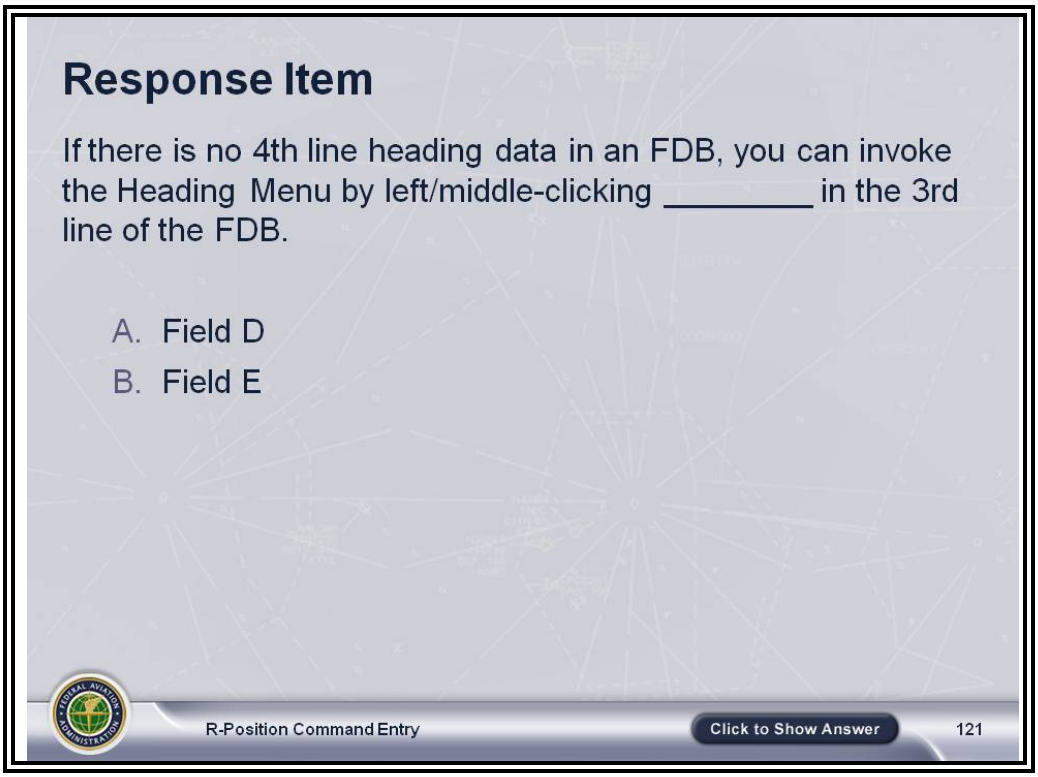


- When the sector position does not have track control of the selected FDB, the Free Form Text /OK Menu prompts for eligibility.
- To delete the free form text in the 4th line of the FDB, left/middle-click /OK when DEL TEXT is displayed in the menu title bar.
- To change the free form text in the 4th line of the FDB, left/middle-click /OK when the modified text (e.g., LOWFUEL) is displayed in the menu title bar.

FDB Menus: Review

Review



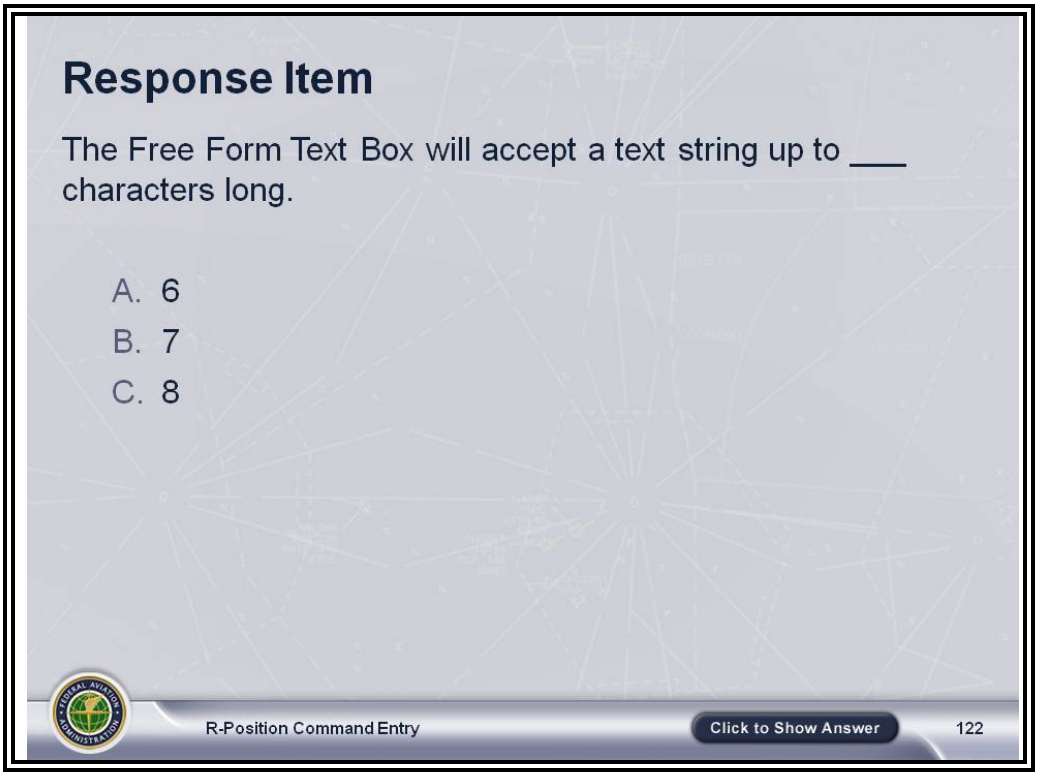


SLIDE ANSWERS: Slide 120 = B; Slide 121 = A

Continued on next page

FDB Menus: Review *(Continued)*

Review (Cont'd)



SLIDE ANSWER: C

CONCLUSION

Summary

☞***NOTE:*** *Review and elaborate briefly on the following items:*

- General rules for command composition
- MCA command syntax
- Range/Bearing command syntax
- Managing data blocks using commands
- Full data block menus

☞***NOTE:*** *Ask students if they have any questions.*

Practice Exercise 2

- Practice Exercise 2: R-Position Command Checklist, is located in 55055-HO4.
- You will complete this exercise in the lab.

☞***NOTE:***

- *Have students complete this practice exercise in the lab.*
- *The exercise is estimated to take 1 hour lab time per student.*
- *The recommended environment is in the TTL at a simulated position in the student's area of specialization with a scenario (e.g., labeled for Lesson 4, Exercise 2) running. No ghost pilots are required.*
- *An instructor must be present in the lab to assist.*
- *The student may refer to notes, user manuals and course materials.*

Continued on next page

CONCLUSION *(Continued)*

Practice Exercise 3

- Practice Exercise 3: Setting Up ERAM Pref Sets, is located in 55055-HO4.
- You will complete this exercise in the lab.

☞ ***NOTE:***

- *Have students complete this practice exercise in the lab.*
- *The exercise is estimated to take 1 hour lab time per student.*
- *The recommended environment is in the TTL at a simulated position in the student's area of specialization with a scenario (e.g., labeled for Lesson 4, Exercise 3) running. No ghost pilots are required.*
- *An instructor must be present in the lab to assist.*
- *The student may refer to notes, user manuals and course materials.*

End-of-Lesson Test

- Your instructor will now administer the End-of-Lesson Test.

☞ ***NOTE:*** *Distribute and administer the End-of-Lesson Test located in 55055-ELT04.*