Federal Aviation Administration

EN ROUTE RADAR FLIGHT DATA CONTROLLER TRAINING

Lesson 6: Computer Command Composition and Entry

Version: 2019-12.1

FAA Course Number: 55053

INSTRUCTOR LESSON PLAN

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LESSON PLAN DATA SHEET

Course Name	Radar Flight Data Controller Training
Course Number	55053
Lesson Title	Computer Command Composition and Entry
Duration	2 hour 30 minutes plus TTL times **TTL exercises are estimated to take an additional 1 hour and 30 minutes per student/instructor team,** see Exercise/Activity below. Total duration will vary based on class size.
Version	2019-12.1
Reference(s)	TI 6110.101, En Route Automation Modernization (ERAM) Air Traffic Manual (ATM): RA Position User Manual; TI 6110.100 En Route Automation Modernization (ERAM) Air Traffic Manual (ATM): R Position 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 EDSM SRS 210.04 V2B1, En Route Automation Modernization (ERAM) En Route Display Management (EDSM) D-Position, A Position, and AT Specialist Requirements Volume 2, Book 1; ERAM IFPA SRS 210.15, En Route Automation Modernization (ERAM) Interface Proxies Set A (IFPA); ERAM FDP SSS 200.04, En Route Automation Modernization (ERAM) Flight Data Processing (FDP)
Prerequisite(s)	
Handout(s)	Electronic delivery requires printing of handout HO01_L06.
Exercise/Activity	Practice Exercise 1: Route Amendment Correction Practice Exercise 2: Using Proper Computer Sequences And Format Practice Exercise 3: Composing Field Amendments (30 minutes) ⊙ Lab Scenario: 55053_L06_PE03 Practice Exercise 4: Command Composition And Entry (1 hour) ⊙ Lab Scenario: 55053_L06_PE04
Assessments	End-of-Lesson Test – ELT_V1_L06 **or** ELT_V2_L06 There will be a graded end-of-lesson test upon completion of this lesson. The score required for passing will be in accordance with current FAA directives.
Materials and Equipment	Practice exercises will need to be locally modified and scenarios developed for exercises 3 and 4. Specific scenario development instructions are located at the beginning of those exercises. Provide local flight plan information to the students for practice exercises 3 and 4.
Other Pertinent Information	Practice exercises 3 and 4 will be conducted in the Test and Training Lab. This lesson is based on ERAM EAE130. The lesson has been reviewed and reflects current orders and manuals as of December 2018.

NOTE: *As you prep for this lesson, recall and be prepared to talk about examples and personal experiences that illustrate or explain the teaching points in the lesson.*

LESSON PLAN ICONS

	Description
	The Activity icon indicates an exercise, lab, or hands-on activity.
	The Discussion Question icon signals a discussion question to be asked to the students.
	The Handout icon indicates a handout is to be distributed to the students.
	The Instructor Note icon is in hidden text and indicates text that is for the instructor only.
	The Multimedia icon indicates a video or audio clip is in the presentation.
	The Phraseology icon indicates that phraseology is in the content.
	The QA icon indicates a question to be asked to the entire class by the instructor.
	Warning icon indicates a safety critical note.
	The WBT icon indicates a component of web-based training.
	The Click icon indicates a PPT slide with click-based functionality to present additional information.

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LESSON INTRODUCTION

Overview

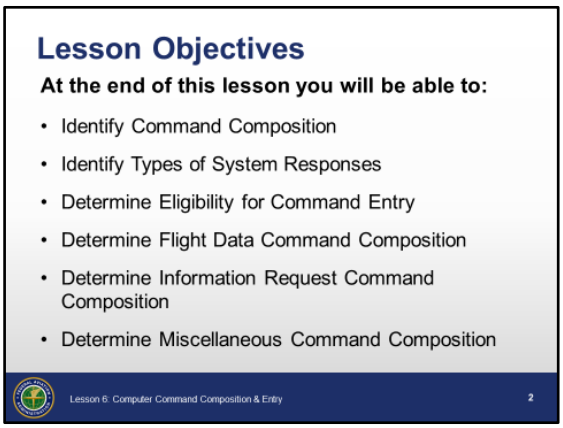
The National Airspace System (NAS) is a computerized network that passes air traffic information from controller to controller. To function effectively in that network, you must gain a thorough knowledge of the required command composition and entry procedures.

The previous lessons covered the location and functions of the sector equipment and of Command Fields 01 through 11. Combining that knowledge with the information in this lesson, you will be able to compose commands.

This lesson will cover command types associated with the A and RA positions. This lesson also covers most of the remaining command fields used.

LESSON INTRODUCTION *(Cont'd)*

Lesson Objectives



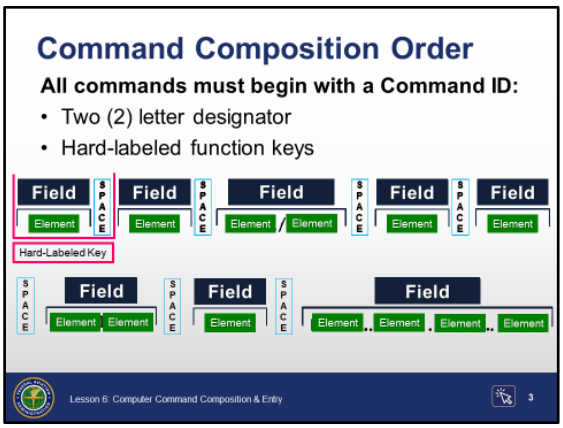
Introduce the lesson objectives.

- At the end of this lesson you will be able to:
  - Identify Command Composition
  - Identify Types of System Responses
  - Determine Eligibility for Command Entry
  - Determine Flight Data Command Composition
  - Determine Information Request Command Composition
  - Determine Miscellaneous Command Composition

COMMAND COMPOSITION

Command Composition Order

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1



This slide is animated, 2 clicks.

Click to reveal Field 01 Hard-Labeled Key.

- All commands must begin with a Command ID:
  - Two-letter designator
  - Hard-labeled function keys
    - The two-letter designator and a space is automatically inserted
- A command starts with Field 01.

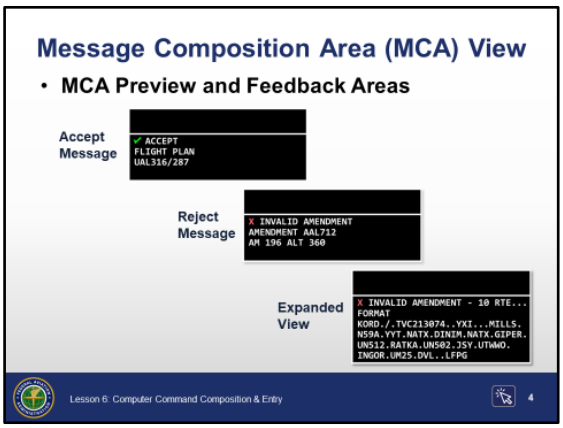
Click to reveal fields 02 - AID; 03 - TYP; 05 - SPD; 06 - FIX; 07 - TIM; 09 - RAL; 10 - RTE.

- The remaining fields are entered in a specified order depending on command type.
- Command fields are separated by spaces or “/”, depending upon the command.

COMMAND COMPOSITION *(Cont'd)*

Message Composition Area

TI 6110.101, par. 4.12



This slide is animated, 2 clicks.

⊙ The RA Position Message Composition Area (MCA) View is accessed through the MCA button on the RA position toolbar or by typing a command.

- The view includes Preview and Feedback Areas.
- When a command is sent, the cursor may change to a busy cursor (hour-glass symbol).
- Accept message - If a command is accepted, a green check mark displays in the Feedback Area.

Click to display reject message. Stress the importance of verifying that a message is accepted or rejected.

- Reject message - If a command is rejected, a red X displays in the Feedback Area.

Click again to display expanded view.

- Expanded View - The view expands automatically when the message in the Feedback Area is longer than four lines.

COMMAND ACCEPTANCE CHECKS

Command Acceptance Checks

TI 6110.100, par. 1.4.1

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.9

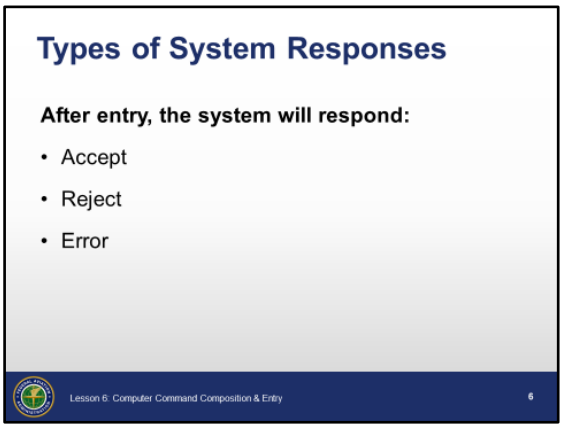
- Syntax and Format checking verifies proper fields, sequence, characters and required range of the data.
- Source Legality determines if the position is authorized to enter the command.
- Semantic Checking determines whether the current state of the system allows the command to be performed. In other words, does the command content have any conceivable or correct relationship to the flight plan or data.

SYSTEM RESPONSE

Type of System Responses

TI 6110.100, par 4.3.1.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.1



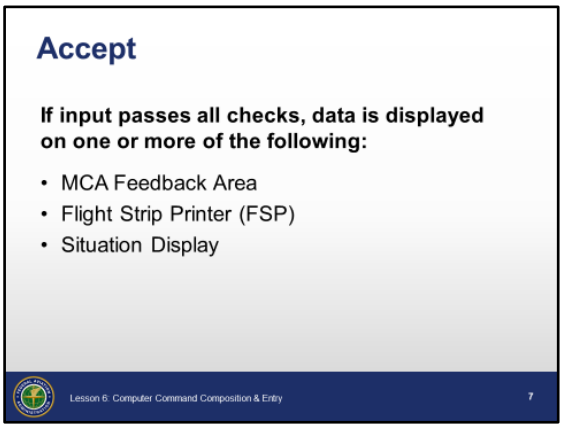
- After format, syntax, source legality, and semantic checks have been performed, the system will respond to the input in one of the following ways:
  - Accept
  - Reject
  - Error

SYSTEM RESPONSE *(Cont'd)*

Accept

ERAM FDP SSS 200.04, par 3.3.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.1.2.1.6.3



⊙ If input passes all checks, data is displayed on one or more of the following:

- MCA Feedback Area
- Flight Strip Printer (FSP)
- Situation Display

Reject/Error Message Overview

TI 6110.100, par 1.4.1-4

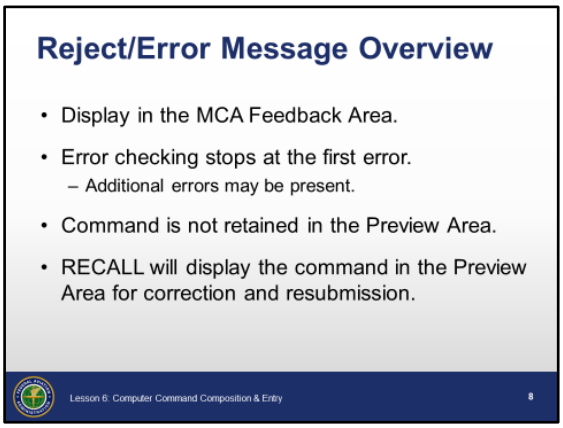
ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

TI 6110.100, par 6.1.2

TI 6110.101, par 1.2.6.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.4

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.35



⊙ Source Legality and Semantic checking results in error and reject messages.

- Display in the MCA Feedback Area.
- Error checking stops at the first error.
  - Additional errors may be present.
- Command is not retained in the Preview Area.
- RECALL will display the command in the Preview Area for correction and resubmission.

SYSTEM RESPONSE *(Cont'd)*

Syntax and Format Example

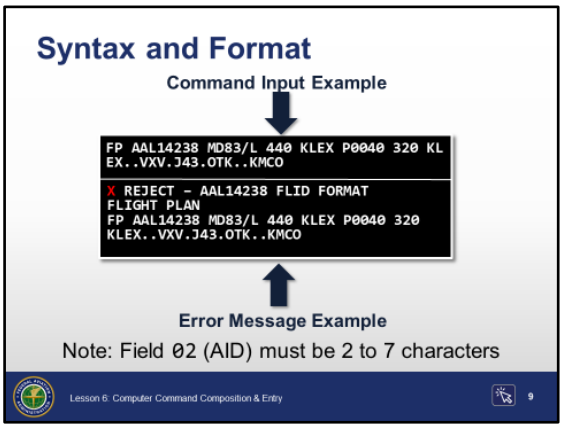
TI 6110.100, par 1.4.1

TI 6110.100, par 1.4.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1, Section C.8

TI 6110.101, par 1.2.6.2

TI 6110.100, par 6.1.2



This slide is animated, 2 clicks.

First click displays the error message as the command input disappears.

Next click displays the command input and error message in one view.

Discuss the command input and the error message. AID contains too many characters. Field 02 (AID) must be 2 to 7 characters.

- Command is rejected and not retained in the Preview Area.
- Rejected command is repeated in the Feedback Area to allow you to correct any errors.

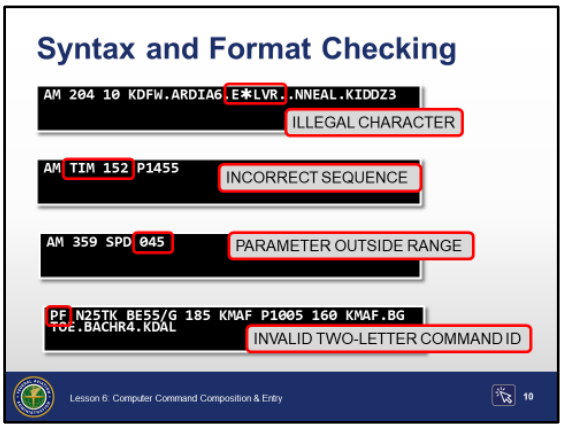
COMMAND ACCEPTANCE CHECKS *(Cont'd)*

Syntax and Format Checking

TI 6110.100, par. 1.4.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1, Section C.8

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.2;



This slide is animated, 1 click.

Click to reveal the section of command in error and type of error.

Discuss the entry errors.

Syntax and Format Checking:

- Syntax checking detects illegal characters.

  Example: Illegal ✱ in Field 10

- Format checking verifies that the required parameters are present and in the correct sequence.

  Example: Field Name **TIM** and **FLID** transposed

- Format checking also verifies that the values entered for a parameter are within the required range.

  Example: Value for speed too low

- Field 01 is always checked to verify it is a valid, two-letter Command ID. If not, you will receive the error message, INVALID MESSAGE TYPE.

  Example: Invalid Command ID, **PF** should be **FP**

SYSTEM RESPONSE *(Cont'd)*

Syntax or Format Error

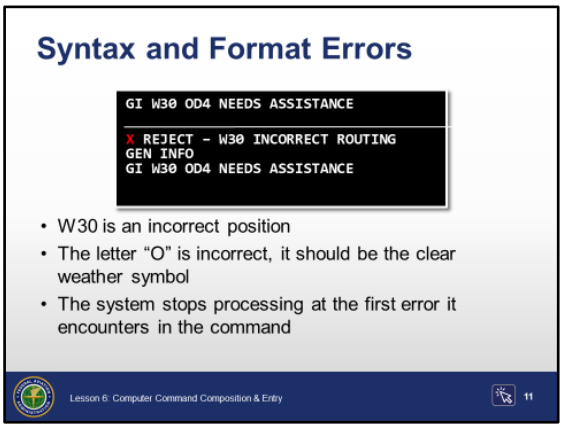
TI 6110.100, par 1.4.1

TI 6110.100, par 1.4.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

TI 6110.101, par 1.2.6.2

TI 6110.100, par 6.1.2



This slide is animated, 2 clicks.

First click displays the error message as the command input disappears.

Next click displays the command input and error message in one view.

Discuss the command input and the resulting error message.

- The sample command contains two errors:
  - Incorrect routing (**W30** should be **W3**, an AT Specialist workstation).
  - Incorrect syntax (typing the letter **O** instead of the clear weather symbol).

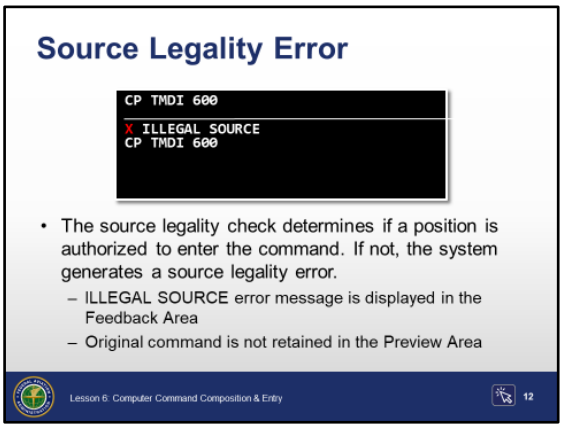
NOTE: As this example demonstrates, the system stops processing at the first error it encounters in the command.

SYSTEM RESPONSE *(Cont'd)*

Source Legality Error

TI 6110.100, par 1.4.3

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.4



This slide is animated, 2 clicks.

First click displays the ILLEGAL SOURCE message as the command input disappears.

Next click displays the command input and error message in one view.

⊙ The source legality check determines if a position is authorized to enter the command. If not, the system generates a source legality error.

- An ILLEGAL SOURCE error message is displayed in the Feedback Area.
- The original command is not retained in the Preview Area.

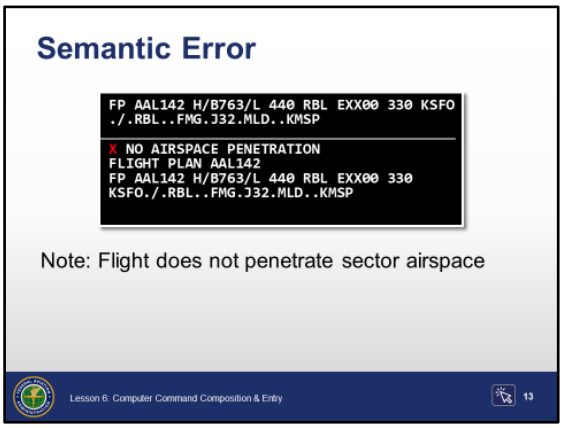
***NOTE:** The RA position is ineligible to enter a Change Parameter (CP) TMU Datablock Drop Interval (TMDI) command.*

SYSTEM RESPONSE *(Cont'd)*

Semantic Error

TI 6110.100, par 1.4.4

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.35



This slide is animated, 2 clicks.

First click displays the Semantic Error message as the command input disappears.

Next click displays the command input and error message in one view.

Discuss the command input and the reject message.

- The semantic check determines whether the current state of the system allows the command to be performed. If not, the system generates a semantic error.

  Example: The flight does not penetrate the airspace of the ARTCC attempting to enter the flight plan.

  - The error message displays in the Feedback Area.
  - The original command is not retained in the Preview Area.

Note: This flight plan will not generate an error at Oakland Center.

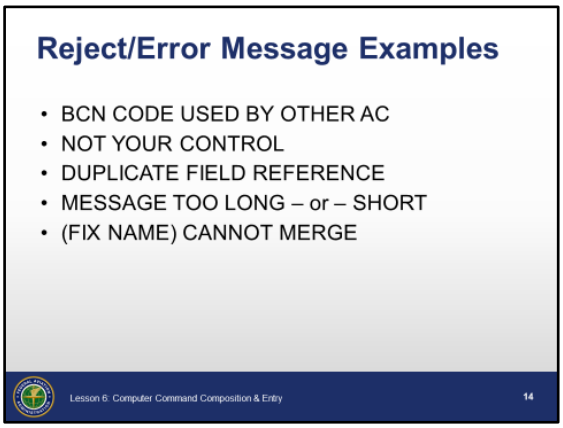
Reject/Error Message Examples

TI 6110.100, par 4.3.1.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

TI 6110.101, par 1.2.6.2

TI 6110.100, par 6.1.2



Discuss the types of command entries that will receive these reject/error messages.

The Feedback Area messages will typically contain information to help the controller troubleshoot the mistake.

- Reject/Error Message Examples
  - BCN CODE USED BY OTHER AC
  - NOT YOUR CONTROL
  - DUPLICATE FIELD REFERENCE
  - MESSAGE TOO LONG - or - SHORT
  - (FIX NAME) CANNOT MERGE

SYSTEM RESPONSE *(Cont'd)*

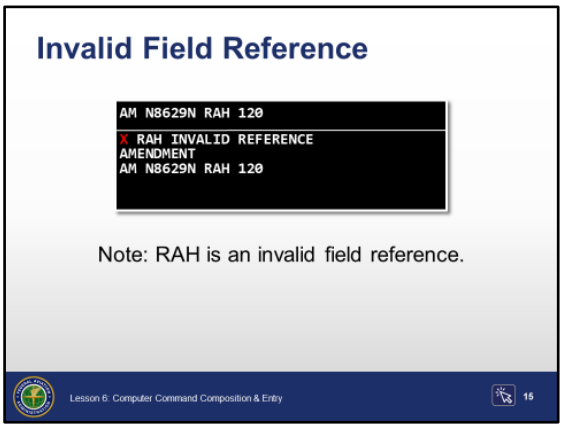
Reject/Error Message Examples *(Cont'd)*

TI 6110.100, par 4.3.1.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

TI 6110.101, par 1.2.6.2

TI 6110.100, par 6.1.2



This slide is animated, 2 clicks.

First click displays the INVALID REFERENCE message as the command input disappears.

Next click displays the command input and error message in one view.

- Either RAL or 09 is a correct field reference for Requested Altitude.

SYSTEM RESPONSE *(Cont'd)*

Reject/Error Message Examples *(Cont'd)*

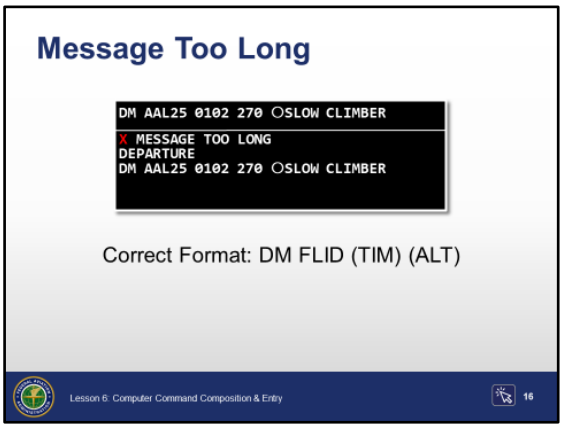
TI 6110.100, par 4.3.1.2

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.8

TI 6110.101, par 1.2.6.2

TI 6110.100, par 6.1.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.5;



This slide is animated, 2 clicks.

First click displays MESSAGE TOO LONG message as the command input disappears.

Next click displays the command input and error message in one view.

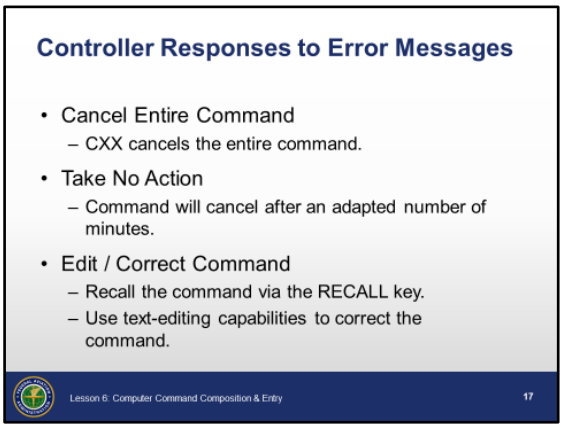
⊙ The DM command format cannot include Field 11 (RMK) remarks.

NOTE: Departure Time (TIM) and amended Altitude (ALT) are the only optional fields in a DM command.

CONTROLLER RESPONSES TO ERROR MESSAGES

Controller Responses to Error Messages

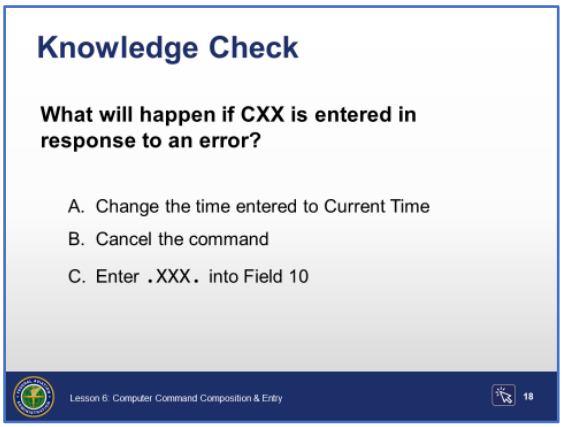
ERAM EDSM SRS 210.04 V1B1, pars. 3.2.1.2.1.5.63.2. and 3.2.3.2.35



- Cancel Entire Command
  - Enter CXX
- Take No Action
  - Command will cancel after an adapted number of minutes.
- Edit / Correct Command
  - Recall the command via the RECALL key.
  - Use text-editing capabilities to correct the command.

KNOWLEDGE CHECK

Knowledge Check



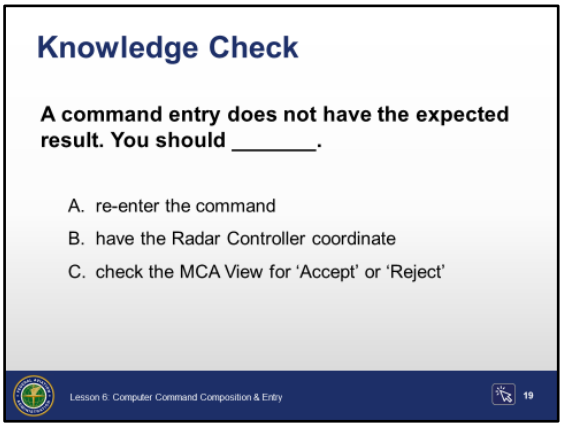
Q&A **Question:** What will happen if CXX is entered in response to an error?

Click to reveal answer.

Answer: *B. cancel the command*

KNOWLEDGE CHECK

Knowledge Check



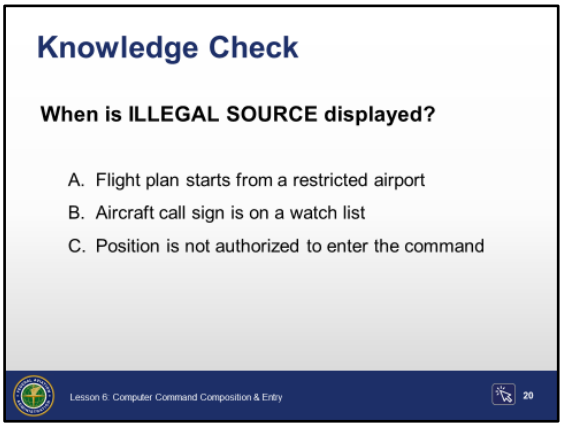
Q&A **Question:** A command entry does not have the expected result. You should _____.

Click to reveal answer.

Answer: *C. check the MCA View for 'Accept' or 'Reject'*

KNOWLEDGE CHECK

Knowledge Check



Q&A **Question:** When is ILLEGAL SOURCE displayed?

Click to reveal answer.

Answer: *C. Position is not authorized to enter the command*

COMMAND ELIGIBILITY

Command Eligibility

ERAM EDSM SRS 210.04, V1B2, Appendix C, Sections C.2, C.3

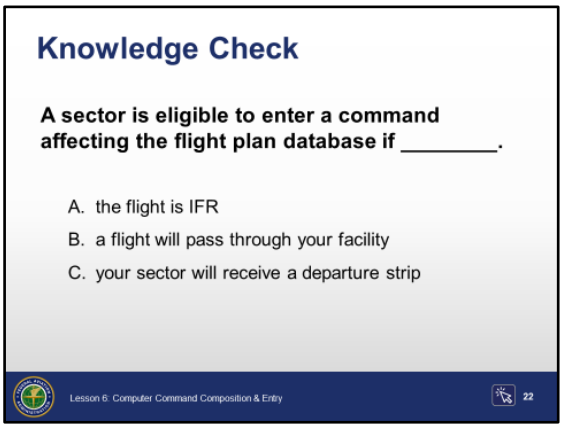
ERAM FDP SSS 200.04, par. 3.3.1.3

There are two types of input commands:

- Flight Data commands
  - Affect flight plan information contained in the NAS
  - Sector is eligible to enter a command affecting the flight plan database if:
    - Proposed flight plans, the sector has or will receive either:
      - departure strip, or
      - departure coordination strip
    - Sector has control of that flight
    - Logic Check Override (/OK) is entered
      - Provides ability to override eligibility requirements
      - May be included in the syntax of some commands or prompted by response
  - Eligibility terminates when control of the flight is transferred to another sector or facility.
- Information Request commands
  - Provide read only information
  - Eligibility is NOT required

KNOWLEDGE CHECK

Knowledge Check



Q&A **Question:** A sector is eligible to enter a command affecting the flight plan database if _____.

Click to reveal answer.

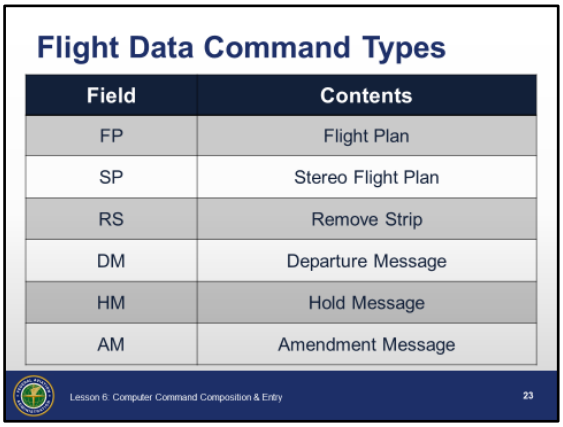
Answer: *C. your sector will receive a departure strip*

COMMAND TYPES

Flight Data Command Types

ERAM SRS EDSM, V1B2, Appendix C, Sections C.1, C.2, C.3, C.8

ERAM FDP SSS 200.04, par 3.3.2



- Purpose: Establish and update flight plan data
- Command types include:
  - Flight Plan (FP)
  - Stereo Flight Plan (SP)
  - Remove Strip (RS)
  - Departure Message (DM)
  - Hold Message (HM)
  - Amendment Message (AM)

Note: There are additional Flight Data commands not covered in this lesson. Refer to the En Route Automation Modernization (ERAM) Quick Reference Controller Card TI 6110.108 for additional information.

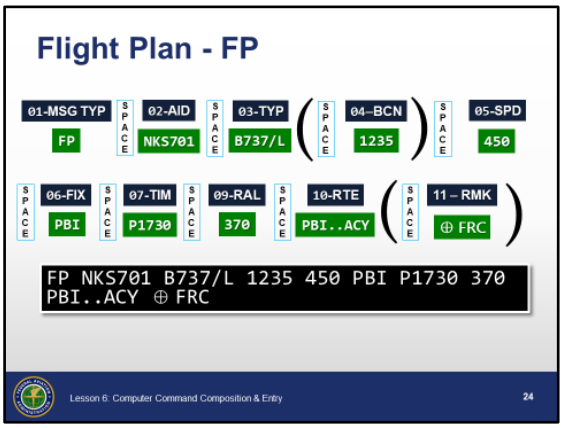
COMMAND TYPES *(Cont'd)*

Flight Plan - FP

TI 6110.108

ERAM EDSM, SRS 210.4 V1B2, Appendix C, Sections C.1, C.2

ERAM FDP SSS 200.04, par 3.3.2



- Purpose: Establish a database for active or proposed flight plans
- Required fields:
  - 01 - Message Type
  - 02 - AID
  - 03 - TYP
  - 05 - SPD
  - 06 - FIX
  - 07 - TIM
  - 08 - ALT or 09 - RAL
  - 10 - RTE
- Optional fields:
  - 04 - BCN
  - 11 - RMK

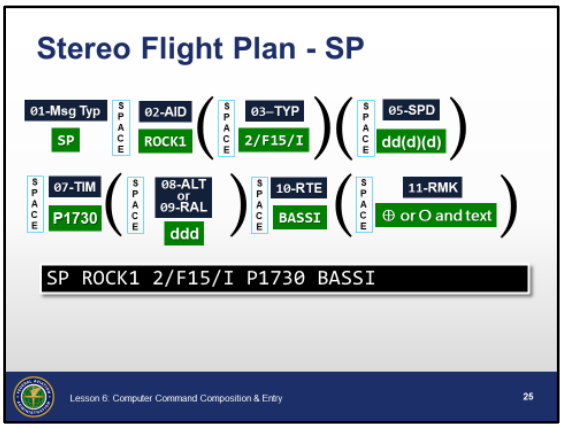
NOTE: If a beacon code is not entered in a Flight Plan command, and the type has an appropriate equipment suffix, the computer will assign one. If you enter a beacon code that is already in use by another aircraft, then the computer will assign another code.

COMMAND TYPES *(Cont'd)*

Stereo Flight Plan - SP

TI 6110.108

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



- Purpose: Used to enter an abbreviated flight plan from pre-stored data identified by a stereo tag
- Required fields:
  - 01 - Message Type
  - 02 - AID
  - 07 - TIM
  - 10 - RTE
    - This field must be a stereo flight plan name (stereo tag).
- Optional fields:
  - 03 - TYP
  - 05 - SPD
  - 08 - ALT or 09 - RAL
  - 11 - RMK

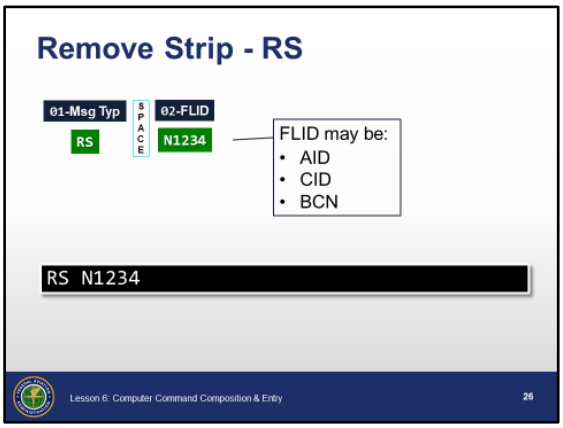
COMMAND TYPES *(Cont'd)*

Remove Strip - RS

TI 6110.108

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

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.34;



- Purpose - Removes:
  - Tentative or active flight plan
  - Full Data Block (FDB)
- Required fields:
  - 01 - Message Type
  - 02 - Flight Identification (FLID)
- Confirm the command by entering the logic check Y.

NOTE: This logic check is to ensure that you have entered the RS command on the correct FLID.

Remove Strip - RS *(Cont'd)*

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

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.34;

This slide is animated, 3 clicks.

- To help prevent an erroneous RS message, an extra confirmation is required.
  - After entering the RS command, CONFIRM BY ENTERING Y is displayed in the Feedback Area.

Click to reveal CONFIRM BY ENTERING Y message.

  - Enter Y and the Remove Strips command is accepted.

Click to reveal response to be entered (i.e., Y).

Click to show ACCEPT REMOVE STRIP MESSAGE.

  - Entering anything other than Y is rejected.

- Using the RS command on the wrong FLID results in:
  - Removal of all flight plan information from the system.
  - Dropping track and data block from the system.

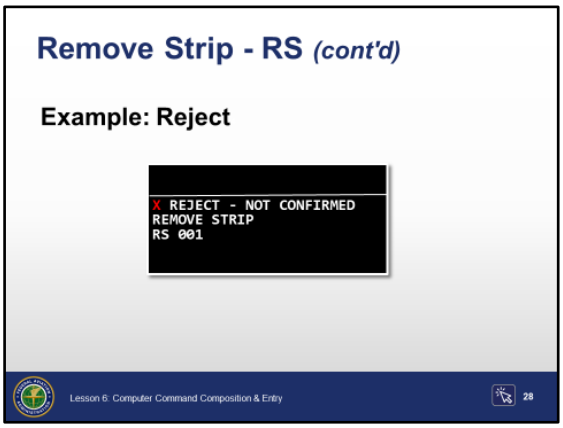
NOTE: The "CONFIRM BY ENTERING Y" prompt will remind you of the consequences of making an error. Upon seeing the prompt, verify that the correct FLID is being removed.

COMMAND TYPES *(Cont'd)*

Remove Strip - RS *(Cont'd)*

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

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.34;



Remove Strip REJECT

- Example: `RS  N1234`

This is an animated slide, 3 clicks.

Click to reveal CONFIRM BY ENTERING Y message.

- After entering the RS command, CONFIRM BY ENTERING Y is displayed in the Feedback Area.

Click to reveal response to be entered (i.e., YES).

- "Yes" is entered incorrectly.

Click to reveal the REJECT message.

Discuss the reject message.

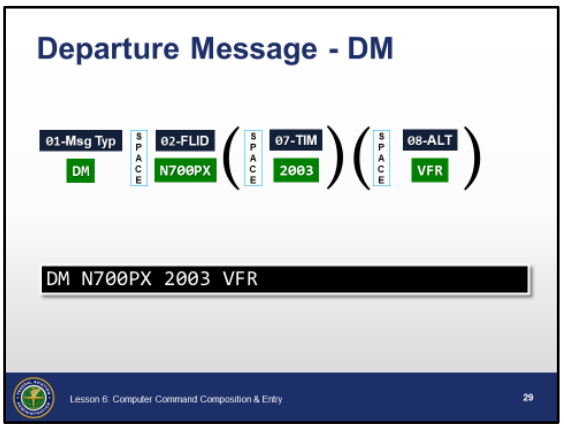
- This example uses YES instead of Y and will generate a REJECT message.

COMMAND TYPES *(Cont'd)*

Departure Message - DM

TI 6110.108

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



- Purpose: Activate a proposed FP
- Required fields:
  - 01 - Message Type
  - 02 - Flight Identification
- Optional fields:
  - 07 - Time
    - If omitted, the computer will use present time.
  - 08 - Assigned Altitude
    - If omitted, the computer will use requested altitude for processing.
- Special Entry:
  - Logic Check Override (/OK)
    - Forces Eligibility
- An optional asterisk (✱) or optional overcast weather symbol (⊕) may be suffixed to Field 02.
  - Entry of the asterisk inhibits the use of preferred routes.
  - Entry of the overcast symbol inhibits the use of ICAO Equipment Restricted Routes (IERRs).
  - If the /OK is also suffixed, the asterisk or overcast symbol must appear first.

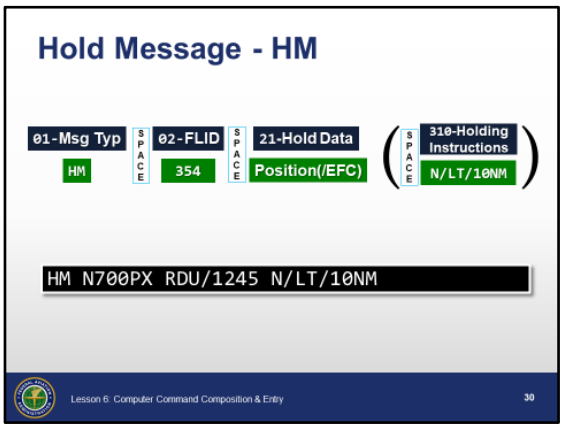
COMMAND TYPES *(Cont'd)*

Hold Message - HM

Ti 6110.108

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

EDSM V1B2 Appendix C, Sections C.1, C.2; SIG884; SIG1380



- Purpose: Suspends flight plan processing when aircraft enter holding
- Required fields:
  - 01 - Message Type
  - 02 - Flight Identification
  - 21 - Hold Data
    - Can include:
      - Holding Fix, must be on the route in Field 10
      - P for present position hold
      - Expect Further Clearance (EFC)
      - C to cancel the hold

    NOTE: To include the EFC time, enter the fix (or P) followed by a forward slash " / " and the four-digit time.

Cont'd on next page

COMMAND TYPES *(Cont'd)*

Hold Message - HM *(Cont'd)*

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

EDSM V1B2 Appendix C, Sections C.1, C.2

SIG884

SIG1380

- ⊙ Optional Fields
  - 310 - Holding Instructions
    - If you want to include detailed holding instructions, they must all be entered as follows:
      - Direction is referenced by 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.

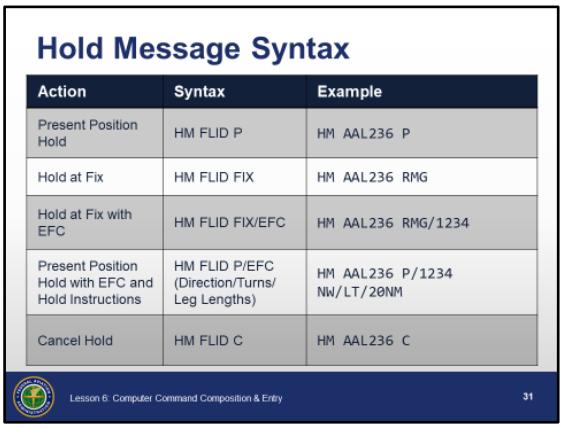
Hold Message Syntax

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

EDSM V1B2 Appendix C, Sections C.1, C.2

SIG884

SIG1380



Discuss each of the HM command examples.

- As soon as the HM command is entered, you will observe HOLD indications on the Aircraft List (ACL) and the aircraft will be entered into the R Position Hold View.

NOTE: If the holding fix is in a downstream sector, the aircraft will also be entered into that sector's Hold View.

- The HOLD key or HM command can be used to cancel a hold.
  - Syntax: HM FLID C
  - The hold is canceled and HOLD indications on the ACL and R Position are grayed out.

NOTE: Entering a route amendment will also cancel a hold for an aircraft.

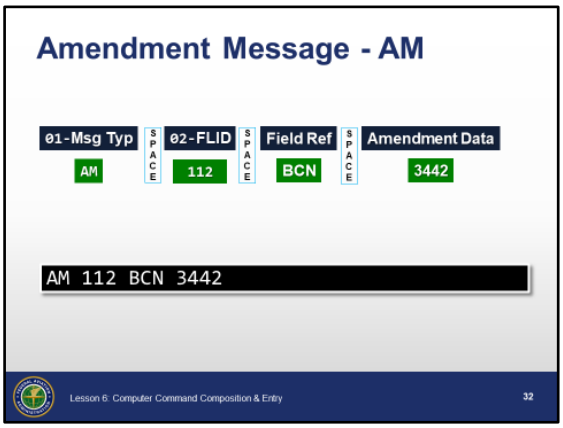
COMMAND TYPES *(Cont'd)*

Amendment Message - AM

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Sections C.1, C.8

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.16



- Purpose: Change, add to, or delete a specific FP data field
- Required fields:
  - 01 - Message Type
  - 02 - FLID
    - "FLID" cannot be used as a field reference name.
  - Field Reference
  - Amendment Data

NOTE: One set of Field Reference and Amendment Data is required. Additional sets are optional and if included are appended to the end of the command.

ERAM has restrictions when amending Fields 02, 06, 07, and 10. The restrictions are discussed later in this lesson.

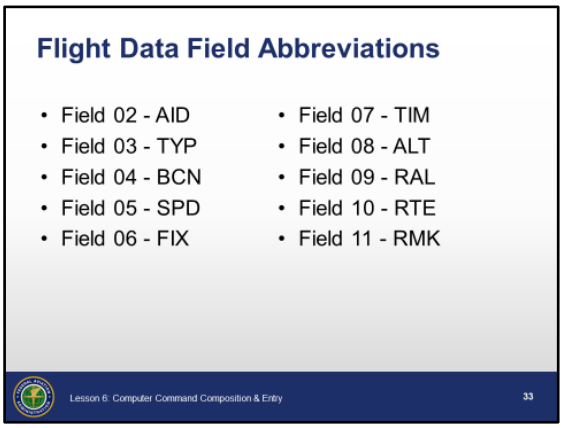
FLIGHT DATA FIELD AMMENDMENTS

Flight Data Field Abbreviations

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2



- Flight Data Field Abbreviations are used to:
  - Amend flight plan data with the AM command.
  - Establish the proper order when entering flight plans with the FP command.

  NOTE: The Flight Data Field Abbreviation or Number is used to reference the flight plan data field being amended by an AM command.

- Flight Data Field abbreviations
  - Field 02 - AID
    - Field 02 amendments cannot be combined with any other field amendments.
    - Cannot be used if a duplicate AID exists
  - Field 03 - TYP
    - Amend if aircraft type changes

    NOTE: Changes to an aircraft's navigation or flight management ability should be changed in the template in En Route Decision Support Tool (EDST) so that proper information is used for Performance Based Navigation routes.
  - Field 04 - BCN
    - Cannot be changed to a beacon code that is already in use.
  - Field 05 - SPD
    - Amend for any speed change

Cont'd on next page

FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Flight Data Field Abbreviations *(Cont'd)*

TI 6110.108

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

ERAM FDP SSS 200.04, par 3.3.2

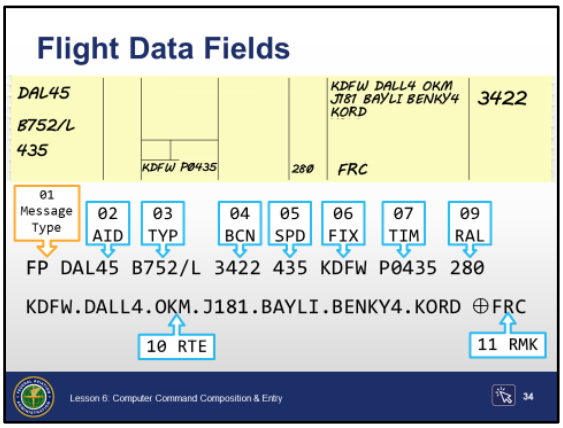
- Field 06 - FIX
  - Cannot be used for proposed flights by itself
    - Amendments to proposed flights must include Fields 06 and 10.
- Field 07 - TIM
  - Coordination time
    - Proposed time (P)
    - Departure time (D)
    - Estimated time (E)
- Field 08 - ALT
  - Assigned altitude in active FP
  - Cannot be used in proposed FP (Must use 09 or RAL)
- Field 09 - RAL
  - Requested altitude in proposed FP
  - Cannot be used in active FP (Must use 08 or ALT)
- Field 10 - RTE
  - Route of flight
    - May contain a combination of navigation fixes, routes, and delay information
- Field 11 - RMK
  - Contains information passed to your facility and/or other facilities

FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Flight Data Fields

TI 6110.108

JO 7110.65, par. 2-3-2



This slide is animated, 1 click.

- ⊙ Correlation between flight strips and flight plan message entry
  - Field 01 - Message type "FP" is the computer command identification for entering a flight plan, not a flight data field

Click to reveal the flight plan data fields of DAL45.

- All pertinent flight plan data fields should be used when entering an FP message
- Flight plan data fields do not always correspond to strip data locations

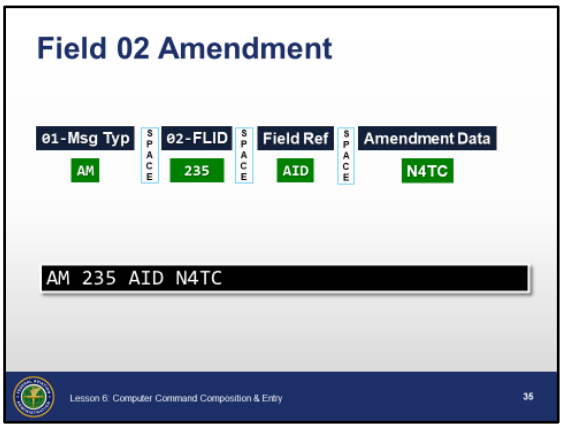
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Amendment Command - Field 02

TI 6110.108

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

ERAM FDP SSS 200.04, par 3.3.2;

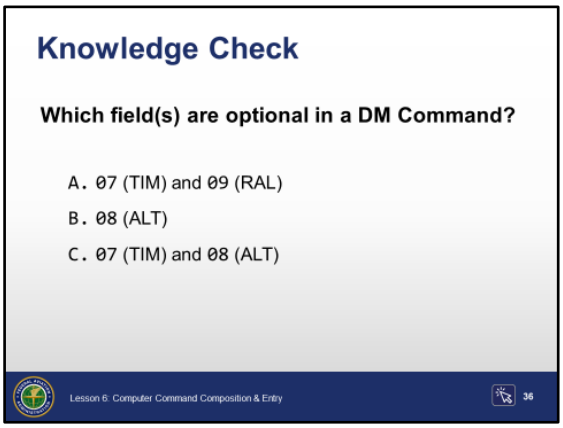


- Purpose: Change call sign
- Required Fields:
  - 01 - Message type
    - AM
  - 02 - FLID
    - Call sign, CID, or beacon code
  - Field reference
    - 02 or "AID"
  - Amendment Data
    - New call sign

NOTE: The AM command is the only command which requires specifying the Flight Data Field Reference Number or Abbreviation.

KNOWLEDGE CHECK

Knowledge Check



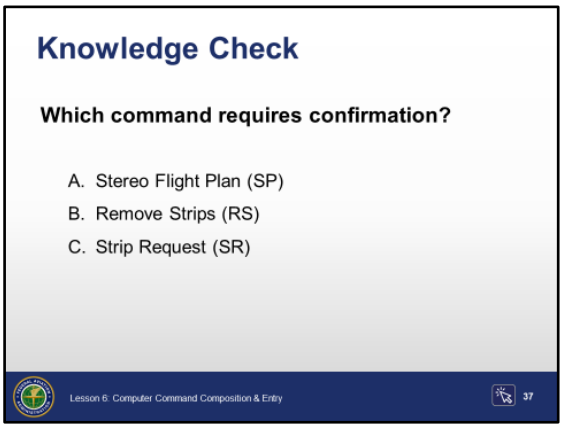
Q&A **Question:** Which field(s) are optional in a DM Command?

Click to reveal answer.

Answer: *C. 07 (TIM) and 08 (ALT)*

KNOWLEDGE CHECK

Knowledge Check



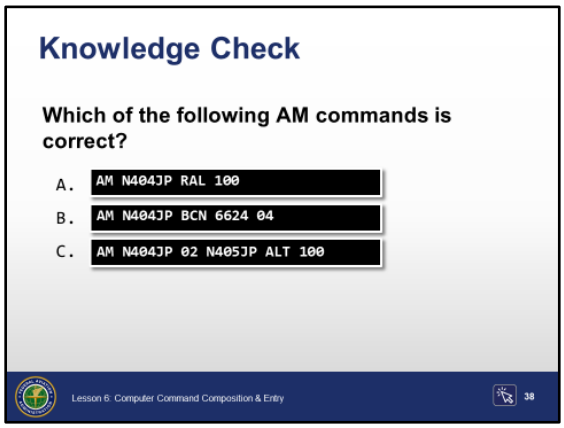
Q&A **Question:** Which command requires confirmation?

Click to reveal answer.

Answer: *B. Remove Strips (RS)*

KNOWLEDGE CHECK

Knowledge Check



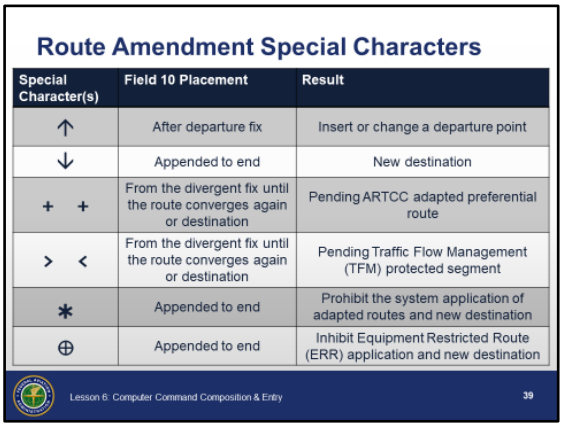
Q&A **Question:** Which of the following AM commands is correct?

Click to reveal answer.

Answers: *A.* `AM N404JP RAL 100`

FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment Special Characters



Route Amendment Special Characters:

↑: When placed in the route after a departure fix, will insert or change a departure point

↓: When appended to the end of the route, will set the destination

+: Indicates a pending ARTCC adapted preferential route is between the pluses

- Begins at a divergent fix and ends at a common fix
- Types of preferential routes:
  - Preferential Departure Route (PDR)
  - Preferential Arrival Route (PAR)
  - Preferential Departure and Arrival Route (PDAR)

NOTE: In ARTCC adaptation, these routes are known as Adapted Departure Route (ADR), Adapted Arrival Route (AAR), and Adapted Departure and Arrival Route (ADAR).

*: Prohibits the system application of adapted routes and can amend to a new destination

⊕: Inhibits Equipment Restricted Route (ERR) application and can amend to a new destination

><: Indicates a pending Traffic Flow Management (TFM) protected segment

- Begins at a divergent fix, and ends at a common fix or destination

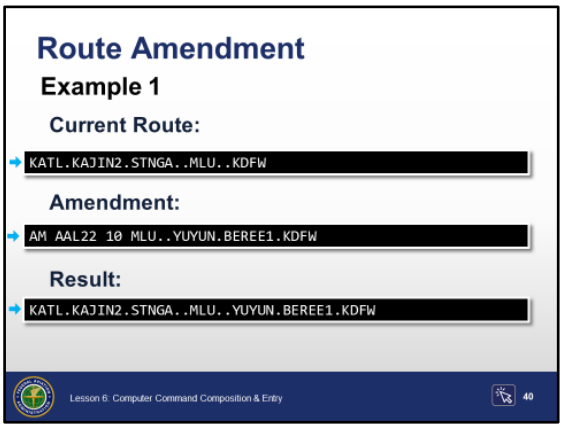
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2;



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal resulting route.

Discuss current route, amendment, and result.

- If Field 10 does not contain a common starting fix, then Field 06 must be included.
- Most amendments to Field 10 must merge elements.
  - A fix or route can be merged if it appears only once in Field 10.
- Fixes or routes that appear multiple times will result in an ambiguous element (i.e., multiple occurrences of a FIX or Route) error.
  - Must do a Field 10 by the numbers amendment (discussed later in this lesson).

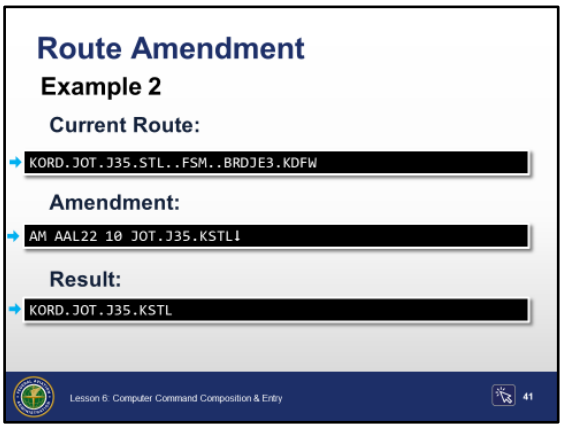
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment *(Cont'd)*

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2;



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal the resulting route.

Discuss current route, amendment, and result.

- Data entered must either merge with two elements of the filed route or merge with one element and indicate the new destination.

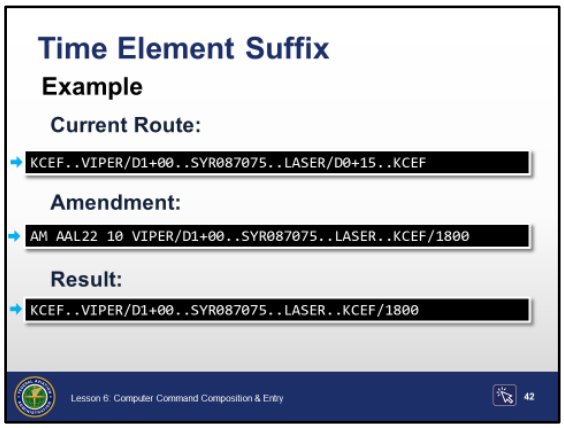
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: Time Element Suffix

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2;



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal the resulting route with time element suffix.

Discuss current route, amendment, and result.

- Delay data is suffixed to the fix name, Fix-Radial-Distance (FRD), or latitude/longitude.
- Estimated Time En Route (ETE)/Estimated Time of Arrival (ETA) must be suffixed to the last filed element.
- Example Result:
  - Stored suffix for LASER is deleted.
  - ETA suffix for KCEF is added.

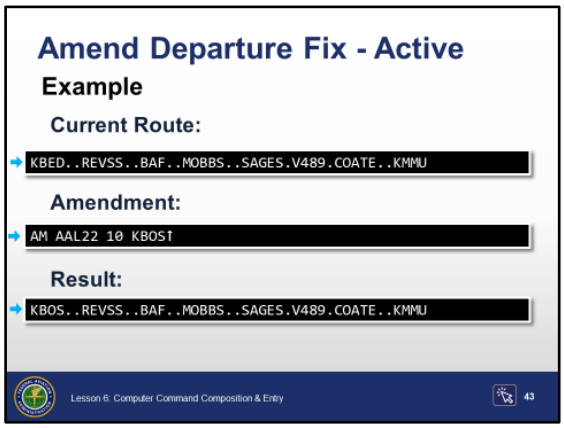
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: Amend Departure Fix - Active

TI 6110.108

ERAM FDP SSS 200.04, par 3.3.2;

ERAM EDSM SRS 210.04 V1B1,pars. 3.2.3.2.3.2.14, 3.2.3.2.3.2.32



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal resulting route with amended departure fix for an active flight.

Discuss current route, the amendment and the result.

⊙ When amending an active flight plan departure fix:

- Amend only the first element of Field 10 and append a departure indicator (↑).
- If the second element of the route is an airway or SID, the new departure fix has to merge correctly with the airway or SID. Otherwise, the amendment will be rejected.
  - The reject message will read "FIX NOT ON ROUTE".

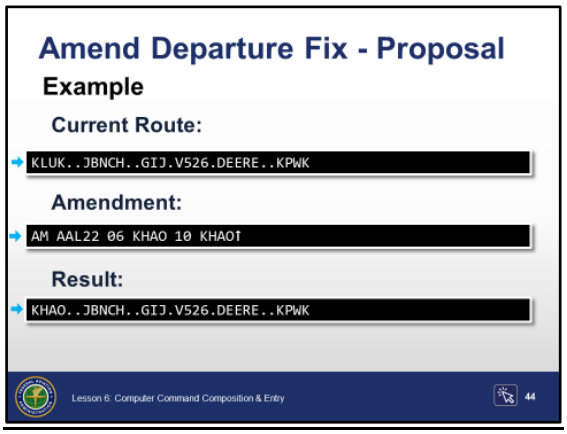
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: Amend Departure Fix - Proposal

TI 6110.108

ERAM FDP SSS 200.04, par 3.3.2;

ERAM EDSM SRS 210.04 V1B1, pars. 3.2.3.2.3.2.14, 3.2.3.2.3.2.32



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal resulting route with amended departure fix for a proposed flight.

Discuss current route, the amendment and the result.

⊙ When amending a proposed flight plan departure fix:

- Enter a Field 06 and Field 10 amendment and append a departure indicator (↑).
  - Amendments to the departure fix on proposed FPs require Field 06.

NOTE: The new departure fix must be the only route element entered and must be followed by the departure indicator (↑).

- If the second element of the route is an airway or SID, the new departure point has to merge correctly with the airway or SID. Otherwise, the amendment will be rejected.
  - The reject message will read "FIX NOT ON ROUTE".

FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

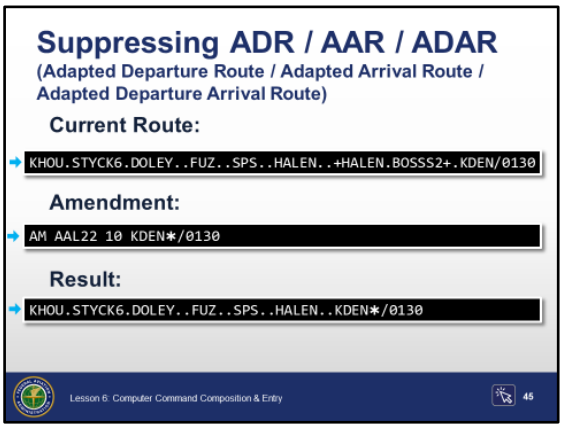
Route Amendment: Suppressing ADR/ AAR/ ADAR

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2;

ERAM EDSM SRS 210.04 V1B1, pars. 3.2.9.2.5.8, 3.2.9.2.6, 3.2.9.2.7.1;



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal the resulting route with suppressed AAR.

Discuss current route, amendment, and result.

- When suppressing an Adapted Departure Route (ADR)/Adapted Arrival Route (AAR)/Adapted Departure Arrival Route (ADAR):
  - An asterisk (*) is suffixed to the departure/destination fix.
  - If used with a time element suffix, it must precede the time element.

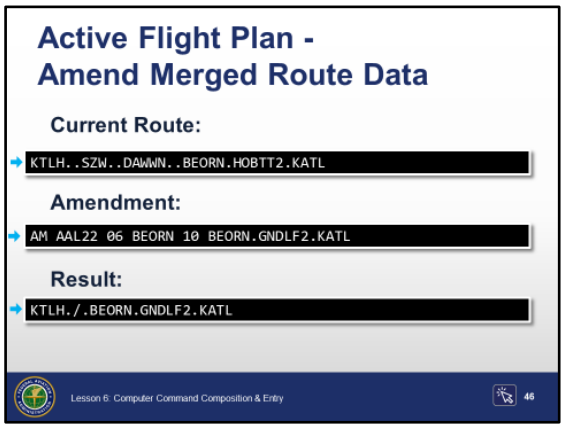
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: Amend Merged Route Data

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2;



This slide is animated, 2 clicks.

Click to reveal route amendment command.

Click to reveal resulting merged route.

Discuss current route, amendment, and result.

- ⊙ Active flight plan:
  - Command format is the same as for a proposed flight plan.
  - Departure fix is retained.
  - Tailoring symbol "*/*" is automatically inserted.
  - New route follows.
  - Field 06 replaces the previously stored coordination fix.

NOTE: In the example on the slide, new coordination fix processing starts at BEORN. Caution must be exercised since all sectors with unexpired fix postings will receive a Remove Strip message.

- If the entered route data is to be merged with the filed Field 10, the last element of the entered route data must match an element of the filed Field 10.
- If a new destination fix is used, it must be followed by ↓ or ✱.
  - The entered route data will completely replace the filed Field 10.

FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

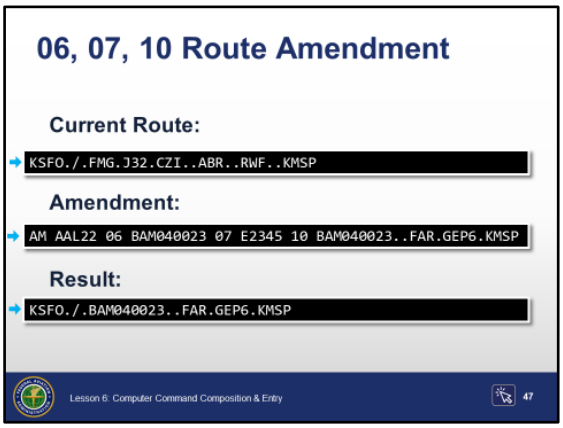
Route Amendment: Fields 06, 07, 10

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.1

ERAM FDP SSS 200.04, par 3.3.2.1.2

ERAM EDSM SRS 210.04 V1B1, pars 3.2.9.2.6, 3.2.9.2.7.1



This slide is animated, 2 clicks.

Click to reveal 06, 07, 10 Route Amendment command.

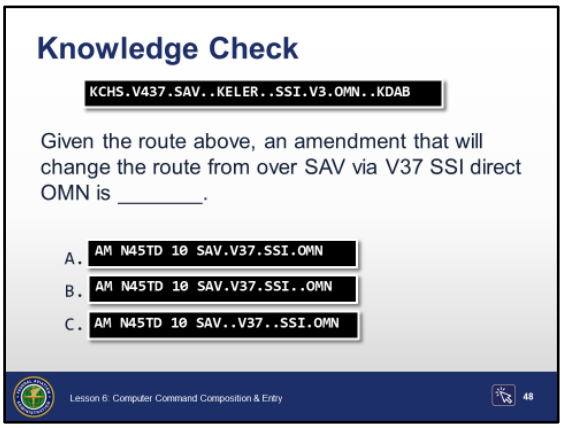
Click to reveal resulting route.

Discuss current route, amendment, and result.

- When there is no common starting point for a Field 10 amendment, you must simultaneously amend Field 06 and Field 07.
  - Field 10
    - Full or partial route
    - May omit the Field 06 fix and begin with "**..**"

KNOWLEDGE CHECK

Knowledge Check



Route: KCHS.V437.SAV..KELER..SSI.V3.OMN..KDAB

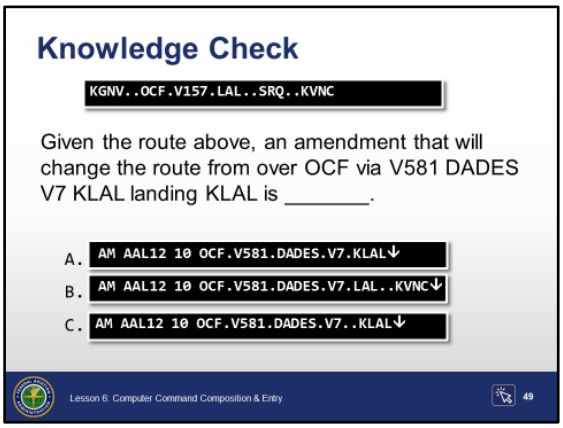
Q&A **Question:** Given the route above, an amendment that will change the route from over SAV via V37 SSI direct OMN is _____.

Click to reveal answer.

Answer: *B. SAV.V37.SSI..OMN*

KNOWLEDGE CHECK

Knowledge Check



Route: KGNV..OCF.V157.LAL..SRQ..KNVC

Q&A **Question:** Given the route above, an amendment that will change the route from over OCF via V581 DADES V7 KLAL, landing KLAL is _____.

Click to reveal answer.

Answer: *A. OCF.V581.DADES.V7.KLAL↓*

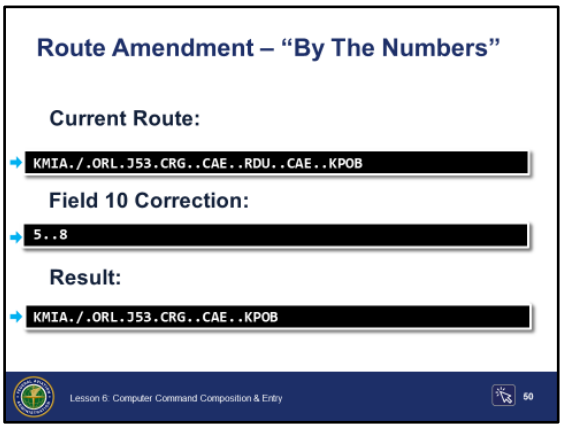
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: By the Numbers

TI 6110.108

ERAM SRS EDSM, V1B2, 3.2.3.3.3.2.26

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.32



This slide is animated, 4 clicks.

- Amendment by the numbers allows you to use numbers associated with all Field 10 elements in the flight plan.
  - Ambiguous elements are clarified by using the numbers to identify the route elements.

Click to reveal route readout request.

- To view the numbers associated with the elements, enter the command AM FLID.
  - The route readout request is displayed in the Response Area.

Click to reveal by-the-numbers route readout.

  - Each element in the route readout is numbered in the sequence that it occurs.
  - The route readout sequence numbers may be used as replacement for the elements in the correction response.

Click to reveal by-the-numbers command input.

- The next command entered is the amendment data using either the element numbers or actual elements.
  - If element number(s) are entered, they may only be the first and/or last elements in the amendment data.
- Once the correction is entered the route is amended.

Click to reveal resulting route.

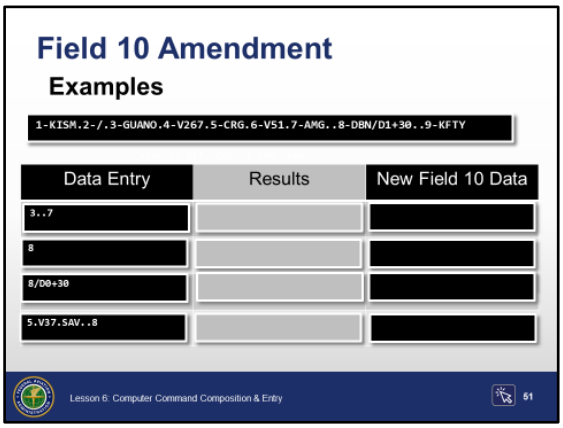
FLIGHT DATA FIELD AMENDMENTS *(Cont'd)*

Route Amendment: Field 10 Examples

TI 6110.108

ERAM SRS EDSM, V1B2, 3.2.3.3.3.2.26

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.32



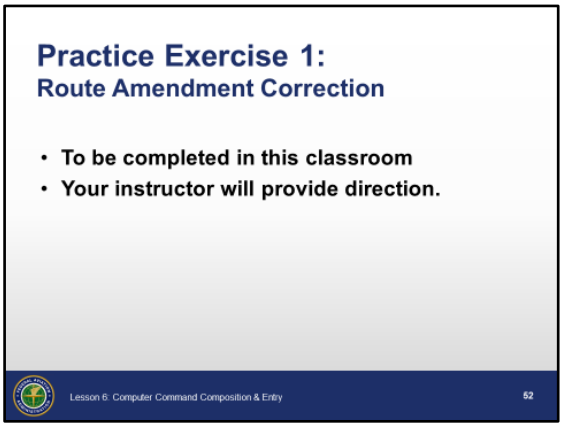
This slide is animated, 13 clicks. Each cell on the top row of the table is revealed by a click. Each successive set of 3 clicks will reveal data in the next row of the table, as the data in the row above disappears. The click after the final row has been revealed will populate the data of the entire table.

Discuss data entry and results.

- Example 1 shows the removal of elements 4 through 6.
- Example 2 is removing the delay after DBN.
- Example 3 is changing the delay at DBN to 0+30.
- Example 4 is changing the route between CRG and DBN.

PRACTICE EXERCISE 1

Practice Exercise 1: Route Amendment Correction



- This is a class exercise. Your instructor will provide directions.

Directions for this exercise are on the following page.

PRACTICE EXERCISE 1

Purpose

To practice correcting route amendments.

Materials

You will need the following materials for this exercise:

Distribute Handout:

- ⊙ Practice Exercise 1: Route Amendment Correction

As an option, this may be completed one amendment at a time. Then as a class discuss each item.

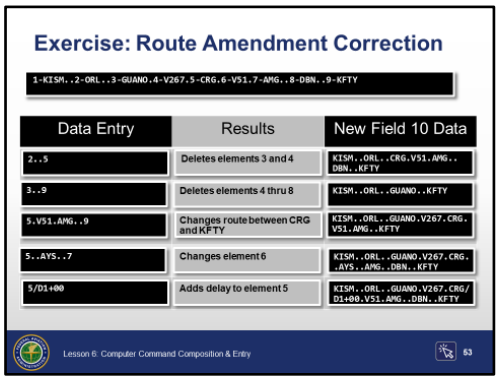
This exercise takes approximately 30 minutes to complete.

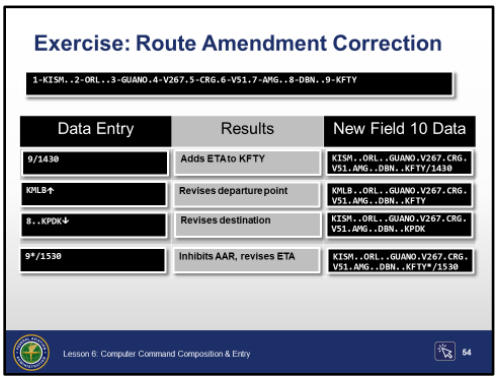
Directions

Your instructor will provide directions.

1. Practice Exercise 1: Route Amendment Correction.
2. Have the student(s) complete the exercise.
3. Advance the PowerPoint (PPT) slide to reveal answers one at a time.
4. Debrief the activity.

Click to display answers for the class.





NOTE: *Utilize these slides throughout this exercise. Students must write the expected results and new Field 10 data in the table on their handout.*

PRACTICE EXERCISE 1

Route Amendment Correction

1-KISM..2-ORL..3-GUANO.4-V267.5-CRG.6-V51.7-AMG..8-DBN..9-KFTY

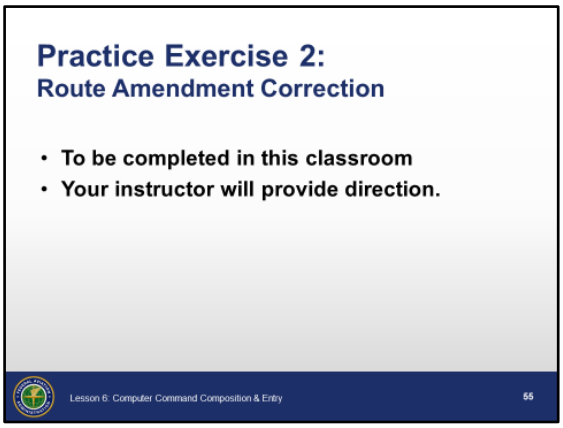
DIRECTIONS: Given the Route Readout request sequence numbers-elements above, if a Field 10 by the numbers amendment is in progress and the information in the data entry column is entered, what would be the resulting amendment? Write the expected results and new Field 10 data in the table below.

Exercise
Answer Key

DATA ENTRY	RESULTS	NEW FIELD 10 DATA
2..5	*Deletes elements 3 and 4*	*KISM..ORL..CRG.V51.AMG..DBN..KFTY*
3..9	*Deletes element 4 through 8*	*KISM..ORL..GUANO..KFTY*
5.V51.AMG..9	*Changes route between CRG and KFTY*	*KISM..ORL..GUANO.V267.CRG.V51.AMG..KFTY*
5..AYS..7	*Changes element 6*	*KISM..ORL..GUANO.V267.CRG..AYS..AMG..DBN..KFTY*
5/D1+00	*Adds delay data to element 5*	*KISM..ORL..GUANO.V267.CRG/D1+00.V51.AMG..DBN..KFTY*
9/1430	*Adds ETA to KFTY*	*KISM..ORL..GUANO.V267.CRG.V51.AMG..DBN..KFTY/1430*
KMLB↑	*Revises departure point*	*KMLB..ORL..GUANO.V267.CRG.V51.AMG..DBN..FTY*
8..KPDK↓	*Revises destination*	*KISM..ORL..GUANO.V267.CRG.V51.AMG..DBN..KPDK*
9✱/1530	*Inhibits AAR, revises ETA*	*KISM..ORL..GUANO.V267.CRG.V51.AMG..DBN..KFTY✱/1530*

PRACTICE EXERCISE 2

Practice Exercise 2: Route Amendment Correction



- This is a class exercise. Your instructor will provide directions.

Directions for this exercise are on the following page.

PRACTICE EXERCISE 2

Purpose

To practice using proper computer sequences and format.

Materials

You will need the following materials for this exercise:

Handout:

- Practice Exercise 2: Computer Sequence and Format

Directions

This exercise takes approximately 30 minutes to complete.

Your instructor will provide directions.

5. Handout Practice Exercise 2: Computer Sequence and Format
6. Have the students complete the handout.
7. Using answer key and instructor guide, review the answers.
8. Provide feedback on missed items, including a discussion to explain why particular answers are correct, as well as why some responses are incorrect.

PRACTICE EXERCISE 2

Computer Sequence and Format

DIRECTIONS: For each item, write your answers in the spaces provided. You may refer to your notes, user manuals and course materials.

1. Write the field abbreviations for Fields 02 through 11.

02 - ***AID***	07 - ***TIM***
03 - ***TYP***	08 - ***ALT***
04 - ***BCN***	09 - ***RAL***
05 - ***SPD***	10 - ***RTE***
06 - ***FIX***	11 - ***RMK***

2. Use the following information to list the steps required to enter a proposed flight plan on N123 using all required fields.

   N123, proposed 2100Z, ETE 1+15, BE10/G, KRBL.V25.LMT..DSD..KBDN, speed 250, altitude 170

   1. ***Press/type: FP function key or type FP.***

   2. ***Type: N123 BE10/G 250 KRBL P2100 170***

   KRBL.V25.LMT..DSD..KBDN/0115

   3. ***Press: ENTER***

3. Use the following information to list the steps required to enter an active flight plan on PINON67 using all required fields:

   PINON67, departed KBAB at 2315Z, U2/I, Beacon Code 4456, FL600, KBAB PINON FMG..KWRI, Interfacility Remarks PRESSURE SUIT FLIGHT, speed 420

   1. ***Press/type: FP function key or type FP.***

   2. ***Type: PINON67 U2/I 420 4456 KBAB D2315***

   600 KBAB..PINON..FMG..KWRI **OPRESSURE SUIT FLIGHT**

   3. ***Press: ENTER.***

PRACTICE EXERCISE 2

4. List the steps required to amend the aircraft identification from N1234 to N7863.

   1. ***Press/type: AM function key or type AM.***

   2. ***Type: N1234 02 (or AID) N7863***

   3. ***Press: ENTER.***

5. This flight plan was entered and a MESSAGE TOO SHORT error was returned.

   FP AAL808 B737/L 464 KOKC P1800 KOKC.J21.ICT.J26.KMCI

   List the steps required to recall and correct the error.

   This may be answered with more than one method.

   1. ***Press: RECALL key.***

   2. ***Insert: a Requested Altitude after P1800 in the command.***

   3. ***Press: ENTER.***

6. List the steps required to cancel an entire command.

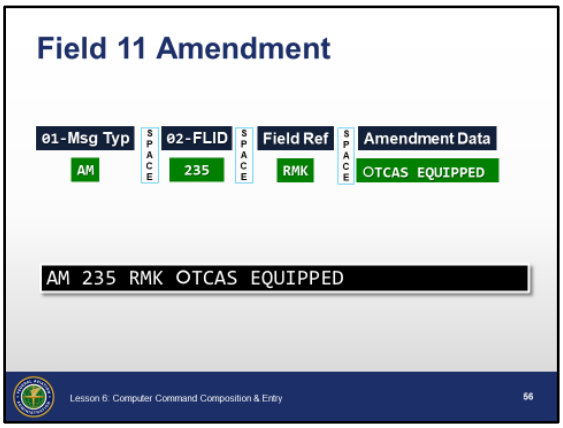
   1. ***Type: CXX.***

   2. ***Press: ENTER.***

FLIGHT PLAN FIELD AMENDMENTS *(Cont'd)*

Field 11 Amendment

ERAM EDSM SRS 210.04 V1B1, par. 3.2.3.2.3.2.32



- Purpose: Record plain language remarks or general information
- Required Fields:
  - 01 - Message Type
  - 02 - FLID
  - 11 - RMK
    - Amendment Data begins with:
      - Clear weather symbol (○) Interfacility, or
      - Overcast symbol (⊕) Intrafacility
    - New RMK entry overwrites existing entry.
      - Leaving the field blank removes existing remarks.
- Intrafacility remarks must precede interfacility remarks when both are entered in Field 11.
- Clear weather and overcast symbols indicate free text remarks.

INFORMATION REQUEST COMMANDS

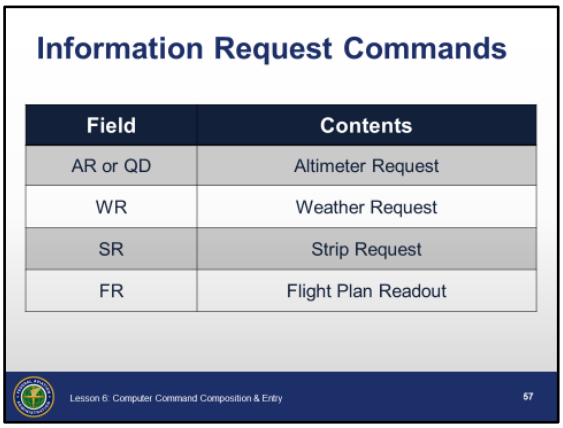
Information Request Commands

TI 6110.108

ERAM SRS EDSM, V1B2, Appendix C, Sections C.1, C.2, D2

TI 6110.101, par. 5.3.18

ERAM EDSM SRS 210.04 V1B1, pars. 2.4.4.2.2.11, 3.2.4.5.2.2.14, 3.2.9.2.5;



- Types of Information Request Commands include:
  - Altimeter Request (AR or QD)
  - Weather Request (WR)
  - Strip Request (SR)
  - Flight Plan Readout (FR)

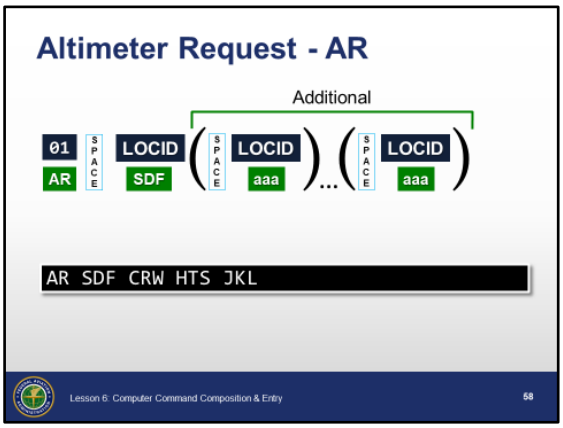
Note: There are additional Information Request commands not covered in this lesson. Refer to the En Route Automation Modernization (ERAM) Quick Reference Controller Card TI 6110.108 for additional information.

INFORMATION REQUEST COMMANDS *(Cont'd)*

Altimeter Request - AR

TI 6110.108

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

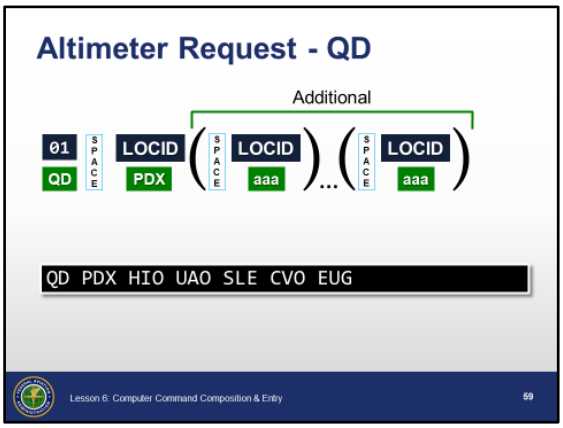


- Purpose: Request/suppress altimeter settings (printing from A Position only)
- Required fields:
  - 01 - Message Type
  - 13 - Location Identification (LOCID)
    - Used to designate a location for altimeter requests and altimeter settings
    - Must be an adapted altimeter reporting station
    - Multiple locations may be requested

INFORMATION REQUEST COMMANDS *(Cont'd)*

Altimeter Request - QD

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



- Purpose: Request/suppress altimeter settings
- Required fields:
  - 01 - Message Type
  - 13 - Location Identification (LOCID)
    - Used to designate a location for altimeter requests and altimeter settings
    - Must be an adapted altimeter reporting station

Note: This command may only be entered from the RA and R positions.

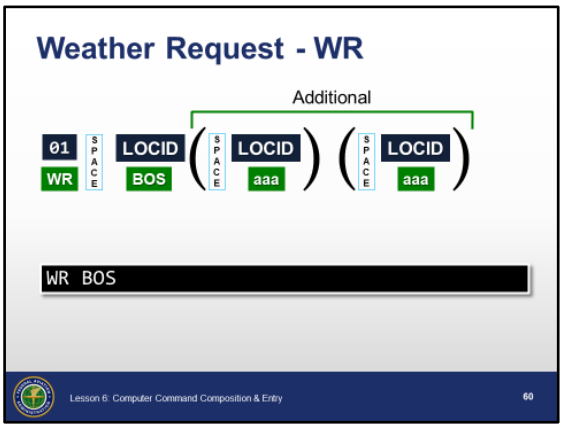
INFORMATION REQUEST COMMANDS *(Cont'd)*

Weather Request - WR

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

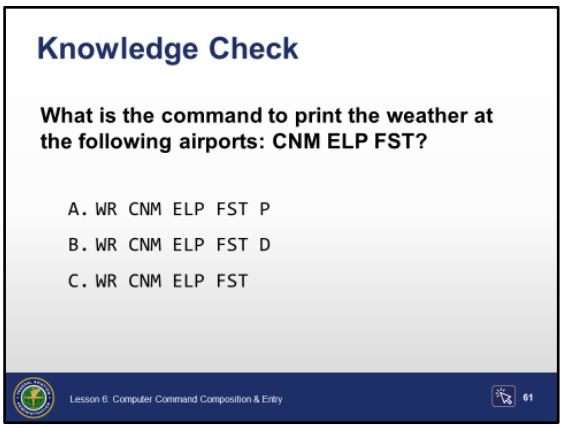
ERAM EDSM SRS 210.04 V1B1, pars. 3.2.4.5.2.2.14 and 3.2.4.5.2.3.13;



- Purpose: Display/suppress/print (from A Position only) stored weather data on the FSP or EDST
- Required fields:
  - 01 - Message Type
  - 13 - Location Identification (LOCID)
    - Used to designate a location for weather requests
    - Must be an adapted weather reporting station
    - Additional locations may be requested

KNOWLEDGE CHECK

Knowledge Check



Q&A **Question:** What is the command to print the weather at the following airports: CNM ELP FST?

Click to reveal answer.

Answer: *C. WR CNM ELP FST*

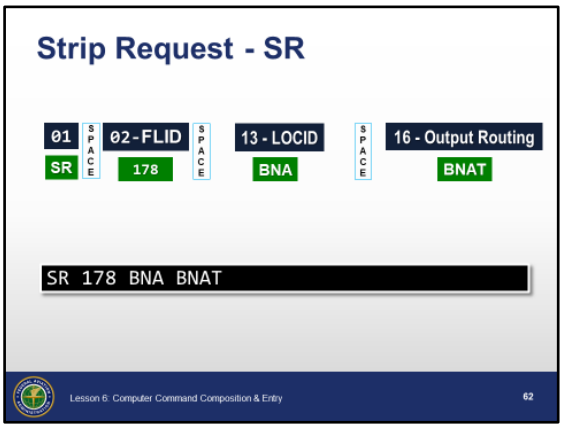
INFORMATION COMMAND REQUESTS *(Cont'd)*

Strip Request - SR

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.5



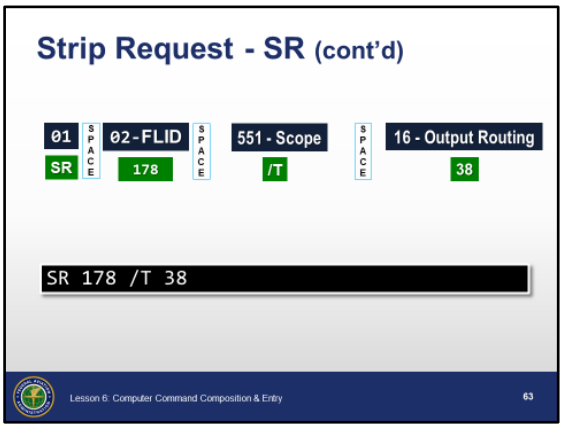
- Purpose: Request printing of desired flight progress strip(s) at:
  - Your sector
  - Another sector/position within your facility
  - Another facility
- Required fields:
  - 01 - Message Type
  - 02 - FLID
  - 13 - LOCID
    - May be a fix (e.g., BNA) or strip number (e.g., 01)
    - If the flight plan is a proposal use the departure point.
    - For active flights, use a current strip number or an unexpired fix on the converted route.
  - 16 - Output Routing
    - May be a sector number or facility
    - When sending a strip to a TRACON use:
      - A for the TRACON arrival position (e.g., BNAA)
      - D for the TRACON departure position (e.g., BNAD)
      - T for the Tower (e.g., BNAT)

INFORMATION COMMAND REQUESTS *(Cont'd)*

Strip Request - SR *(Cont'd)*

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

ERAM EDSM SRS 210.04 V1B1, par. 3.2.9.2.5



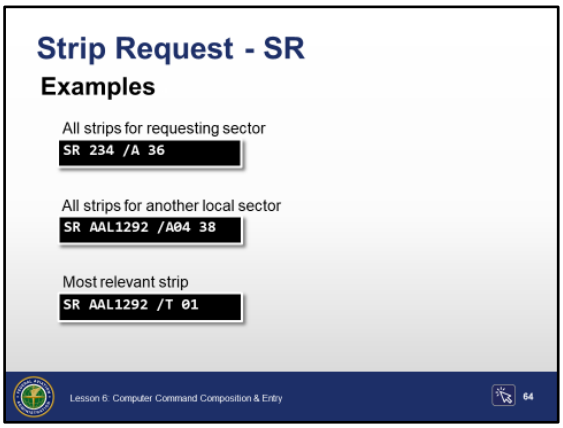
- Purpose: Request printing of desired flight progress strip(s) at:
  - Your sector
  - Another sector within your facility
- Required fields:
  - 01 - Message Type
  - 02 - FLID
  - 551 - Scope
    - /T
      - Prints the most relevant strip for your sector
    - /A
      - Prints all strips for a specific sector
  - 16 - Output Routing
    - Must be a sector number when printing
    - Optional for /A when entered from the R and RA positions

INFORMATION REQUEST COMMANDS *(Cont'd)*

Strip Request - SR *(Cont'd)*

ERAM SRS EDSM, V1B2, Appendix C, Sections C.1, C.2, C.8

TI 6110.108



This slide is animated, 2 clicks.

Discuss each of the examples

- To print all strips for the requesting sector:
  - Syntax: SR FLID /A <output routing>

    Example: `SR AAL123 /A 06`

Click to reveal the second example.

- To print all strips for a specific sector:
  - Syntax: SR FLID /A <sector number> <output routing>

    Example: `SR AAL123 /A04 06`

Click to reveal the third example.

- To print the most relevant strip for your sector:
  - Syntax: SR FLID /T <output routing>

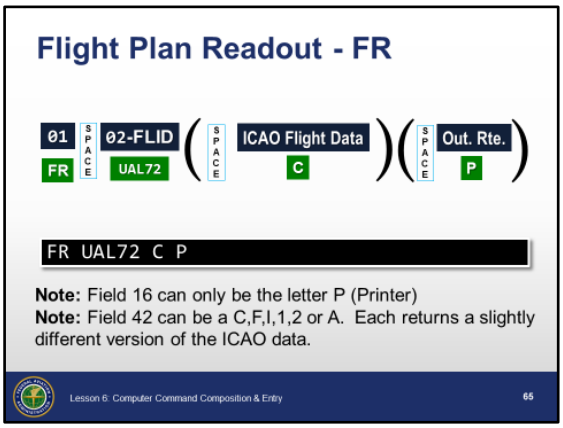
    Example: `SR AAL123 /T 06`

Flight Plan Readout - FR

TI 6110.108

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

TI 6110.101, Section 1.2.6.3



- Purpose: Displays the entire flight plan on the A Position or the RA Position Response Area or FSP
- Required fields:
  - 01 - Message Type
  - 02 - FLID
    - "✱" may be appended for multiple flight plan readout

      Example: FR AAL217*
- Optional Fields:
  - 16 - Output Routing
    - Can only be the letter P
  - 42 - ICAO Data
    - Can be C, F, I, 1, 2, or A

Domestic FR - Beacon code as FLID

```
Example: FR 3501
```

Multiple Plans Readout - Use ✱ to check for more than one stored flight plan

- `FR AAL217✱`

ICAO FR - The I requests readout of additional flight plan fields

- `FR AAL217 I`

Optional fields (42) (16) - Using ICAO option 2 and Output Routing P

- `FR 235 2 P`

NOTE: ICAO data readout will display much more information compared to the NAS flight plan.

INFORMATION REQUEST COMMANDS *(Cont'd)*

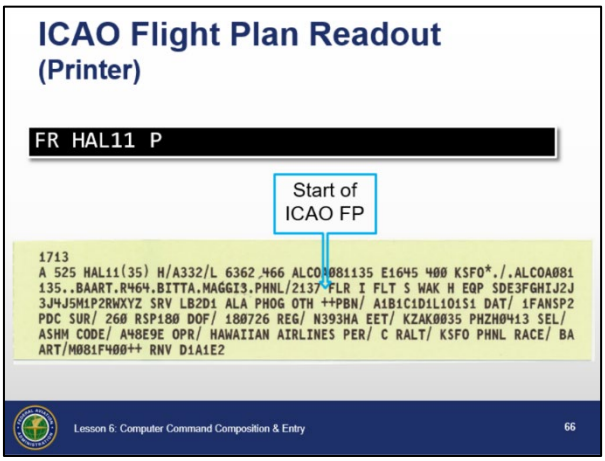
Flight Plan Readout - FR *(Cont'd)*

TI 6110.108

TI6110.101, par. 5.3.18

FAA International Flight Plan Filing Guide

FAA ICAO Flight Planning Interface Reference Guide V-2.1



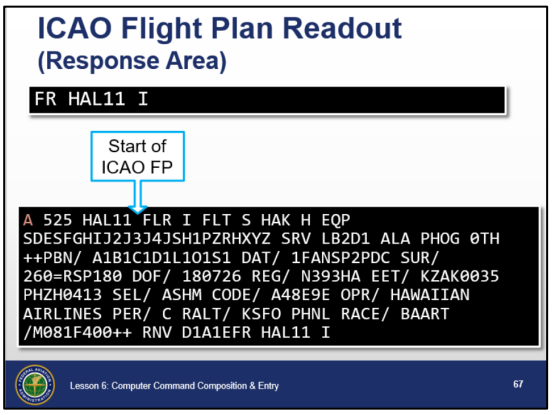
- ICAO readouts directed to the FSP will show the ICAO Fields after the NAS Flight Plan.
  - In this example the ICAO Flight Plan Fields begin with FLR (Flight Rules).
    - I - IFR
    - V - VFR
  - An alphabetic character indicating the type of flight follows FLT:
    - S - Scheduled air service
    - N - Non-scheduled air transport operation
    - G - General aviation
    - M - Military
    - D - DVFR
    - X - Other than any of the defined categories above

INFORMATION REQUEST COMMANDS *(Cont'd)*

Flight Plan Readout - FR *(Cont'd)*

TI 6110.108

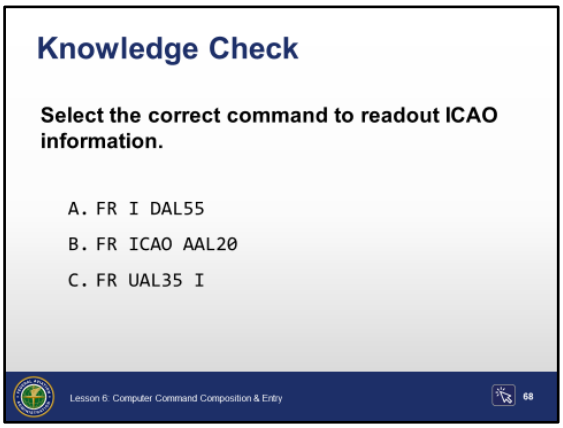
TI6110.101, par. 5.3.18



- ICAO readouts to the Response Area display only the requested ICAO Fields.
  - Compare this to the previous example and note the lack of the NAS Flight Plan in the Response Area readout.

KNOWLEDGE CHECK

Knowledge Check



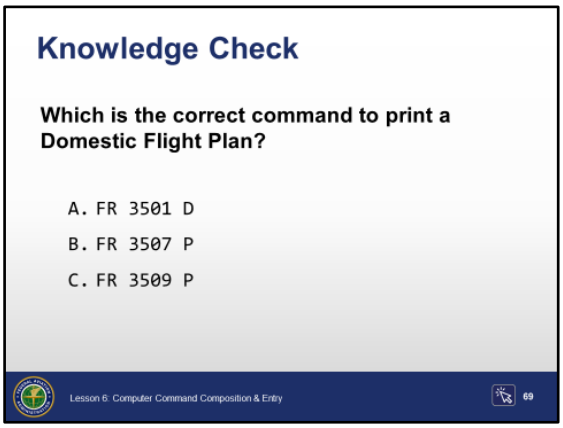
Q&A **Question:** Select the correct command to readout ICAO information.

Click to reveal answer.

Answer: *C. FR UAL35 I*

KNOWLEDGE CHECK

Knowledge Check



Q&A **Question:** Which is the correct command to print a Domestic Flight Plan?

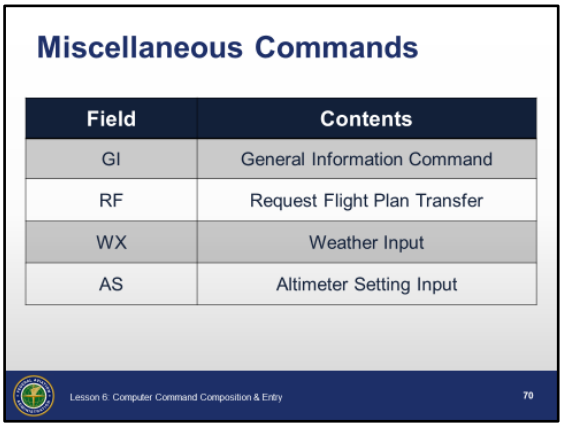
Click to reveal answer.

Answer: *B. FR 3507 P*

MISCELLANEOUS COMMANDS

Misc. Commands

ERAM EDSM 210.04 V1B2, Appendix C, Sections C.2, C.3



- Miscellaneous Commands include:
  - GI - General Information Command
  - RF - Request Flight Plan Transfer
  - WX - Weather Input
  - AS - Altimeter Setting Input

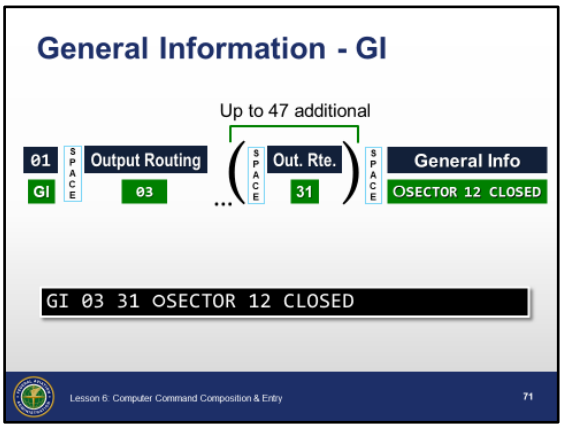
  NOTE: There are additional miscellaneous commands not covered in this lesson. Refer to the En Route Automation Modernization (ERAM) Quick Reference Controller Card TI 6110.108 for additional information.

MISCELLANEOUS COMMANDS *(Cont'd)*

General Information - GI

ERAM EDSM SRS 210.04 V1B2, Appendix C, Section C.2

ERAM EDSM SRS 210.04 V1B1, pars, 3.2.9.2.6 and 3.2.9.2.7.1

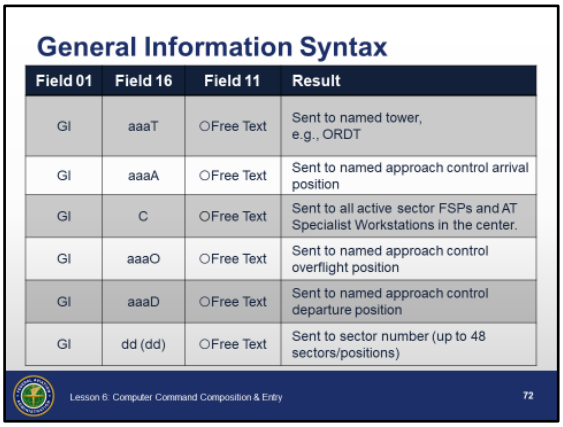


- Purpose: Sends plain language commands to specified address(es)
- Required fields:
  - 01 - Message Type
  - 16 - Output Routing
    - May be a sector number or facility
    - When sending a strip to a TRACON use:
      - A for the TRACON arrival position (e.g., BNAA)
      - D for the TRACON departure position (e.g., BNAD)
      - T for the Tower (e.g., BNAT)
    - Up to 48 output destinations
  - 11 - General Information
    - Begins with a clear weather symbol "O"

MISCELLANEOUS COMMANDS *(Cont'd)*

General Information - GI *(Cont'd)*

ERAM EDSM SRS 210.04 V1B2, Appendix C, Sections C.2, C.3



Discuss the command formats.

- Syntax: GI <output routing> ○<free text>
- Result: General Information free text will be sent to the specified output routing.
- These examples are the most common routings of GI commands.
  - T - Tower (e.g., RDUT)
  - A - TRACON arrival position (e.g., RDUA)
  - C - all Center positions
  - O - TRACON overflight position (e.g., RDUO)
  - D - TRACON departure position (e.g., RDUD)
  - dd (dd) - sent to sector number (up to 48 sectors/positions)

  Example: `GI RDUT ○GROUND STOP KEWR CANCELED`
- Undirected GI commands
  - Does not include facility name
  - Sends the message to all adapted facility types for the ARTCC

  Example: `GI C O T D ○GROUND STOP KATL UNTIL 0130Z`

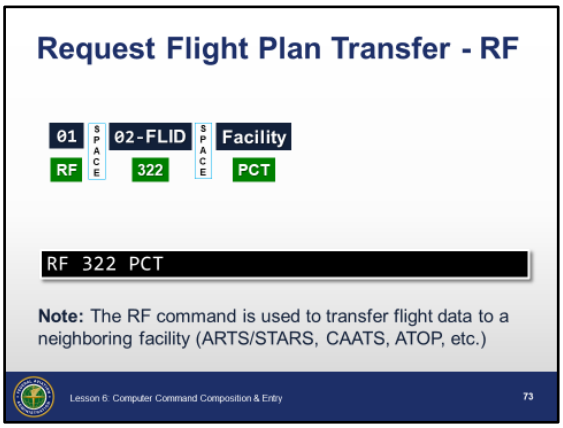
NOTE: There are several routings not taught in this lesson.

MISCELLANEOUS COMMANDS *(Cont'd)*

Request Flight Plan Transfer - RF

ERAM SRS EDSM, V1B2, Appendix C, Sections C.2, C.3

ERAM IFPA SRS 210.15, par. 3.2.4.2.1.8



- Purpose: Transfers flight data to a neighbor facility (ARTS/STARS, neighboring centers, CAATS, ATOP, etc.)
  - Used when Unsuccessful Transmission Message (UTM) is received in the EDST, or FAIL appears in a Full Data Block (FDB)
  - 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 receiving facility's situation display or in views, but the plan data is entered in their computer.
- Required fields:
  - 01 - Message Type
  - 02 - FLID
  - Facility ID
    - Adapted three letter ID (e.g., ZSE, ZMP, RRR)
- Syntax: RF FLID <Facility ID>

MISCELLANEOUS COMMANDS *(Cont'd)*

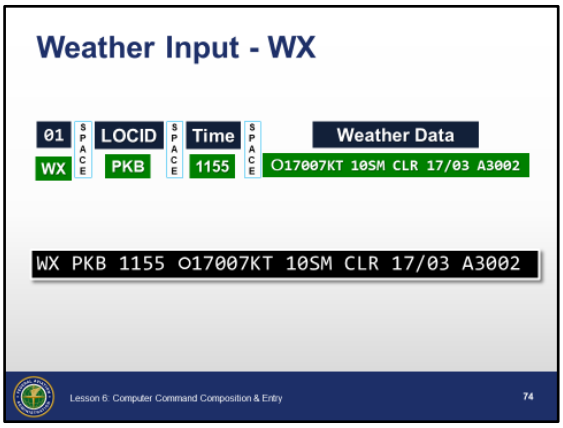
Weather Input - WX

TI 6110.108

ERAM SRS EDSM, V1B2, Appendix C, Sections C.2, C.3

ERAM IFPA SRS 210.15, par. 3.2.4.2.1.8

Advisory Circular 00-45, Aviation Weather Services



- Purpose: Enters weather observation data for the selected adapted reporting station.
- Required fields:
  - 01 - Message Type
  - 13 - Location Identifier
    - Must be an adapted reporting station
  - 35 - Time
    - Format: dddd - First two digits are hours and last two are minutes (HHMM).
    - Represents the time the weather observation was taken
  - 45 - Weather Data
    - Must begin with a clear weather symbol
    - Free format with spaces separating weather data
    - Altimeter format: Ldddd
      - L is the letter "A"
      - dddd will contain the 4-digit barometric pressure
    - Data format: Should comply with current weather format in Advisory Circular, AC 00-45.
      - Wind speed and direction, wind variability, visibility, RVR, weather causing obscuration to visibility, cloud layers, temperature/dew-point, altimeter setting, remarks

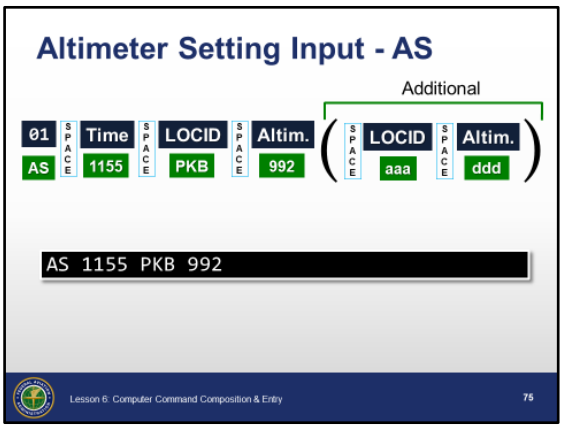
      Example: `01017KT 340V010 7SM R32L/1000FT -RA OVC006 09/08 A2957 RMK PRESFR`

Altimeter Setting - AS

TI 6110.108

ERAM SRS EDSM, V1B2, Appendix C, Sections C.2, C.3

ERAM IFPA SRS 210.15, par. 3.2.4.2.1.8



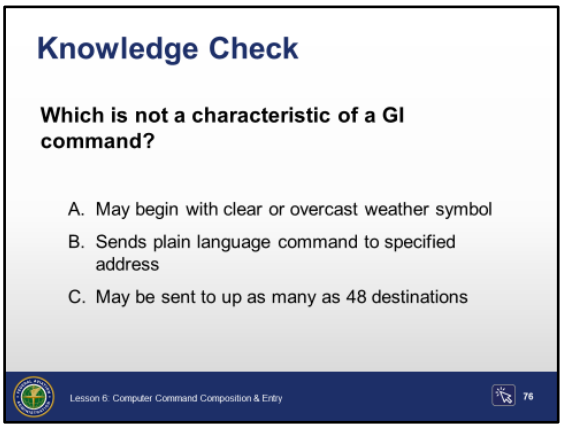
- Purpose: Update altimeter setting
- Required fields:
  - 01 - Message Type
  - 35 - Time
    - Format: dddd - First two digits are hours and last two are minutes (HHMM).
  - 13 - Location Identifier
    - Must be an adapted reporting station
    - Format: aa(a)(a)(a)
  - 34 - Altimeter Setting
    - Format: ddd or "M" (for missing)
- A maximum of 24 sets of Fields 13 and 34 are permitted.
  - For multiple entries, a Field 34 must follow each Field 13.

    Example: `AS 2255 PRX 983 OSA 987 SLR 986`

NOTE: An altimeter setting of 000-499 implies a value of 3000-3499, and a setting of 500-999 implies a value of 2500-2999.

KNOWLEDGE CHECK

Knowledge Check



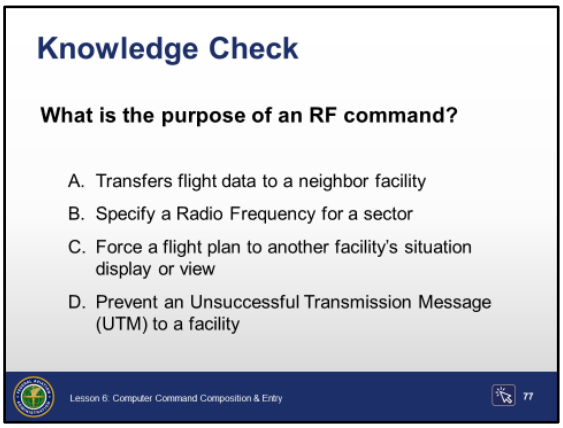
Q&A **Question:** Which is not a characteristic of a GI command?

Click to reveal answer.

Answer: *A. May begin with clear or overcast weather symbol*

KNOWLEDGE CHECK

Knowledge Check



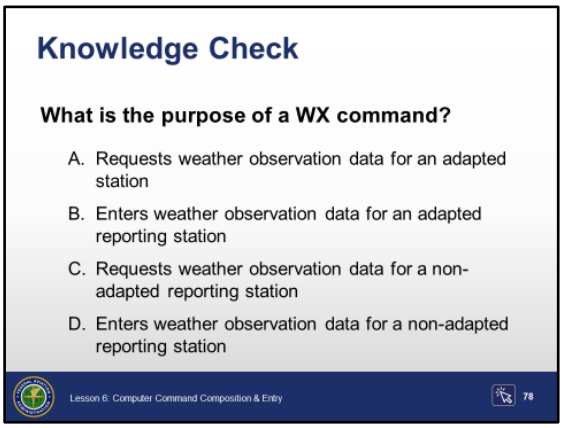
Q&A **Question:** What is the purpose of an RF command?

Click to reveal answer.

Answer: *A. Transfers flight data to a neighbor facility*

KNOWLEDGE CHECK

Knowledge Check



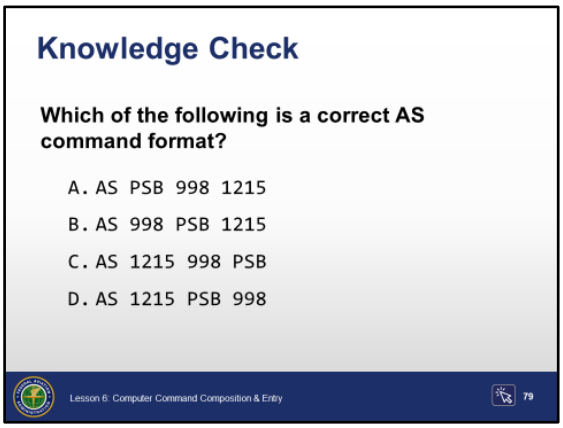
Q&A **Question:** What is the purpose of a WX command?

Click to reveal answer.

Answer: *B. Enters weather observation data for an adapted reporting station*

KNOWLEDGE CHECK

Knowledge Check



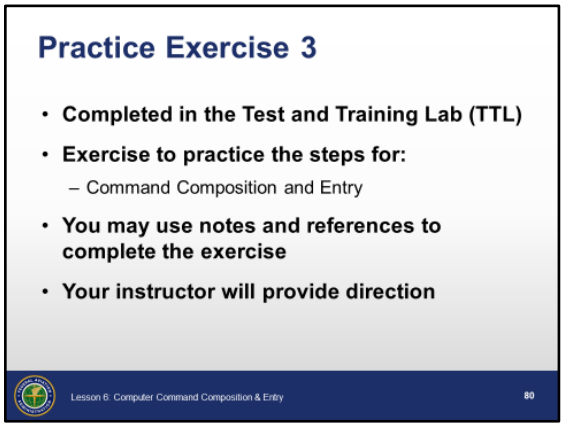
Q&A **Question:** Which of the following is a correct AS command format?

Click to reveal answer.

Answer: *D. AS 1215 PSB 998*

PRACTICE EXERCISE 3 INTRODUCTION

Practice Exercise 3 Introduction



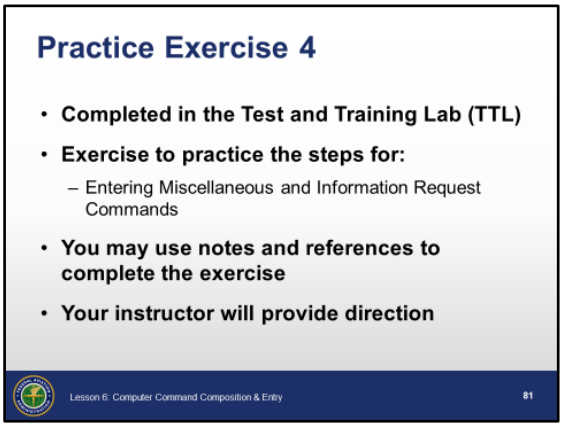
Practice Exercise 3

- Completed in the Test and Training Lab (TTL) at the conclusion of classroom instruction
- Exercise to practice the steps for:
  - Command Composition and Entry
- You may use notes and references to complete the exercise.
- The instructions for this exercise are located immediately following the lesson summary.
- Your instructor will provide direction at the appropriate time.

NOTE: *Each student will complete exercises 3 and 4 in the Test and Training Lab (TTL), and then complete the end-of-lesson test.*

PRACTICE EXERCISE 4: INTRODUCTION

Practice Exercise 4 Introduction



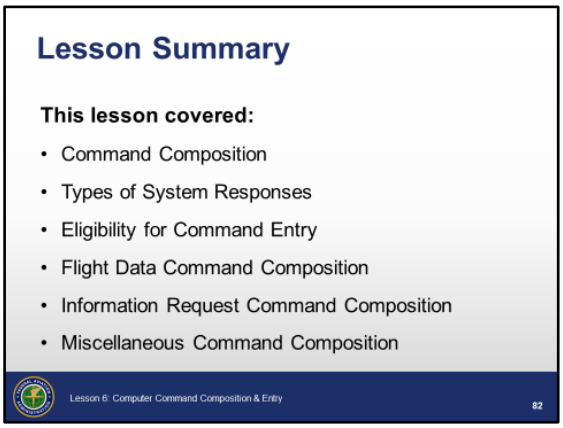
Practice Exercise 4

- Completed in the Test and Training Lab (TTL) at the conclusion of classroom instruction
- Exercise to practice the steps for:
  - Composing and Entering Commands
  - Entering Miscellaneous and Information Request Commands
- You may use notes and references to complete the exercise.
- The instructions for this exercise are located after the lesson summary.
- Your instructor will provide direction at the appropriate time.

NOTE: *Each student will complete exercises 3 and 4 in the Test and Training Lab (TTL) and then complete the end-of-lesson test.*

SUMMARY

Lesson Summary



Review and elaborate briefly on the following:

- Command Composition
- Types of System Responses
  - Accept or Reject
- Eligibility for Command Entry
  - Illegal Source
  - Not Your Control
  - Logic Check Override
- Flight Data Command Composition
  - Flight Plan (FP)
  - Stereo Flight Plan (SP)
  - Remove Strip (RS)
  - Departure Message (DM)
  - Hold Message (HM)
  - Amendment Message (AM)
- Information Request Command Composition
  - Altimeter Request (AR or QD)
  - Weather Request (WR)
  - Strip Request (SR)
  - Flight Plan Readout (FR)
- Miscellaneous Command Composition
  - GI - General Information Command
  - RF - Request Flight Plan Transfer
  - WX - Weather Input
  - AS - Altimeter Setting Input

Ask students if there are any questions.

NOTE: Each student will complete Exercises 3 and 4 in the Test and Training Lab (TTL) and then complete the end-of-lesson test.

Cont'd on next page

SUMMARY

Lesson Summary *(Cont'd)*

End-of-Lesson Test

Ask students if there are any questions.

- Your instructor will now administer the end-of-lesson test.
- *Administer end of lesson test (ELT01_L06), explain test passing score requirements, time allowed for completing the test, and other procedures for administering test.*

  NOTE: The score required for passing the end-of-lesson test will be in accordance with current FAA directives.

- *Provide feedback on missed questions, including a discussion to explain why particular answers are correct or incorrect.*

PRACTICE EXERCISE 3: COMMAND COMPOSITION AND ENTRY

Practice Exercise 3

Purpose

To demonstrate the steps in composing field amendments.

Materials

You will need the following materials for this exercise:

Handout:

- Practice Exercise 3: Command Composition and Entry

Provide local flight plan information for steps 1a, 2a, 3a, and 4a. Space has been provided on the worksheet.

Directions

This exercise takes approximately 30 minutes to complete.

1. Create a scenario, 55053_L06_PE03, with the following content:

STEP	REQUIREMENT
1	Create a new scenario for the TTL. Name this scenario 55053_L06_PE03.
2	Set scenario run length to 45 minutes.
3	No targets are required.
4	Import weather reconstitution message.
5	Enter SA commands to enable SIDs and STARs.

2. Refer the students to the handout in their Student Guide.
   - A copy of the practice exercise is located on the next 2 pages.
3. Direct the students to complete the exercise in the lab.
   - Students may refer to notes, user manual and course materials.
4. Instructor handout contains syntax examples for select commands.

PRACTICE EXERCISE 3: COMMAND COMPOSITION AND ENTRY *(CONT'D)*

INSTRUCTOR: _____ DATE: _____

STUDENT: _____

STEP	ACTION	✓
1a	Enter a proposed flight plan.	
FP Info:		
1b	Amend the aircraft identification to A15521.	
1c	Amend the aircraft type to H/C135/Z.	
1d	Amend the beacon code to 4271.	
1e	Enter a Departure Command for A15521.	
2a	Enter another proposed flight plan.	
FP Info:		
2b	Amend the aircraft identification to UAL633.	
2c	Amend the time to P1330.	
2d	Amend the departure airport. ***Syntax:*** *AM <FLID> 6 <FIX> 10 <FIX>*↑	
2e	Enter a Departure Command for UAL633 which also changes the altitude to FL310.	
3a	Enter a third proposal flight plan which has a route containing a SID or STAR, like route elements (FIX..FIX and AIRWAY..AIRWAY) and remarks.	
FP Info:		
3b	Amend the aircraft type and equipment suffix to H/B744/L.	
3c	Amend the true airspeed to 430 and the requested altitude to 330.	
3d	Amend the proposed time to 1645Z.	
3e	Delete remarks.	
3f	Amend the route using the Route Readout Request method.	

PRACTICE EXERCISE 3: COMMAND COMPOSITION AND ENTRY *(CONT'D)*

STEP	ACTION	✓
3g	Amend the destination airport.	
3h	Change the departure point.	
4a	Enter a fourth proposed flight plan.	
FP Info:		
4b	Add TCAS EQUIPPED to remarks.	
4c	Add a 2 hour and 10 minute delay to one of the fixes in the route.	
4d	Suppress any adapted departure route.	

PRACTICE EXERCISE 4: ENTERING MISCELLANEOUS AND INFORMATION REQUEST COMMANDS

Practice Exercise 4 Purpose

To demonstrate the steps in composing and entering commands.

Materials

You will need the following materials for this exercise:

Handout:

- Practice Exercise 4: Entering Miscellaneous and Information Request Commands

Provide local flight plan information for steps 1a, 2a, 5a, 8a, 9a, and 19a. Space has been provided on the worksheet.

Directions

This exercise takes approximately 1 hour to complete.

1. Create a scenario, 55053_L06_PE04, with the following content.

STEP	ACTION
1	Create a new scenario for the TTL. Name this scenario 55053_L06_PE04
2	Set scenario run length to 1 hour.
3	Import weather reconstitution message.
4	Select sector(s) that will enable an RF message for an aircraft to an adjacent ARTCC.
5	Select sector(s) that will enable an RF message for an aircraft to an adjacent ARTS/STARS facility.
6	Do not check the training sector as live.
7	Enter weather station reports to be used in the scenario.
8	Enable AARs, ADRs AND PDARs.
9	Create a stream of 10 turbojet aircraft 3 minutes in trail that are routed over a fix or NAVAID that will enter an ARTS/STARS facility. Name the targets DAL1 through DAL10. Have the first target enter the training sector at 10 minutes.

2. Refer the students to the handout in their Student Guide.
   - A copy of the exercise is located on the next 3 pages.
3. Instructor handout contains syntax examples for select commands.
4. Direct the students to complete the exercise in the lab.
   - Students may refer to notes, user manuals and course materials.
5. Assist students as necessary.

PRACTICE EXERCISE 4: ENTERING MISCELLANEOUS AND INFORMATION REQUEST COMMANDS *(CONT'D)*

INSTRUCTOR: _____ DATE: _____

STUDENT: _____

STEP	ACTION	✓
1a	Enter a flight plan on AAL1, an en route aircraft that contains an AAR.	
FP Info:		
1b	Request a Flight Plan Readout on AAL1.	
1c	Use the optional fields in a Flight Plan Readout command to print a flight plan in ICAO format. ***Syntax:*** *FR <FLID> I P*	
1d	Request a strip on AAL1.	
1e	Amend the route of flight for AAL1 suppressing an AAR using "by the numbers."	
1f	Amend the route of flight for AAL1 using fields 6 and 10.	
1g	Amend the route of flight for AAL1 creating a delay at a FIX.	
1h	Remove Flight Plan of AAL1.	
2a	Enter a flight plan on UAL1, an en route aircraft, with a route of flight containing only airways and fixes.	
FP Info:		
2b	Request Flight Plan Readout on UAL1.	
2c	Request a strip on UAL1.	
2d	Demonstrate how to send a Flight Plan Readout to a local printer.	
2e	Use the Strip Request command to send a strip to an external facility	
2f	Amend the route of flight for UAL1 using fields 6 and 10 and inserting a STAR.	
2g	Amend the route of flight for UAL1 using fields 6, 7 and 10 suppressing any AAR.	
NOTE: The Altimeter View needs to be opened in order to see the results of the altimeter requests from the RA position.		
3a	Request four altimeter settings using the AR command.	
3b	Request six altimeter settings using the QD command.	
3c	Add/change an altimeter setting.	

PRACTICE EXERCISE 4: ENTERING MISCELLANEOUS AND INFORMATION REQUEST COMMANDS *(CONT'D)*

STEP	ACTION	✓
NOTE: The Weather View needs to be opened in order to see the results of the weather requests from the RA position.		
4a	Request a weather report using the WR command.	
4b	Request three weather reports in a single command.	
5a	Enter a locally adapted Stereo Flight Plan. ***Syntax:*** *SP <FLID> PXX00 <Stereo Tag>*	
FP Info:		
5b	Enter Flight Plan Readout on the Stereo Flight Plan.	
5c	Enter a Departure Command on the Stereo Flight Plan.	
5d	Remove the flight plan of the Stereo Flight Plan.	
6a	Enter a flight plan on SWA1, an en route aircraft, containing ambiguous elements.	
FP Info:		
6b	Amend the route of flight for SWA1 using "by the numbers."	
6c	Remove the flight plan of SWA1.	
7a	RF the flight plan of a DAL flight to an adjacent facility.	
8a	Use the HM command to place a DAL flight in HOLD at a FIX.	
8b	Use the HM command to enter a present position hold for a DAL flight.	
8c	Enter a keyboard Hold Command for a DAL flight including an EFC.	
8d	Cancel the hold on a DAL flight.	
9a	Enter a proposal.	
FP Info:		
9b	Depart the flight specifying a time 4 minutes in the future and an altitude change.	
10a	Enter a new proposed flight and include an ETE.	
FP Info:		

PRACTICE EXERCISE 4: ENTERING MISCELLANEOUS AND INFORMATION REQUEST COMMANDS *(CONT'D)*

STEP	ACTION	✓
10b	Depart the flight, enter a flight plan readout and observe the ETE has changed to ETA.	
11a	Send a General Information message to all sectors within your facility	
11b	Send a General Information message to a specific sector within your facility	
11c	Send a General Information message to an external facility/position.	
11d	Send a General Information message to all sectors within your facility	