Federal Aviation Administration

En Route ERAM Ghost Pilot (GP) Training

Lesson 4: Adjacent Sector/Facility Simulation Tasks

Course FAA55149002

Version: V.2019-05

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LESSON PLAN DATA SHEET

Section	Description
Course Name	En Route ERAM Ghost Pilot (GP)
Course Number	FAA55149002
Lesson Title	Adjacent Sector/Facility Simulation Tasks
Duration	40 Minutes
Date Revised	May 2019
Version	V.2019-05
Software Compatibility	Microsoft Word, Power Point
Reference(s)	• TI 6110.106, ERAM Ghost Pilot Quick Reference Card • TI 6110.154, ERAM ARTCC System Support Manual: Simulation User's Guide • ATPilot Situational Display Data (SDD) User Manual
Handout(s)	None
Exercise(s)/ Activity(s)	Part Task Scenario 4
Assessments	End-of-course Knowledge and Performance Tests
Materials and Equipment	Projector
Other Pertinent Information	None

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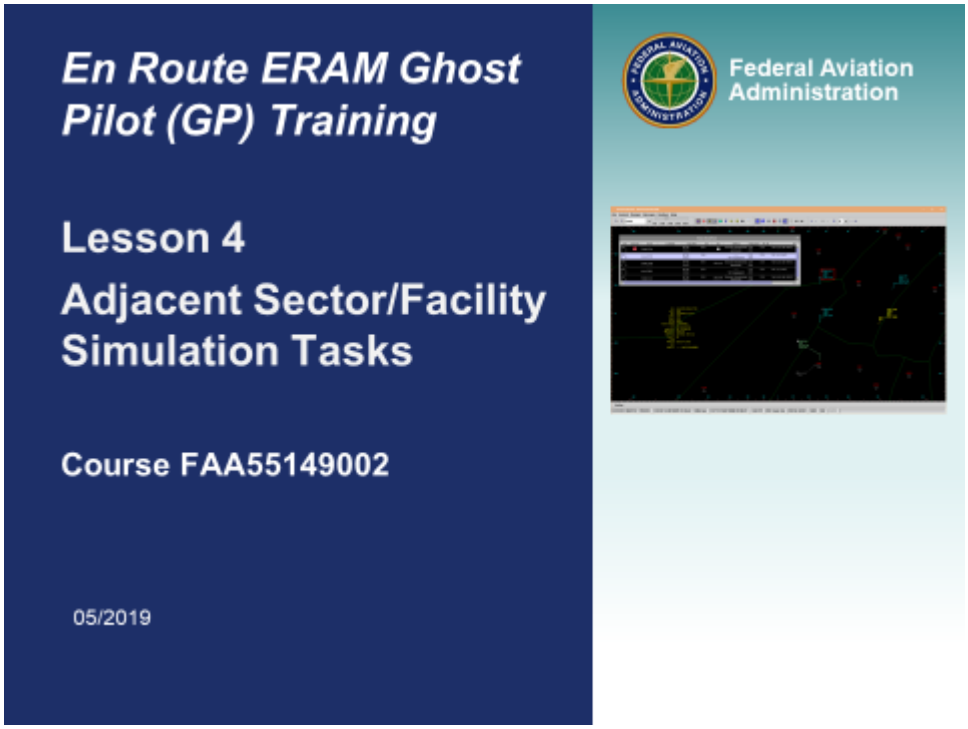
Slide - 1.


En Route ERAM Ghost Pilot (GP) Training
Lesson 4
Adjacent Sector/Facility Simulation Tasks
Course FAA55149002
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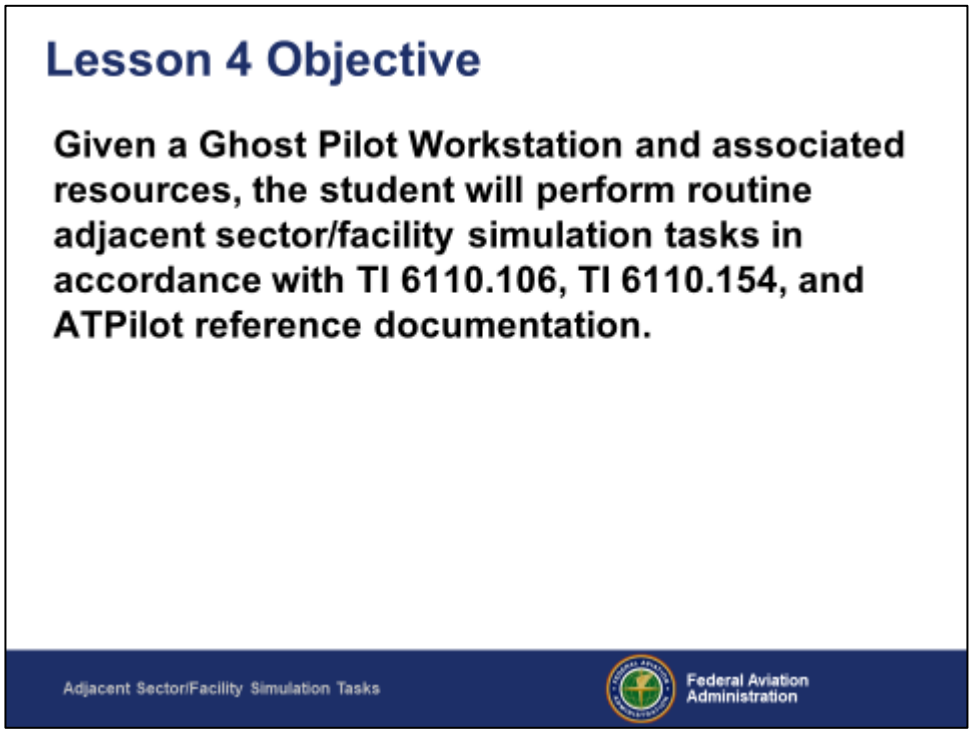
Slide - 2.


Lesson 4 Objective
Given a Ghost Pilot Workstation and associated resources, the student will perform routine adjacent sector/facility simulation tasks in accordance with TI 6110.106, TI 6110.154, and ATPilot reference documentation.
Adjacent Sector/Facility Simulation Tasks
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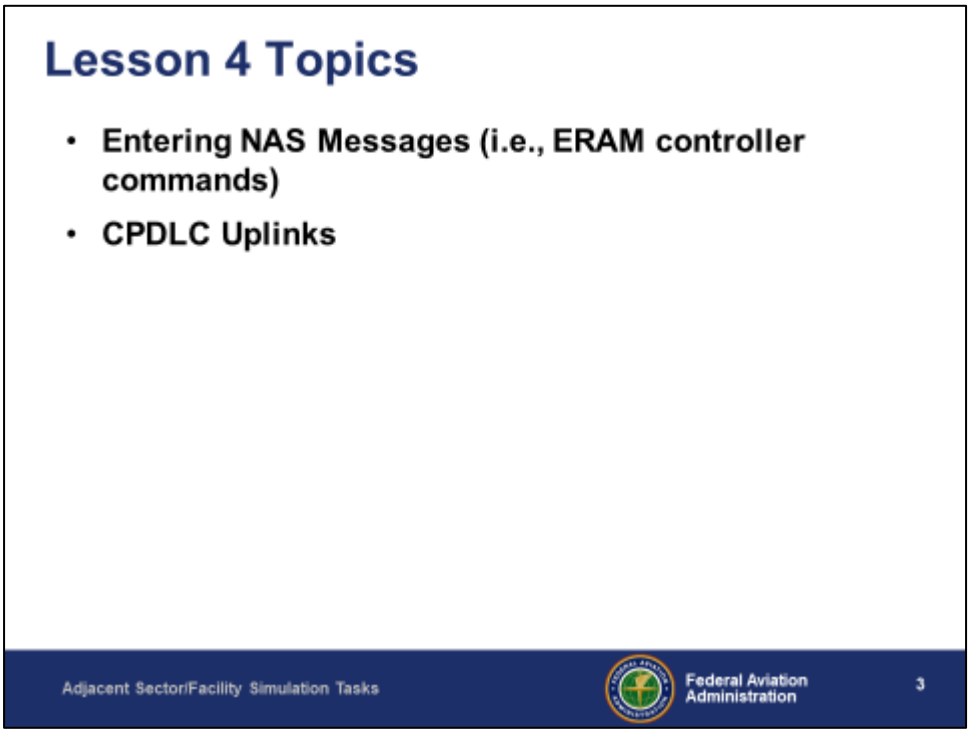
Slide - 3.


Lesson 4 Topics
• Entering NAS Messages (i.e., ERAM controller commands)
• CPDLC Uplinks
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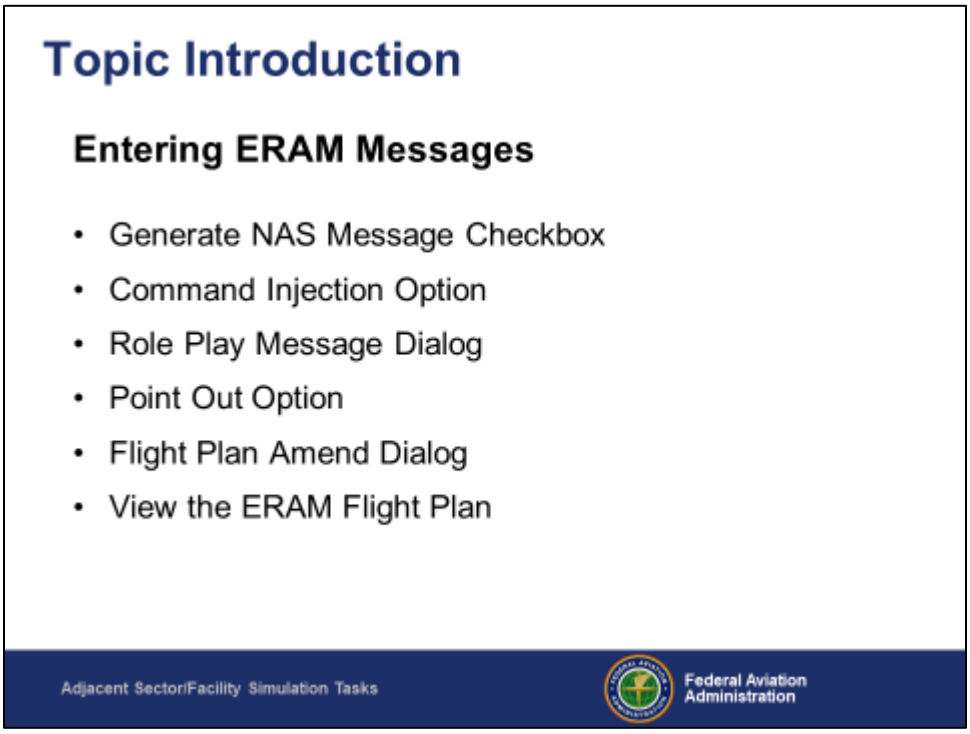
Slide - 4.



Ghost Pilots not only simulate tasks performed by pilots, they also simulate tasks performed by adjacent controllers. For example, the controller may contact an adjacent sector controller and coordinate a new altitude for a target inbound to the training sector.

When the Ghost Pilot enters a target control command for a target controlled by an adjacent sector, the Ghost Pilot may also need to enter the appropriate ERAM command to ensure the target maneuver and the ERAM flight data match. Remember, target control commands only affect the simulated surveillance data; they do not amend the ERAM flight plan data.

ATPilot provides five options for entering ERAM commands as an adjacent sector controller. Each option provides unique benefits. The options are:

- Generate NAS Message checkbox (already described)
- Command Injection option on the Target Control menu
- Role Play Message dialog
- Point Out option on the Target Control menu
- Flight Plan Amend dialog

This section will also cover how to view a target's ERAM flight plan data.

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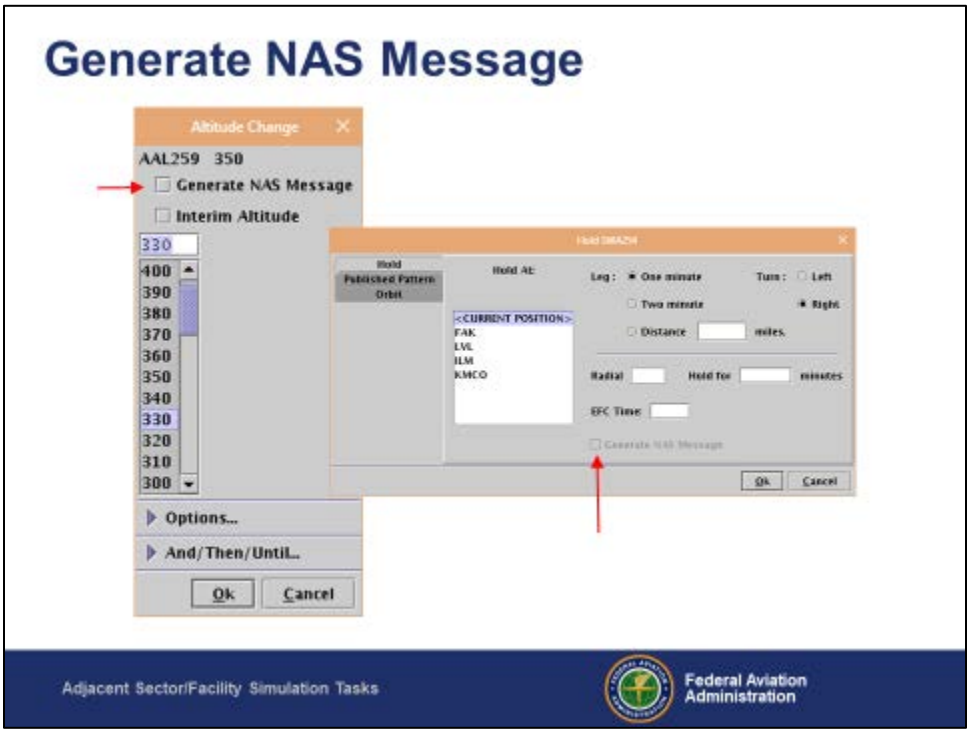

As described in the previous lesson, many of the target control dialogs include a **Generate NAS Message** checkbox. The checkbox is grayed out if the training sector has track control of the target since, in that case, the controller should be the only person amending flight data.

When the **Generate NAS Message** checkbox is checked, and the **OK** button is clicked, the appropriate ATCoach command will be executed, and the corresponding ERAM amendment will be entered as if from the R-position at the sector with track control.

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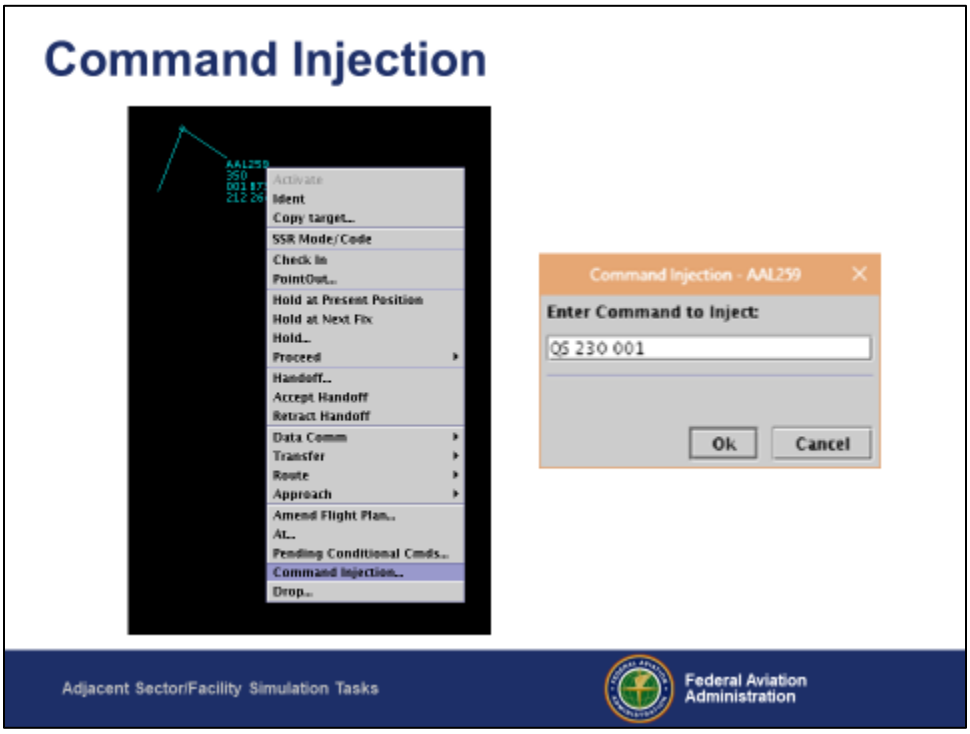


The **Command Injection…** option on the Target Control menu opens the Command Injection dialog. It is a very quick way to enter an ERAM command since the only required field is the command.

Any valid ERAM command can be entered.

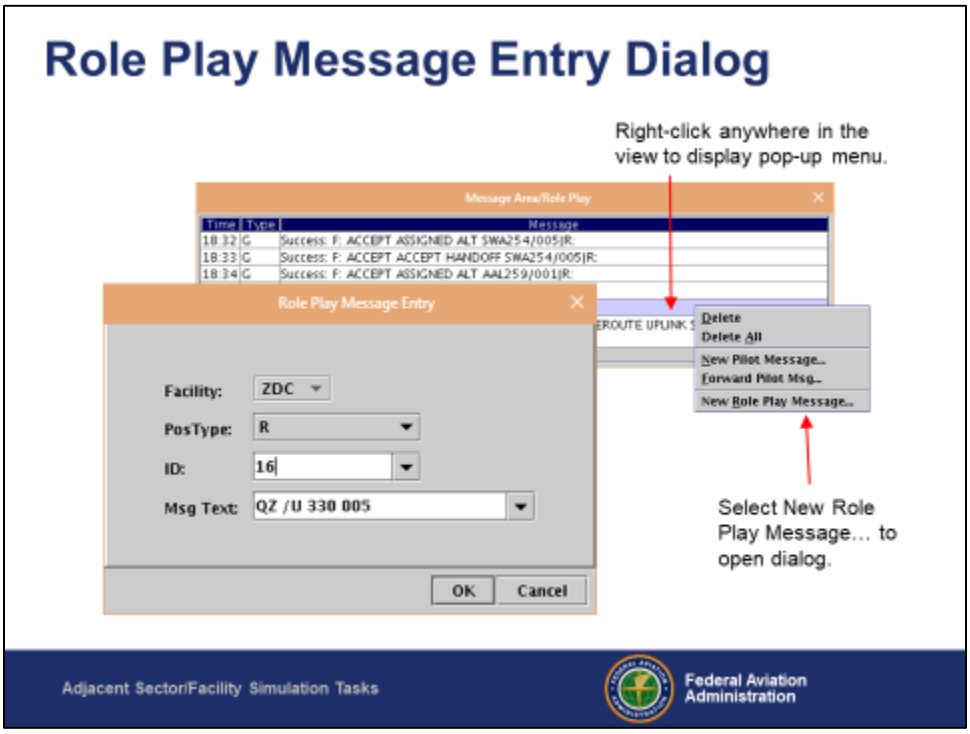
The command will be entered from the R-position of the facility/sector that has track control of the aircraft.

- The owning facility must be an ERAM facility.
- If the owning facility and sector have not yet been set, an error message will be displayed.

The command must pass all normal ERAM validation criteria, just as it would if entered at an R-position. For example, if the syntax is incorrect, the message will be rejected.

Be aware that this option will amend an ERAM flight plan even if the target is under control of the training sector.

Slide - 7.



The Role Play Message Entry dialog provides another option for the Ghost Pilot to enter an ERAM command. The dialog is accessed from the Message Area/Role Play view. To enter an ERAM message using the Role Play Message Entry dialog:

1. Open the Message Area/Role Play view.
2. Right-click anywhere in the view to display the pop-up menu.
3. Select the **New Role Play Message…** option in the pop-up menu. The dialog will open.
4. Select the source facility from the pull-down list.
5. Select the desired position type from the pull-down list. Note that the available position types include AT Specialist Workstations (ATSW).
6. Enter the source ID (i.e., sector number or ATSW number).
7. Enter the ERAM command. Note that there is a pull-down list of previously entered commands.
8. Click **Ok**.

The command must pass all ERAM validation criteria or it will be rejected.

Be aware that this option will amend an ERAM flight plan even if the target is under control of the training sector.

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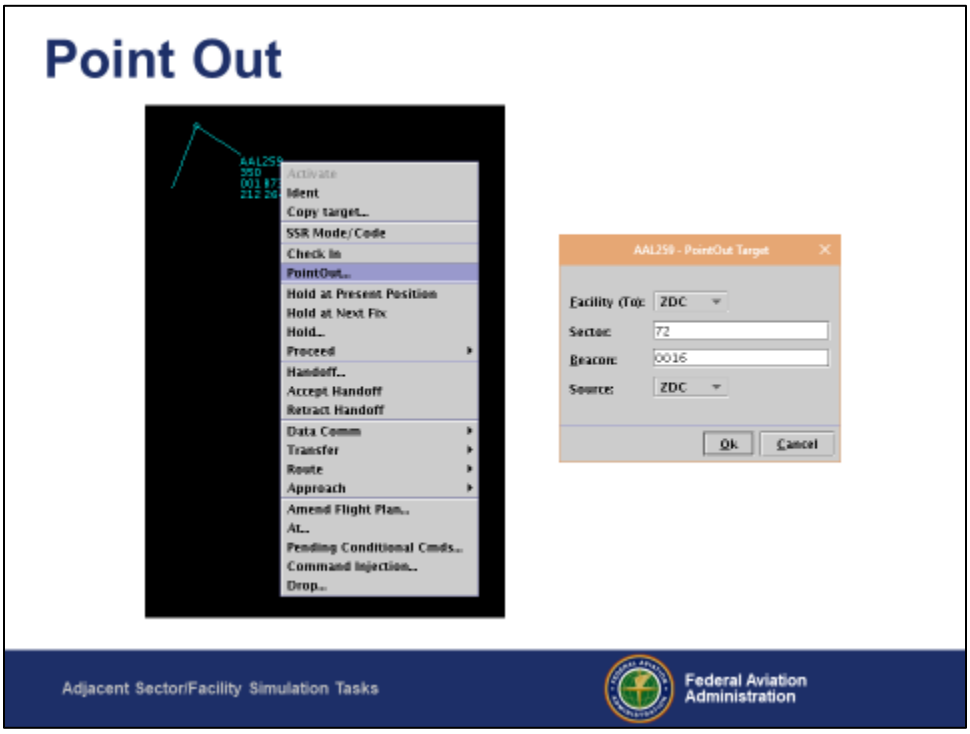

The **PointOut…** option in the Target Control menu can be used to enter an ERAM Point Out command. To do so:

1. Right-click on the target callsign to open the Target Control menu.
2. Select the **PointOut…** option. The PointOut Target dialog will open.
3. Select the destination facility from the pull-down list.
4. Enter the destination sector number.
5. If desired, enter the target beacon code. The beacon code is not required.
6. Select the source facility from the pull-down list.
7. Click **Ok**.

ATPilot will use the contents of the dialog to create the appropriate Point Out (QP) command. It will be entered from the R-position of the sector with track control. The command must pass all ERAM validation criteria.

There is no feedback in the Message view when the message source is an adjacent ERAM.

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A Ghost Pilot can amend up to four fields of a target's ERAM Flight Plan using the Flight Plan Amend dialog. To do so:

1. Right-click on the target callsign to open the Target Control menu.
2. Select the **Amend Flight Plan…** option. The Flight Plan Amend dialog will open.
3. Select the destination facility from the pull-down list.
4. Select the source facility from the pull-down list.
5. Enter the field name or number in the Field input area (e.g., 6, or 06 or FIX).
6. Enter the new value in the Value input box (e.g., FAK).
7. Repeat steps 5 and 6 as needed.
8. Once all desired fields have been amended, click **Ok**.

ATPilot will use the contents in the dialog to construct the appropriate amendment (AM) command. The amendment must pass all ERAM validation criteria or it will be rejected.

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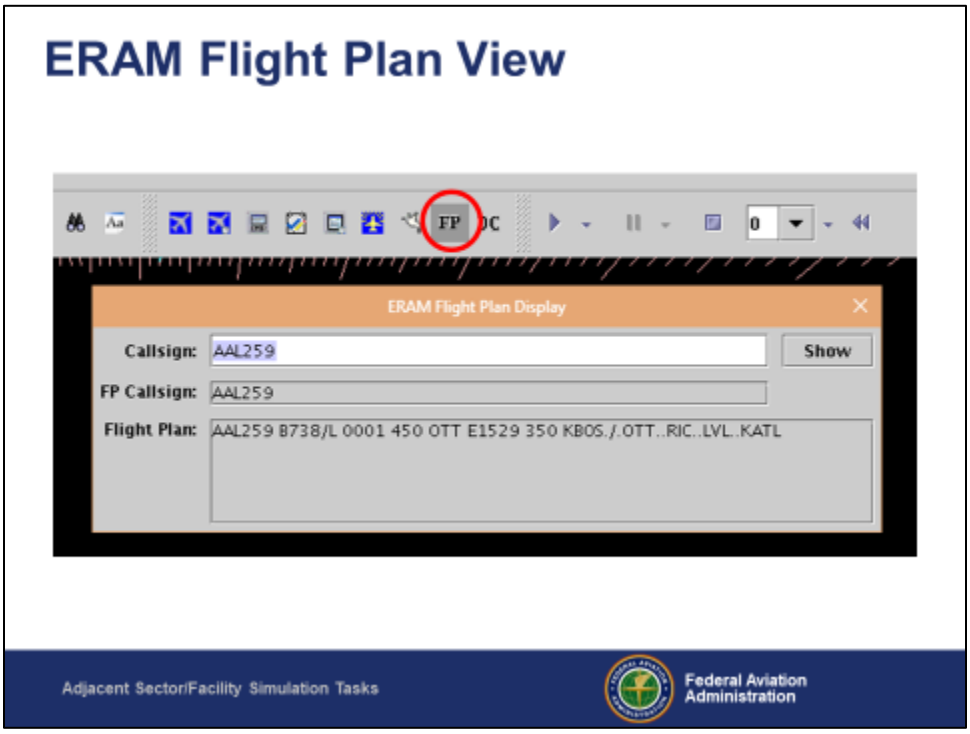

A Ghost Pilot can examine a target's ERAM Flight Plan using the ERAM Flight Plan Display view. To do so:

1. Click on the FP icon on the Views toolbar. The ERAM Flight Plan Display view will open.
2. The callsign field will contain the currently selected target.
3. If desired, select another target or type in a different callsign.
4. Click on **Show**.

If the view is open, the view contents will be dynamically updated if an ERAM amendment is made.

The ERAM flight plan is the controller flight plan. The target route may or may not be the same as the route in the ERAM flight plan.

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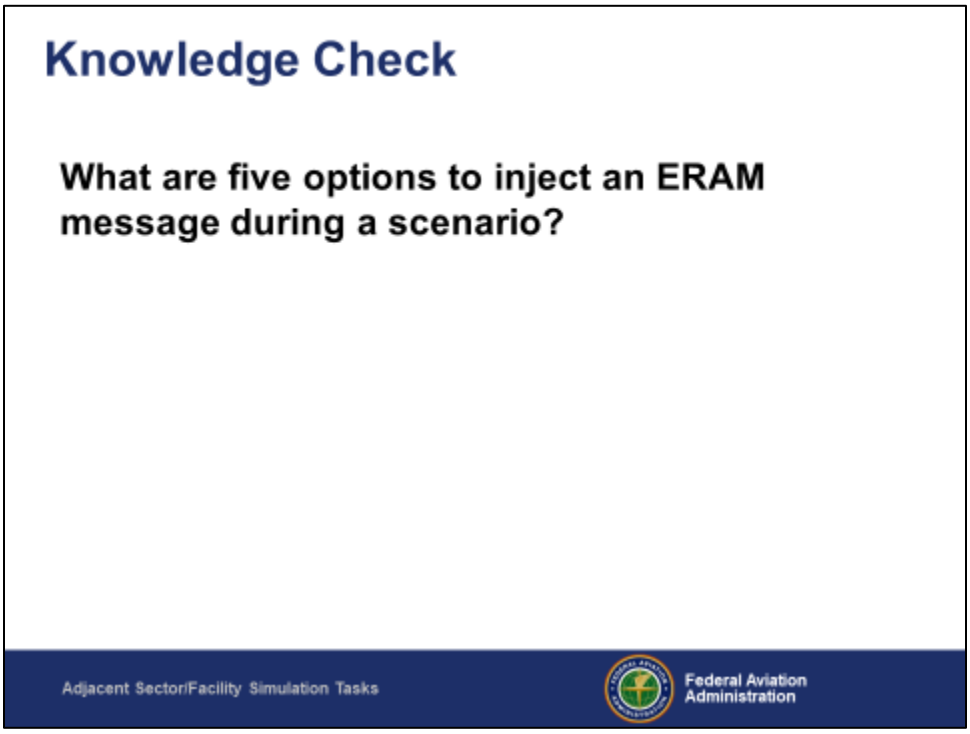
Knowledge Check
What are five options to inject an ERAM message during a scenario?
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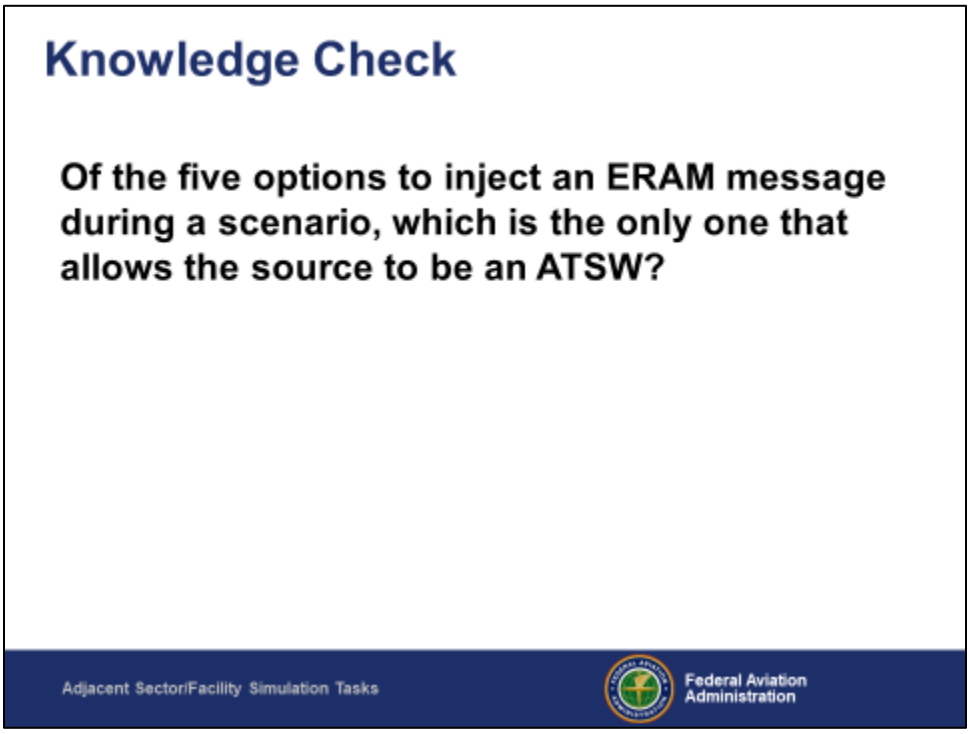
Knowledge Check
Of the five options to inject an ERAM message during a scenario, which is the only one that allows the source to be an ATSW?
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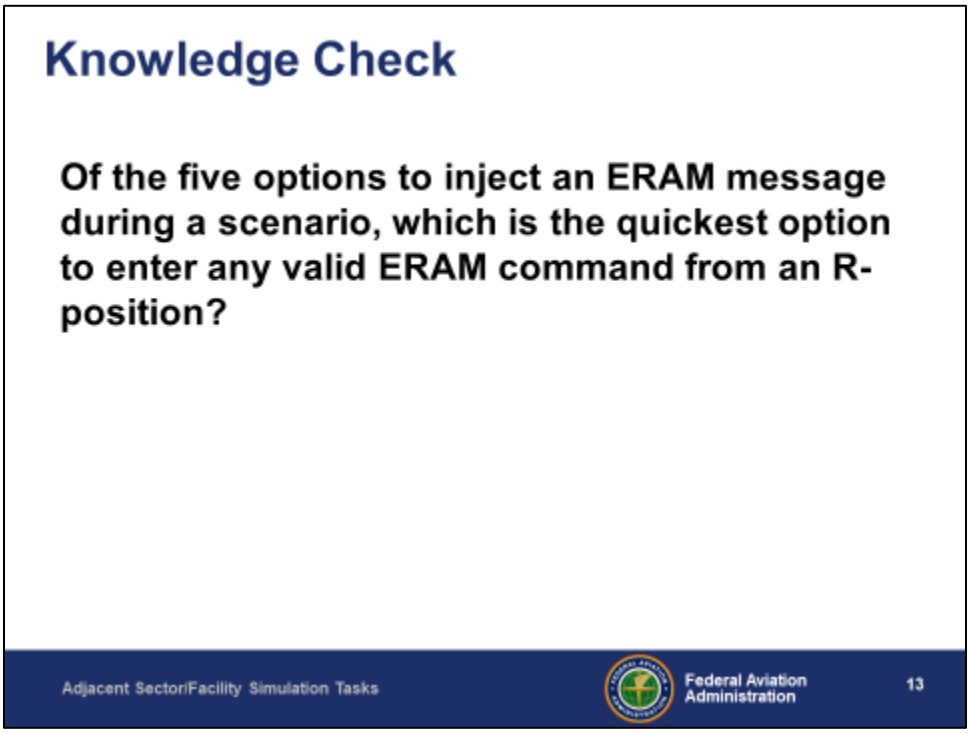
Slide - 13.


Knowledge Check
Of the five options to inject an ERAM message during a scenario, which is the quickest option to enter any valid ERAM command from an R-position?
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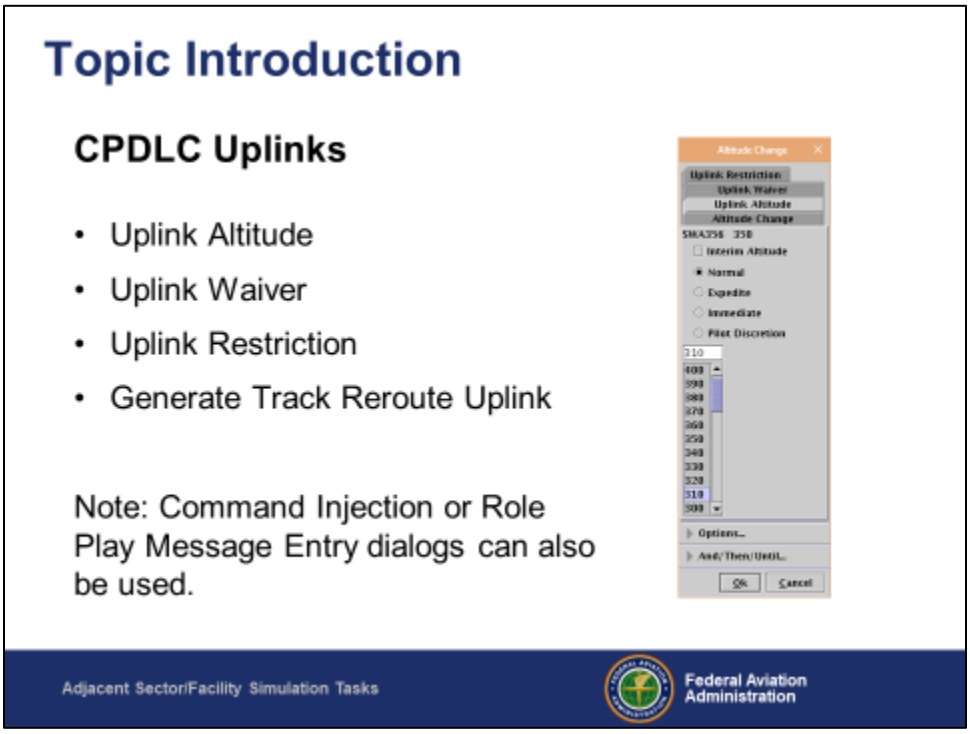


The next topic covers four dialogs used to uplink CPDLC messages. The four dialogs are used to uplink the following types of messages:

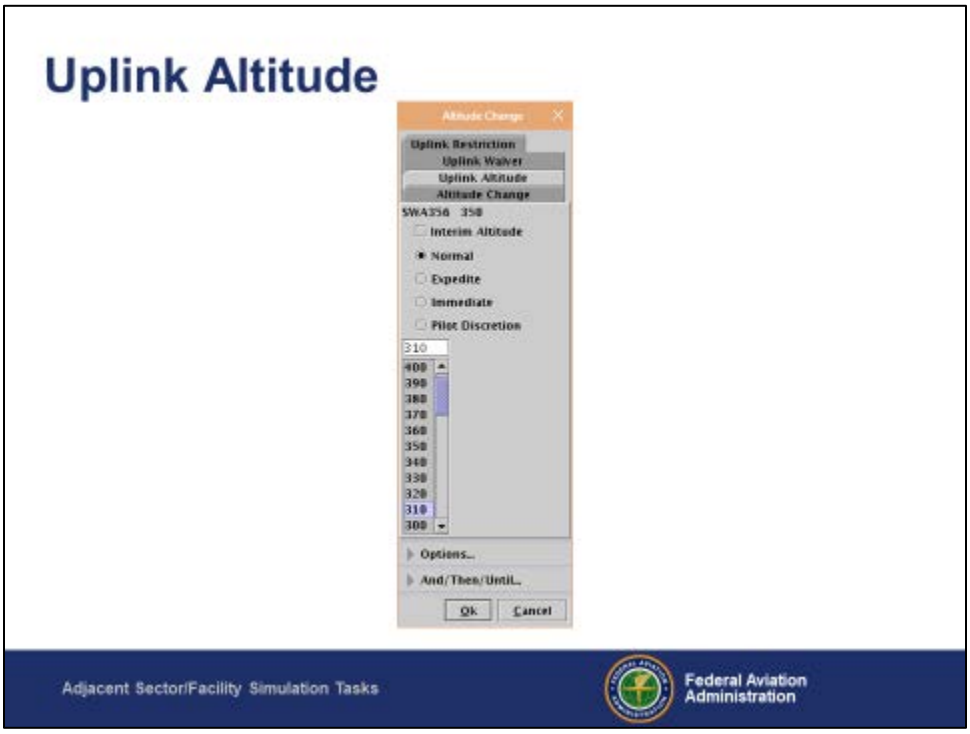
- Assigned or interim altitudes
- Waiver altitudes
- Crossing restrictions
- Route changes

These dialogs are only available if:

- The target is CPDLC equipped.
- The training sector does not have track control of the target.
- The adjacent sector that has track control of the target also has eligibility.

Note that any valid CPDLC uplink command can also be entered using the Command Injection or Role Play Message Entry dialogs described in the last section.

Slide - 15.

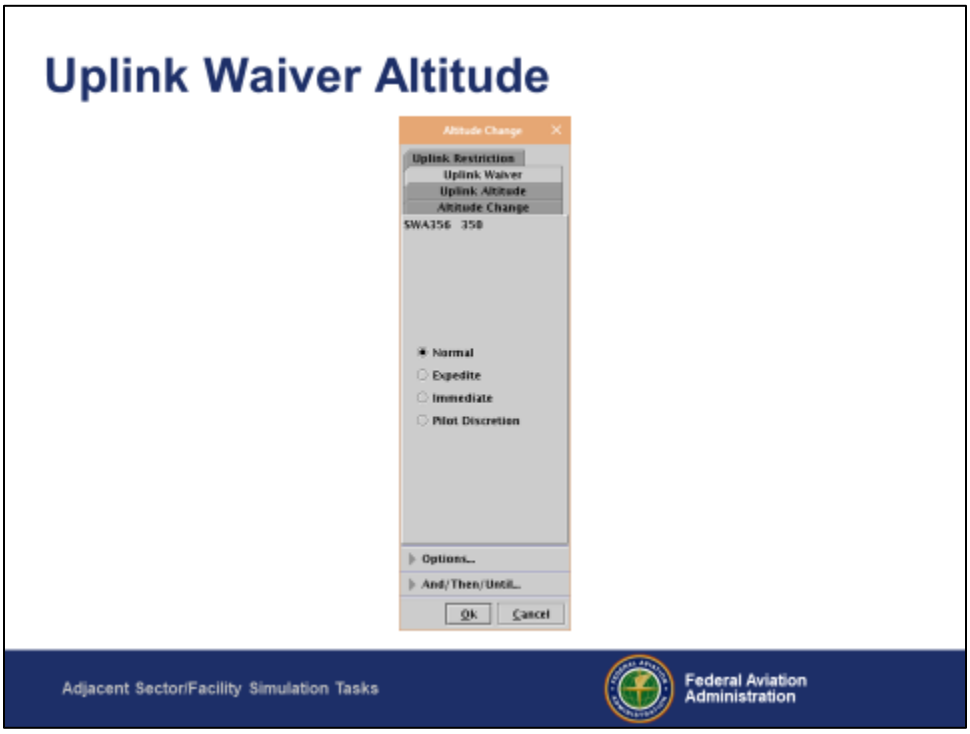


The Uplink Altitude tab in the Altitude Change dialog is used to uplink an altitude clearance to the target and make the corresponding ERAM amendment. To do so:

1. Select the Uplink Altitude tab.
2. If an interim altitude (QQ) amendment is desired, click on the Interim Altitude checkbox. If not checked, an assigned altitude (QZ) amendment will be made.
3. If desired, select an optional urgency option (i.e., Expedite, Immediate, Pilot Discretion). Normal is the default selection.
4. Double-click on the desired altitude.

Be aware that this will not cause the target to climb or descend to the specified altitude. This only sends a CPDLC altitude clearance uplink to the target. The uplink will be displayed in the CPDLC Message view. Any corresponding target maneuver will be the result of normal CPDLC uplink response processing based on the target's CPDLC Response Mode setting.

Slide - 16.



A Waiver altitude can be adapted at a departure sector. If adapted, the requirement to enter an interim altitude in the data block has been waived. The controller clears the aircraft to an adapted altitude but leaves the requested altitude in the data block.

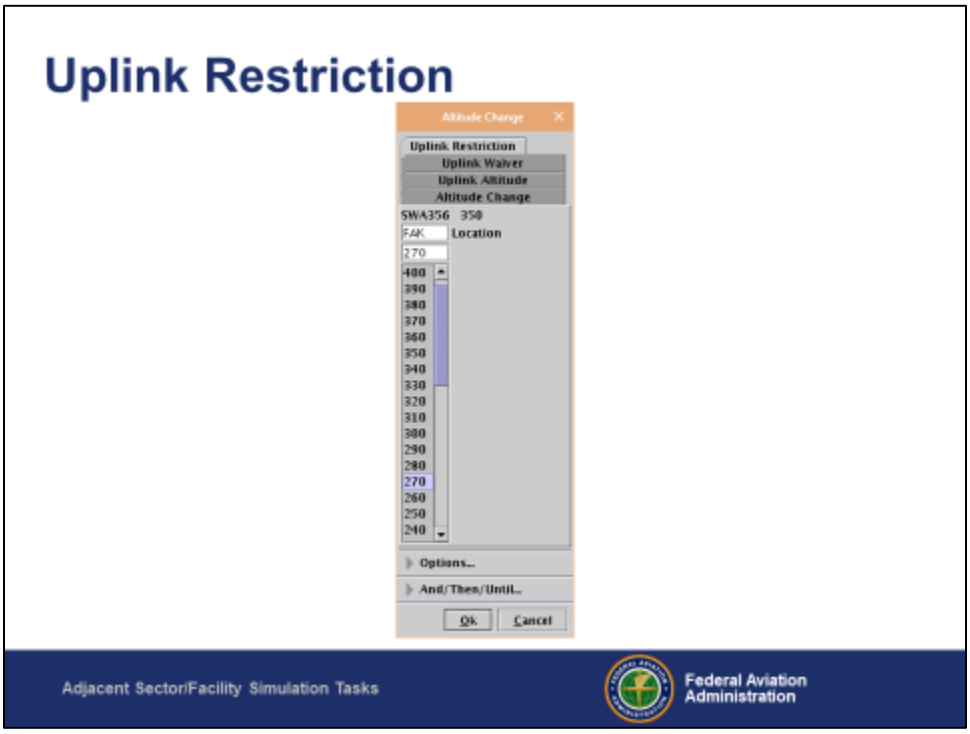
The Uplink Waiver tab in the Altitude Change dialog is used to uplink the waiver altitude to the target and make the corresponding ERAM amendment. To do so, assuming the Altitude Change dialog is already open:

1. Select the Waiver Altitude tab. The tab will be grayed out if a waiver altitude is not adapted.
2. If desired, select an optional urgency option (i.e., Expedite, Immediate, Pilot Discretion). Normal is the default selection.
3. Click **Ok**.

A clearance to the adapted waiver altitude will be uplinked.

Any corresponding target maneuver will be the result of normal CPDLC uplink response processing based on the target's CPDLC Response Mode setting.

Slide - 17.



An altitude crossing restriction instructs a pilot to cross a location at a specified altitude.

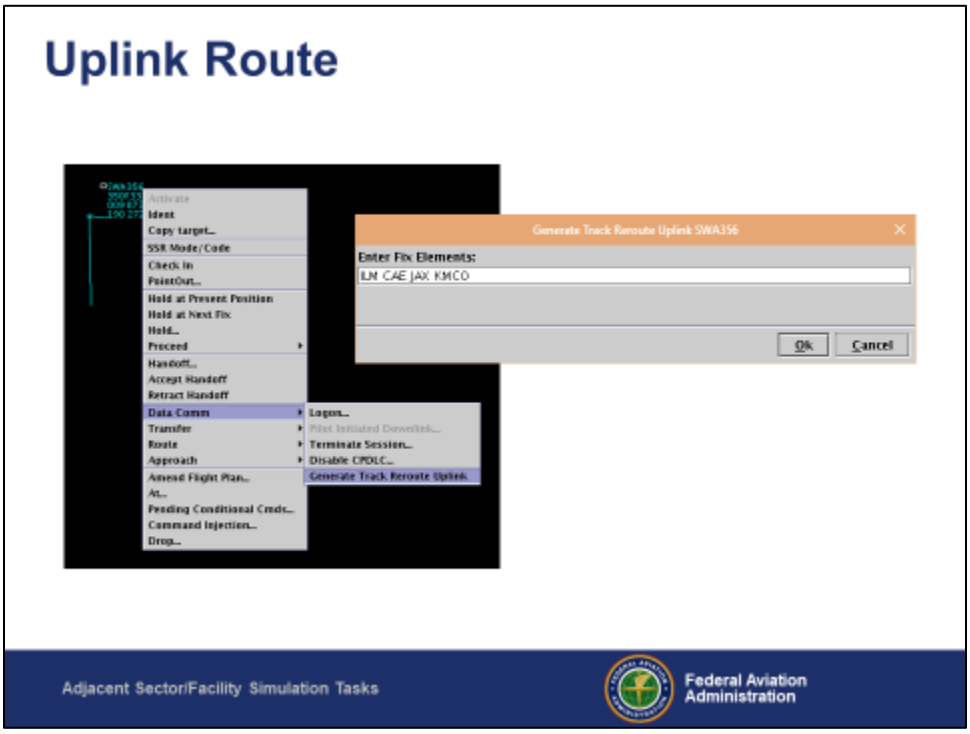
The Uplink Restriction tab in the Altitude Change dialog is used to uplink a crossing restriction and make the corresponding ERAM amendment. To do so, assuming the Altitude Change dialog is already open:

1. Select the Uplink Restriction tab.
2. Enter the altitude restriction location in one of the following formats:
   - Fix: *aa(a)(a)(a)*
   - Fix/radial/distance: *aa(a)(a)(a)dddddd*
   - Latitude/longitude: *ddddL/(d)ddddL*
3. Double-click on the desired altitude or select the desired altitude then click **Ok**.

The crossing element must be contained in both the target route and the ERAM flight plan.

Any corresponding target maneuver will be the result of normal ATPilot CPDLC uplink response processing based on the target's CPDLC Response Mode setting.

Slide - 18.



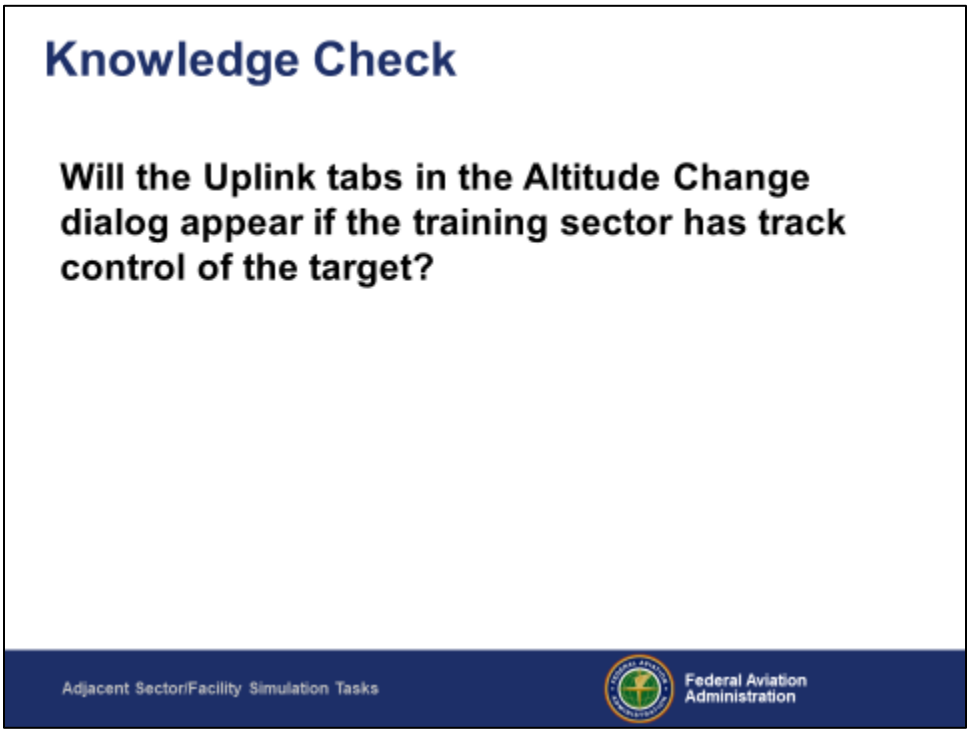
A route amendment uplink can be created using the Generate Track Reroute Uplink dialog. To do:

1. Right-click on the data block callsign to open the Target Control menu.
2. Select the **Data Comm** option. A sub-menu will appear.
3. Select the **Generate Track Reroute Uplink** option from the sub-menu. The Generate Track Reroute Uplink dialog will open.
4. Type the new route using only fixes and separating each fix with a space. The new route entered must tie back into the target's existing route.
5. Click **Ok**.

An ATPilot error message will be displayed if there are problems with the route.

Be aware that this will not cause the target to proceed on the specified route. This only sends a CPDLC route clearance uplink to the target. The uplink will be displayed in the CPDLC Message view. Any corresponding target maneuver will be the result of normal CPDLC uplink response processing based on the target's CPDLC Response Mode setting.

Slide - 19.


Knowledge Check
Will the Uplink tabs in the Altitude Change dialog appear if the training sector has track control of the target?
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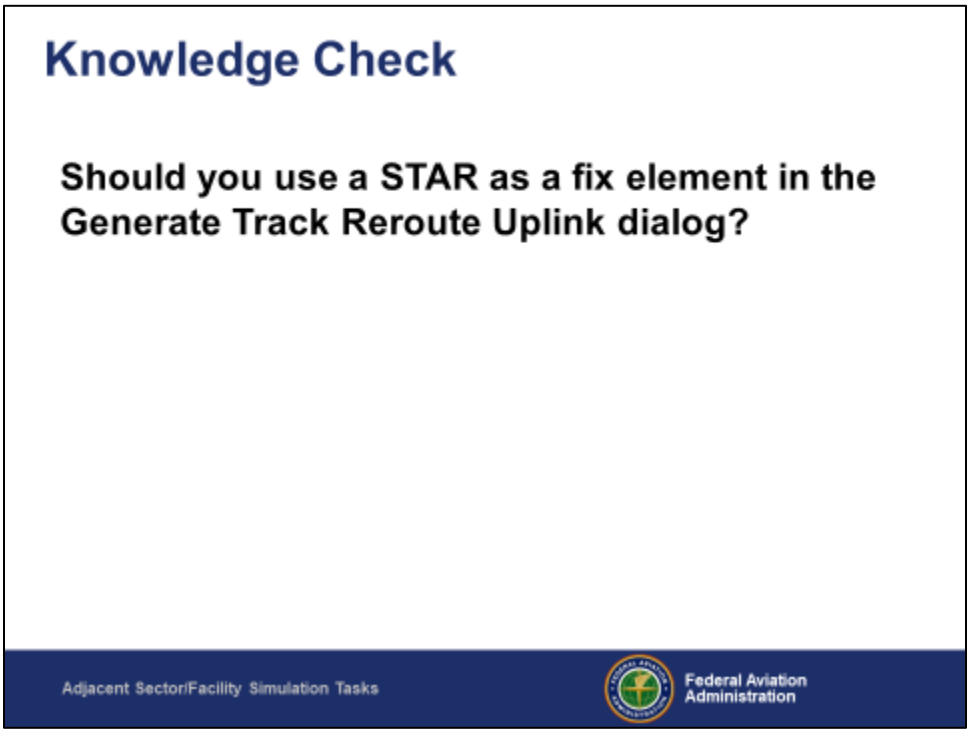
Slide - 20.


Knowledge Check
Should you use a STAR as a fix element in the Generate Track Reroute Uplink dialog?
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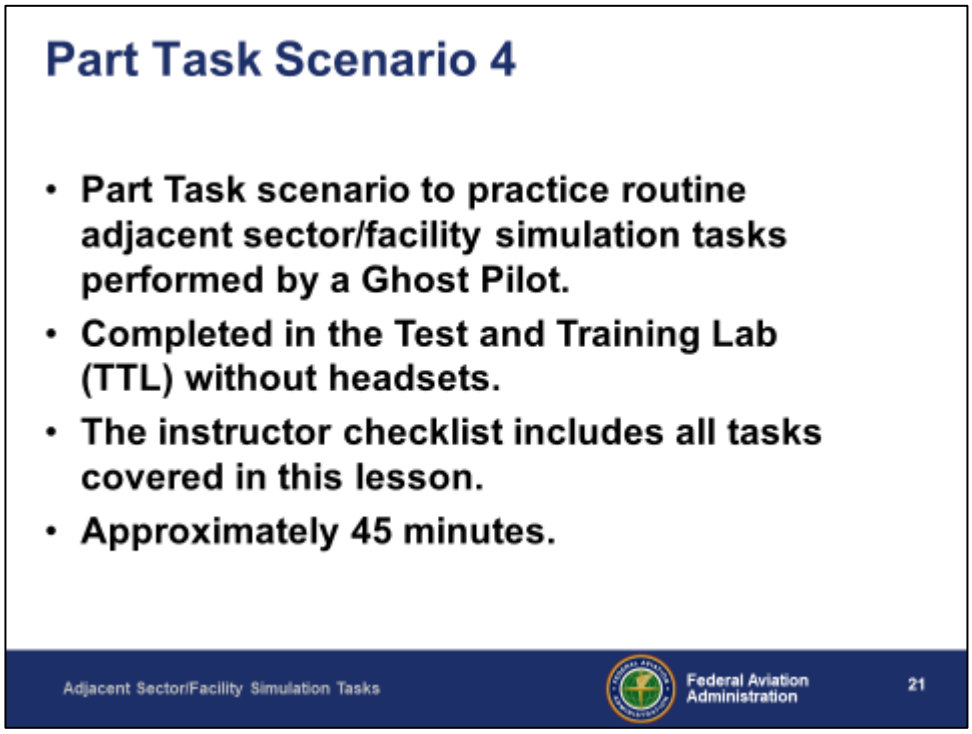
Slide - 21.

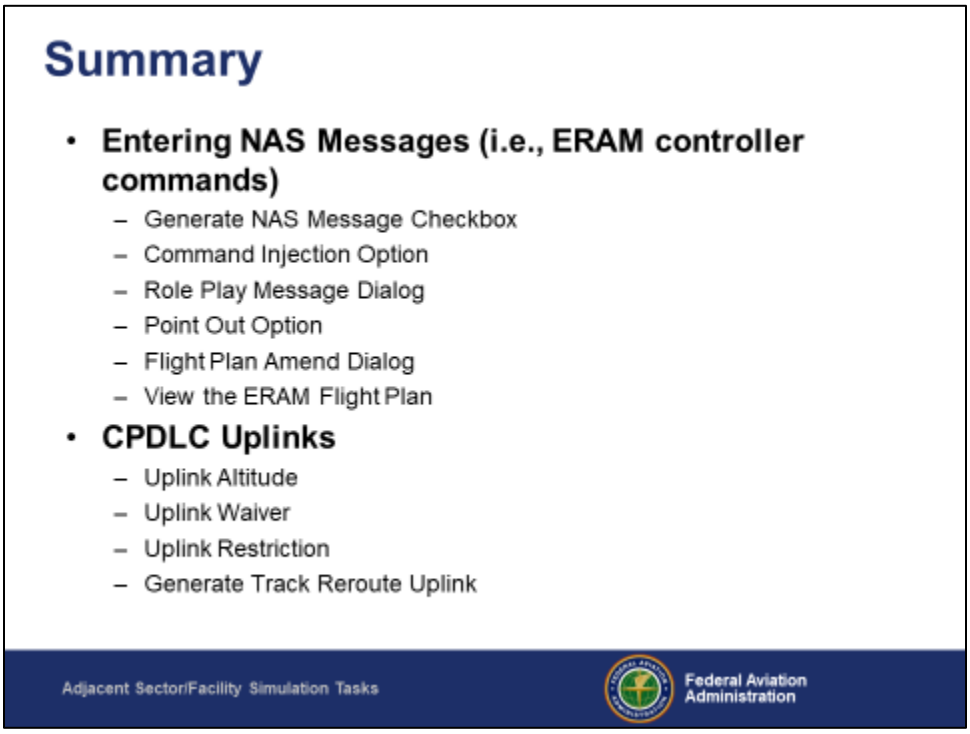


After completion of this exercise, this lesson will resume in the classroom. Your instructor will provide the details.

Part Task Scenario 4:

Purpose	To practice routine adjacent sector/facility tasks performed by a Ghost Pilot.
Materials	The instructor will use the Part Task Scenario 4 checklist. No student handouts are required.
Directions	A locally developed scenario should be loaded and ready to start in the TTL. Requirements for the scenario have been provided to the facility. No controllers are needed. No headsets are needed. Instructors should use the checklist to step through all the functionality to be practiced. Instructors should assist students as necessary. Students should check-in and accept handoffs from the training sector without direction from the instructor. Approximate duration of the exercise is 45 minutes.

Slide - 22.


Summary
• Entering NAS Messages (i.e., ERAM controller commands)
– Generate NAS Message Checkbox
– Command Injection Option
– Role Play Message Dialog
– Point Out Option
– Flight Plan Amend Dialog
– View the ERAM Flight Plan
• CPDLC Uplinks
– Uplink Altitude
– Uplink Waiver
– Uplink Restriction
– Generate Track Reroute Uplink
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