Federal Aviation Administration

55054003
EN ROUTE
RADAR ASSOCIATE
CONTROLLER TRAINING PART C:
ADVANCED CONCEPTS

Lesson 17: CPDLC TOC and Message Management

Version: 1.0 2022.08

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LESSON PLAN DATA SHEET

Course Name	En Route Radar Associate Controller Training Part C: Advanced Concepts
Course Number	55054003
Lesson Title	CPDLC TOC and Message Management
Duration	2 hours, 15 minutes (includes lesson, part-task exercise, and ELT)
Version	1.0 2022.08
Reference(s)	TI 6110.100, En Route Automation Modernization R-Position User Manual; TI 6110.101, En Route Automation Modernization RA-Position User Manual; TI 6110.102, En Route Automation Modernization AT Specialist User Manual; TI 6110.108, En Route Automation Modernization Quick Reference Card
Prerequisites	NONE
Handout(s)	⊙ Part-Task Exercise ⊙ TI 6110.108, ERAM Quick Reference Controller Card
Exercise / Activity	Refer to handout for: ⊙ Part-Task Exercise: CPDLC TOC and Message Management
Scenario	⊙ Run scenario 55054003_L17_S## in TTL
Assessments	⊙ YES - Written
Materials and Equipment	⊙ Pencil and/or pen
Other Pertinent Information	⊙ **Ensure lesson materials are downloaded to the classroom computer** ⊙ This lesson is based on ERAM EAE410 ⊙ The lesson has been reviewed and reflects current orders and manuals as of April 2022

LESSON ICON LEGEND

	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 WBT icon indicates a component of web-based training.
	The Click icon indicates a PPT slide with click-based functionality to present additional information.
	The Definition icon indicates a published definition.

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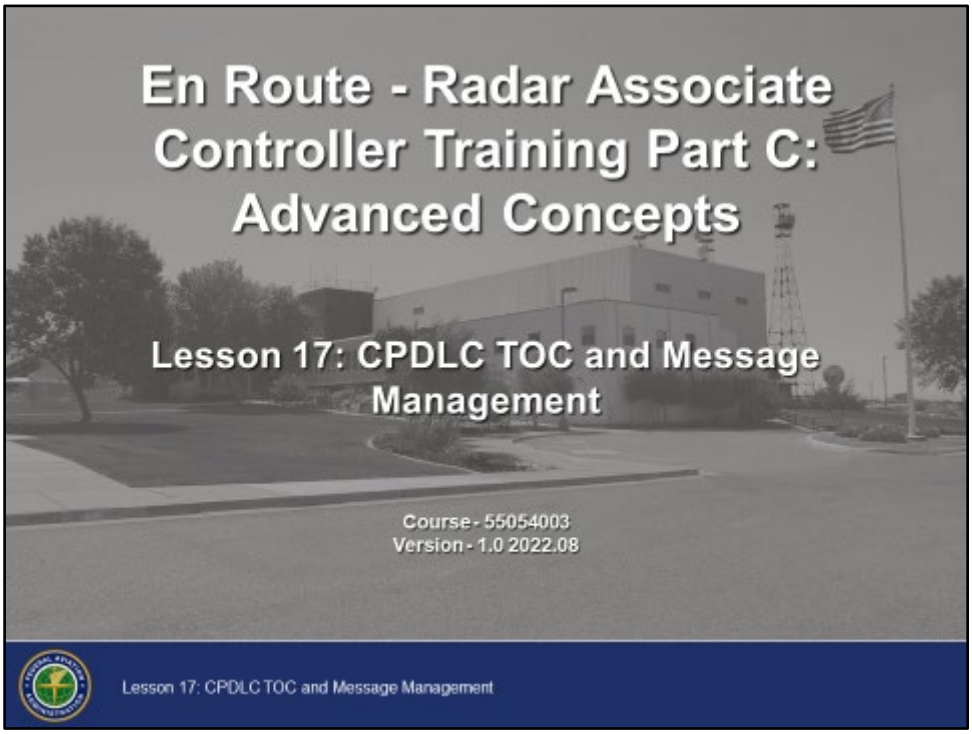
LESSON INTRODUCTION

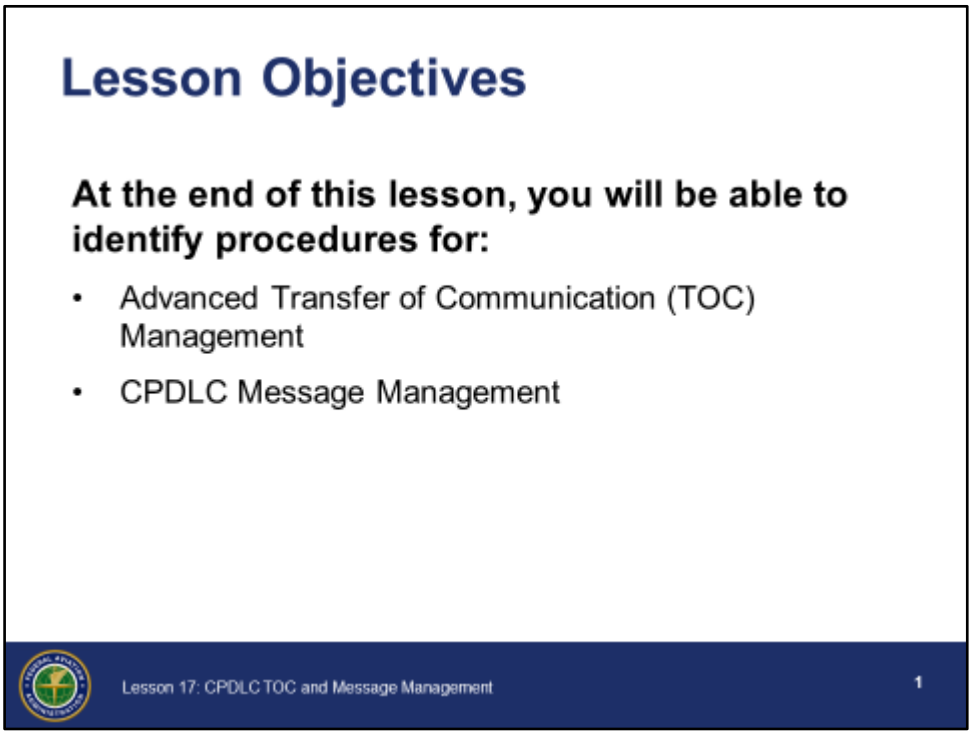
Overview



This lesson covers the advanced CPDLC Transfer of Communications (TOC) functions and the various options for viewing and interacting with uplink and downlink messages using the Message Out view, Message Out menu (Mini Mo), and History view.

LESSON INTRODUCTION *(CONT'D)*

Lesson Objectives



At the end of this lesson, you will be able to identify procedures for:

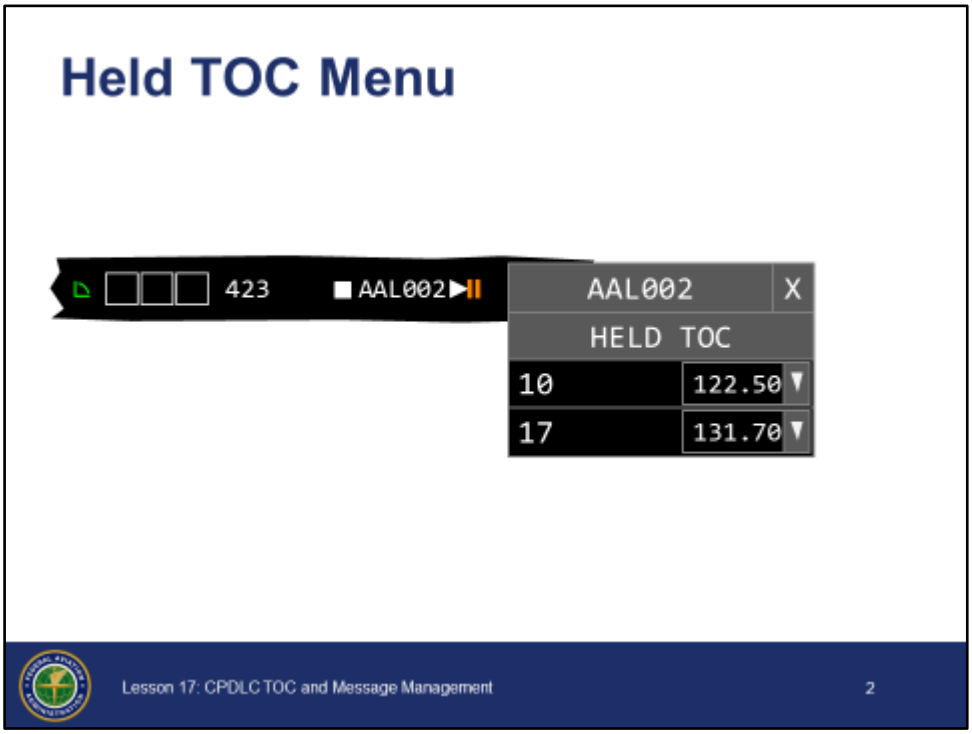
- Advanced Transfer of Communication (TOC) Management
- CPDLC Message Management

NOTE: There will be a graded end-of-lesson test upon completion of the lesson. The passing score is 70%. If you do not achieve a score of 70%, you will be provided study time and one retake of an alternate end-of-lesson test.

ADVANCED TOC MANAGEMENT

Held TOC Menu

TI 6110.101, sec. 7.2



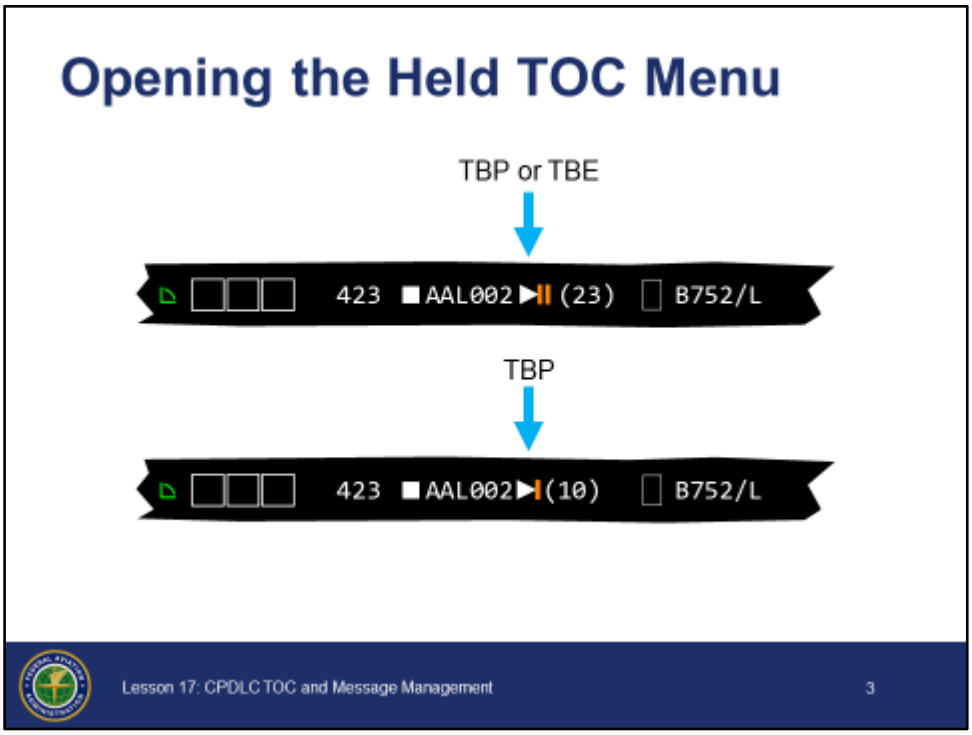
- The Held TOC menu provides the eligible sector the ability to display and uplink Held TOCs for an individual aircraft
- The system generates a separate Held TOC after every track control change
  - Track control changes include both handoff and stealing of track control
- A multiple Held TOC indicator is displayed on the Full Data Block (FDB) and Aircraft List (ACL) whenever there are two or more Held TOC entries in the Held TOC menu
- Whenever there are two or more Held TOC entries, the controller must open the Held TOC menu and select the desired Held TOC (i.e., sector) for uplink
  - The menu can hold up to 10 Held TOC entries
  - The menu will close after the Held TOC is released

ADVANCED TOC MANAGEMENT *(CONT'D)*

Opening the Held TOC Menu

TI 6110.101, secs. 7.2.1, 7.2.2.1.1

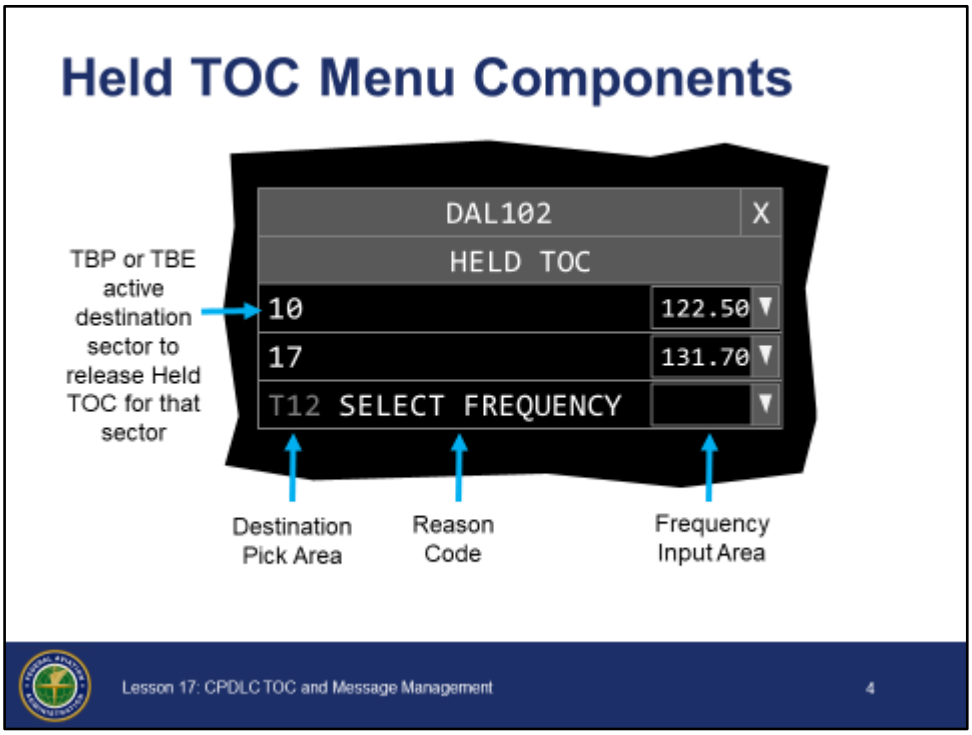
TI 6110.100, sec. 7.2.1



- There are various options for displaying the Held TOC menu:
  - Trackball Pick (TBP) or Trackball Enter (TBE) on a Multiple Held TOC indicator (FDB or ACL)
  - TBP or TBE on the HELD status on the Message Out view or Message Out menu (Mini Mo)
  - TBP on the Single Held TOC indicator (FDB or ACL)
    - A TBE on a Single Held TOC indicator will release the Held TOC without having to access the Held TOC Menu

Held TOC Menu Components

TI 6110.101, sec. 7.2.2.1.2



- The Held TOC menu header area contains the aircraft call sign and a Close Window pick area
  - The menu can also be closed by a TBP or TBE away from the menu or by pressing the Clear key on the keyboard
- Each Held TOC entry that is ready for uplink has a Destination pick area with the sector or TRACON position that will receive the transfer of communication, and a Frequency Input area with the appropriate system selected frequency
  - TBP or TBE on the desired Destination pick area to release that Held TOC

NOTE: The system knows when a given local destination sector has other sectors combined with it and will automatically select the appropriate frequency for that sector configuration.

- If the system determines there are one or more conditions preventing the release of a Held TOC, the Destination pick area will be grayed out and a reason code will be provided
  - The Frequency Input area may or may not be populated depending on what reason is preventing release

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ADVANCED TOC MANAGEMENT *(CONT'D)*

Held TOC Menu Components (Cont'd)

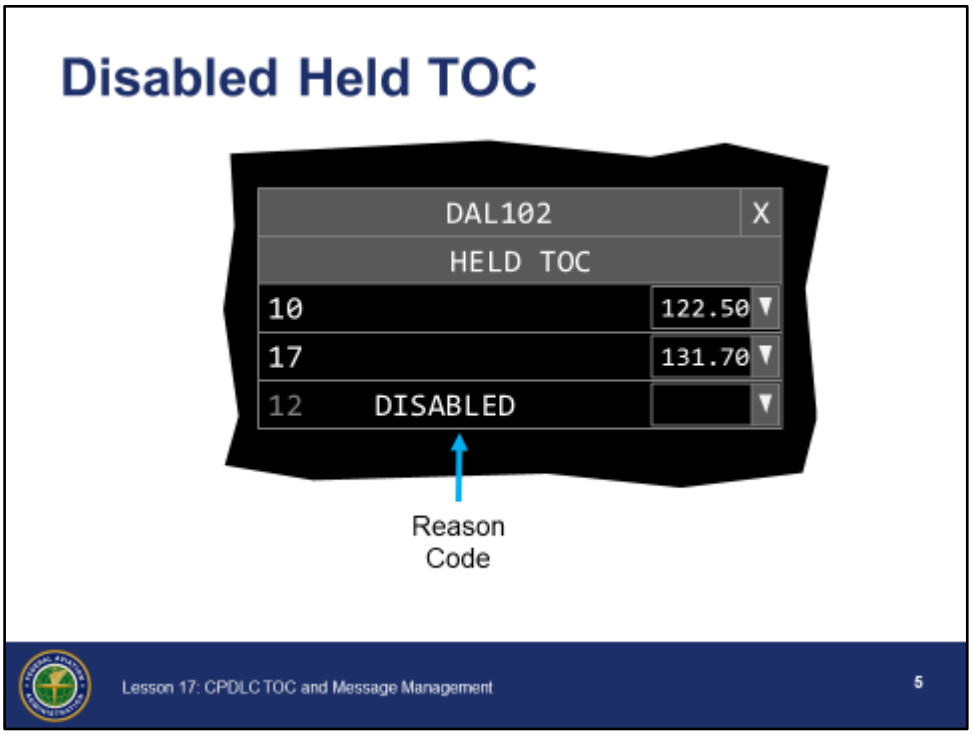
TI 6110.101, sec. 7.2.2.1.1

- Possible reason codes include:
  - IC IN PROGRESS - When no response has been received to a Confirm Assigned Altitude uplink
  - IC MISMATCH - When there is an unacknowledged IC mismatch
  - ABNORMAL UPLINK - When there is an unacknowledged abnormal uplink indicator as a result of a pilot response of unable, an error, or the session has failed
  - OPEN UPLINK - When there is an open controller-initiated uplink
  - AIRCRAFT NOT ON FREQUENCY - When the aircraft is not marked on frequency
  - SELECT FREQUENCY - When the system is unable to automatically select a frequency, but the controller can select a frequency from the Frequency List menu
  - NO FREQUENCY - When the system does not automatically select a frequency and there are no selectable frequencies in the Frequency List menu
    - The controller will need to type a valid frequency

ADVANCED TOC MANAGEMENT *(CONT'D)*

Reason - Disabled Held TOC

TI 6110.101, sec. 7.2.2.1.2

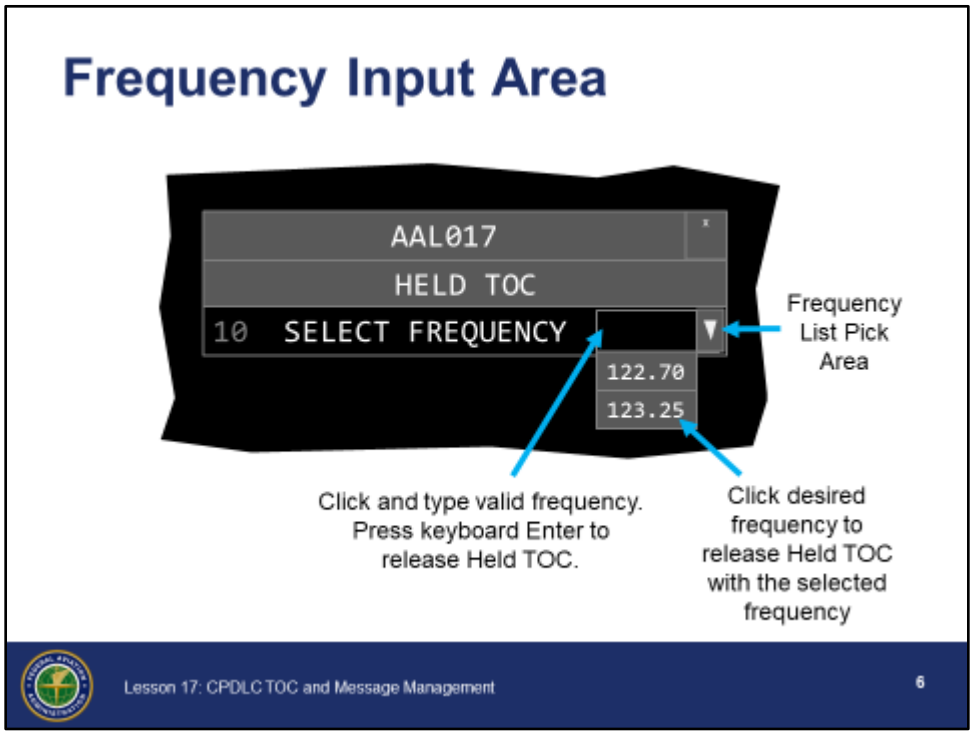


- Another possible reason code that can appear in the Held TOC menu is DISABLED
- A Held TOC entry is considered disabled if the destination sector for that Held TOC entry is closed as a result of a sector plan update from the local facility (i.e., Combine Sector command)
  - A closed sector is a sector that does not have any airspace assigned
- Disabled Held TOC:
  - Cannot be uplinked to the aircraft
  - Displayed only as a reference for the controller
- Controller options:
  - Use another Held TOC entry
  - Use voice
    - Eligibility will be automatically transferred to the sector with track control when the aircraft is marked off frequency by the transferring controller
- Disabled Held TOC overrides all other conditions
  - No other reason codes are displayed

ADVANCED TOC MANAGEMENT *(CONT'D)*

Frequency Input Area

TI 6110.101, secs. 7.2.2.1.1, 7.2.2.1.2



- There are two ways a controller can add a frequency to the Frequency Input area and release the Held TOC:
  - Option 1 is to select from the Frequency List
    - TBP or TBE the Frequency List pick area to open a list of alternate frequencies adapted for the destination sector
    - TBP or TBE on the desired frequency and the system will uplink the TOC message with the specified frequency
  - Option 2 is to type any adapted frequency in the Frequency Input area
    - TBP or TBE inside the Frequency Input area
    - Type the desired frequency

      Format: ddd.d(d)

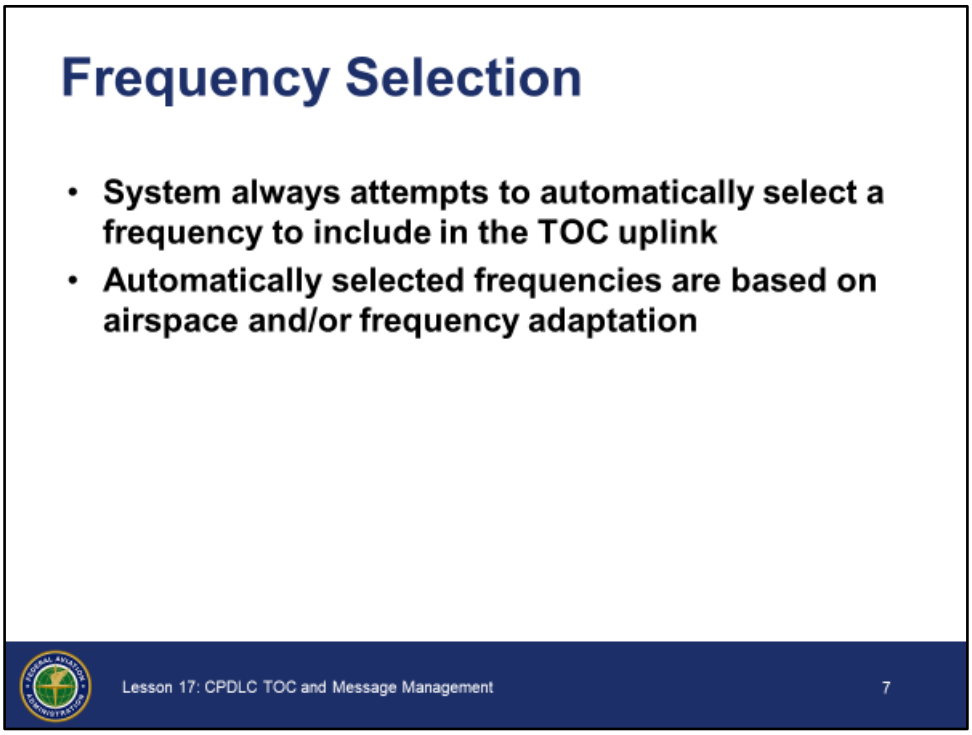
      - Periods are automatically inserted
      - Four digit input is allowed when the last digit is zero

      Example: 123.2
    - KBE and the system will uplink the TOC message with the specified frequency

ADVANCED TOC MANAGEMENT *(CONT'D)*

Frequency Selection

TI 6110.101, sec. 6.2.3.12



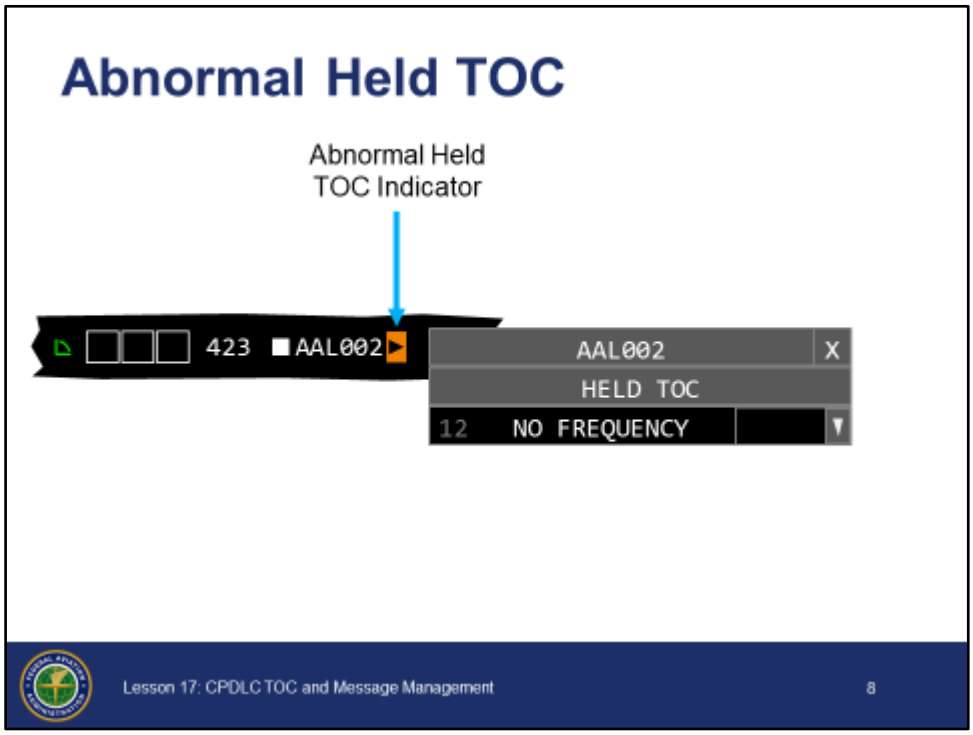
- System always attempts to automatically select a frequency to include in the TOC uplink
- Automatically selected frequencies are based on airspace and/or frequency adaptation, but can be dynamically modified
- Separate frequency adaptations are created for the local ERAM, adjacent ERAMs, TRACONs and, if needed, adjacent ATOP or Canadian facilities
- ERAM will select the appropriate frequency, regardless of how the sector is configured
- Since the local ERAM does not know about the current configuration at adjacent ERAMs or TRACONs, a single frequency is adapted for those sectors or positions

ADVANCED TOC MANAGEMENT *(CONT'D)*

Abnormal Held TOC

TI 6110.101, sec. 7.2.1

TI 6110.108, CPDLC Symbology

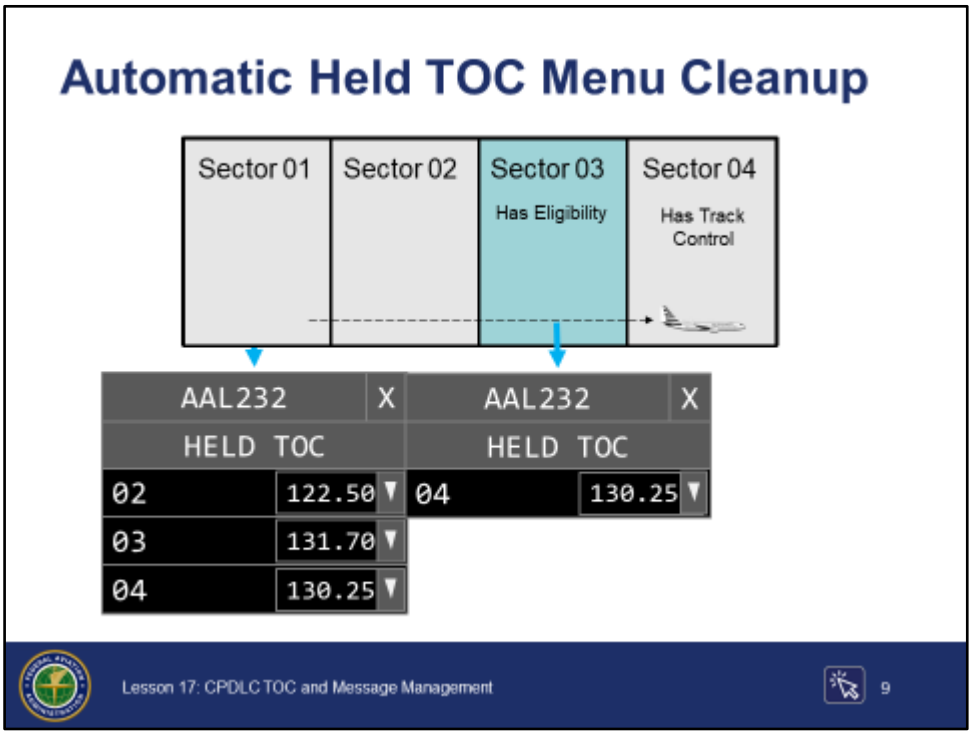


- When the system is unable to automatically select a frequency, an abnormal Held TOC will be generated and an abnormal Held TOC indicator will be displayed on the ACL and FDB
- The system selected frequency in an existing Held TOC can change, and possibly become abnormal, when either of the following happens:
  - The sector configuration is changed via CS command
  - Frequency mapping is dynamically changed from the Air Traffic Specialist Workstation (ATSW)
- Whenever this happens, the controller will need to open the Held TOC menu and use the Frequency Input area to enter the desired frequency or select one from the Frequency List

ADVANCED TOC MANAGEMENT *(CONT'D)*

Automatic Held TOC Menu Cleanup

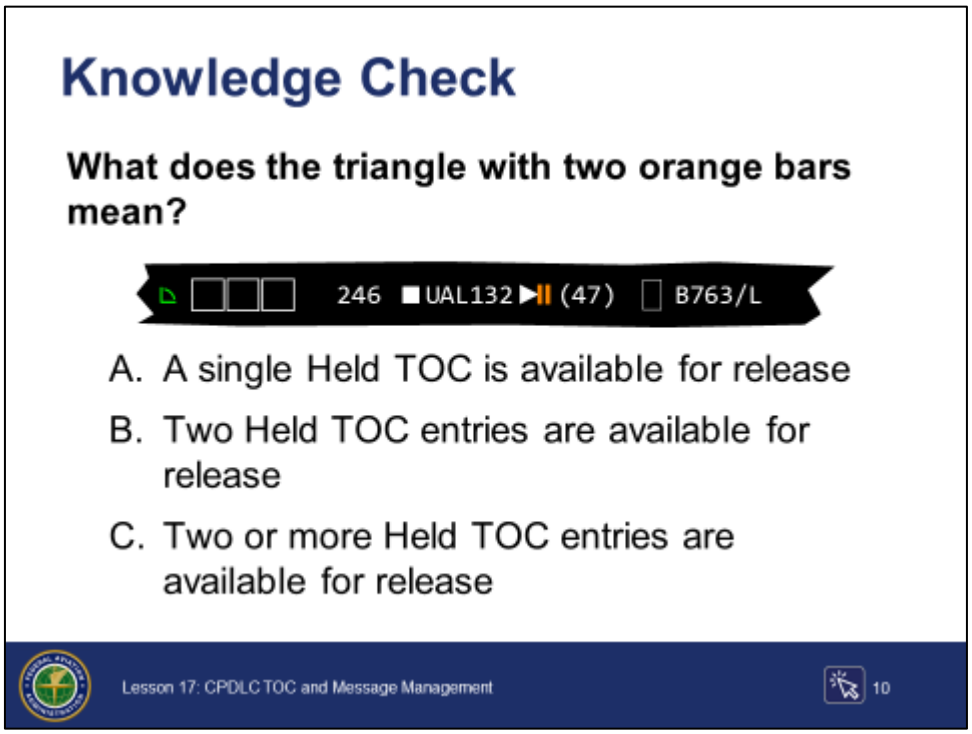
TI 6110.101, sec. 7.2



- A Held TOC is generated each time there is a track control change
  - When there are multiple track control changes before a Held TOC is released, the system will build a separate Held TOC for each track control change and all are available in the Held TOC menu at the eligible sector
- When the eligible sector releases a Held TOC, it will be deleted from the system and the Held TOC menu will close
- When a WILCO to that Held TOC is received:
  - All Held TOCs to sectors upstream of the destination sector will also be deleted
  - Held TOCs to sectors downstream of the destination sector will be kept

ADVANCED TOC MANAGEMENT *(CONT'D)*

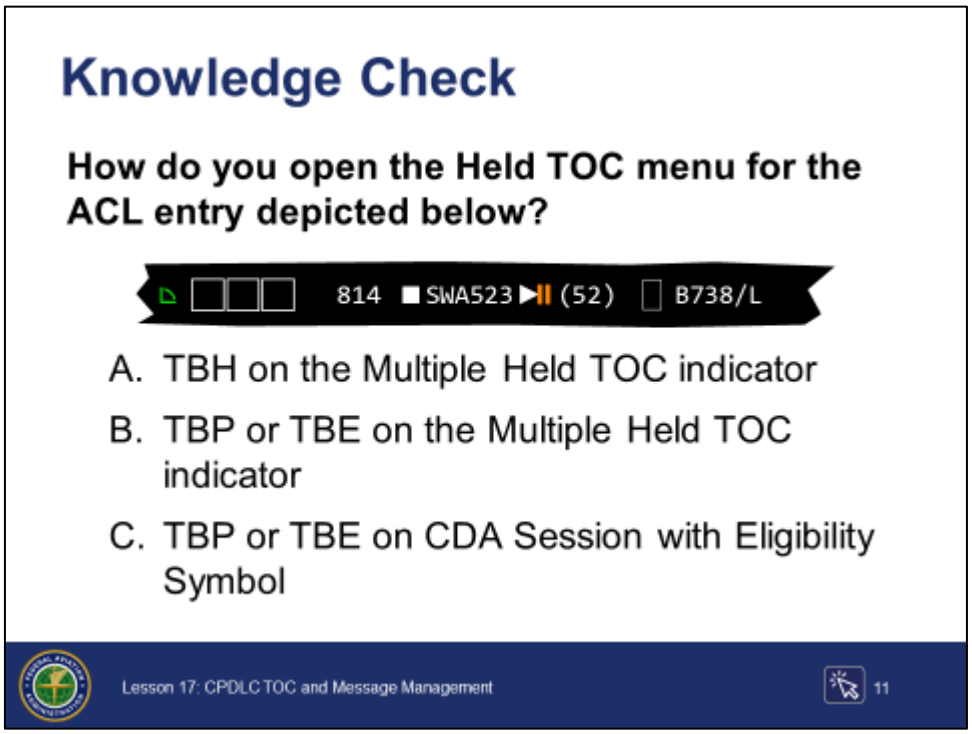
Knowledge Check



Question: What does the triangle with two orange bars mean?

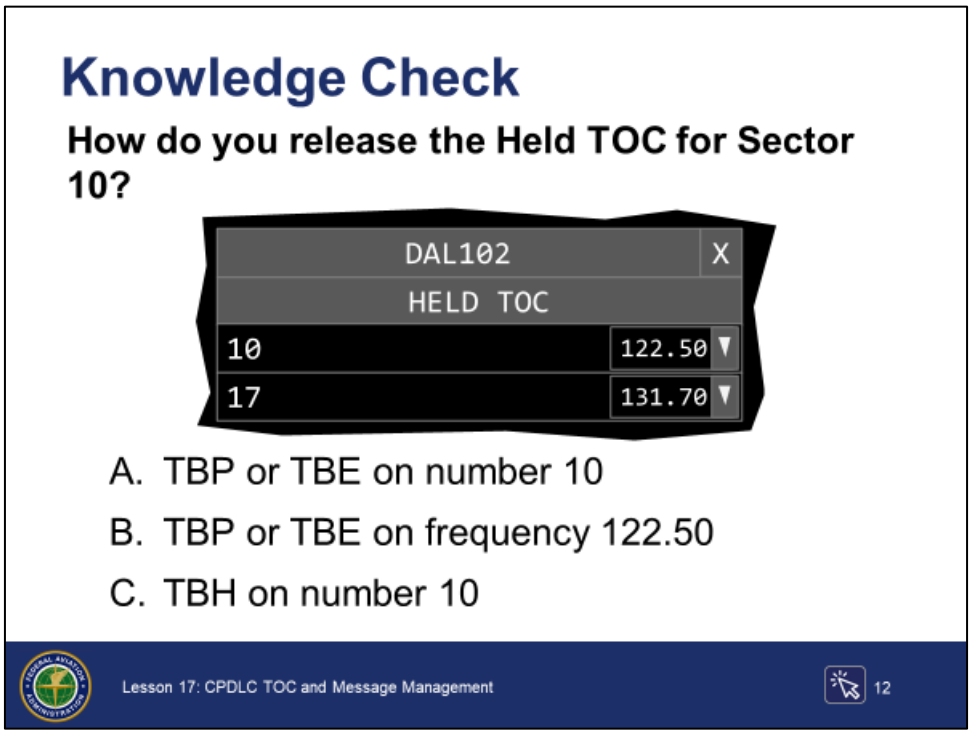
ADVANCED TOC MANAGEMENT *(CONT'D)*

Knowledge Check



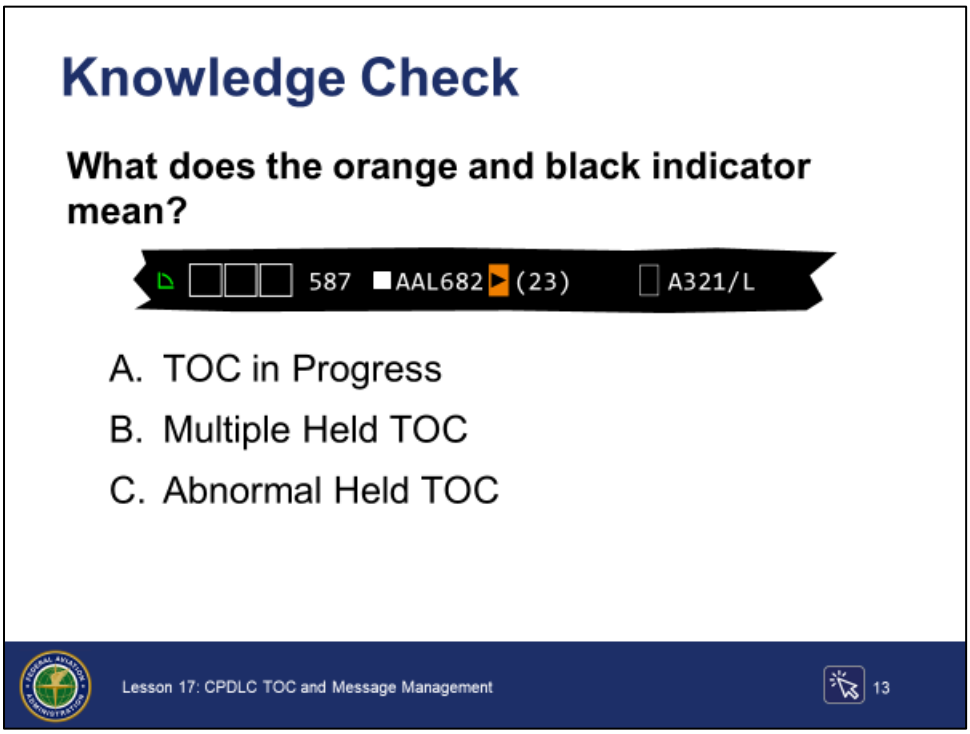
Question: How do you open the Held TOC menu for the ACL entry depicted below?

Knowledge Check



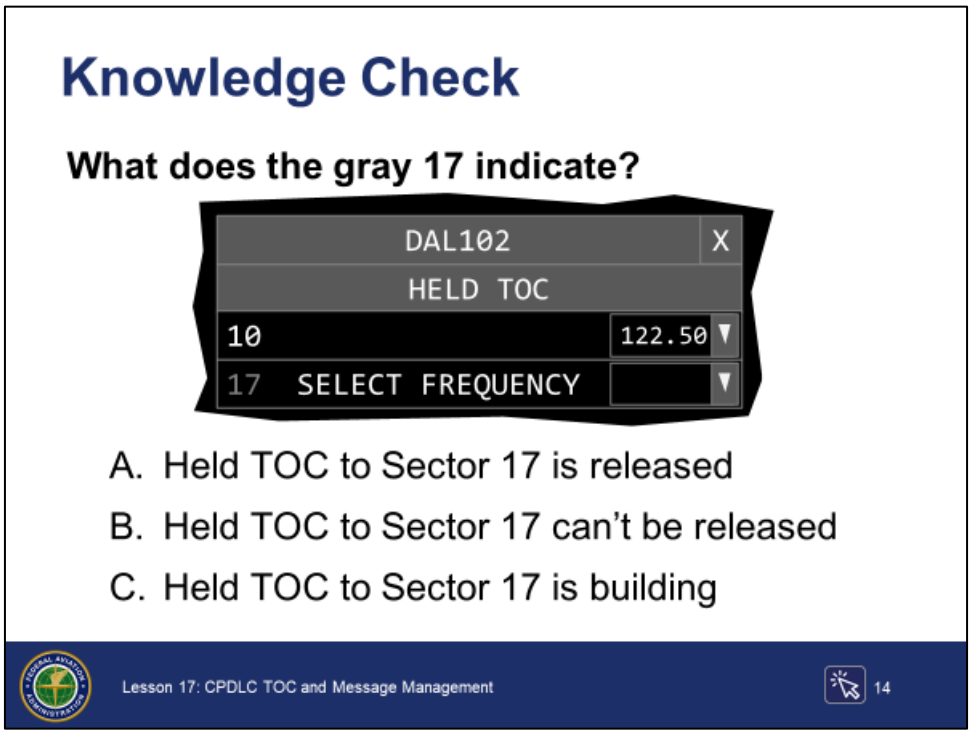
Question: How do you release the Held TOC for Sector 10?

Knowledge Check



Question: What does the orange and black indicator mean?

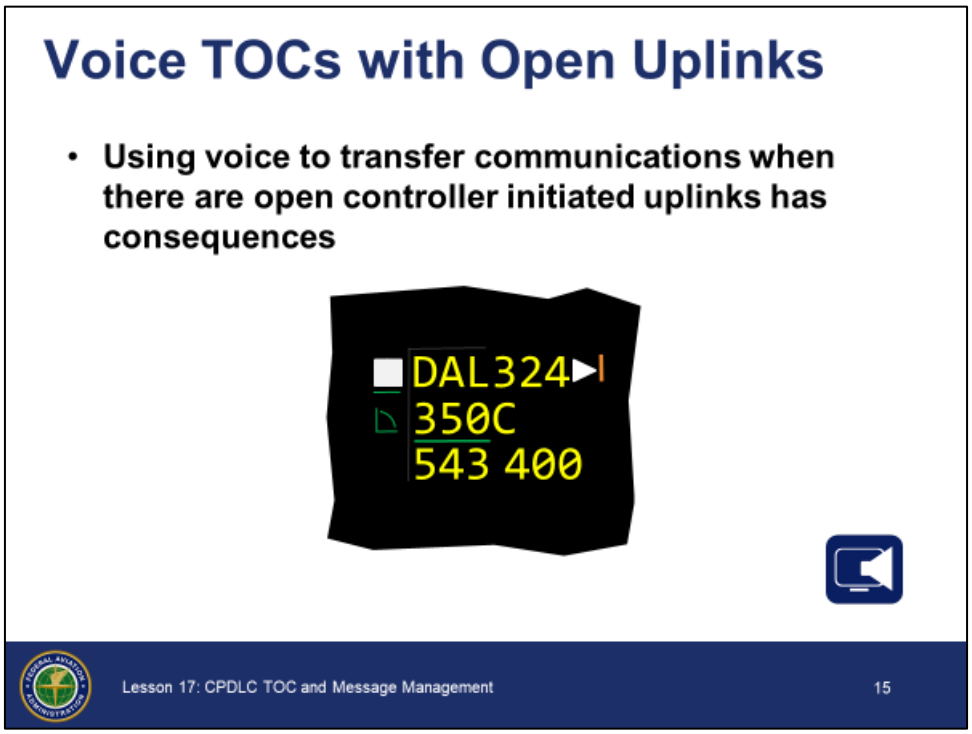
Knowledge Check



Question: What does the gray 17 indicate?

Voice TOCs with Open Uplinks

TI 6110.101, sec. 7.2



- An open uplink at the transferring sector will prevent release of a Held TOC
  - Unless coordinated, the receiving sector will not be aware of the open uplinks
  - The receiving sector will not be assigned eligibility automatically
    - For internal handoffs, the receiving sector can steal eligibility in order to communicate with the aircraft using CPDLC
    - Interfacility steals are not permitted by the system

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ADVANCED TOC MANAGEMENT *(CONT'D)*

Voice TOCs with Open Uplinks (Cont'd)

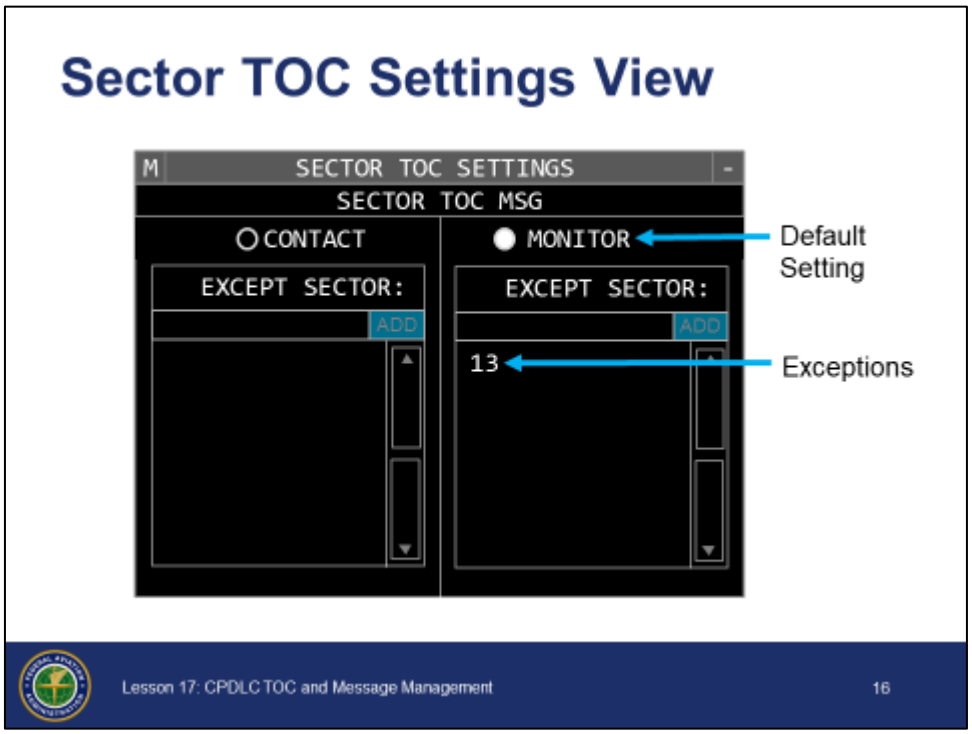
TI 6110.101, sec. 7.2

- You may cancel an open uplink only after ensuring the pilot has been issued, via voice communication, the correct ATC clearance
- You must ensure there are no trajectory altering uplinks open prior to transfer of communication, unless otherwise coordinated
  - A trajectory altering clearance alters an aircraft's altitude, speed, heading, or route

ADVANCED TOC MANAGEMENT *(CONT'D)*

Sector TOC Settings View

TI 6110.100, secs. 7.1.2.1, 7.1.2.2

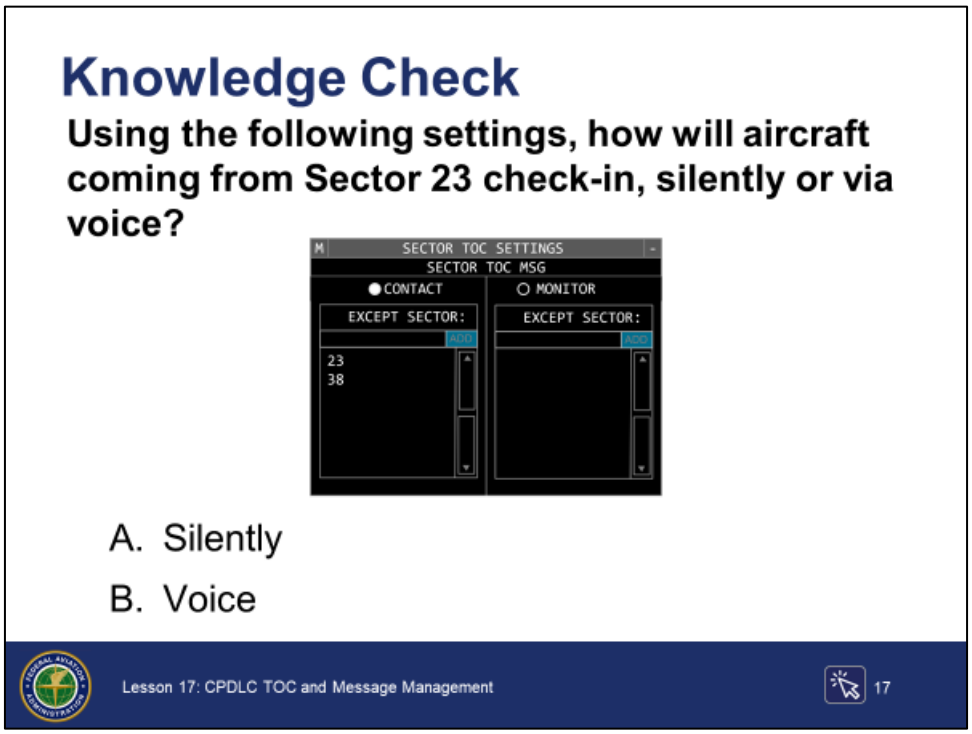


- The Sector TOC Settings view is used at the R Position to establish a controller's preferences for how CPDLC equipped aircraft will check in to their sector from adjacent local sectors
  - For a voice check-in, the system will uplink a CONTACT instruction to the aircraft
  - For a silent check-in, the system will uplink a MONITOR instruction
  - Optionally, there may be a list of sectors that are excepted from the default setting

  Example: The default setting is Monitor and Sector 13 is the exception. That means that aircraft coming from Sector 13 will check in via voice and all other aircraft will check in silently.

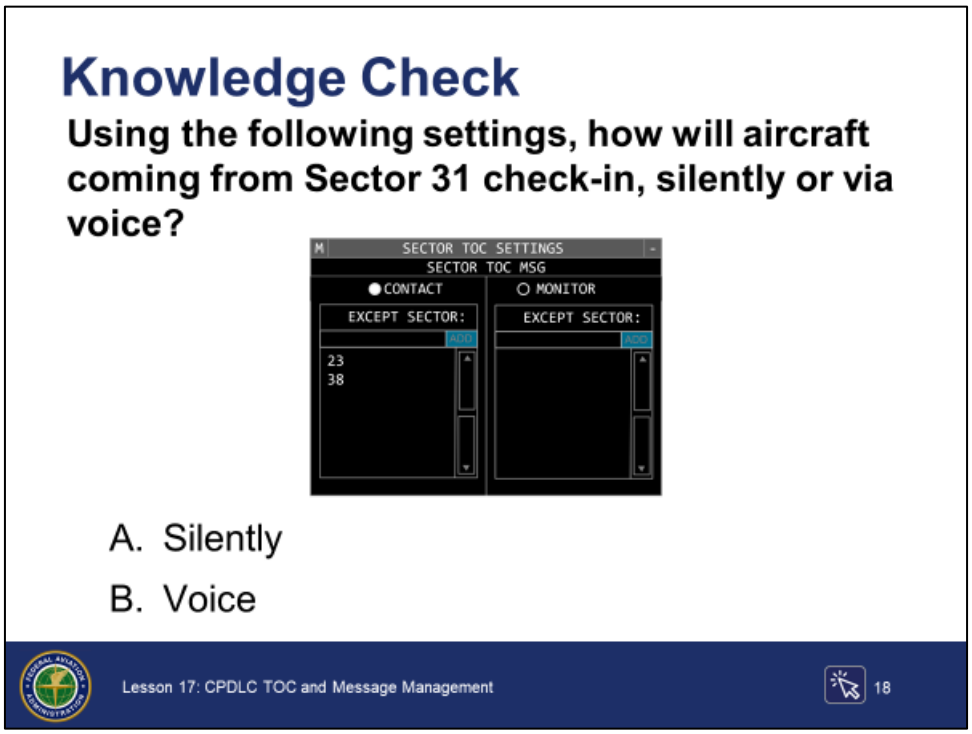
ADVANCED TOC MANAGEMENT *(CONT'D)*

Knowledge Check



Question: Using the following settings, how will aircraft coming from Sector 23 check-in, silently or via voice?

Knowledge Check

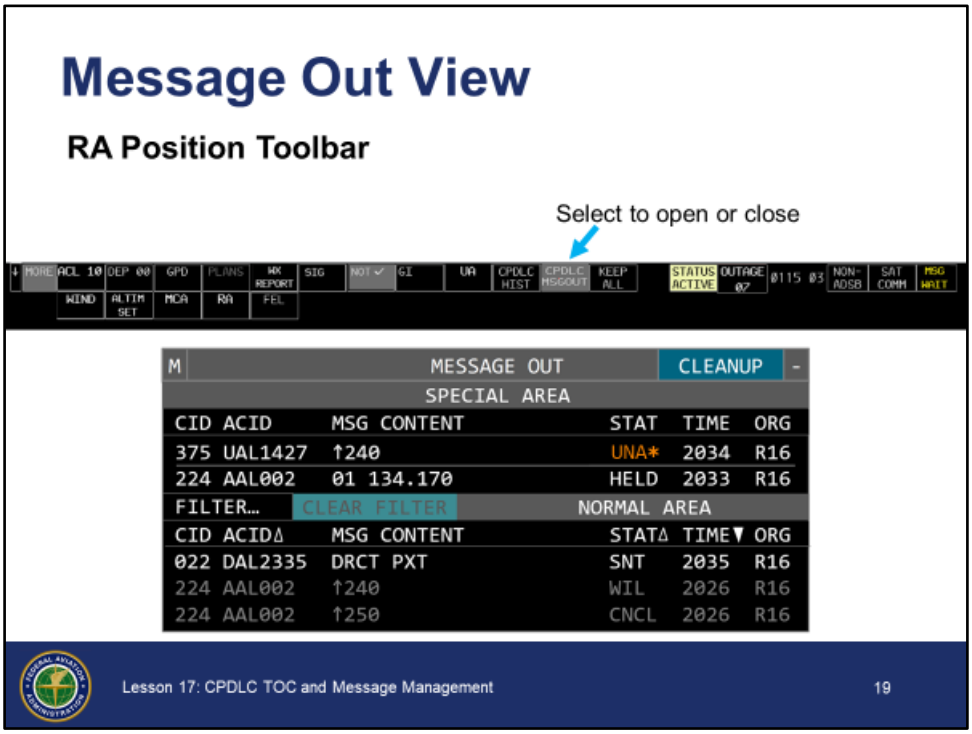


Question: Using the following settings, how will aircraft coming from Sector 31 check-in, silently or via voice?

CPDLC MESSAGE MANAGEMENT

Message Out View

TI 6110.101, sec. 2.5.5 and sec. 4.13

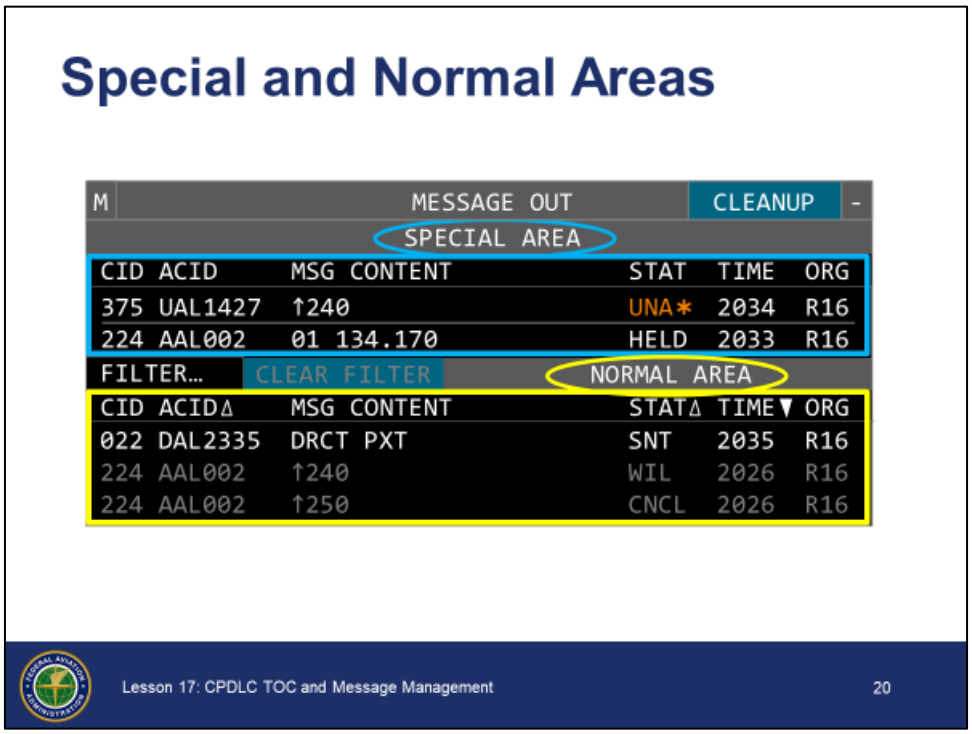


- The Message Out view is used at the sector with eligibility to view or manage controller and system initiated uplinked messages
- The Message Out view is opened using the CPDLC MSGOUT button on the Views toolbar
  - It can also be opened by entering the UU command

    Syntax: UU MV
- The view contains the following types of messages:
  - Uplinks that are still open at the sector that has CPDLC eligibility
  - Messages that are closed while the sector has CPDLC eligibility or previously had eligibility
    - Closed messages with a normal response that have not timed out
    - Closed acknowledged messages with an abnormal response that have not been removed by the user or the system
    - Closed messages with an abnormal response that have not been acknowledged by the user
  - Messages that were canceled by the controller while the sector had CPDLC eligibility that did not time out
  - Held TOCs

Special and Normal Areas

TI 6110.101, sec. 4.13.2.2



- The Message Out view has two major areas
  - The Special Area contains:
    - Entries for uplink messages with abnormal status (Unable, Error, Fail)
    - Entries for Held TOCs
  - The Normal Area contains:
    - Entries for uplink messages that have a normal status (Sent, Wilco, Standby, Time out, and Cancelled)

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CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Special and Normal Areas (Cont'd)

TI 6110.101, secs. 4.13.2.2, 4.13.2.3

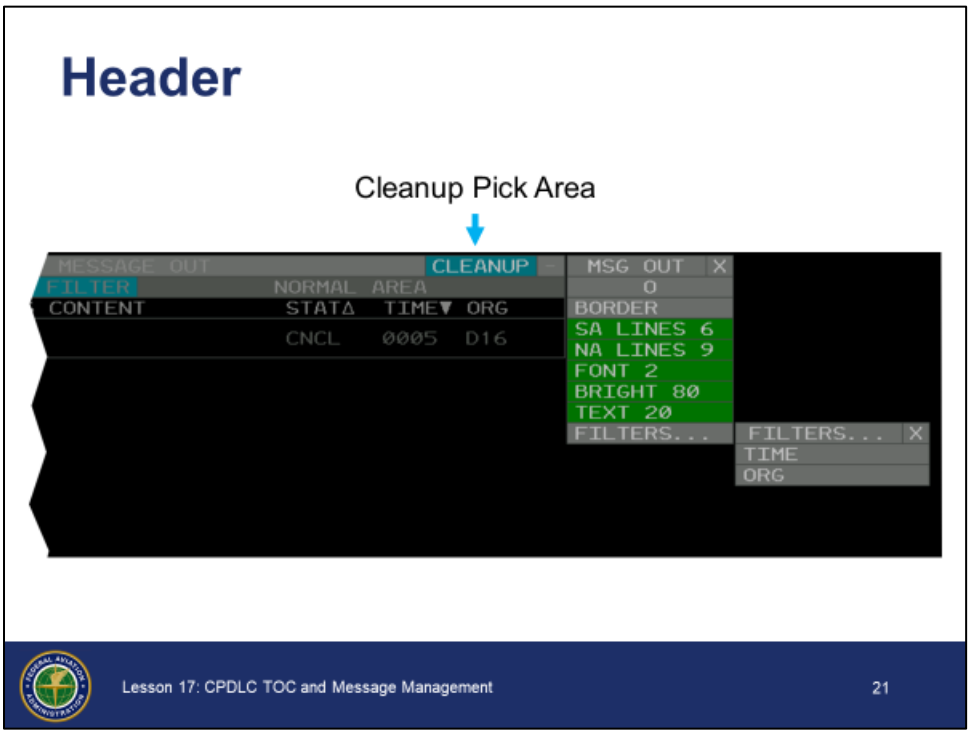
⊙ Each entry consists of the following information:

- CID
- ACID
- MSG CONTENT
  - Message Content (abbreviated form)
- STAT
  - The current status of the message
- TIME
  - For SNT, SBY and TIM the time refers to the time the message was uplinked
  - For other status it is the time of the status change
  - This column can be filtered off
- ORG
  - Originator of message
    - R for R position
    - D for RA position
    - S for system generated
  - This column can be filtered off

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Header

TI 6110.101,
sec. 4.13.3

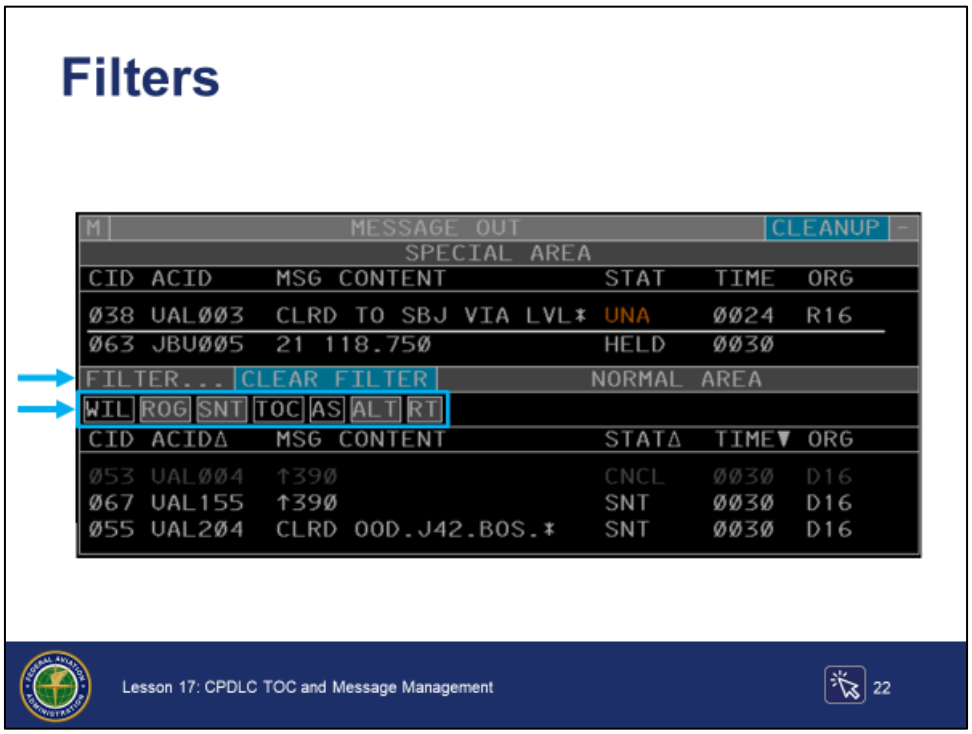


- The CLEANUP pick area
  - TBP or TBE on the pick area to remove all messages that are both closed and acknowledged (entries displayed with gray text)
  - Pick area is only active if there are grayed out entries
- The MSG OUT view menu has four unique options:
  - The SA LINES pick area is used to select the maximum number of entries to display in the Special area
    - Range is 4 to 10 lines
  - The NA LINES pick area is used to select the maximum number of entries to display in the Normal area
    - The range is 5 to 15 lines
  - TEXT pick area is used to adjust the width of the abbreviated message content in both the Message Out view and Message Out menu (Mini Mo)
    - Range is 20 to 50 characters
  - FILTERS… pick area opens a secondary menu with options to hide or display the TIME and ORG columns in the body of the view

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Filters

TI 6110.101,
sec. 4.13.2.4.2



- The FILTER… button displays or hides seven pick areas used to filter entries in the NORMAL AREA based on status or type
- TBP or TBE on the button to display or hide the seven filter pick areas, which filter:
  - WIL - Entries with a status of Wilco
  - ROG - Entries with a status of Roger
  - SNT - Entries with a status of Sent
  - TOC - Closed TOC entries
  - AS - Entries for Altimeter Setting uplinks
  - ALT - Entries for Altitude uplinks
  - RT - Entries for Route uplinks

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CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Filters (Cont'd)

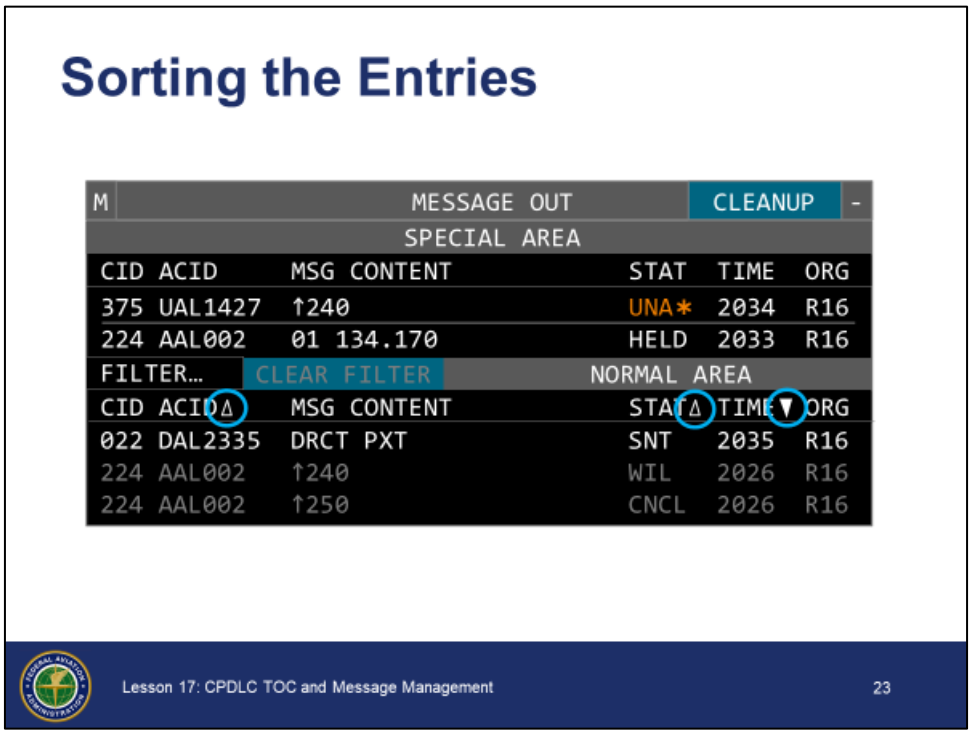
TI 6110.101, sec. 4.13.2.4.2

- TBP or TBE the desired filter to toggle the setting
- If the pick area has gray shading, those types of entries will be filtered out
- When multiple filters apply to a single entry, the entry will be filtered (i.e., hidden) if any applicable filter is active
- CLEAR FILTER pick area:
  - Clears all applied filters and restores the Normal Area to its default state
  - Is only active when one or more filters have been applied
  - TBP or TBE on the pick area when it is active to clear all filters

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Sorting the Entries

TI 6110.101, sec. 4.13.2.4.1



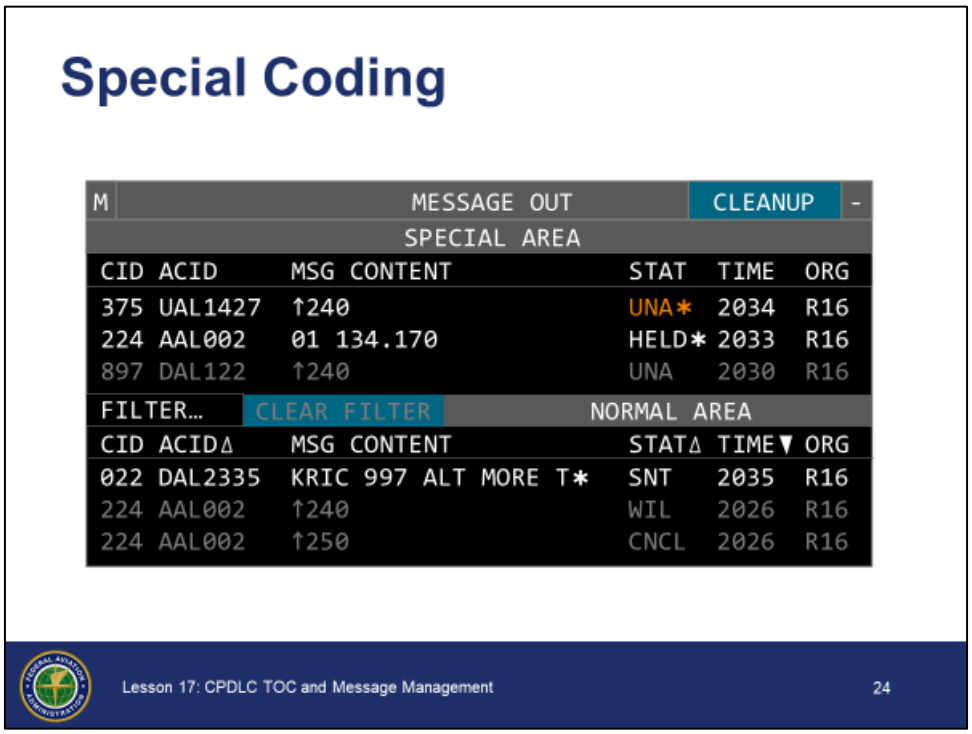
- Entries in the NORMAL AREA may be sorted by ACID, status, or time
  - TBP or TBE on the desired sort pick symbol to change the sort order
  - Only one sort option can be active at a time
  - The active sort symbol is indicated by a filled triangle

    Example: The active sort symbol is TIME.
- Time sort can be either most recent time first or most recent time last
- Status sort can be either most significant first or most significant last
  - Order of significance:
    - Timeout
    - Standby
    - Sent
    - User Cancelled
    - Wilco
  - There is also a secondary sort by most recent time first
- The ACID sort can be either ascending order or descending order

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Special Coding

TI 6110.101, sec. 4.13.2.3



- The following color codes are used:
  - Abnormal messages (UNA, ERR, FAIL) - Status field for an unacknowledged message will be orange

    Example: UAL1427
  - Open messages (i.e., SNT, SBY, TIM) - entire message will be white
  - Held TOC message - entire message will be white
  - Closed message - entire message will be gray
    - Includes acknowledged Abnormal messages
- The asterisk "✱" character is used in three ways:
  - Next to the message content indicates the message text in the view has been truncated

    Example: DAL2335
  - Next to an entry with a status of UNA indicates that an unable response from the pilot has associated Due To Reason text

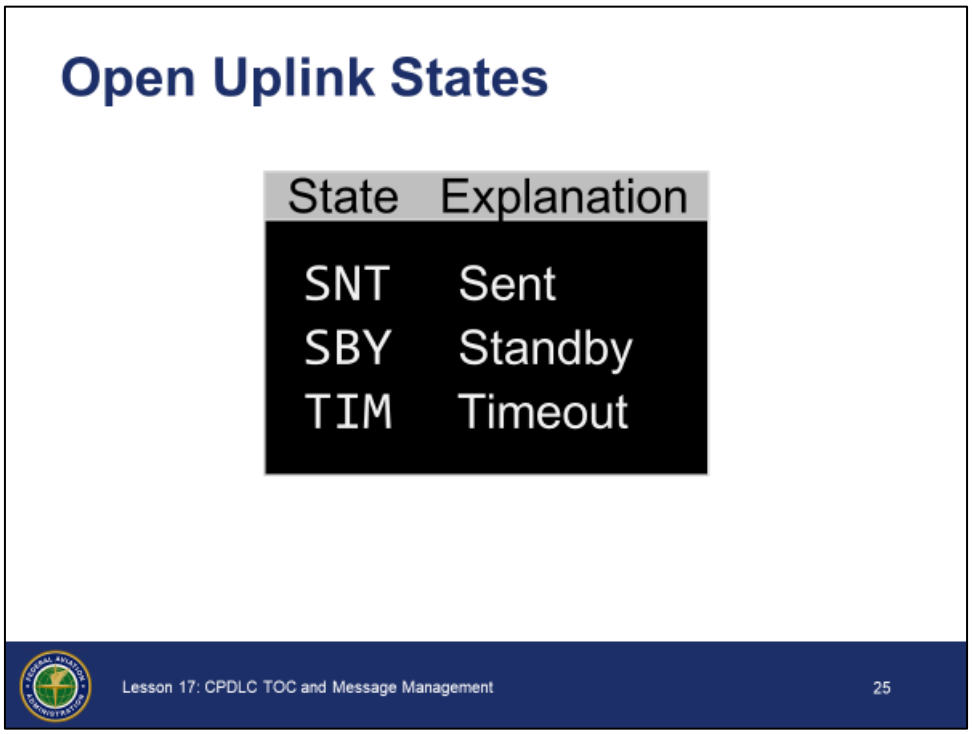
    Example: UAL1427
  - Next to an entry with a status of HELD indicates there are multiple Held TOCs for the flight

    Example: AAL002

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Open Uplink States

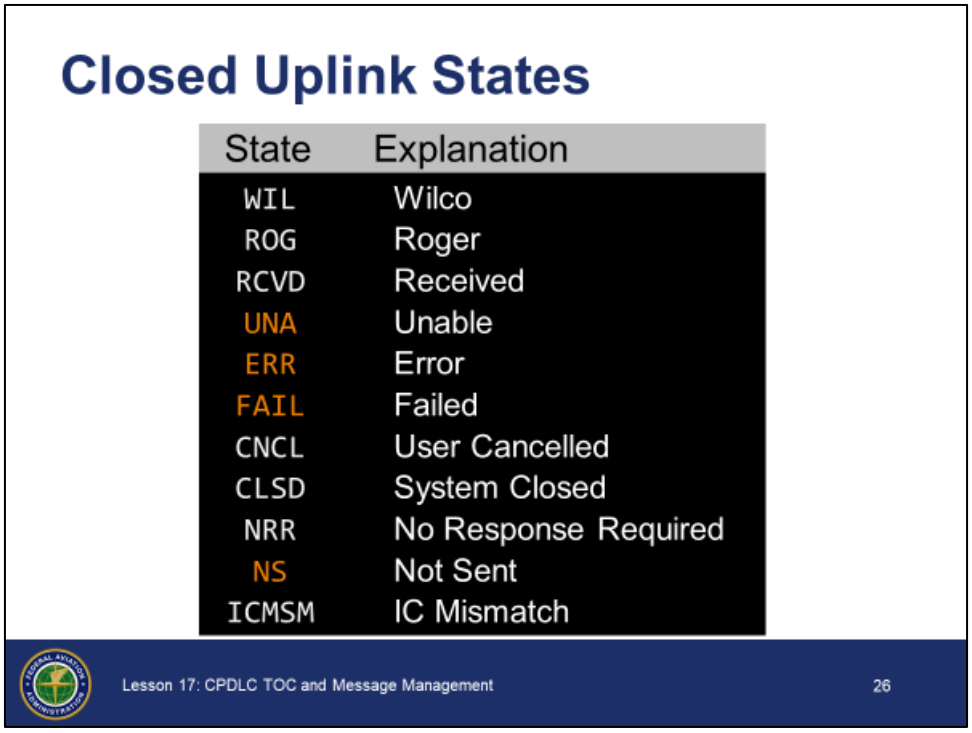
TI 6110.101, sec. 4.13



- An open uplink means the system is waiting for a response from the aircraft
  - Sent - Uplink message was sent, and no response has been received
  - Standby - Uplink message was sent, and a STANDBY downlink response was received; the controller is awaiting further response from the pilot
  - Timeout - Uplink message was sent, and no response has been received within an adapted amount of time

Closed Uplink States

TI 6110.101, sec. 6.2.1



- A closed uplink state means the system is no longer waiting for a response from the aircraft
  - Wilco (WIL) - Downlink response was received indicating that the pilot will comply with the uplink request
  - Roger (ROG) - Downlink response was received indicating pilot acknowledgement of the uplinked information
  - Received (RCVD) - Downlink response received indicating the pilot responded to a Confirmed Assigned Altitude (CAA) request
  - Unable (UNA) - Downlink response was received indicating that the pilot is unable to comply with the uplink request
    - Results in abnormal coding
  - Error (ERR) - Uplink message was unable to be sent due to a software or hardware issue in the ground system, or a downlink response was received indicating that the aircraft responded with an error
    - Results in abnormal coding
  - Failed (FAIL) - Indicates the CPDLC session was terminated with open uplink(s)
    - Any uplink that is open when the session fails will be closed by the system and set to FAIL
    - Results in abnormal coding

Continued on next page

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Closed Uplink States (Cont'd)

TI 6110.101, sec. 6.2.1

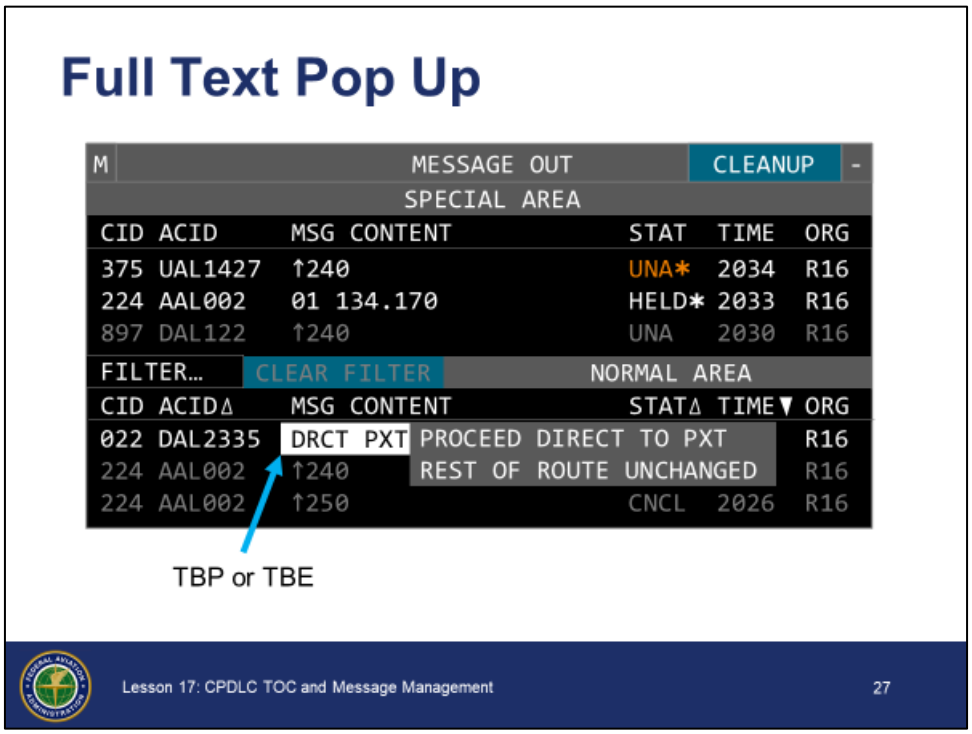
- User Cancelled (CNCL) - Open uplink was manually cancelled by the controller
- System Closed (CLSD) - System generated open uplink was automatically cancelled by the system without any controller action

  Example: UNABLE, REQUEST AGAIN WITH NEXT ATC UNIT
- No Response Required (NRR) - Uplink message was sent, and no downlink response is required
  - An uplink that has no response required is set to the state of NRR immediately; the Uplink state is never set to Sent
- Not Sent (NS) - Displayed when a route or altitude amendment is accepted, or auto altimeter uplink is rejected, and the corresponding uplink cannot be sent
  - Results in abnormal coding
  - Feedback is provided to the controller in the Response Area to indicate the reason a message was not sent
- IC Mismatch (ICMSM) - Initial contact is complete and the controller who has the aircraft on their voice frequency must use voice communication to verify the assigned altitude of the aircraft, and acknowledge the IC mismatch

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Full Text Pop Up

TI 6110.101, sec. 4.13.2.6.1

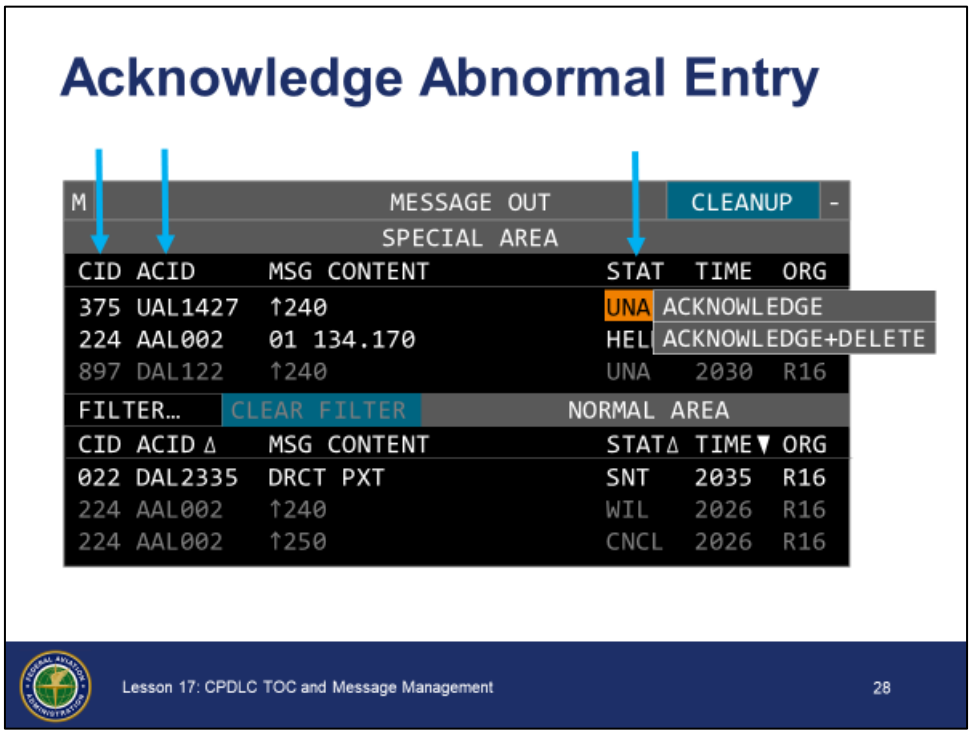


- The Message Content field typically displays an abbreviated version of the uplink message which is sufficient for the controller to determine the nature of the uplink
- You may also choose to see the full version of the uplink, by:
  - TBP or TBE the Message Content field of an abbreviated or truncated message, indicated by an asterisk
  - The full message text pop up will be displayed with the full message sent to the aircraft
  - TBP or TBE again to close the full message text pop up

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Acknowledge Abnormal Entry

TI 6110.101, sec. 4.13.2.6.2

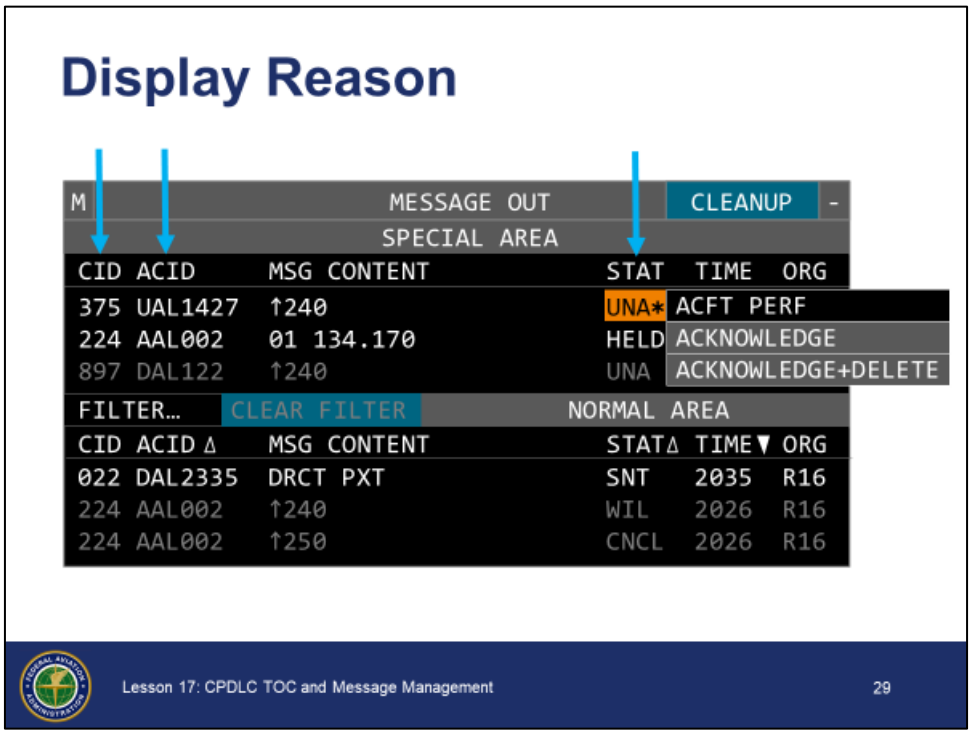


- When an abnormal response is received, the controller is alerted by abnormal coding in the ACL and FDB
- Abnormal coding will prevent further uplinks to the aircraft, so it must be acknowledged after voice coordination with the aircraft
- Abnormal coding will typically be acknowledged from the Message Out menu (Mini Mo) accessed from the ACL or FDB
- Acknowledgement can also be accomplished from the Message Out view, by:
  - TBP or TBE on the Status, CID, or ACID field of the desired entry
    - Pop up will appear with options to acknowledge or acknowledge and delete
    - TBP or TBE on ACKNOWLEDGE to acknowledge the abnormal coding and keep the entry in the view
      - Entry will be grayed out
    - TBP or TBE on ACKNOWLEDGE+DELETE to acknowledge the abnormal coding and remove the entry from the view

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Display Reason

TI 6110.101, sec. 4.13.2.6.3

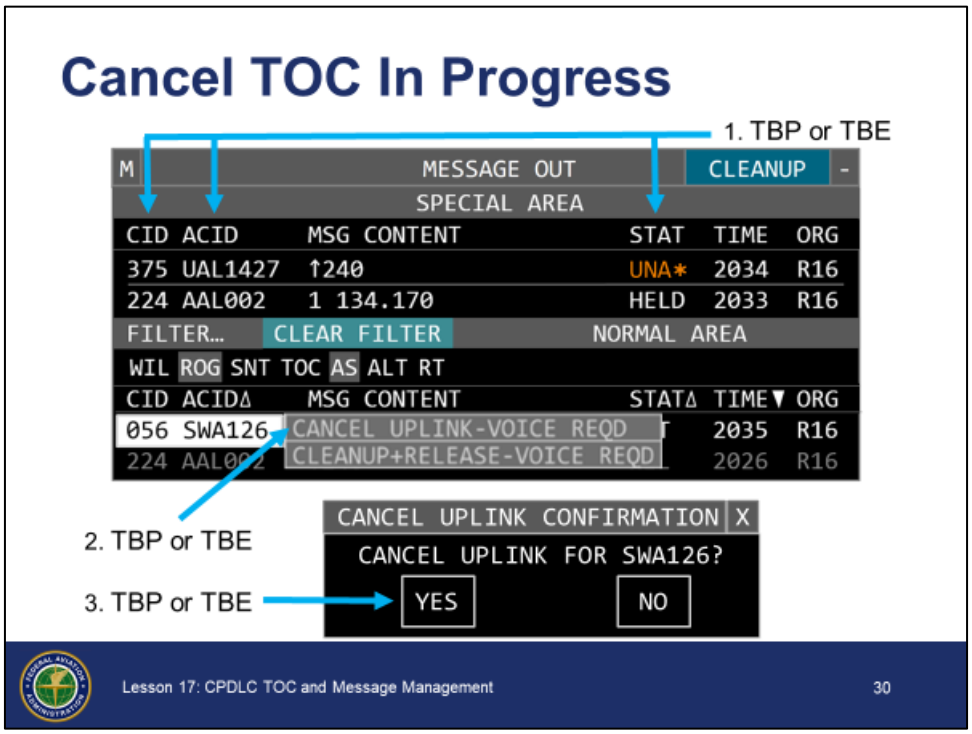


- An asterisk "✱" will be displayed next to a status of UNA, if the pilot included a reason for the response
  - Possible reasons:
    - Due to Weather (WX)
    - Due to Aircraft Performance (ACFT PERF)
- TBP or TBE on the CID, ACID, or Status field to view the reason for the Unable response
- If the Unable response has not been acknowledged, the ACKNOWLEDGE and ACKNOWLEDGE+DELETE pick areas will also be available
- If the Unable response has been acknowledged, a DELETE option will be available to remove the entry from the view

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel TOC In Progress

TI 6110.101, sec. 4.13.2.6.5

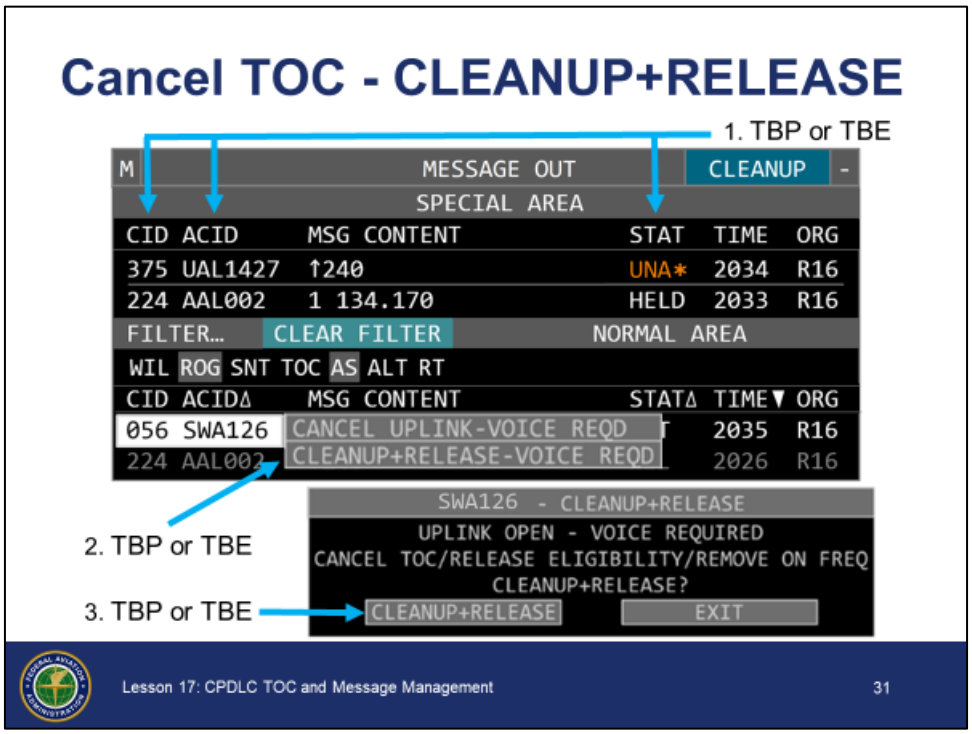


- A TOC in progress may be cancelled at the transferring sector
- Application of the CANCEL UPLINK-VOICE REQD pick area only closes the entry in the ground system
  - The uplink was sent, and the aircraft may respond to or act on the uplink
  - Voice coordination with the aircraft is required
- To cancel a TOC in Progress:
  - TBP or TBE on the CID, ACID, or Status field of the desired open entry
    - The CANCEL UPLINK-VOICE REQD pick area will appear
  - TBP or TBE on the CANCEL UPLINK-VOICE REQD pick area
    - The CANCEL UPLINK CONFIRMATION pop up will appear
  - TBP or TBE on the YES pick area

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel TOC In Progress (Cont'd)

TI 6110.101, sec. 4.13.2.6.5



- Application of CLEANUP+RELEASE-VOICE REQD performs the following actions:
  - Closes the TOC In Progress entry in the ground system
    - The uplink was sent and the aircraft may respond to, or act on the uplink
    - Voice coordination with the aircraft is required
  - Marks the aircraft off frequency at the transferring sector
  - Releases CPDLC Eligibility

NOTE: Application of CLEANUP+RELEASE-VOICE REQD saves the controller from having to mark the aircraft off frequency, which releases eligibility. These actions are automatically reflected in the FDB and ACL.

Continued on next page

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel TOC In Progress - (Cont'd)

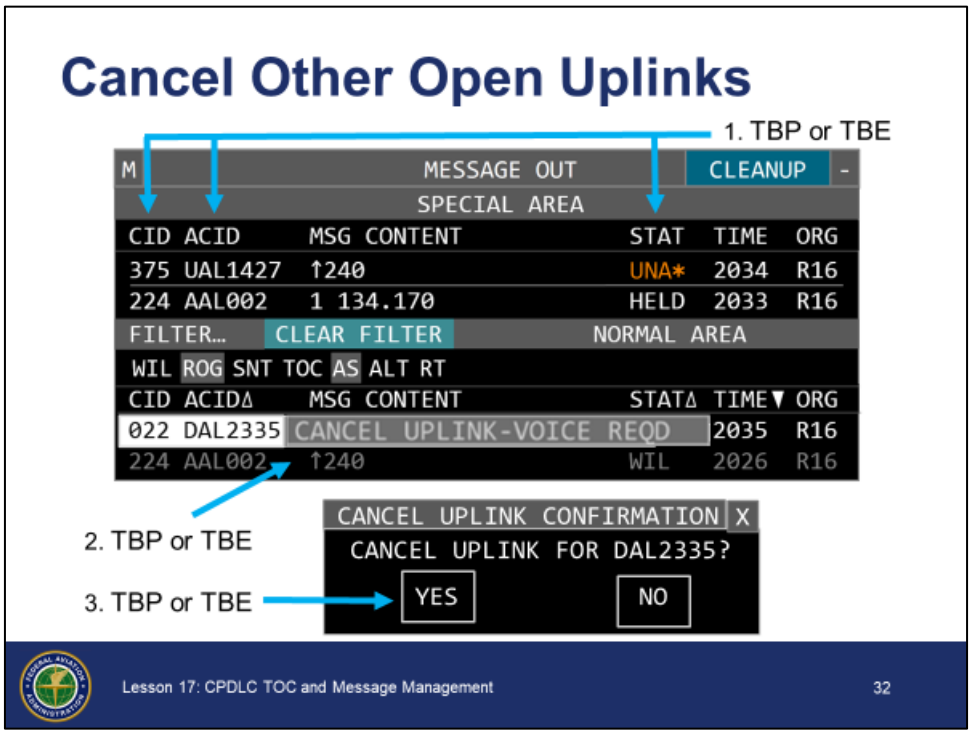
⊙ To cleanup and release a TOC in Progress:

- TBP or TBE on the Status field of the desired open entry
  - The CANCEL UPLINK-VOICE REQD and CLEANUP+RELEASE-VOICE REQD pick areas will appear
- TBP or TBE on the CLEANUP+RELEASE-VOICE REQD pick area
  - The CLEANUP+RELEASE pop up will appear
- TBP or TBE on the CLEANUP+RELEASE pick area

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel Other Open Uplinks

TI 6110.101, sec. 4.13.2.6.5

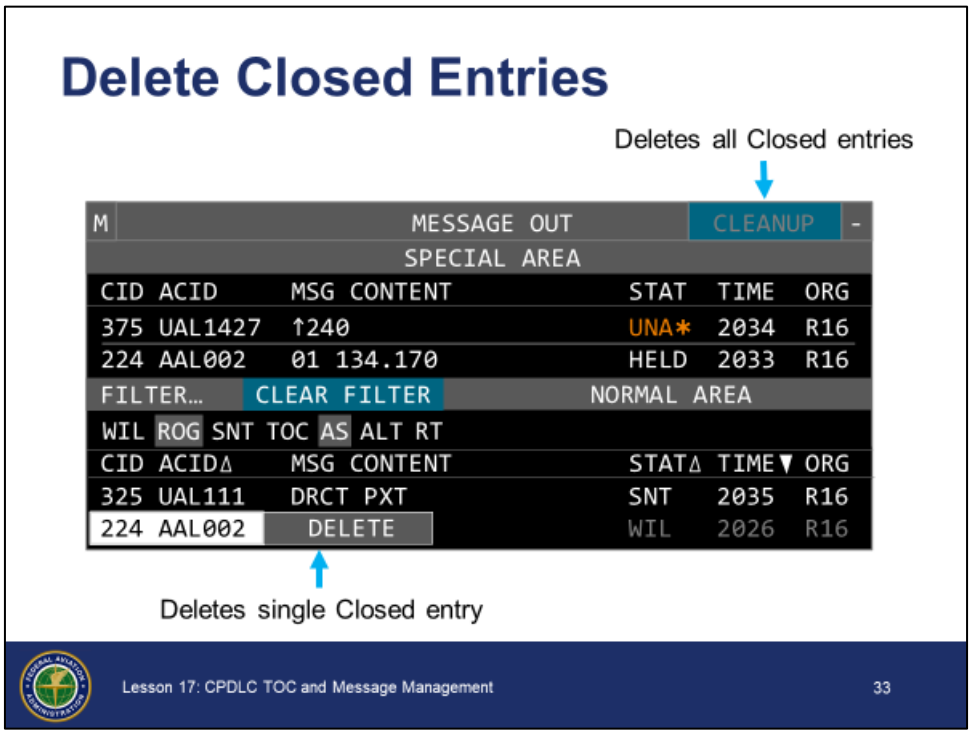


- You have the option to cancel any other type of open uplink
- Cancelling an open entry only closes the entry in the ground system
  - The uplink was sent, and the aircraft may respond to or act on the uplink
  - Voice coordination with the aircraft is required
- To cancel another type of open uplink:
  - TBP or TBE on the CID, ACID or Status field of the desired open entry
    - The CANCEL UPLINK-VOICE REQD pick area will appear
  - TBP or TBE on the CANCEL UPLINK-VOICE REQD pick area
    - The CANCEL UPLINK CONFIRMATION pop up will appear
  - TBP or TBE on the YES pick area

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Delete Closed Entries

TI 6110.101,
sec. 4.13.2.6.6

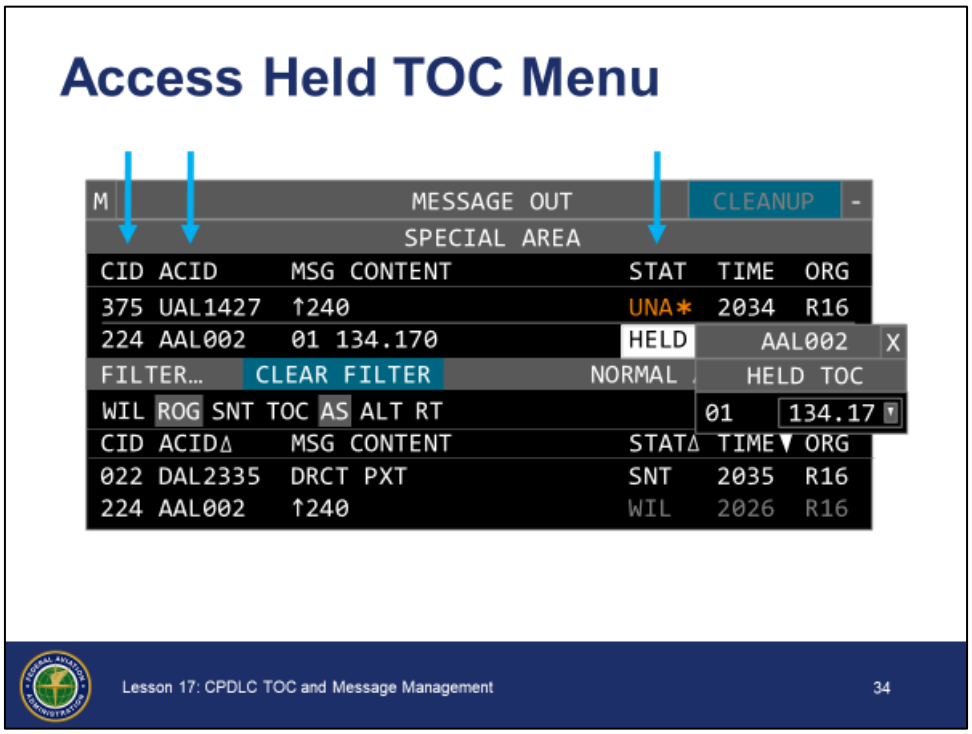


- You can delete one or all closed entries in the Message Out view
- Closed entries are color coded in gray
- To delete a single closed entry:
  - TBP or TBE on the CID or ACID field of the desired closed entry
    - The DELETE pick area will appear
  - TBP or TBE on the DELETE pick area
- To delete all closed entries:
  - TBP or TBE on the CLEANUP pick area

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Access Held TOC Menu

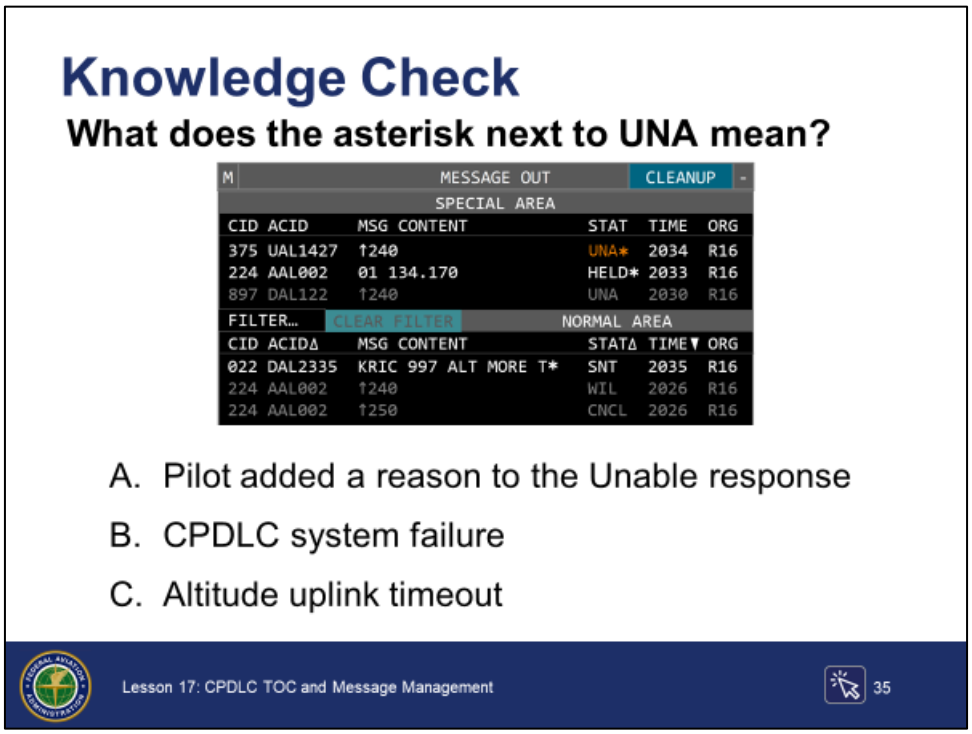
TI 6110.101, sec. 4.13.2.6.7



- The Held TOC menu is typically accessed via the Held TOC indicator on the FDB or ACL
- You also have the option to access the Held TOC menu from the Message Out view, by:
  - TBP or TBE on the CID, ACID or Status field of the desired Held TOC entry
    - Held TOC menu will appear next to the selected field

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

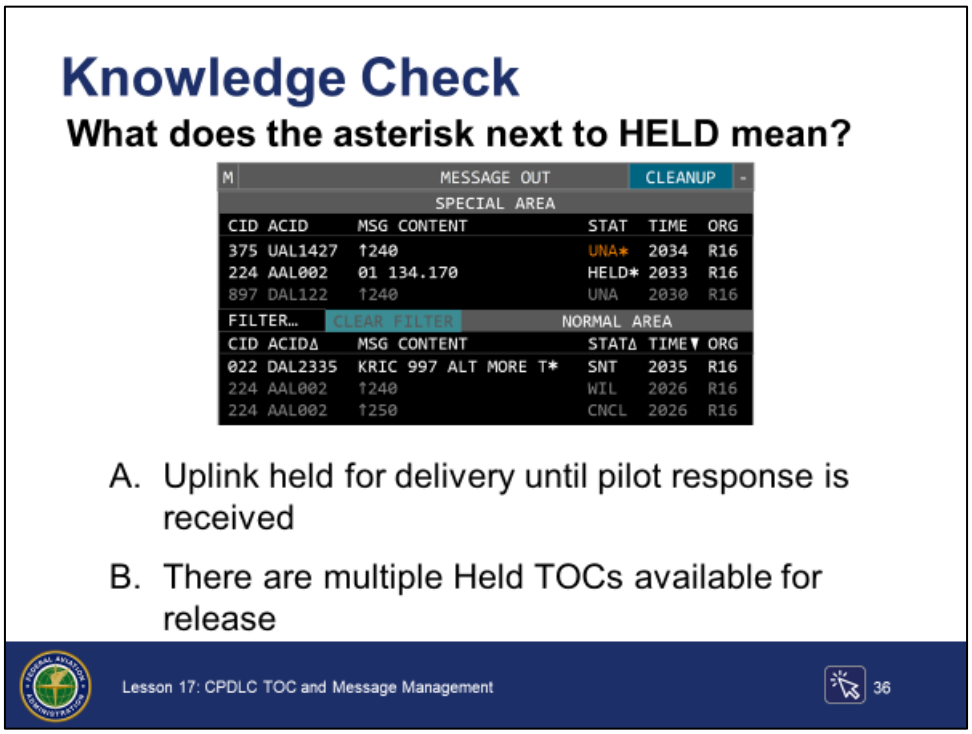
Knowledge Check



Question: What does the asterisk next to UNA mean?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

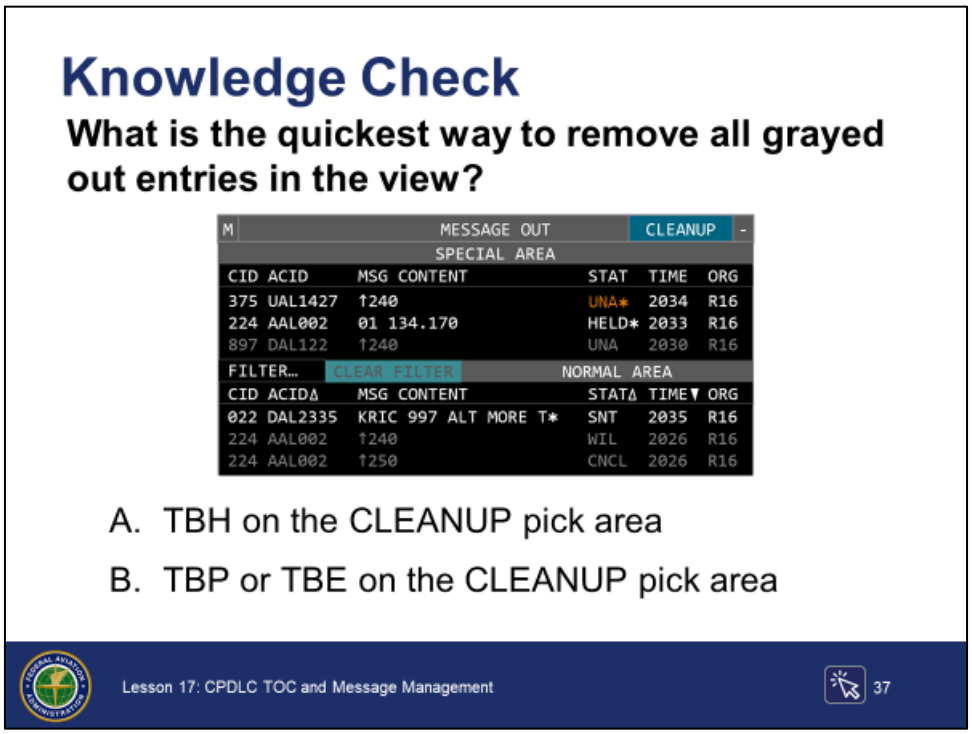
Knowledge Check



Question: What does the asterisk next to HELD mean?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Knowledge Check

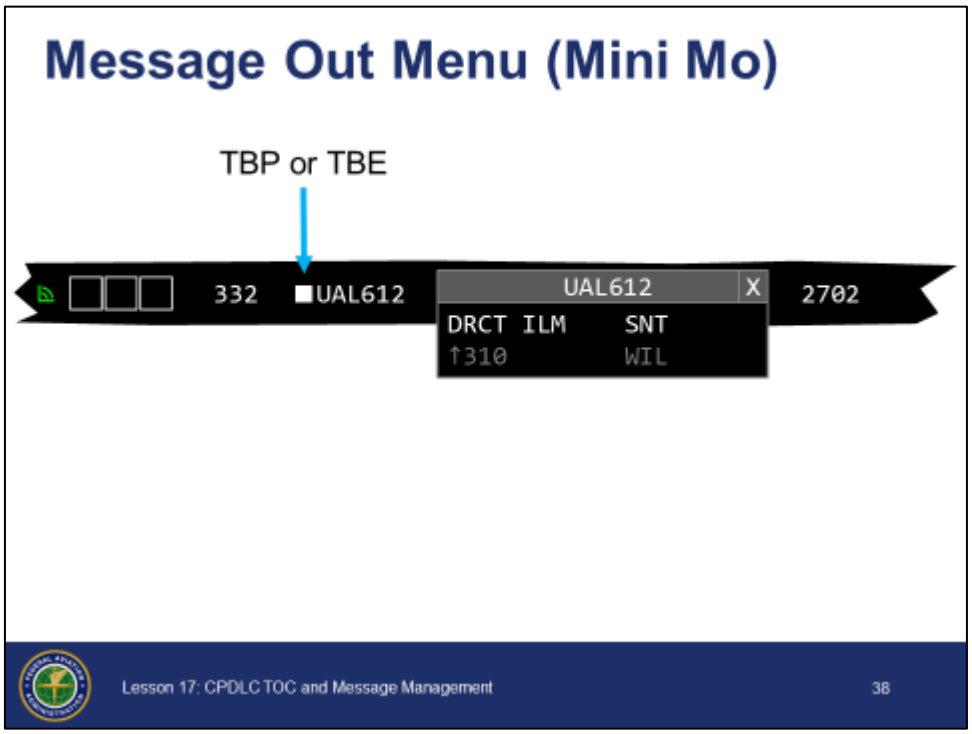


Question: What is the quickest way to remove all grayed out entries in the view?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Message Out Menu (Mini Mo)

TI 6110.101, sec. 4.13.4



- The Message Out menu displays all uplinks for a single flight that are also eligible for display on the Message Out view

NOTE: The Message Out menu is also referred to as the Mini Mo.

- TBP or TBE on the CDA Session indicator on the ACL to access the view
  - The menu will only open if there are any entries to be displayed
- The Message Out menu will remain accessible for a facility adapted amount of time after a transfer of eligibility
  - TBP or TBE on the CDA Session indicator without eligibility to open the menu
- Message Out menu is dynamically updated as entries are added, deleted, or have a status change

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Message Out Menu Components

TI 6110.101, sec. 4.13.4

- Message Out menu (Mini Mo) header displays the selected call sign and a Close pick area
- Each entry contains an abbreviated form of the message content and the status of the uplink
- Entries are sorted by status, with the most severe at the top
  - ERR/FAIL/UNA/NS/ICMSM (earliest at the top)
  - HELD
  - TIM
  - SBY
  - SNT
  - CNCL
  - WIL
  - ROG

Continued on next page

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Message Out Menu Components (Cont'd)

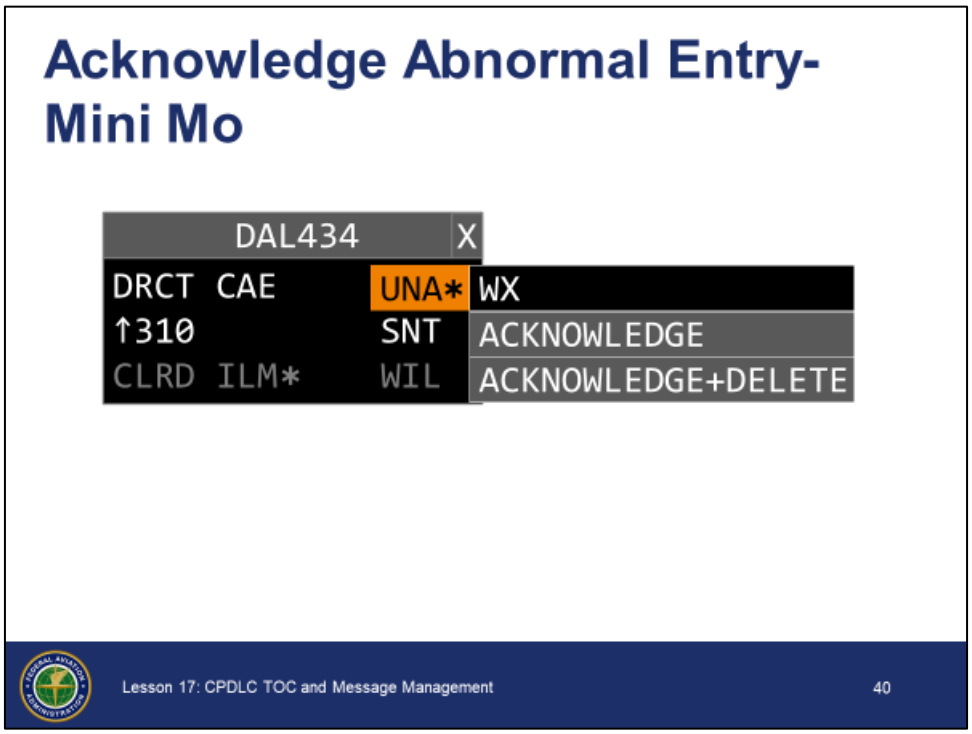
TI 6110.101, sec. 4.13.4

- The Message Out menu (Mini Mo) uses the same color and special coding as the Message Out view
  - An asterisk "✱" to the right of the Message Content field indicates that the message content has been truncated
  - You may choose to see the full text message of the uplink by selecting the Message Content field
- The menu can also contain an Acknowledge Failed Session (ACK FAILED SESS) pick area when applicable

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Acknowledge Abnormal Entry - Mini Mo

TI 6110.101, sec. 4.13.4.3.1

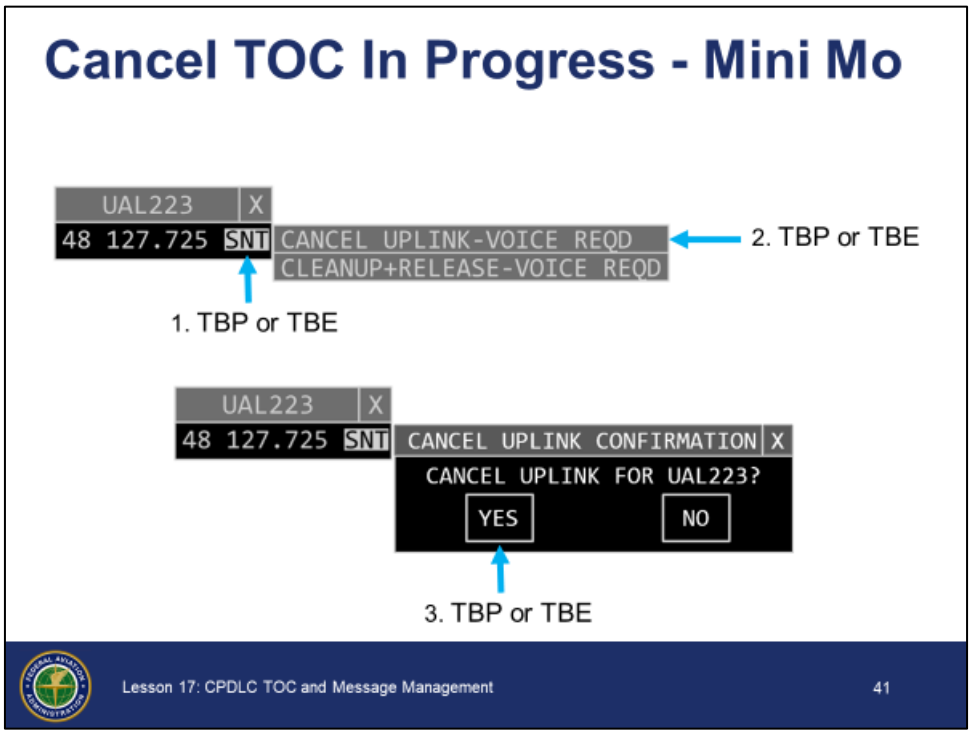


- When an abnormal response is received, the controller is alerted by abnormal coding in the ACL and FDB
- Abnormal coding will prevent further uplinks to the aircraft
- To acknowledge after voice coordination with the aircraft:
  - TBP or TBE on the Status field of the desired entry
    - A pop up will appear with options to acknowledge or acknowledge and delete
    - If a Due to Reason has been included, that too will be displayed
  - TBP or TBE on ACKNOWLEDGE to acknowledge the abnormal coding and keep the entry in the menu
    - The entry will be grayed out
  - TBP or TBE on ACKNOWLEDGE+DELETE to acknowledge the abnormal coding and remove the entry from the menu

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel TOC In Progress - Mini Mo

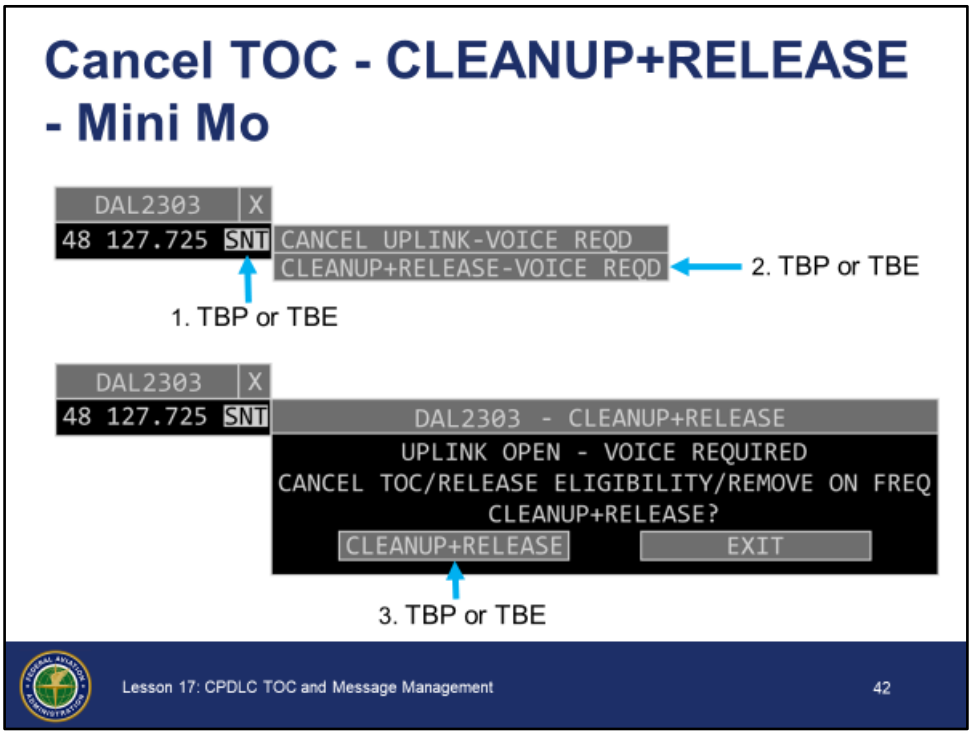
TI 6110.101, secs. 4.13.4.3.4, 7.2.2.6.1



- A TOC in progress may be cancelled at the transferring sector
- Application of the CANCEL UPLINK-VOICE REQD pick area only closes the entry in the ground system
  - The uplink was sent, and the aircraft may respond to or act on the uplink
  - Voice coordination with the aircraft is required
- To cancel a TOC in Progress:
  - TBP or TBE on the Status field of the desired open entry
    - The CANCEL UPLINK-VOICE REQD pick area will appear
  - TBP or TBE on the CANCEL UPLINK-VOICE REQD pick area
    - The CANCEL UPLINK CONFIRMATION pop up will appear
  - TBP or TBE on the YES pick area

Cancel TOC In Progress - Mini Mo (Cont'd)

TI 6110.101, secs. 4.13.4.3.4, 7.2.2.6.1



- Application of CLEANUP+RELEASE-VOICE REQD performs the following actions:
  - Closes the TOC In Progress entry in the ground system
    - The uplink was sent and the aircraft may respond to, or act on the uplink
    - Voice coordination with the aircraft is required
  - Marks the aircraft OFF Frequency at the transferring sector
  - Releases CPDLC Eligibility

NOTE: Application of CLEANUP+RELEASE-VOICE REQD saves the controller from having to mark the aircraft off frequency, which releases eligibility. These actions are automatically reflected in the FDB and ACL.

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CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Cancel TOC In Progress - Mini Mo (Cont'd)

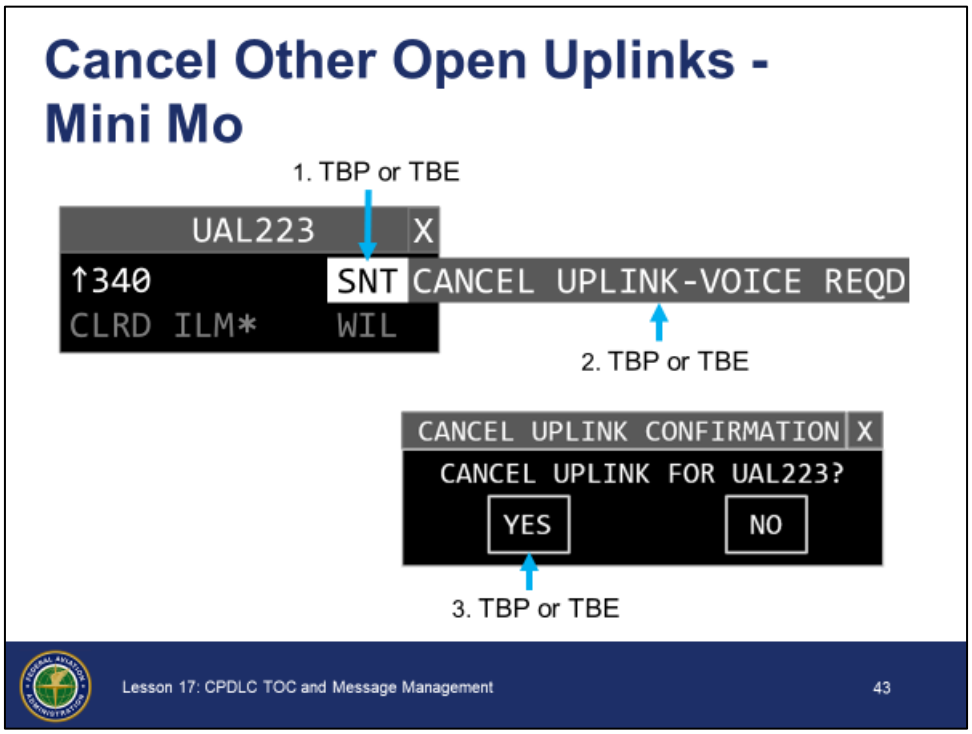
TI 6110.101, secs. 4.13.4.3.4, 7.2.2.6.1

⊙ To cleanup and release a TOC in Progress:

- TBP or TBE on the Status field of the desired open entry
  - The CANCEL UPLINK-VOICE REQD and CLEANUP+RELEASE-VOICE REQD pick areas will appear
- TBP or TBE on the CLEANUP+RELEASE-VOICE REQD pick area
  - The CLEANUP+RELEASE pop up will appear
- TBP or TBE on the CLEANUP+RELEASE pick area

Cancel Other Open Uplinks - Mini Mo

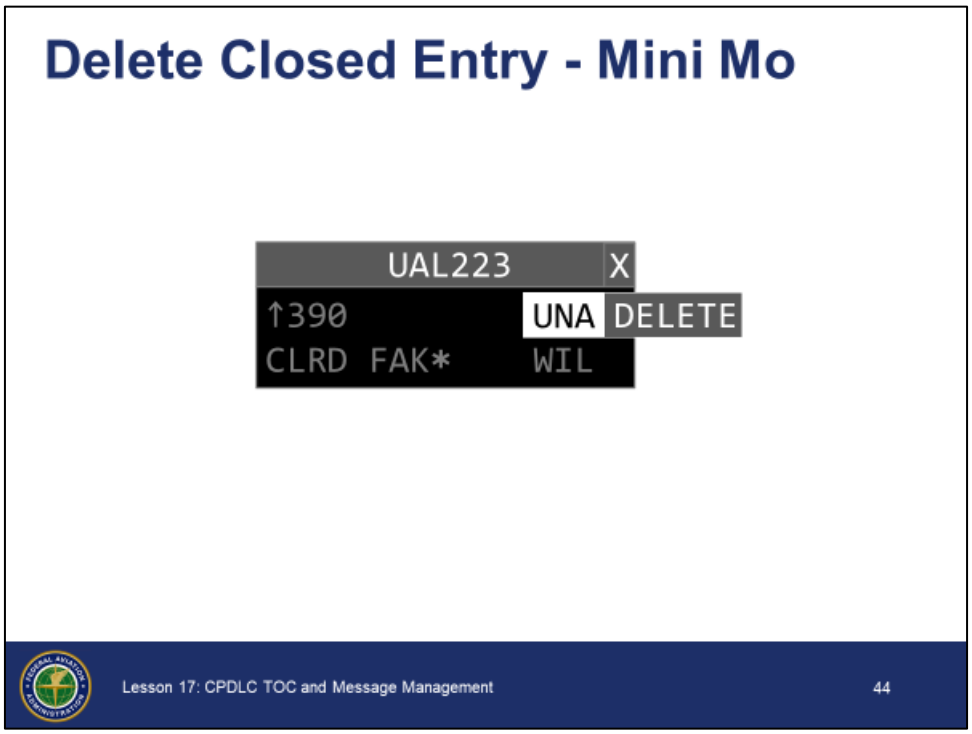
TI 6110.101, sec. 4.13.4.3.4



- You have the option to cancel any other type of open uplink
- Cancelling an open entry only closes the entry in the ground system
  - The uplink was sent, and the aircraft may respond to or act on the uplink
  - Voice coordination with the aircraft is required
- To cancel another type of open uplink:
  - TBP or TBE the Status field of the desired open entry
    - The CANCEL UPLINK-VOICE REQD pick area will appear
  - TBP or TBE on the CANCEL UPLINK-VOICE REQD pick area
    - The CANCEL UPLINK CONFIRMATION pop up will appear
  - TBP or TBE on the YES pick area

Delete Closed Entry - Mini Mo

TI 6110.101, sec. 4.13.4.3.5

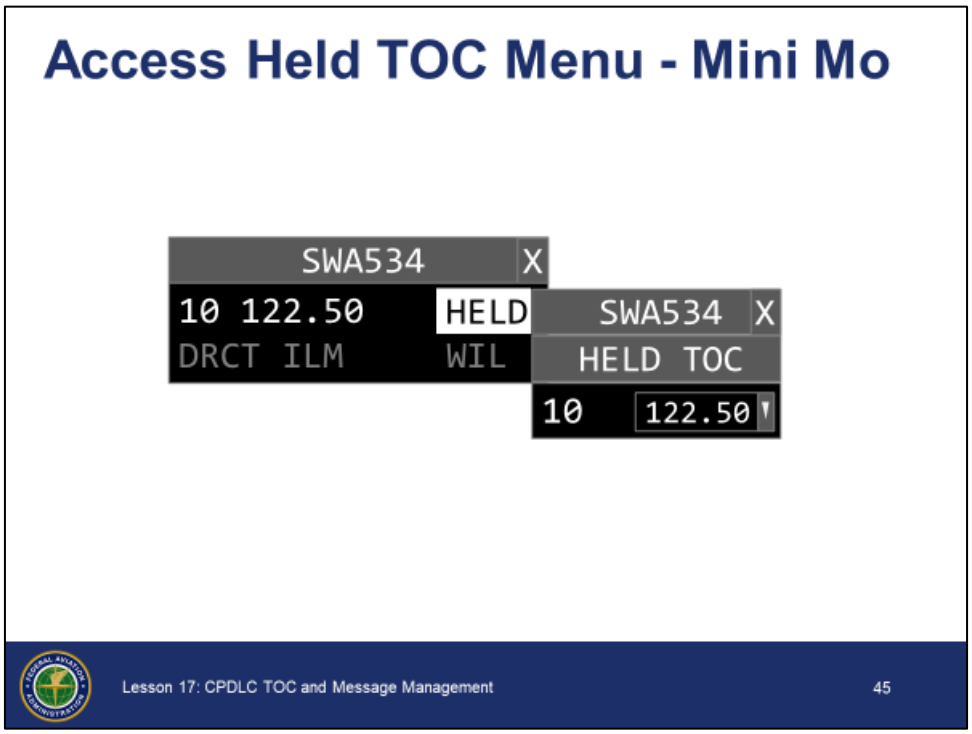


- A closed entry in the Message Out menu may be removed
- Closed entries are color coded in gray
- To delete a closed entry:
  - TBP or TBE on the Status field of the desired closed entry
    - The DELETE pick area will appear
  - TBP or TBE on the DELETE pick area

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Access Held TOC Menu - Mini Mo

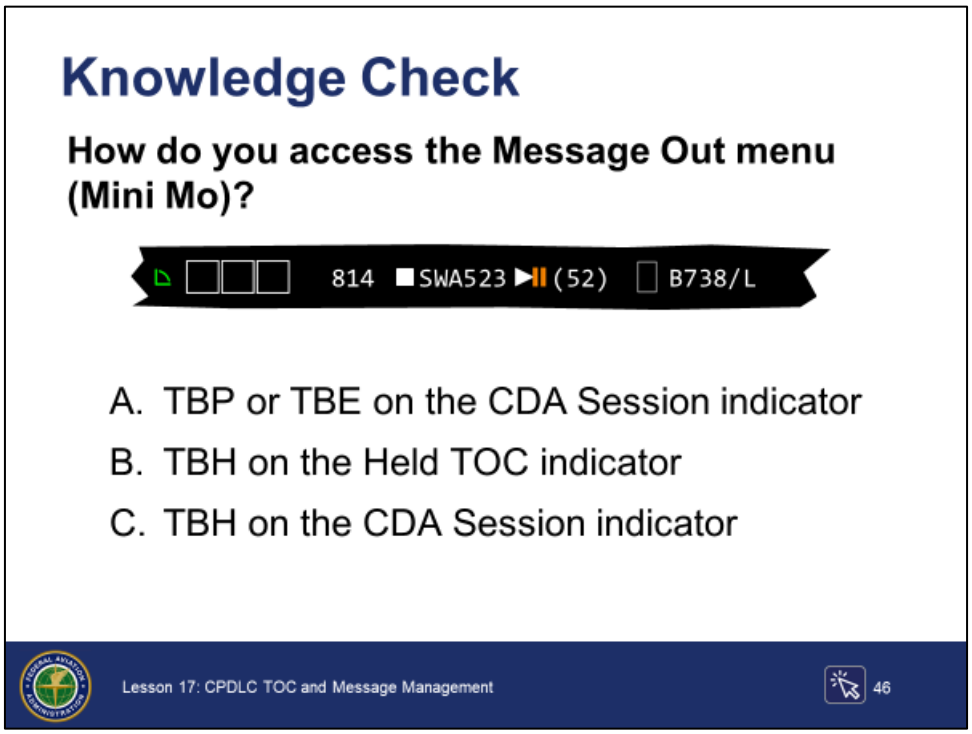
TI 6110.101, sec. 4.13.4.3.6



- The Held TOC menu is typically accessed via the Held TOC indicator on the ACL or FDB
- The Held TOC menu may also be accessed from the Message Out menu
  - TBP or TBE on the Status field of the desired entry
    - The Held TOC menu will appear

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

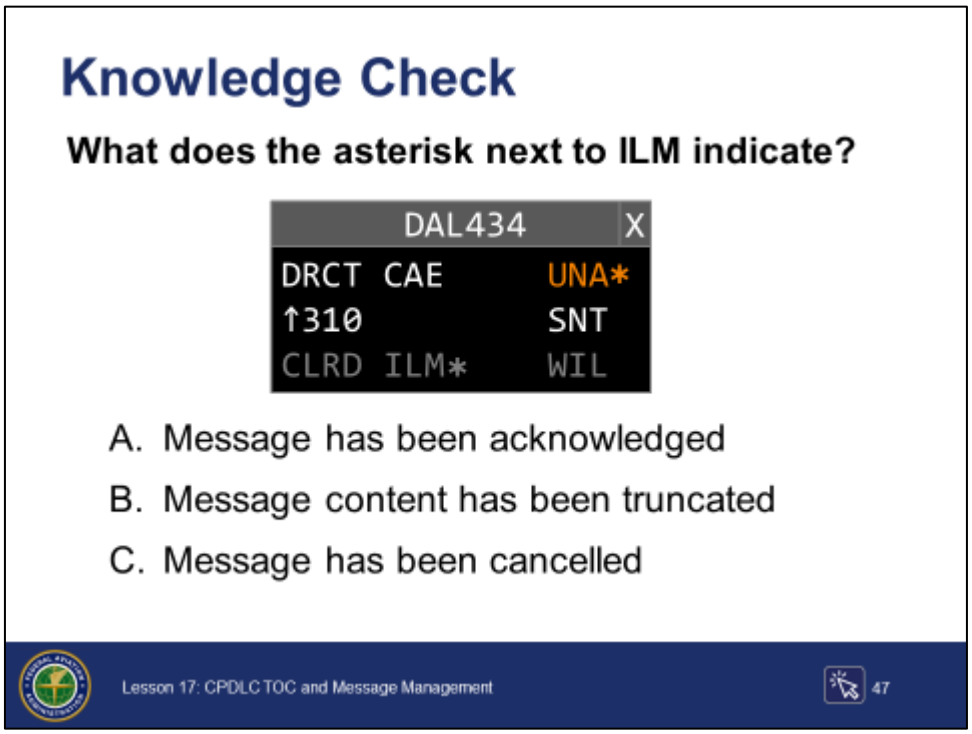
Knowledge Check



Question: How do you access the Message Out menu (Mini Mo)?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

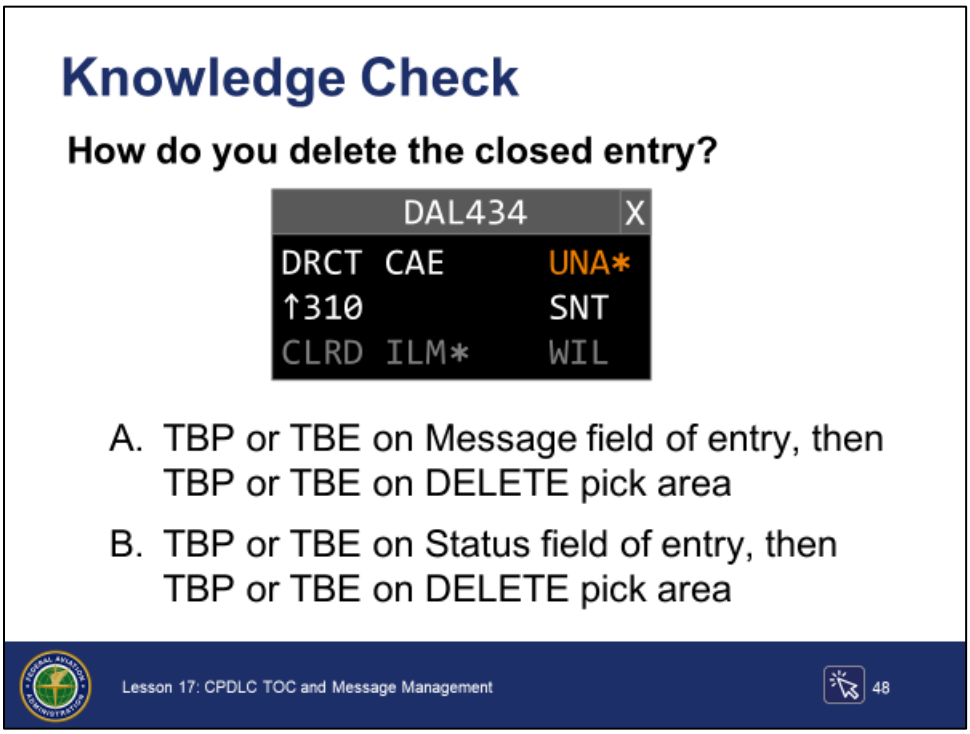
Knowledge Check



Question: What does the asterisk next to ILM indicate?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Knowledge Check

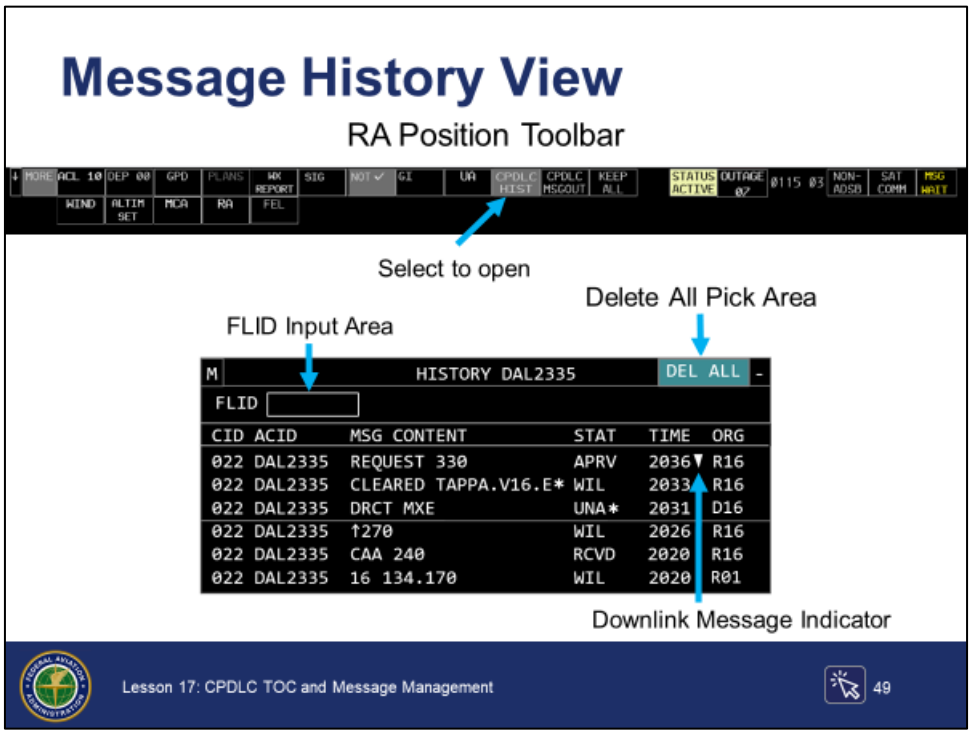


Question: How do you delete the closed entry?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Message History View

TI 6110.101, sec. 4.12



- Message History view displays all closed uplink and downlink messages for a specified flight involving the local facility
  - This is the only view that displays closed downlinked messages
- At the RA Position, the Message History view is opened using the CPDLC HIST button on the RA Position toolbar
- FLID Input Area is used to search for the desired aircraft
  - Anytime a new FLID is specified, entries for the previous FLID will be removed
- Delete All Pick Area is used to clear all search results from the display

Continue on next page

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Message History View (Cont'd)

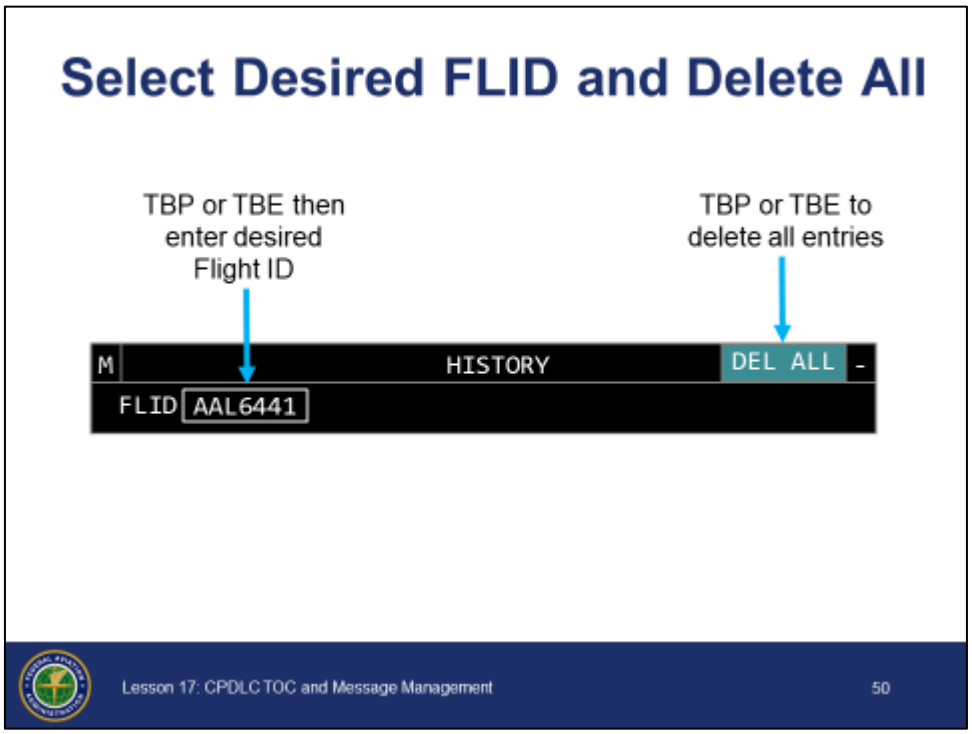
TI 6110.101, sec. 4.12

- Each entry consists of:
  - CID
  - ACID
  - Abbreviated message content
    - An asterisk to the right of the message content indicates the message content has been truncated
  - Message status
    - An asterisk next to status of UNA indicates a reason text was appended to the Unable response
  - Time of the last status change
    - A downward pointing white triangle next to the time indicates the message was a downlink
    - This column can be filtered off
  - Originator of the message
    - This column can be filtered off
- There is no color coding
- Entries are sorted by time with the most recent at the top

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Select Desired FLID and Delete All

TI 6110.101, sec. 4.12.1.1

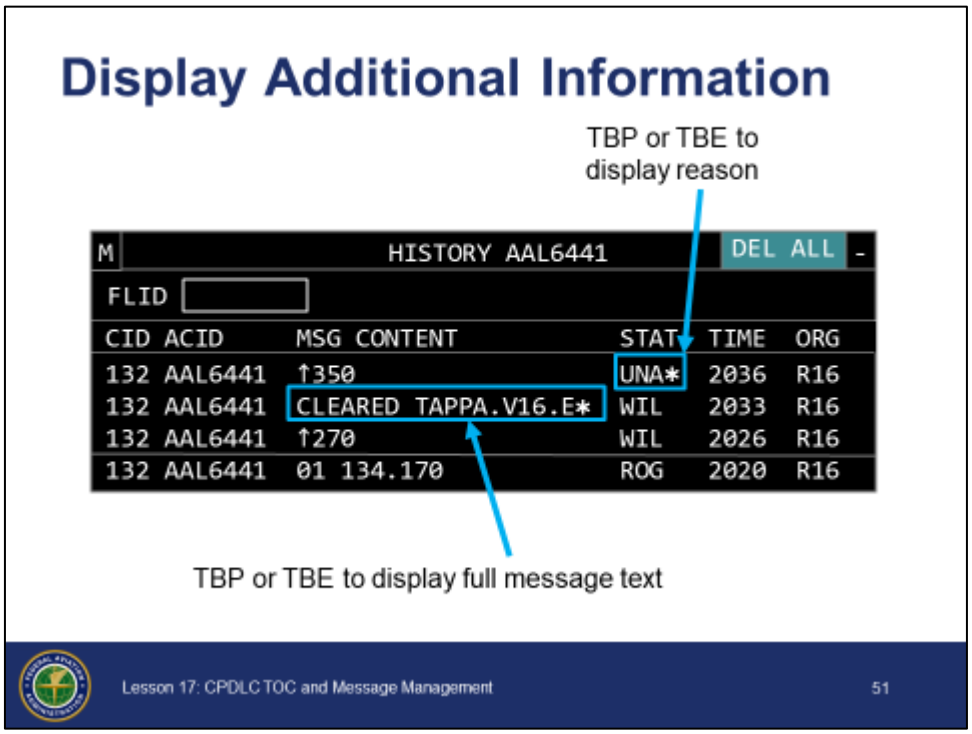


- To specify the desired flight:
  - TBP or TBE in the FLID input area
  - Type the desired call sign, CID or beacon code
  - KBE
- When searching, the best practice is to use the call sign
  - Displays all entries regardless of any CID or beacon code changes that may have occurred
- New entries will replace any entries from a previous flight
- An error will be displayed if no flight matches the entered ACID
- To delete all entries:
  - TBP or TBE the DEL ALL pick area
    - This simply removes the entries from the display, it does not delete them from the system

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

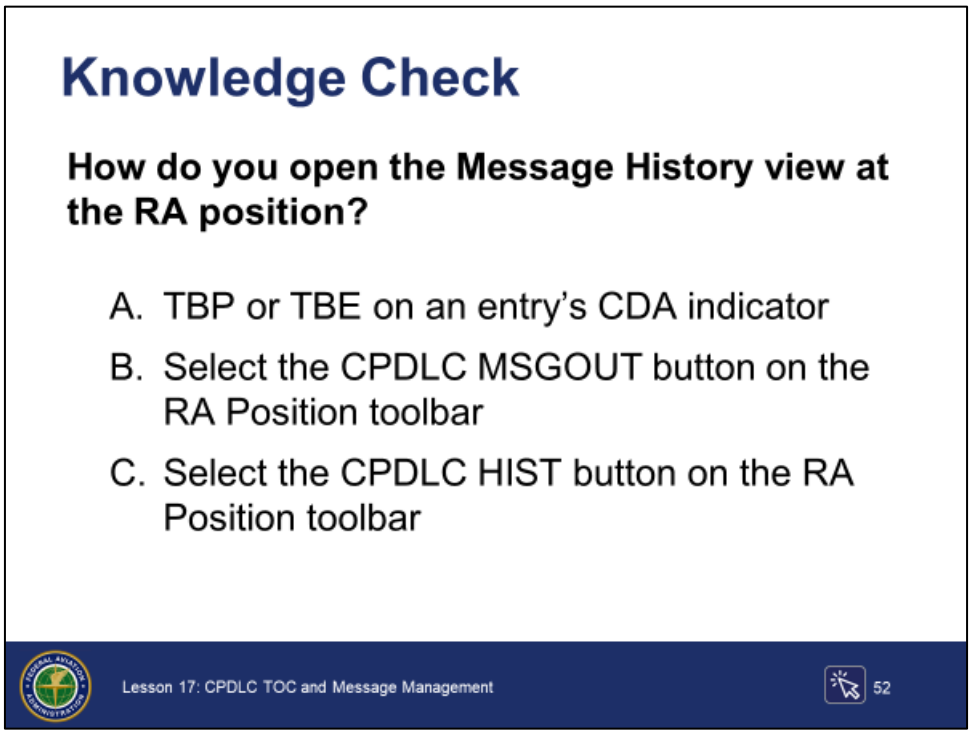
Display Additional Information

TI 6110.101, secs. 4.12.1.2.2.1, 4.12.1.2.2.2



- To display the full text of the message:
  - TBP or TBE on the Message Content field
- To display the reason for an Unable response
  - TBP or TBE on the Status field

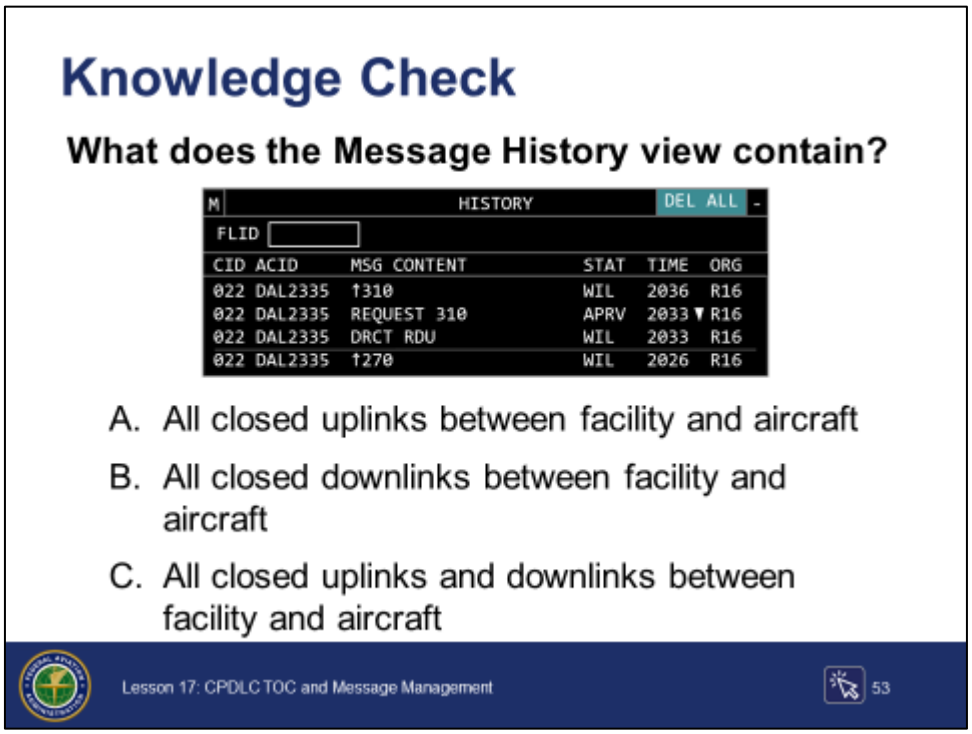
Knowledge Check



Question: How do you open the Message History view at the RA position?

CPDLC MESSAGE MANAGEMENT *(CONT'D)*

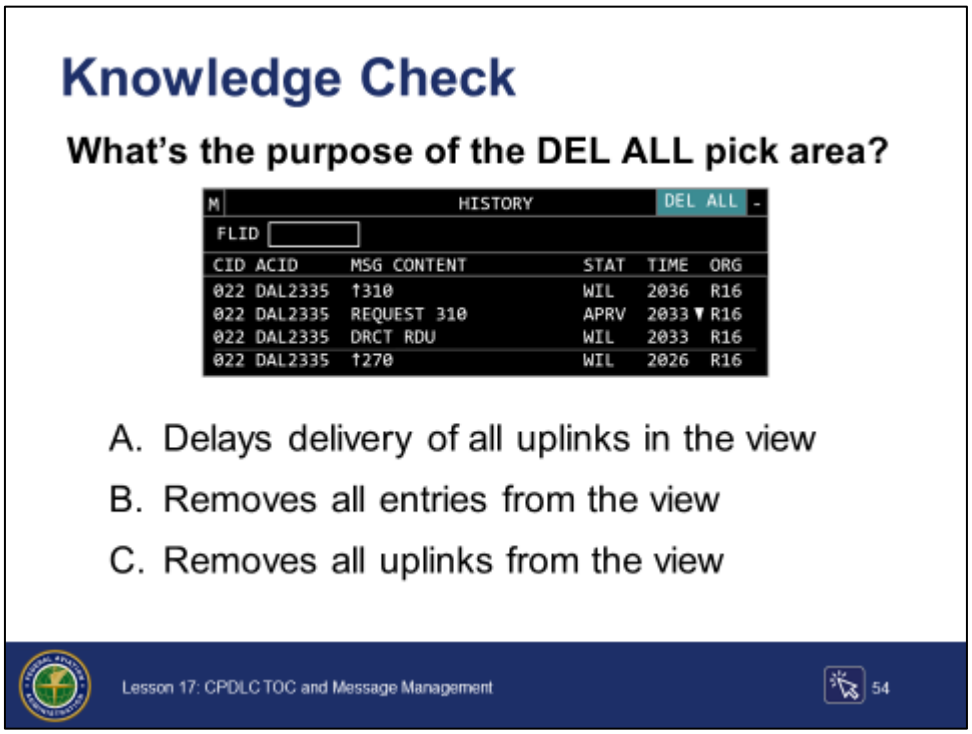
Knowledge Check



Question: What does the Message History view contain?

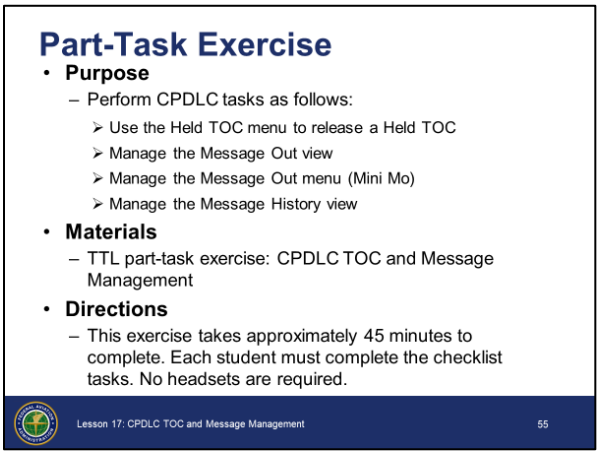
CPDLC MESSAGE MANAGEMENT *(CONT'D)*

Knowledge Check



Question: What's the purpose of the DEL ALL pick area?

PART-TASK EXERCISE: CPDLC TOC AND MESSAGE MANAGEMENT



Purpose

Perform CPDLC tasks as follows:

- Use the Held TOC menu to release a Held TOC
- Manage the Message Out view
- Manage the Message Out menu (Mini Mo)
- Manage the Message History view

Materials

Handout:

- TTL part-task exercise: CPDLC TOC and Message Management

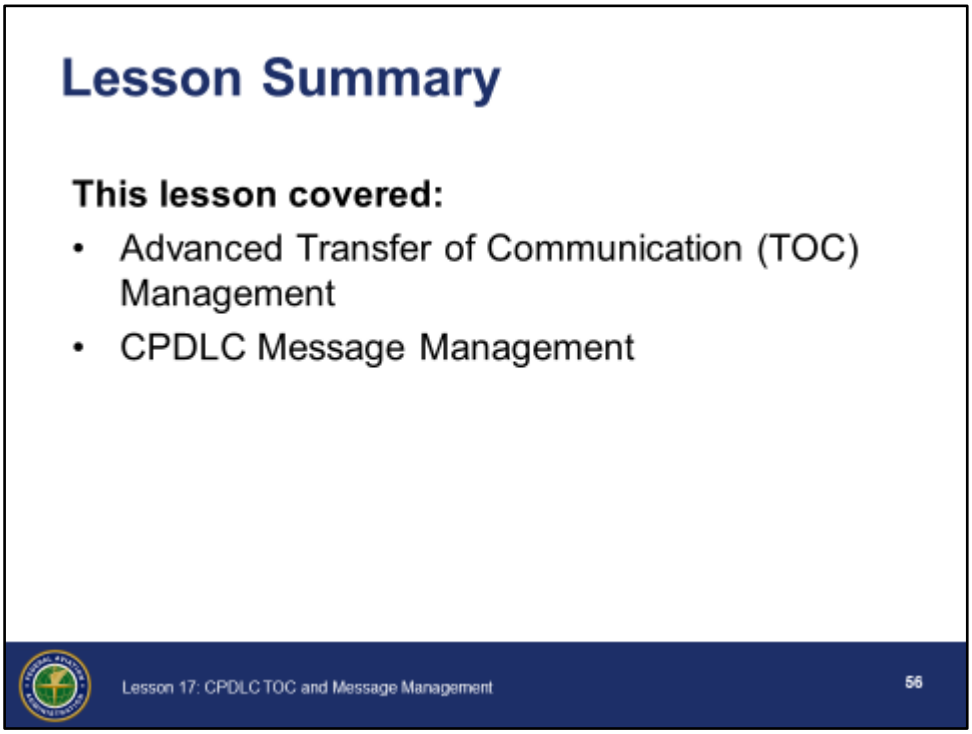
TTL Scenario

Directions

This exercise takes approximately 45 minutes to complete. Each student must complete the checklist tasks. No headsets are required.

CONCLUSION

Lesson Summary



This lesson covered:

- Advanced Transfer of Communication (TOC) Management
  - Held TOC menu
    - Opening the Held TOC menu
    - Held TOC menu components
    - Reason - Disabled Held TOC
    - Frequency Input area
    - Frequency selection
    - Abnormal Held TOC
    - Automatic Held TOC menu cleanup
  - Voice TOCs with open uplinks
  - Sector TOC Settings view

Continued on next page

CONCLUSION *(CONT'D)*

Lesson Summary (Cont'd)

- CPDLC Message Management
  - Message Out view
    - Special and Normal Areas
    - Header
    - Filters
    - Sorting the entries
    - Special coding
    - Open uplink states
    - Closed uplink states
    - Full text pop up
    - Acknowledge abnormal message
    - Display reason
    - Cancel TOC in progress
    - Cancel other open uplinks
    - Delete closed entry
    - Access Held TOC menu
  - Message Out menu (Mini Mo)
    - Message Out menu components
    - Acknowledge abnormal entry
    - Cancel TOC in progress
    - Cancel TOC – CLEANUP + RELEASE
    - Cancel other open uplinks
    - Delete closed entry
    - Access Held TOC menu
  - Message History view
    - Select Desired FLID and Delete All
    - Display additional information