



# **Ramp Traffic Console (RTC) and Ramp Manager Traffic Console (RMTC) User Manual**

**Airspace Technology Demonstration 2 (ATD-2)**

POC: Deborah L. Bakowski

# Abstract

This document serves as a user manual for the ATD-2 Ramp Traffic Console (RTC) (version 5.11) utilized by the Ramp Control Tower. It describes the elements of the RTC interface and provides step-by-step instructions for using the tool. RTC provides live flight information, including, flight state and location, departure/arrival schedules, gate conflicts, Traffic Management Initiative (TMI) restrictions, and gate advisories to support Surface Time-Based Metering (STBM). RTC facilitates information sharing with the Air Traffic Control (ATC) Tower. This document also provides instructions for use of the Ramp Manager Traffic Console (RMTC) for Ramp Manager functions, such as managing the priority flight list and setting the ramp status. The RTC/RMTC ramp tools are components of the NASA Airspace Technology Demonstration 2 (ATD-2) sub-project.

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# 1 RTC/RMTC: Getting Started

The thin green bar on the left side of the display provides access to several different system views (Figure 1.1). Any local systems integrated with ATD-2 may be selected for observation. To get started, first make sure that “My Desktop” is displayed.

**To access “My Desktop”:**

- Step 1:* Hover mouse over the green bar to display the menu (Figure 1.1).
- Step 2:* Select “My Desktop” from the menu (Figure 1.1).

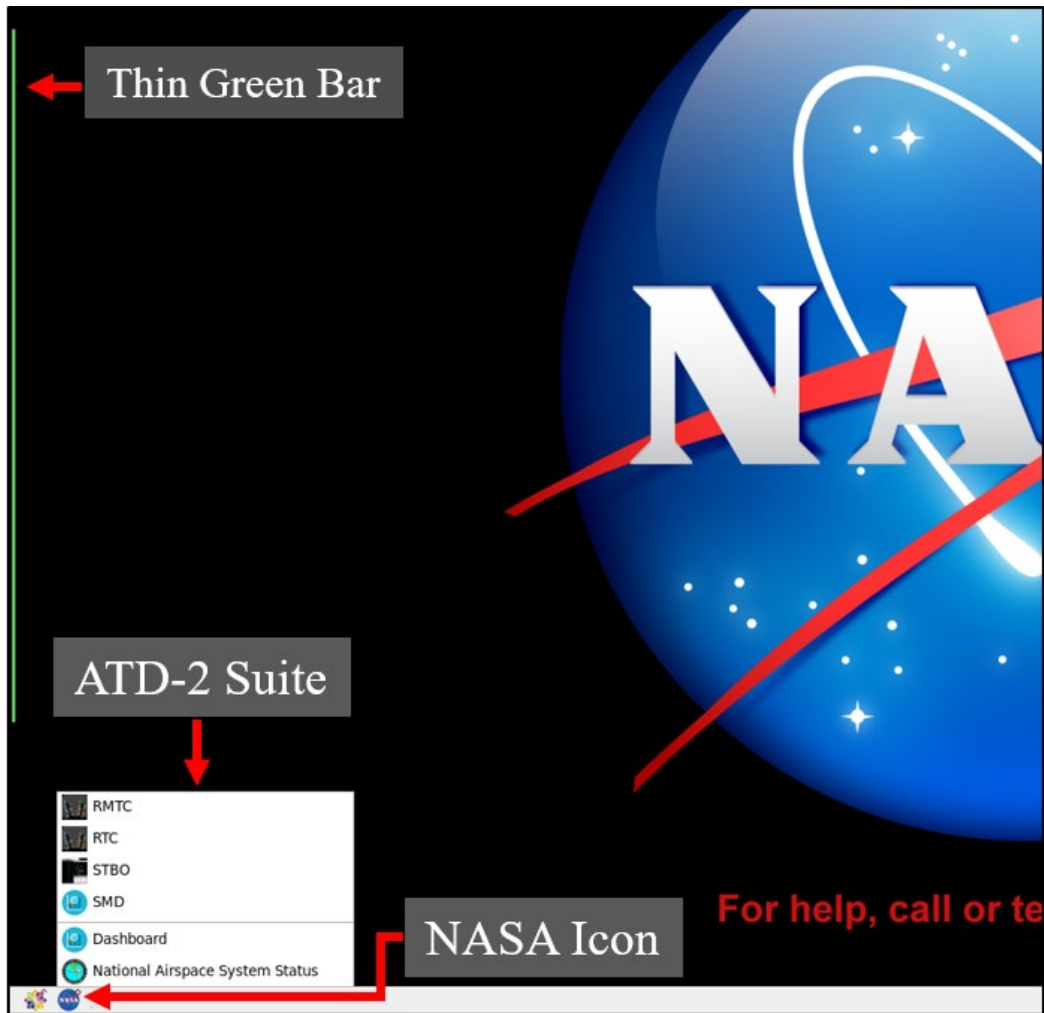


**Figure 1.1. Use the green bar tool to navigate to “My Desktop.”**

The NASA icon in the lower left of the display, provides access to ATD-2 tools, including the Ramp Traffic Console (RTC) and the Ramp Manager Traffic Console (RMTC) (Figure 1.2).

**To open RTC (or RMTC, if applicable):**

- Step 1:* Ensure that “My Desktop” has been selected.
  - Step 2:* Click on the NASA icon in the lower left of the display, to open the ATD-2 suite menu (Figure 1.2).
  - Step 3:* Select “RTC” (or “RMTC,” if applicable) from the menu.
- Note: It may take a few minutes for RTC (or, RMTC) to load.*



**Figure 1.2. Select RTC or RMTC from the ATD-2 Suite menu.**



- Section 9: Surface Metering Program (SMP)
- Section 10: Ramp Manager Traffic Console (RMTC)

### 3 Toolbar

Use the RTC Toolbar to adjust map view, save profiles, and configure the display.

#### 3.1 Menu Bar

User profiles, map settings, and display options can be accessed using the Menu Bar (Figure 3.1).

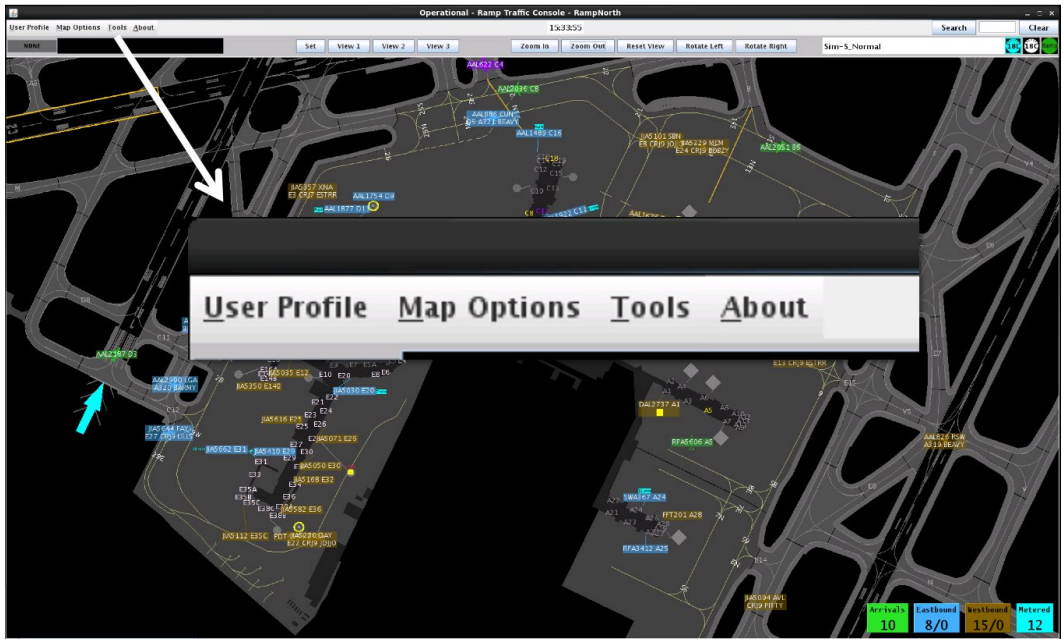


Figure 3.1. Menu Bar.

##### 3.1.1 User Profile

Use the “User Profile” menu to manage user settings.

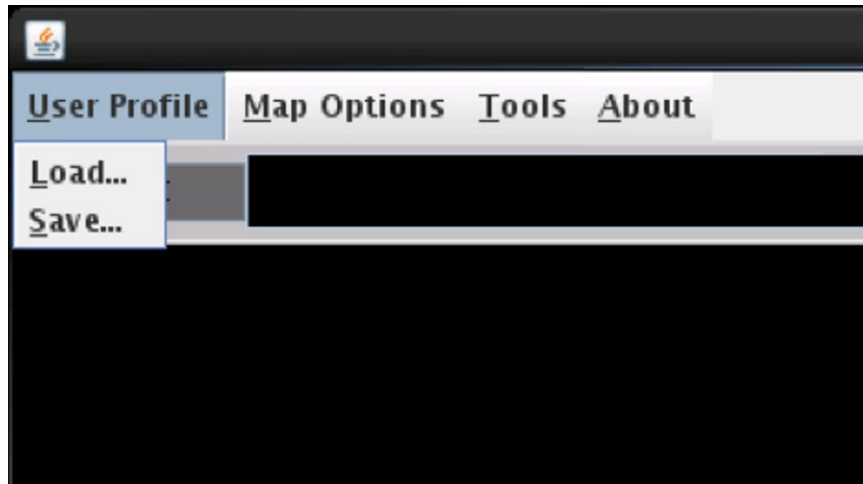


Figure 3.2. Menu Bar: User Profile.

### 3.1.1.1 Load User Profile

Select “Load” to access saved profiles.

**To load a user profile:**

- Step 1:* Select “User Profile” from the Menu Bar (Figure 3.3, left).
- Step 2:* Select “Load” in the dropdown menu (Figure 3.3, left).
- Step 3:* Select a saved user profile (e.g., “Ramp\_A” in Figure 3.3, right).
- Step 4:* Select “Load” (Figure 3.3, right).

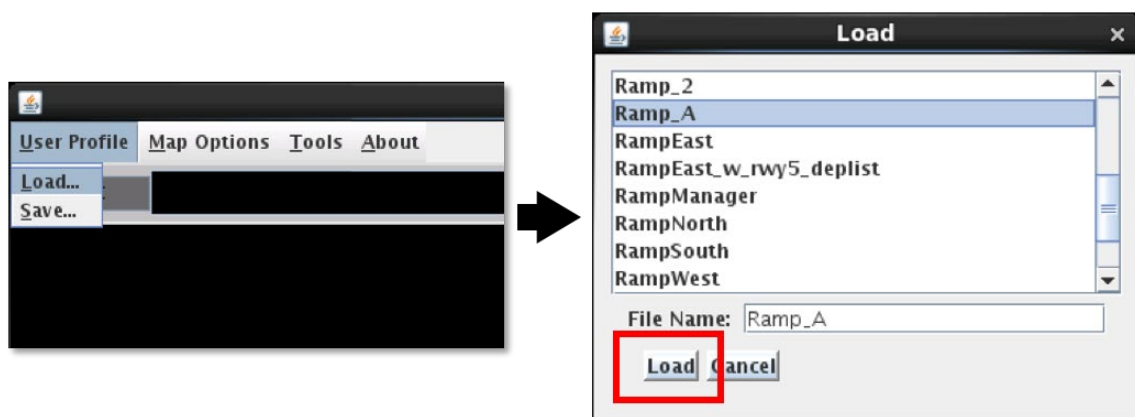


Figure 3.3. Load user profile: Select from saved profiles.

### 3.1.1.2 Save User Profile

Select “Save” to save a profile.

**To save a new user profile:**

- Step 1:* Select “User Profile” from the Menu Bar (Figure 3.4, left).
- Step 2:* Select “Save” in the dropdown menu (Figure 3.4, left).
- Step 3:* Enter new profile name (e.g., “Ramp\_1A” in Figure 3.4, right).
- Step 4:* Select “Save” (Figure 3.4, right).

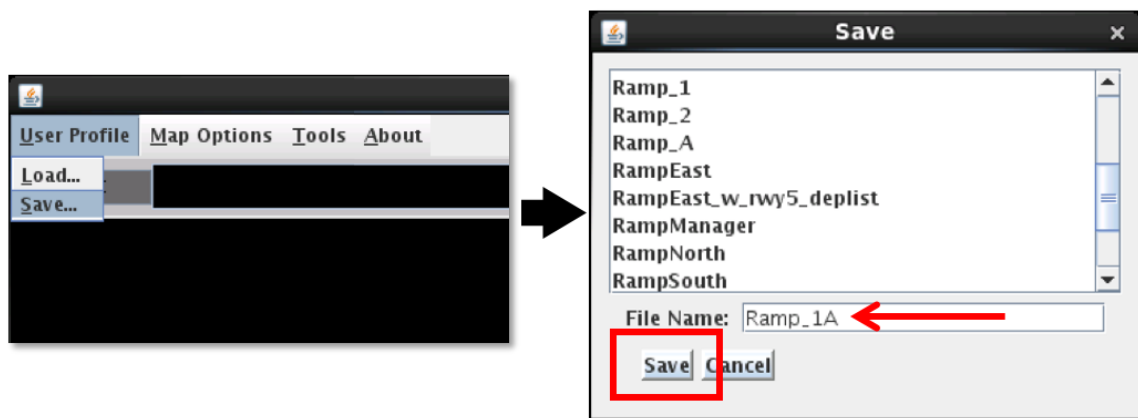


Figure 3.4. Save a new user profile.

**To update a saved user profile:**

- Step 1:* Select “User Profile” from the Menu Bar (Figure 3.4, left).
- Step 2:* Select “Save” in the dropdown menu (Figure 3.4, left).
- Step 3:* Select a previous-saved profile (e.g., “RampNorth” in Figure 3.5, left).
- Step 4:* Select “Save” (Figure 3.5, left).
- Step 5:* In the pop-up window, select “Yes” to overwrite the profile (e.g., “RampNorth” in Figure 3.5, right).

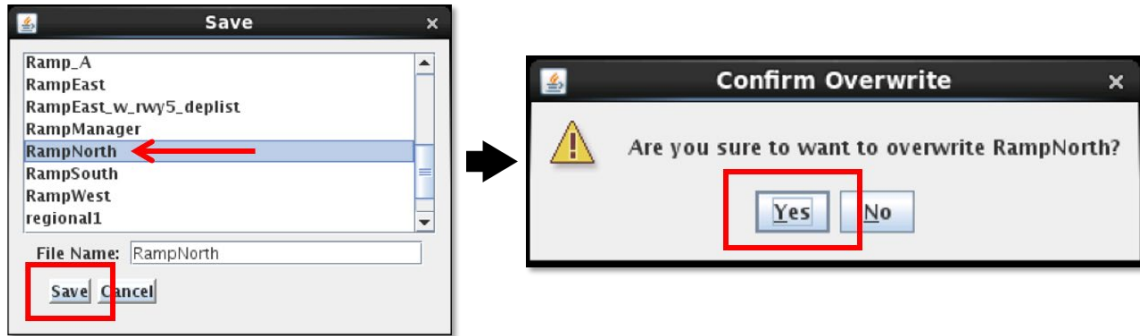


Figure 3.5. Update a saved user profile.

### 3.1.2 Map Options

Use the “Map Options” dropdown menu to configure the RTC map display (Figure 3.6). Not all options are applicable at all airports.

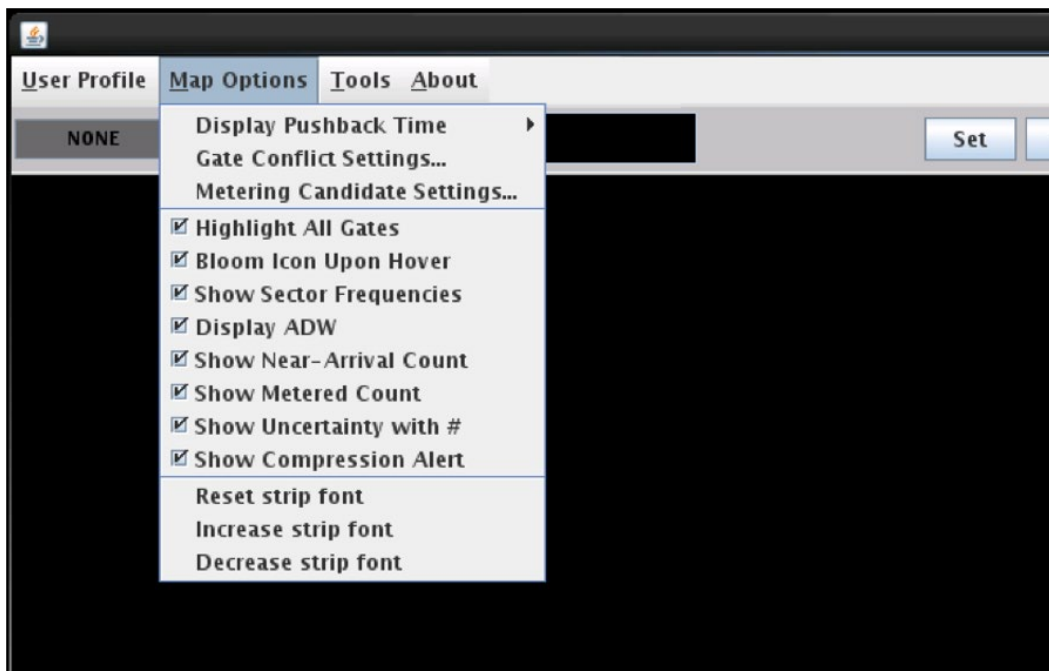


Figure 3.6. Menu Bar: Map Options.



**Table 1. Map Options Menu**

<b>Map Options Item</b>	<b>Description</b>
Display Pushback Time	Choose which time will be displayed on the departure flight strips as reference for pushback time (P-Time, EOBT, TOBT).
Gate Conflict Settings	Set arrival-time parameter to indicate gate conflicts on the RTC map.
Metering Candidate Settings	To leverage surface metering, set number of minutes greater than the number of minutes between the TOBT and UOBT that is required for surface metering candidate highlight to show up.
Highlight All Gates	Highlight/Gray-out gates under ownership of another sector/terminal (where applicable).
Bloom Icon Upon Hover	Enable/Disable “bloom” (i.e., enlarging the strip and font to improve readability and help focus attention) of a strip/icon when hovering mouse over the strip/icon.
Show Sector Frequencies	Display sector/terminal frequencies.
Display ADW	Display Arrival-Departure Window (ADW).
Show Near-Arrival Count	Display Arrival Count with the list of arrivals that are due to touch down in the next 10 minutes.
Show Metered Count	Display Metered Count with the list of current metered aircraft.
Show FAA Spots	Display FAA Spots on the RTC map (where applicable).
Show Uncertainty with #	Controls how gate and spot advisories are displayed for Uncertain flights when Surface Metering is active.
Show Compression Alert	Display Compression Alerts during metering.
Filter Arrival/Departure Count	Filter the arrivals/departures shown in the arrival/departure box by terminal (where applicable).
Adjust Strip Font	Reset, increase, and decrease flight strip font size.

### 3.1.2.1 Display Pushback Time

Use the “**Display Pushback Time**” option to select which pushback time will be displayed on departure flight strips:

- **P-Time:** Airline-published departure time; the Scheduled Off-Block Time (SOBT). P-Time is the default setting.
- **Earliest Off-Block Time (EOBT):** Earliest predicted push back time provided by the airline.
- **Target Off-Block Time (TOBT):** Advised pushback time for flights part of a Surface Metering Program (SMP) or subject to an EDCT or APREQ. TOBT is generated by the ATD-2 Scheduler and based on the runway schedule.

**To select the pushback time displayed on flight strips:**

- Step 1:* Select “Map Options” from the Menu Bar (Figure 3.7, left).
- Step 2:* Select “Display Pushback Time” from the dropdown menu (Figure 3.7, left).
- Step 3:* Select pushback time: P-Time, EOBT, or TOBT (“EOBT” is selected in Figure 3.7, left).

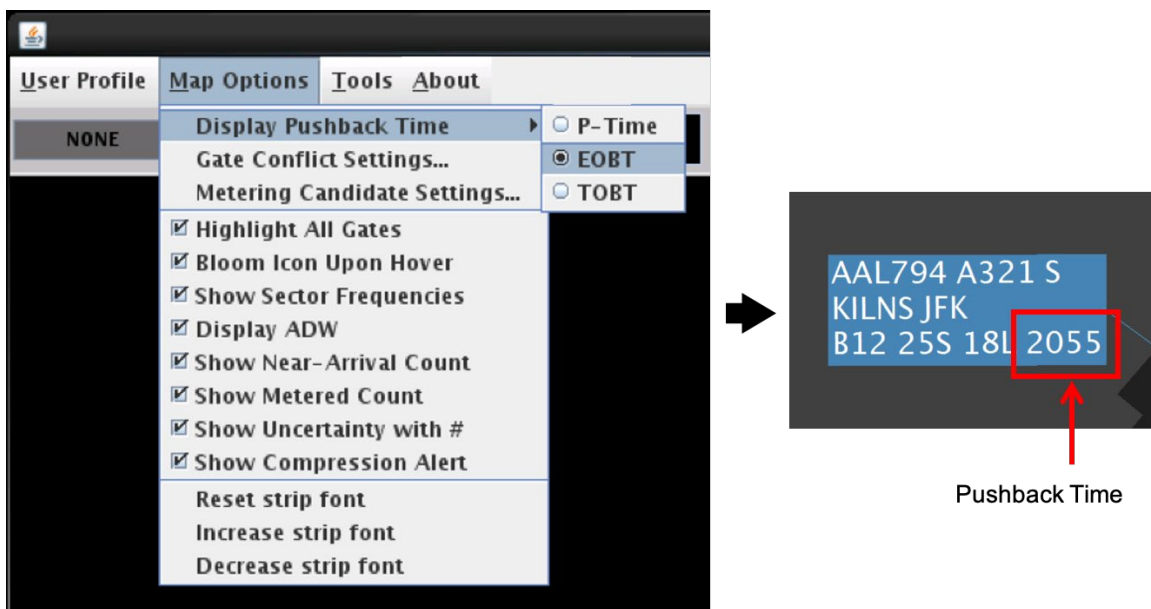


Figure 3.7. Select pushback time to display on departure flight strips (P-Time, EOBT, or TOBT).

### 3.1.2.2 Gate Conflict Settings

Use “Gate Conflict Settings” to set the number of minutes prior to the inbound arrival’s touchdown that a gate conflict will be indicated on the map. A gate conflict is indicated on the map in two ways:

- The parking gate label is displayed in magenta (see Section 4.2), and

- The data tag/flight icon are displayed in magenta (see Section 5.1.4.7).

The default setting is 10 minutes. That is, if a gate conflict is detected, it will not be indicated on the map until 10 minutes prior to predicted landing time.

If the time is set to 0 (zero) minutes, a gate conflict will not be indicated until the arrival flight lands.

At gates where space is limited, a gate conflict may also be indicated because of traffic at an *adjacent* gate. In some cases, a ‘heavy’ aircraft at an adjacent gate may restrict use of a flight’s arrival gate and trigger a gate conflict indication.

**To change the Gate Conflict setting:**

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.8, left).

**Step 2:** Select “Gate Conflict Settings” from the dropdown menu (Figure 3.8, left).

**Step 3:** Use the up/down arrows or enter number of minutes in the “Prior to Landing” field (e.g., 10 minutes in Figure 3.8, right).

**Note:** *The default setting is 10 minutes.*

**Step 4:** Select “Apply” (Figure 3.8, right).

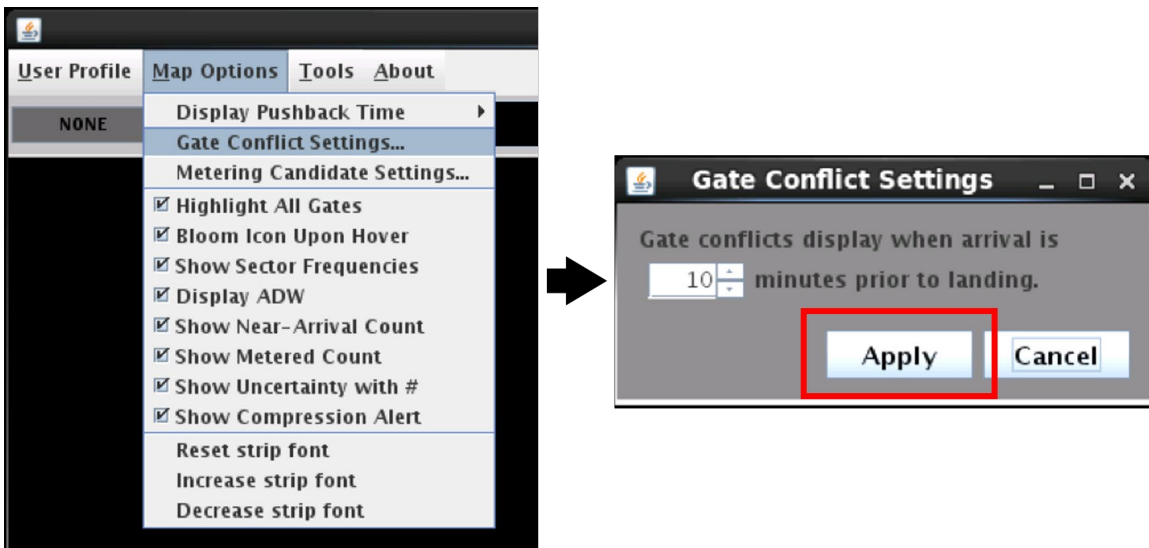


Figure 3.8. Gate Conflict Settings: Arrival-time setting. In this example, gate conflicts will be indicated on the map 10 minutes prior to the arrival’s landing.

### 3.1.2.3 Metering Candidate Settings (Leveraging Surface Metering)

Use “**Metering Candidate Settings**” to set the threshold, in minutes, at which a flight becomes eligible to be a Candidate for Leveraging Surface Metering. This parameter,

Target Off-Block Time (TOBT) minus Undelayed Off-Block Time (UOBT), represents the Scheduler-recommended gate hold time. Note that the UOBT is typically the airline-provided Earliest Off-Block Time (EOBT).

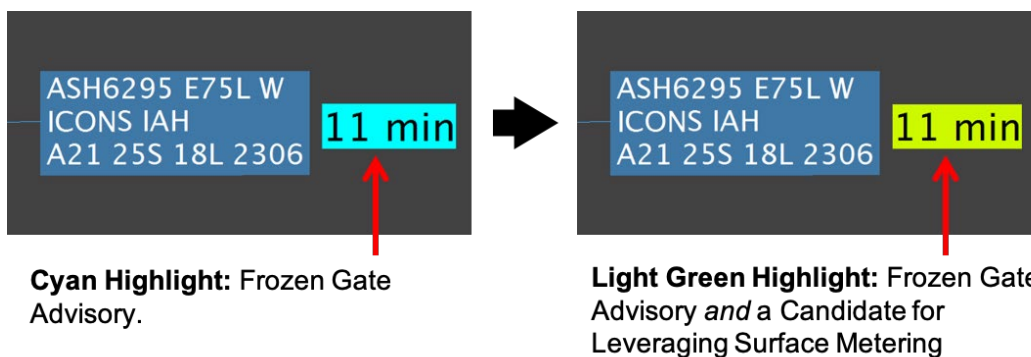
An example of leveraging surface metering may be leaving the door of the aircraft open a few minutes longer to accommodate late passengers, knowing the flight is subject to a gate hold of at least “x” minutes.

A flight is identified as a Candidate for Leveraging Surface Metering when all of the following are true:

- The flight is part of an active Surface Metering Program (SMP) *or* is subject to an EDCT or APREQ,
- The flight is still at the gate,
- The Ramp Controller has *not* placed the flight “Hold,”
- The flight’s TOBT and TMAF are already *frozen*.
  - The target times may be frozen because:
    - The flight is within the Static Time Horizon (STH), or
    - The Ramp Manager used the “Freeze Advisory” function in the RMTF Flight Menu.
- The flight has a Scheduler-recommended gate hold (i.e., TOBT > EOBT),

When these criteria are met, this flight is identified as a Candidate for Leveraging Surface Metering and the gate advisory is highlighted in *light green*. The light green highlight distinguishes a flight with a frozen gate advisory (black text, highlighted in *cyan*) from a flight with a frozen gate advisory that is *also* a Candidate for Leveraging Surface Metering.

Examples of a Candidate for Leveraging Surface Metering are shown in Figure 3.9 (metered flight) and Figure 3.10 (APREQ flight).



**Figure 3.9.** In this example, a flight subject to surface metering as part of an SMP is identified as a Candidate for Leveraging Surface Metering. The gate advisory is highlighted in light green.

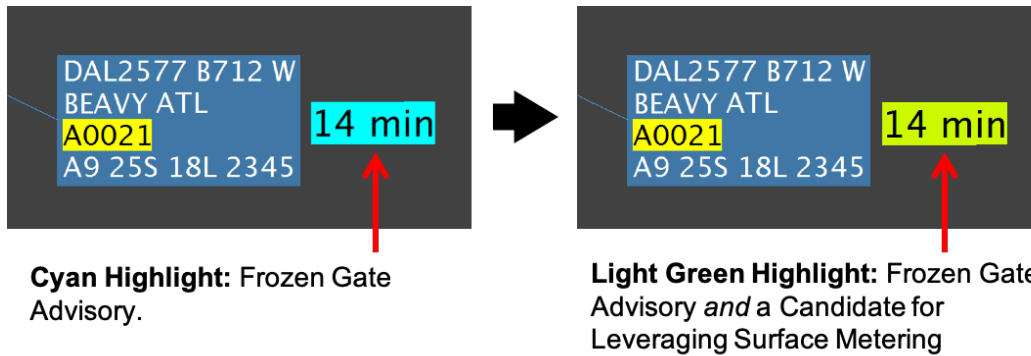


Figure 3.10. In this example, a flight subject to an APREQ is identified as a Candidate for Leveraging Surface Metering. The gate advisory is highlighted in light green.

**To change the Metering Candidate Setting:**

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.11, left).

**Step 2:** Select “Metering Candidate Settings” from the dropdown menu (Figure 3.11, left).

**Step 3:** Use the up/down arrows or enter number of minutes in the “TOBT – UOBT” field (e.g., 10 minutes in Figure 3.11, right).

**Note:** *This time represents the Scheduler-recommended gate hold. When the Scheduler-recommended gate hold is greater than this time value, the flight is eligible to be a Candidate for Leveraging Surface Metering. The default setting is 10 minutes.*

**Step 4:** Select “Apply” (Figure 3.11, right).

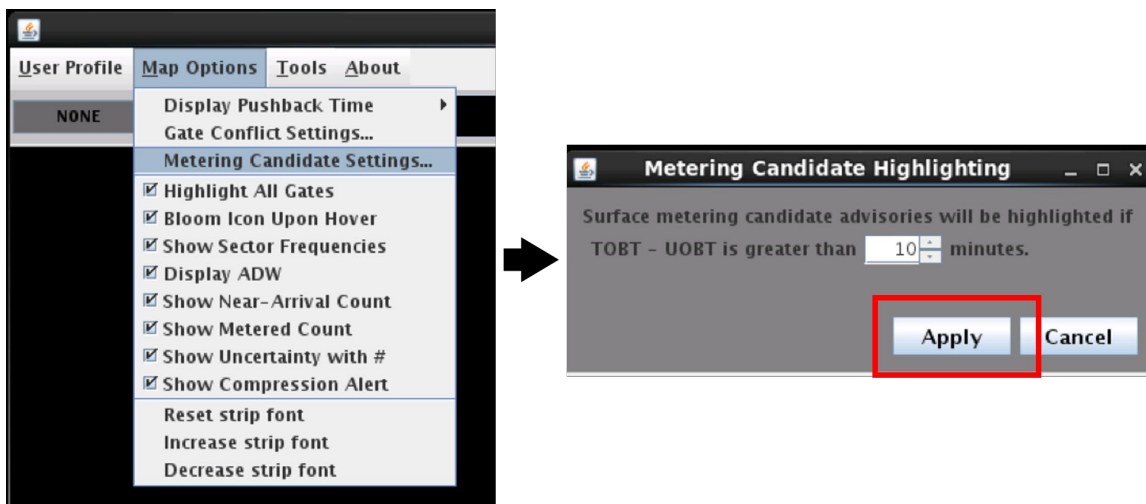


Figure 3.11. Metering Candidate Settings: Set threshold for the difference between TOBT and UOBT, which represents the Scheduler-recommended gate hold time.

### 3.1.2.4 Highlight All Gates

By default, in RTC, parking gates owned by a ramp sector/terminal are displayed in white, while parking gates under the ownership of another sector/terminal are displayed in gray. Use “**Highlight All Gates**” to display *all* gate numbers in white, whether under ownership of another sector/terminal or not.

#### To highlight all gate numbers:

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.12).

**Step 2:** Check “Highlight All Gates” to display all parking gate labels, whether under ownership of another ramp sector/terminal or not, in **white** (Figure 3.13, right).

**Alternatively:** Uncheck “Highlight All Gates” to highlight in white *only* those parking gates controlled by a particular ramp sector in white (Figure 3.13, left).

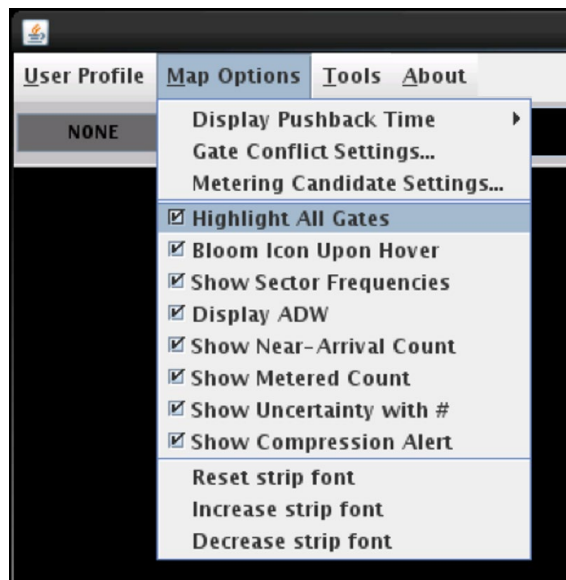
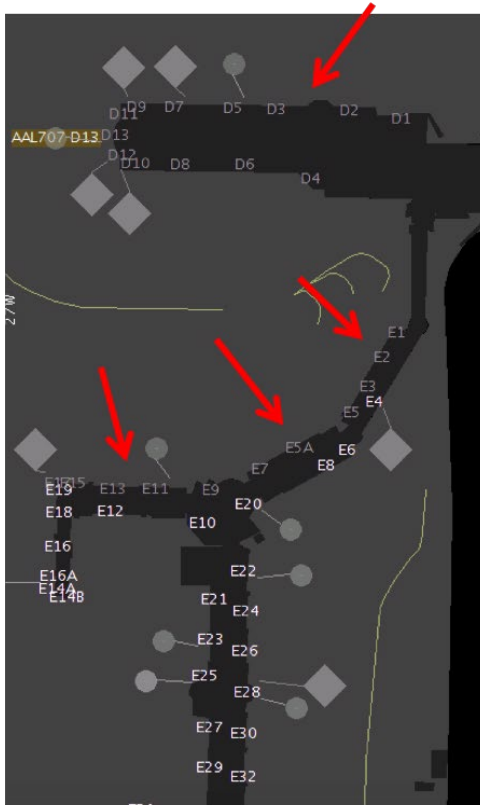
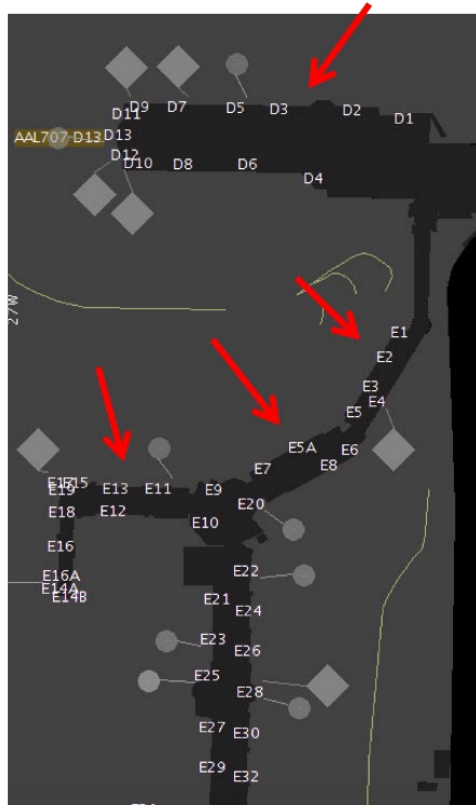


Figure 3.12. Highlight All Gates.



**Highlight All Gates (not selected):** Gates belonging to other ramp sectors are displayed in gray.



**Highlight All Gates (selected):** All parking gate labels are displayed in white.

**Figure 3.13.** When “Highlight All Gates” is not selected, gate labels belonging to other ramp sectors are displayed in gray (left). When selected, all parking gates are displayed in white (right).

### 3.1.2.5 Bloom Icon Upon Hover

Use the “**Bloom Icon Upon Hover**” option to magnify, or “bloom,” minimized flight strips/data tags at higher zoom levels. Blooming increases the size of the text to improve readability and displays all of the information on the flight strip, if hidden, while minimized.

**To enable Bloom Icon Upon Hover:**

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.14).

**Step 2:** Check “Bloom Icon Upon Hover” to bloom flight strips/data tags (Figure 3.14). See example in Figure 3.15.

**Alternatively:** Uncheck “Bloom Icon Upon Hover” to disable bloom.

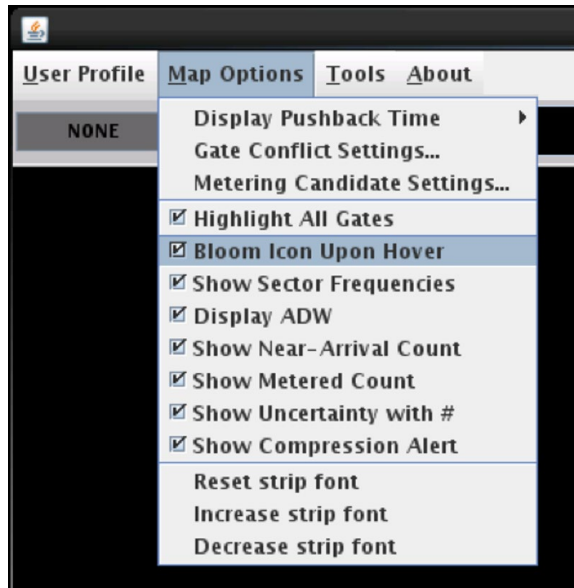


Figure 3.14. Bloom Icon Upon Hover.

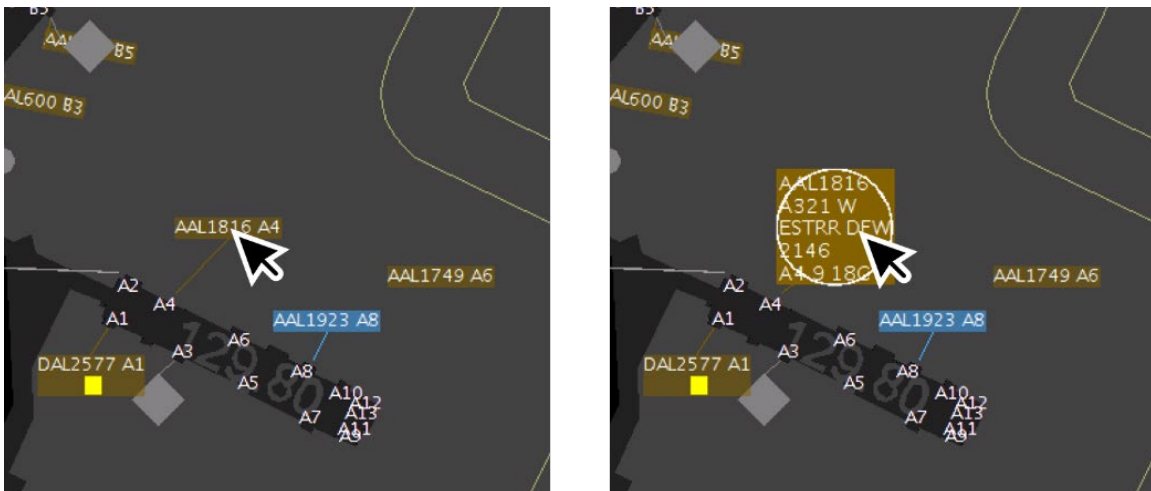


Figure 3.15. At higher zoom levels, flight strips are minimized (left). Use the mouse to hover over the flight strip, if “Bloom Icon” is enabled, the highlighted flight strip “blooms” to full size (right).

### 3.1.2.6 Show Sector Frequencies

Use “**Show Sector Frequencies**” to display the radio frequency for each ramp sector/terminal.



## To display Ramp Sector Frequencies:

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.16).

**Step 2:** Check “Show Sector Frequencies” to display the ramp sector/terminal frequencies on the map (Figure 3.16). See example in Figure 3.17.

**Alternatively:** Uncheck “Show Sector Frequencies” to hide the frequencies.

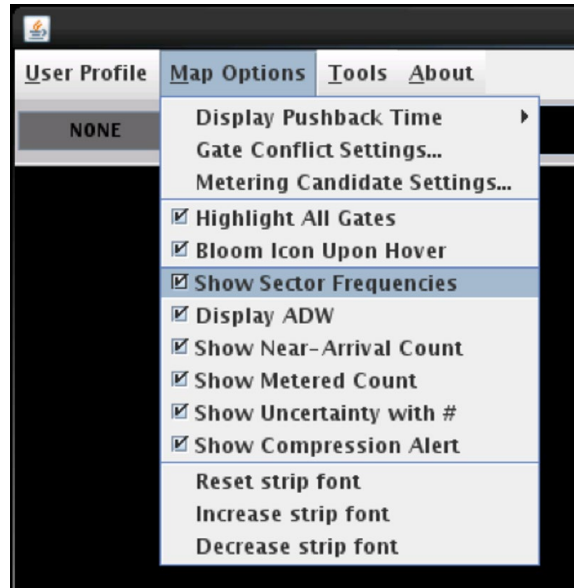


Figure 3.16. Show Sector Frequencies.

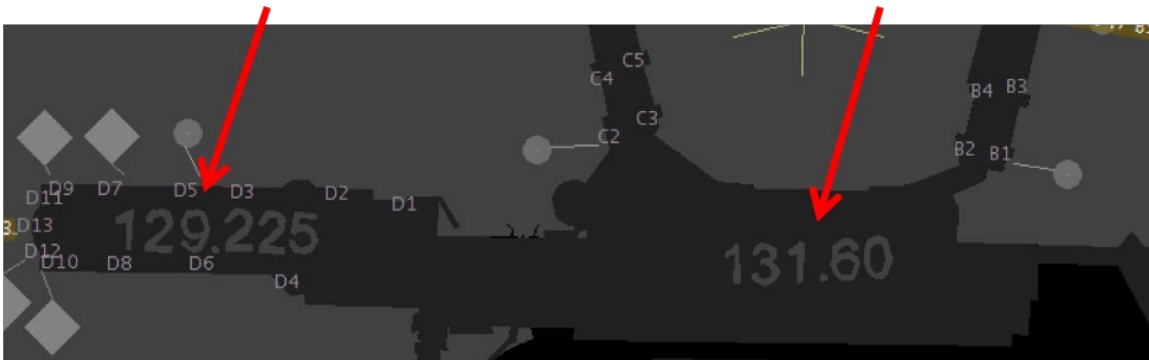


Figure 3.17. Example of sector/terminal radio frequencies.

### 3.1.2.7 Display Arrival-Departure Window (ADW)

At airports where an Arrival-Departure Window (ADW) is used for converging runway operations, use “**Display ADW**” to display the ADW on the map.

**To display an ADW:**

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.18).

**Step 2:** Check “Display ADW” to display the ADW for converging operations (Figure 3.18). See example in Figure 3.19.

**Alternatively:** Uncheck “Display ADW” to hide the ADW.

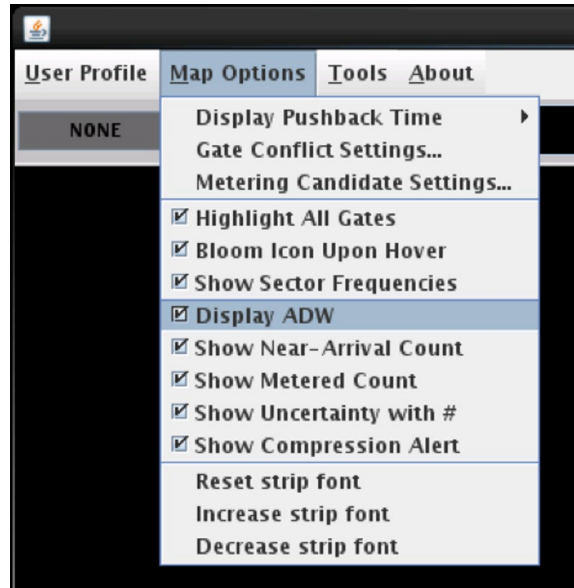


Figure 3.18. Display ADW.



Figure 3.19. Arrival-Departure Window (ADW) display example.

### 3.1.2.8 Show Near-Arrival Count

Use “**Show Near-Arrival Count**” to display the number of arrivals due to touch down within the next 10 minutes. See Section 4.1.1 for a description of the Near-Arrival Count.

**To display the Near-Arrival Count:**

*Step 1:* Select “Map Options” from the Menu Bar (Figure 3.20, left).

*Step 2:* Check “Show Near-Arrival Count” (Figure 3.20, left).

*Note:* A green Arrivals Count window is displayed in the lower right corner of the RTC map, to the left of the Eastbound- and Westbound-Departure Counts. In Figure 3.20, 13 arrival flights are expected to land within the next 10 minutes.

*Alternatively:* Uncheck “Show Near-Arrival Count” to hide the Arrivals Count.

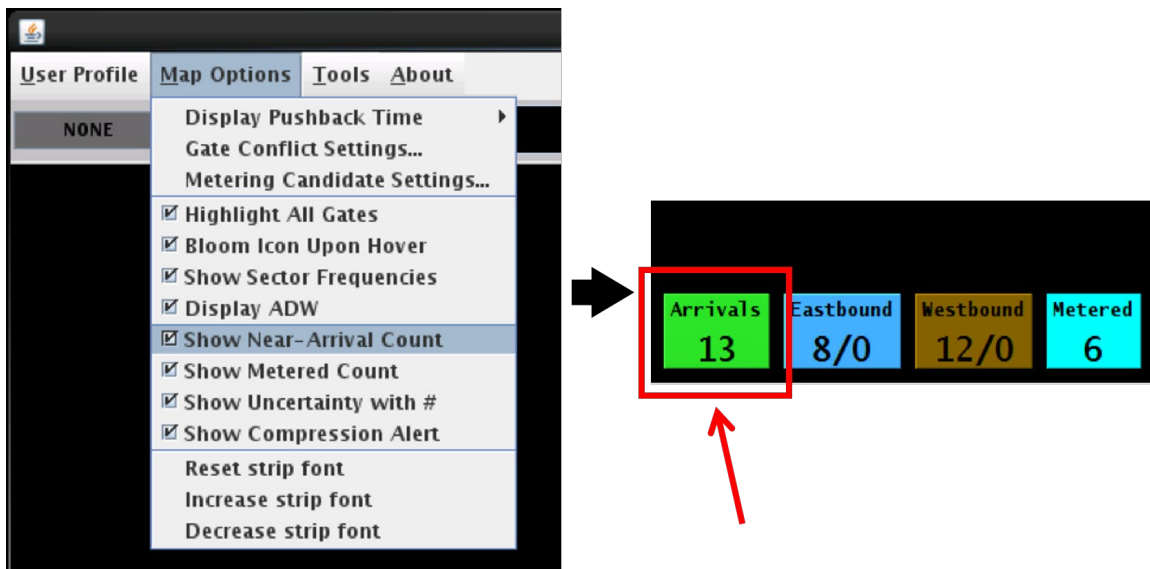


Figure 3.20. Show Near-Arrival count.

### 3.1.2.9 Show Metered Count

Use “**Show Metered Count**” to display the number of flights, still at their gate, that are part of an affirmed or active Surface Metering Program (SMP). See Section 4.1.3 for a description of the Metered Count.

## To display the Metered Count:

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.21, left).

**Step 2:** Check “Show Metered Count” to display the Metered Count (Figure 3.21, left).

**Note:** A cyan Metered-Count window is displayed in the lower right corner of the map, to the right of the Eastbound- and Westbound-Departure Counts. In Figure 3.21, six flights are currently part of the Surface Metering Program (SMP).

**Alternatively:** Uncheck “Show Metered Count” to hide the Metered Count.

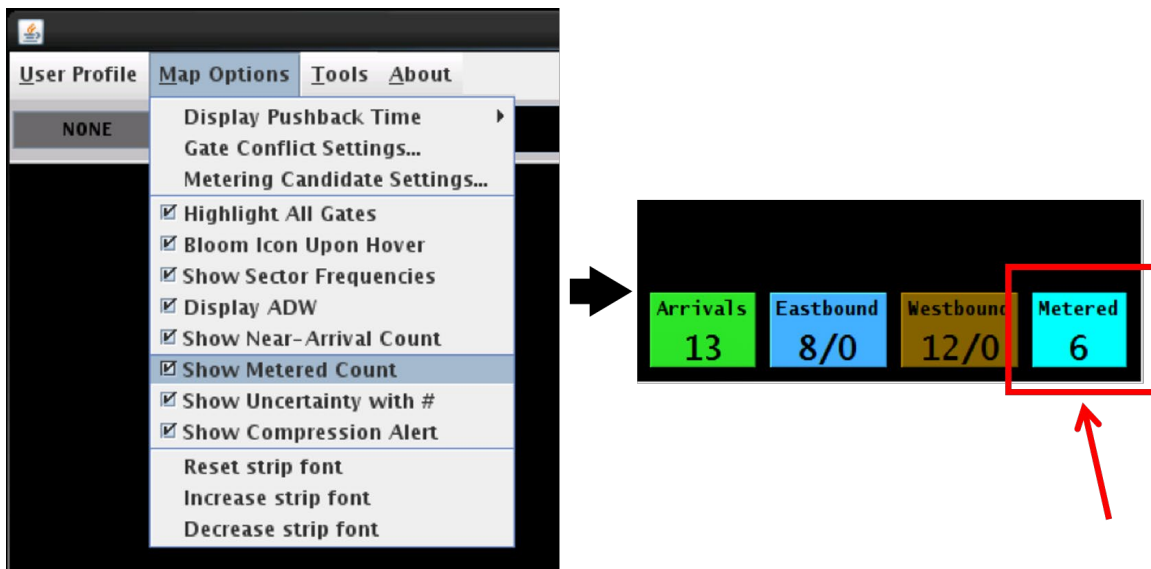


Figure 3.21. Show Metered Count.

### 3.1.2.10 Show FAA Spots

Use “Show FAA Spots” to display spot numbers (i.e., the transition points between ramp and AMA) on the RTC map.

**To show/hide FAA Spots on the RTC map (no available at all airports):**

**Step 1:** Select “Map Options” (Figure 3.22).

**Step 2:** Check “Show FAA Spots” to display spot numbers on the map (Figure 3.22). See example in Figure 3.23.

**Alternatively:** Uncheck “Show FAA Spots” to hide spot numbers.

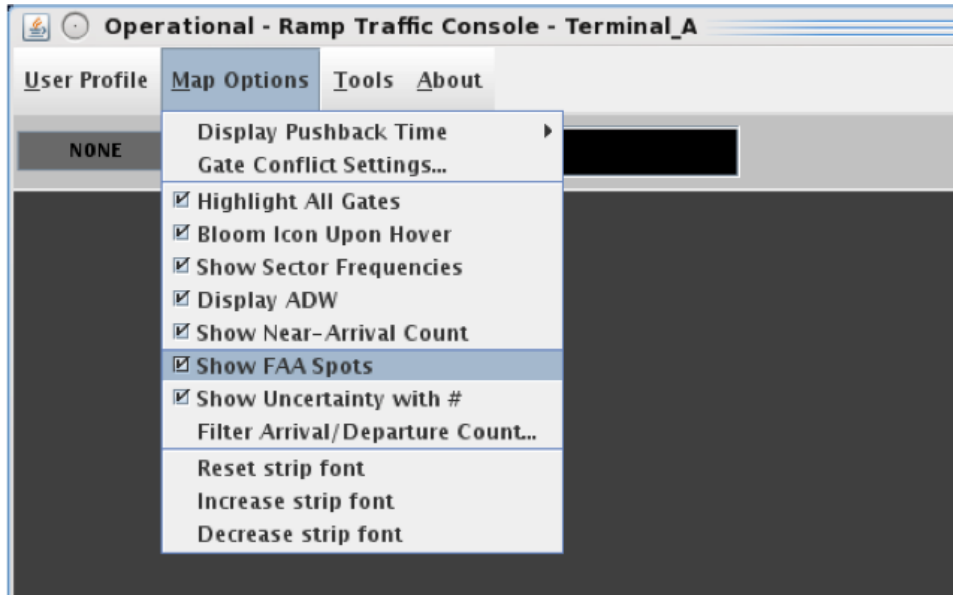


Figure 3.22. Show/hide FAA spots.

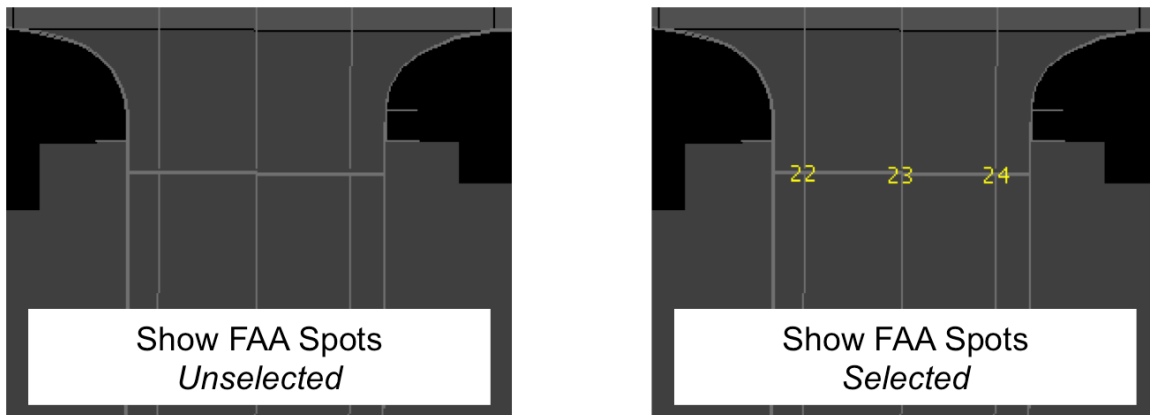


Figure 3.23. Show FAA Spots unselected (left) and selected (right).

### 3.1.2.11 Show Uncertainty with # (Hashtag)

The “**Show Uncertainty with #**” option impacts how gate advisories for “Uncertain” flights are displayed when a Surface Metering Program (SMP) is active.

When there is uncertainty around a flight’s Earliest Off-Block Time (EOBT), the ATD-2 Scheduler puts the flight in the “Uncertain” group. A flight is considered “Uncertain” when:

- The flight’s EOBT is not available from the airline, or
- Current time is *x* minutes greater than EOBT (e.g., 8 minutes) and the flight deck has not yet called “ready.”

The Scheduler considers all other flights as belonging to the “Planning” group.

When a flight is part of an active SMP, a gate advisory is displayed, in cyan, next to the flight strip. The gate advisory is a countdown timer, counting down to the Target Off-Block Time (TOBT), generated by the Scheduler.

Gate advisories for “Uncertain” flights may appear unusually long because of the uncertainty around their expected pushback time. The gate advisories may also appear to “jump” because the TOBT can change based on updated traffic demands.

Users have the option to display gate advisories for “Uncertain” flights in two different ways:

- 1) If the Ramp Controller/Manager prefers to see a hashtag (“#”), rather than the gate advisory countdown timer that may adjust, or “jump,” each time the TOBT changes, they can *select* “Show Uncertainty with #” (Figure 3.24).
- 2) If the Ramp Controller/Manager prefers to see the gate advisory timer, they can *uncheck* the “Show Uncertainty with #” option (Figure 3.25).

#### To Show Uncertain flights with a Hashtag (“#”):

**Step 1:** Select “Map Options” from Menu Bar (Figure 3.24, left).

**Step 2:** Check “Show Uncertainty with #” to view gate advisories for flights in the “Uncertain” group as a hashtag (“#”) (Figure 3.24).

**Alternatively:** Uncheck “Show Uncertainty with #” to view gate advisories for flights in the “Uncertain” group as countdown timers (e.g., “17 min” in Figure 3.25). Note, however, that the gate advisory can change, or “jump,” when the TOBT changes.

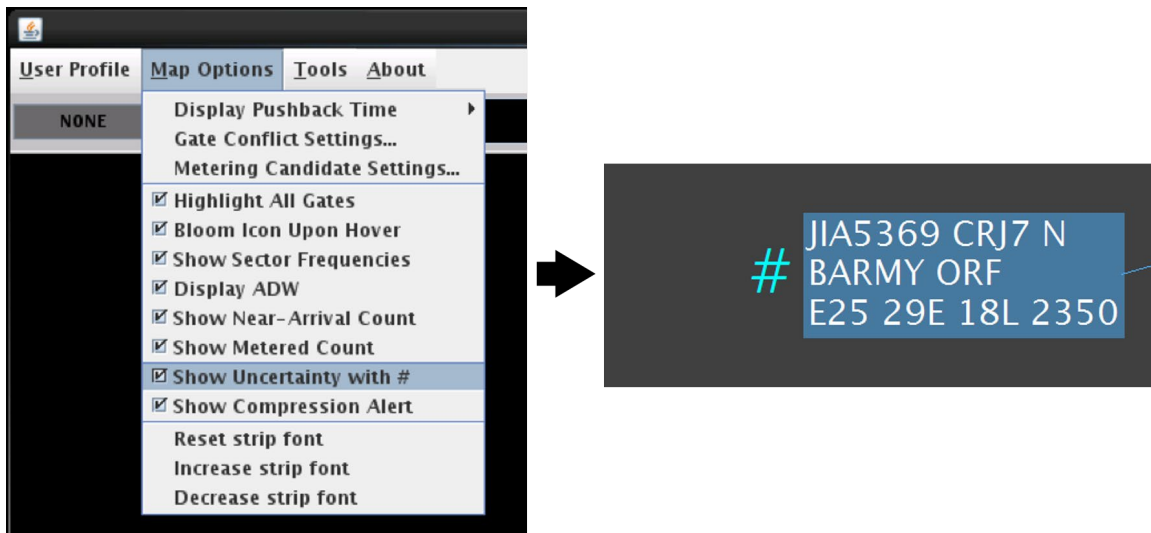


Figure 3.24. When “Show Uncertainty with #” is selected, gate advisories for flights in the “Uncertain” group are displayed as a hashtag (“#”).

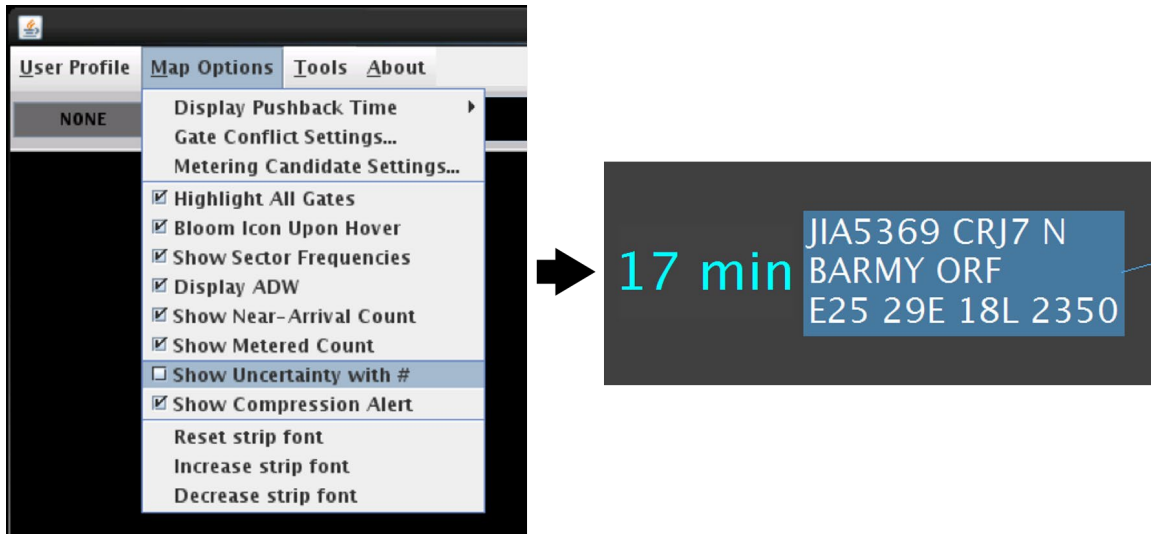


Figure 3.25. When “Show Uncertainty with #” is unselected, gate advisories for flights in the “Uncertain” group are displayed as a countdown timer (e.g., 17 min), which may change, or “jump.”

Flights in the “Uncertain” group are *never* subject to the Static Time Horizon (STH), the preset time relative to the TOBT (e.g., 10 minutes prior to the TOBT) at which the TOBT and TMAT are automatically frozen.

However, there are two ways in which users can freeze an “Uncertain” flight, if needed:

- The Ramp Manager can freeze a flight in the “Uncertain” group by using the “Freeze Advisory” function in the RMTC Flight Menu (see Section 10.1), and
- When a pilot of an “Uncertain” flight calls ready to pushback, the Ramp Controller can select “Ready” on the right-click menu. Selecting “Ready” automatically freezes the TOBT and TMAT so that a stable gate advisory is presented to the Ramp Controller (see Section 5.1.1.2.8).

When the target times are frozen, the gate advisory will no longer adjust, or “jump” (see Section 9.1.3 for a description of frozen gate advisories).

### 3.1.2.12 Show Compression Alert

“**Show Compression Alert**” can be checked to momentarily display an alert when gate holds are compressed during surface metering (Figure 3.26).

As part of surface metering, the ATD-2 Scheduler recommends gate holds for some departure flights. The Scheduler-recommended gate hold is calculated as Target Off-Block Time (TOBT) minus Undelayed Off-Block Time (UOBT), where UOBT is typically equal to the airline-provided Earliest Off-Block Time (EOBT).

Compression is used during an active Surface Metering Program (SMP) when departure queue time is predicted to fall below a lower threshold. Compression allows a *frozen*

TOBT to be changed to an earlier time – **despite having already been frozen** – reducing the Scheduler-recommended gate hold time. The purpose of compressing gate hold times is to enable more flights to arrive at the runway departure queue sooner in order to maintain a minimum target demand at the runway.

A flight’s schedule can be compressed when all of the following are true:

- The flight is part of an active Surface Metering Program (SMP),
- The flight is *not* subject to an EDCT or APREQ,
- The flight is still at the gate,
- The Ramp Controller has *not* placed the flight “Hold,”
- The flight’s TOBT and TMAAT are already *frozen*.
  - The target times may be frozen because:
    - The flight is within the Static Time Horizon (STH), or
    - The Ramp Manager used the “Freeze Advisory” function in the RMTC Flight Menu,
- The flight has a Scheduler-recommended gate hold (i.e., TOBT > EOBT), and
- The flight’s TOBT can be changed to be earlier by two, or more, minutes. If the TOBT cannot be made earlier by at least two minutes, then the flight’s schedule is not compressed.

When compression is applied, users may notice gate advisories (the cyan countdown timers next to the flight strip) adjust (i.e., decrease) when the TOBT is changed to an earlier time.

**To show/hide the Metering Compression alert:**

***Step 1:*** Select “Map Options” (Figure 3.26, left).

***Step 2:*** Check “Show Compression Alert” to display a compression alert during metering (Figure 3.26, left).

***Note:*** *The alert is visible for seven seconds, but can be dismissed sooner by clicking on the map.*

***Note:*** *The runway to which compression is being applied is identified in the alert message (e.g., Runway 36R in Figure 3.26).*

***Alternatively:*** Uncheck “Show Compression Alert” to hide the alerts.



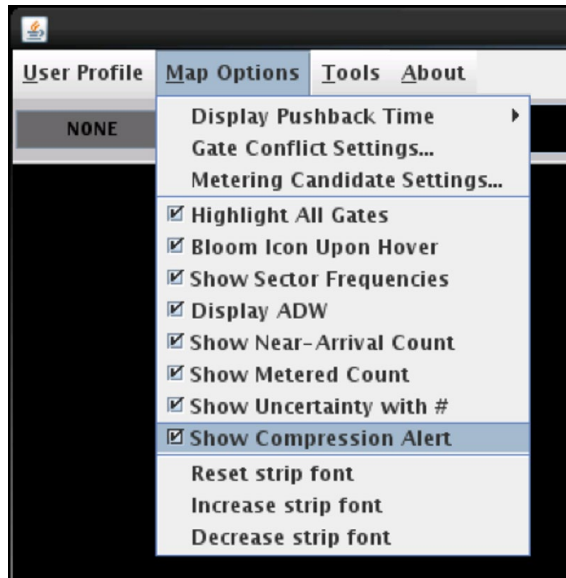


Figure 3.26. Show alert when compression is applied during surface metering.

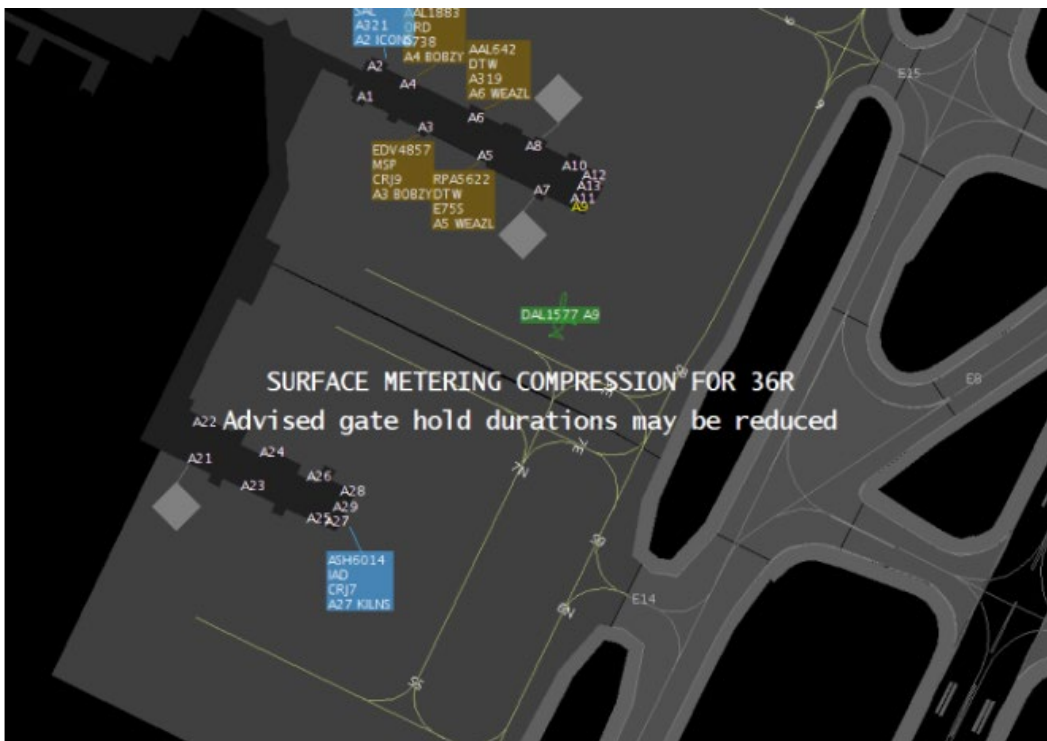


Figure 3.27. “Metering Compression” message on map.

### 3.1.2.13 Filter Arrival/Departure Count

Use the “**Filter Arrival/Departure Count**” menu to filter which arrival/departure flights are included in the Arrival count (described in Section 4.1.1) and Departure count

(described in Section 4.1.2). Counts can be filtered according terminals/sectors at a given airport. This may not be applicable to all airports.

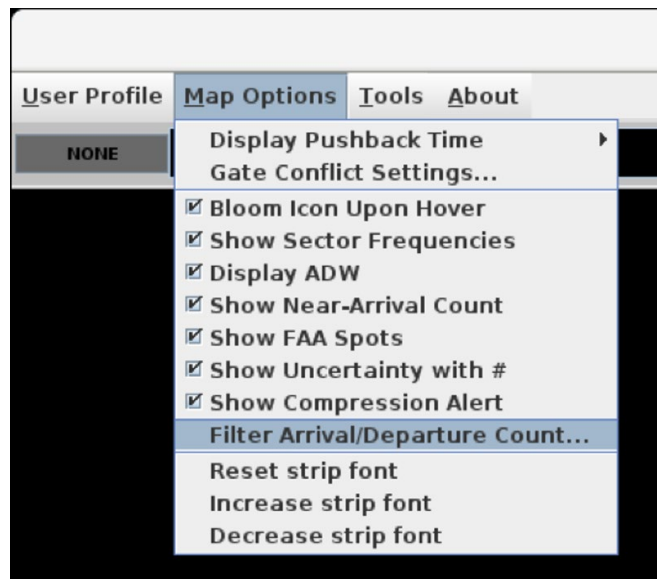
**To change the Arrival- and Departure-Count filters (where applicable):**

**Step 1:** Select “Map Options” from Menu Bar (Figure 3.28).

**Step 2:** Select “Filter Arrival/Departure Count” from the dropdown menu (Figure 3.28).

**Step 3:** In the Filter window, select which ramp terminals/sectors to include in the Departure count (top panel) and in the Arrival count (bottom panel) (Figure 3.29).

**Step 4:** Select “Apply” (Figure 3.29).



**Figure 3.28.** Filter Arrival and Departure counts by ramp terminal/sector (menu is airport-specific).

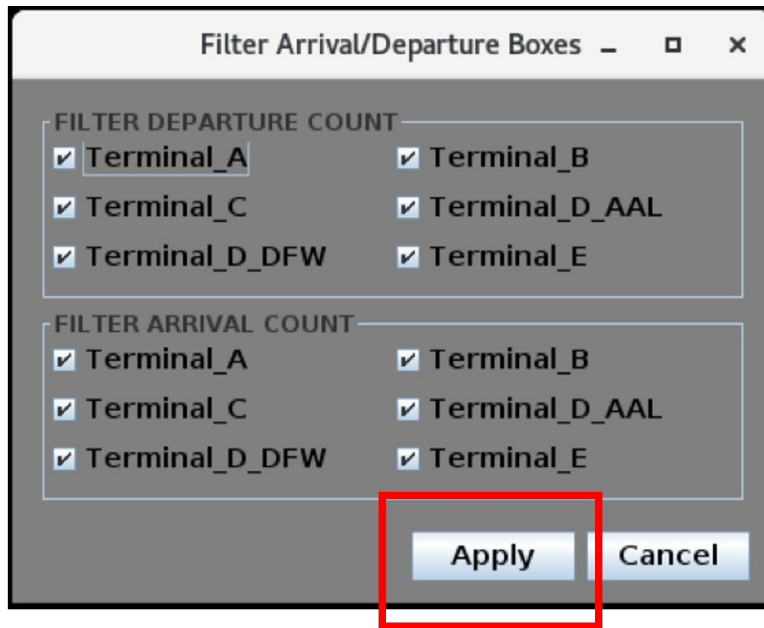


Figure 3.29. Select terminals/sectors (menu is airport-specific).

### 3.1.2.14 Flight Strip Font Size

The default text size on flight strips/data tags is set at an optimal size for the display. However, the size of the text can be changed. Use the “Reset,” “Increase,” and “Decrease” strip font options to change text size.

#### To change the Flight Strip font size:

**Step 1:** Select “Map Options” from the Menu Bar (Figure 3.30).

**Step 2:** Select “Reset strip font” to reset text size (Figure 3.30).

**Alternatively:** Select “Increase strip font” to increase the text size (Figure 3.30).

**Alternatively:** Select “Decrease strip font” to decrease the text size (Figure 3.30).

**Note:** *The size of the flight icon increases and decreases along with the size of the text. See examples in Figure 3.31.*

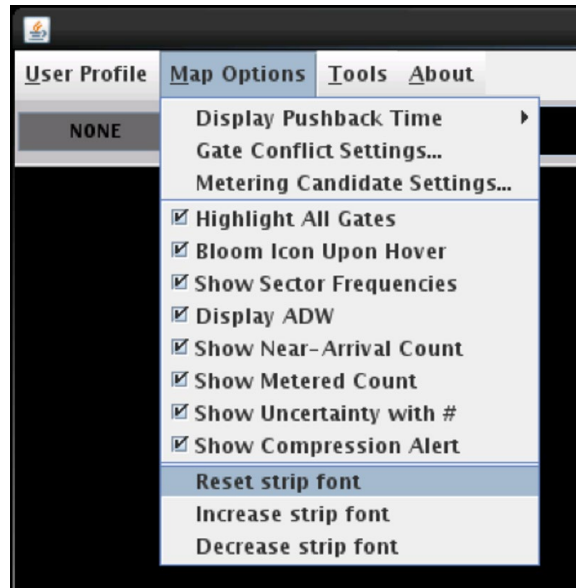


Figure 3.30. Reset, increase, or decrease flight strip text size.

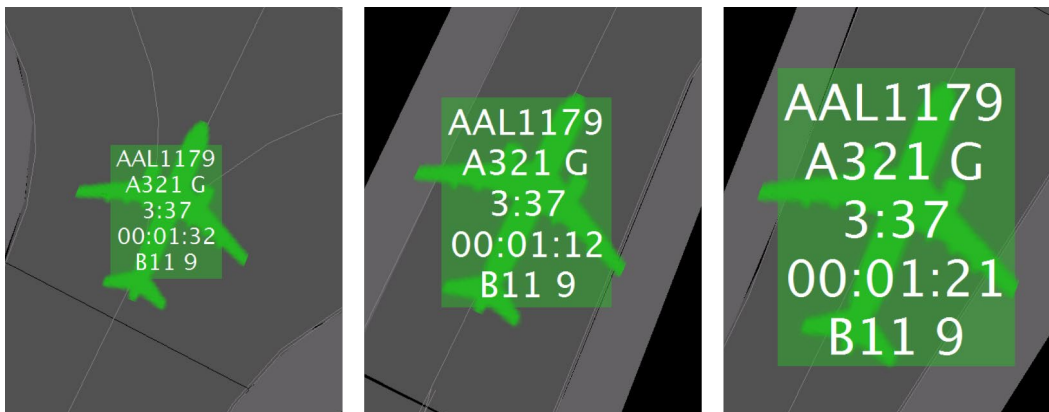


Figure 3.31. Examples of smaller, default, and larger text.

### 3.1.3 Tools

The option to refresh the map is available in the Tools dropdown menu.

#### 3.1.3.1 Refresh

When “**Refresh**” is selected, all targets are removed from the display and are re-created based on the latest flight and aircraft data in the system. This is different from the automatic 1-second update of the system that is constantly taking place.

### To Refresh the Map:

**Step 1:** Select “Tools” on the Menu Bar (Figure 3.32, left).

**Step 2:** Select “Refresh” (Figure 3.32, left).

**Note:** *When the refresh is complete, “Data refresh is complete” is displayed (Figure 3.32, right).*

**Step 3:** Select “OK” to close the “Refresh Complete” window (Figure 3.32, right).



Figure 3.32. “Refresh Complete” popup message.

### 3.1.4 About

Use “About” to view the software version number.

#### To view RTC software version number:

**Step 1:** Select “About” from the Menu Bar (Figure 3.33, left).

**Step 2:** Select “About” from the dropdown menu to view the software version number (Figure 3.33, left).

**Step 3:** Select “OK” to close the “About” window (Figure 3.33, right).

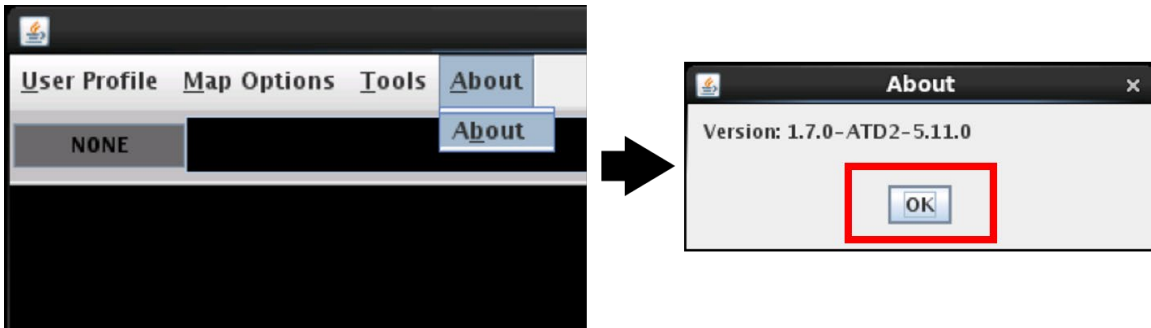


Figure 3.33. Select “About” to view software version.

## 3.2 Clock

All times displayed in RTC/RMTC are Coordinated Universal Time (UTC). Current time (UTC) is displayed in the toolbar (Figure 3.34).

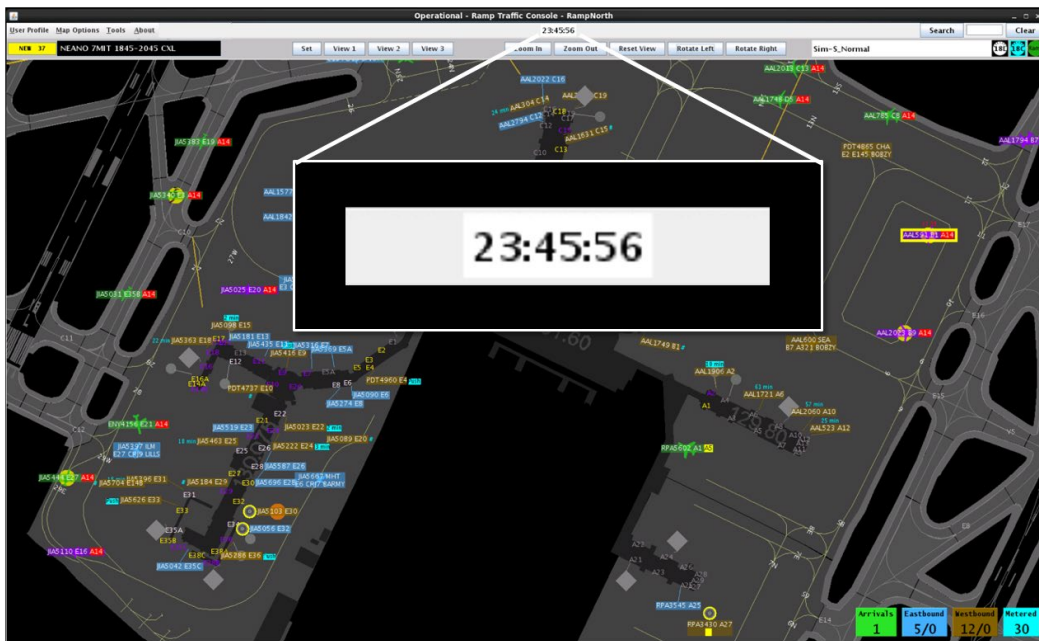


Figure 3.34. Current time (UTC).

## 3.3 Zoom and Rotate Map

In addition to using the mouse to click-and-drag to reposition the map, the “Zoom,” “Reset,” and “Rotate” buttons allow for incremental adjustment to the zoom and the orientation of the map display.

### To change the Zoom level:

**Step 1:** Select “**Zoom In**” or “**Zoom Out**” to incrementally increase or decrease the zoom level (Figure 3.35).

**Alternatively:** Use the scroll wheel on the mouse to adjust the zoom level.

### To Rotate the map:

**Step 1:** Select “**Rotate Left**” or “**Rotate Right**” to incrementally rotate the map display (Figure 3.35).

### To Reset the view:

**Step 1:** Select “**Reset View**” to reset the map view to the default view for the RTC sector/terminal display (Figure 3.35).

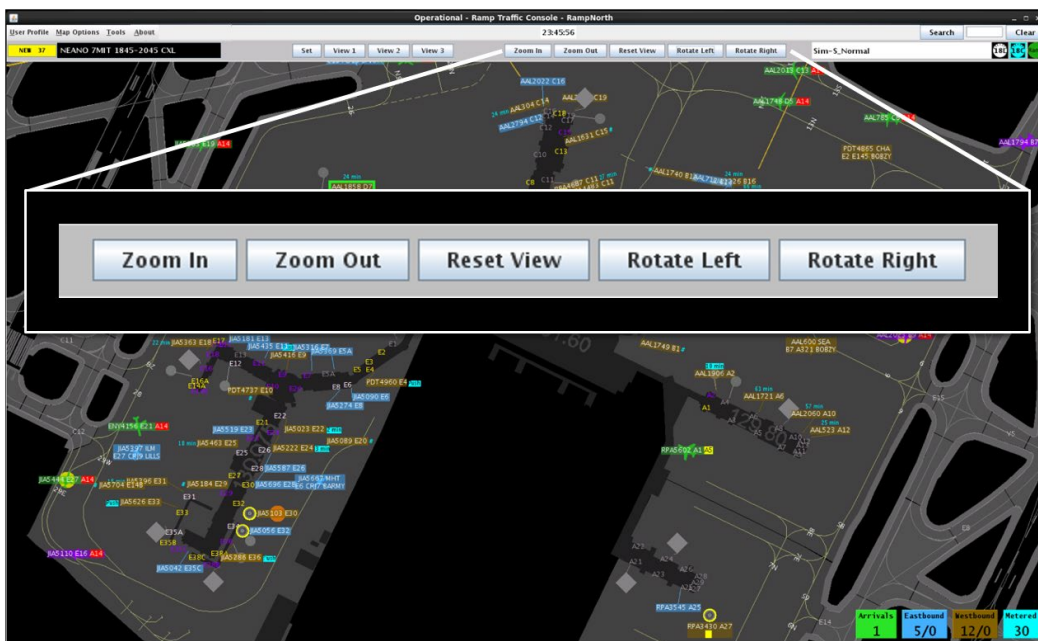


Figure 3.35. Zoom, Reset, and Rotate controls.

## 3.4 Set Views

Use the “Set” and “View” buttons to save up to three different map views (Figure 3.36).

To set a map view:

**Step 1:** Set the map to the desired position, zoom level, and rotation.

**Step 2:** Select “Set” in the Toolbar. The “View 1,” “View 2,” and “View 3” buttons are highlighted in green (Figure 3.37).

**Step 3:** Select View 1, View 2, or View 3 to save the current view (Figure 3.37).

**Note:** Repeat the same steps to set additional views. Up to three views can be saved. Once saved, select a “View” button to load the saved setting.



Figure 3.36. Save three different views.

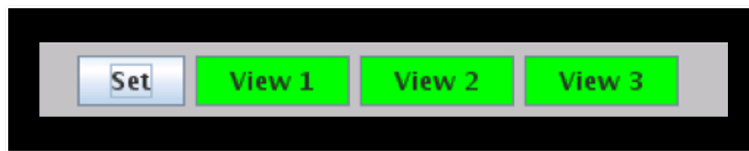


Figure 3.37. Select “Set” and “View 1,” “View 2,” or “View 3” to save a display setting.

## 3.5 Search Map

To find a flight, or flights, on the RTC map, use the Search feature (Figure 3.38). A search includes departure and arrival flights at the gate, in the ramp, the AMA, or near airspace. Searchable fields are: Call sign, flight number, tail number, carrier, destination



airport, terminal departure gate, departure fix for outbound flights, and arrival fix for inbound flights. The user can also type “GA” to search for General Aviation flights.

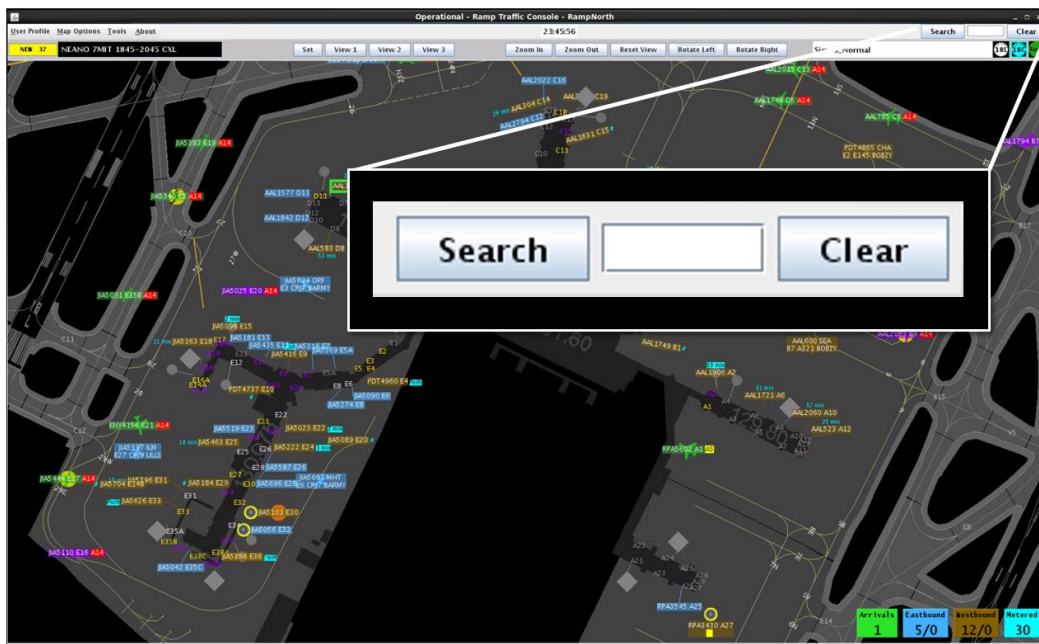


Figure 3.38. Search button, Search field, and Clear button.

The search results become more precise as a more complete call sign, flight number, or tail number is entered into the search field. Clicking the “Search” button executes an exact match. For example, typing “ABC12” will match ABC12 and ABC123, but typing “ABC12” followed by clicking Search will match only ABC12.

#### To search for a flight(s):

**Step 1:** Enter a call sign, flight number, tail number, carrier, destination airport, terminal departure gate, departure fix, or “GA” for General Aviation (e.g., “AAL” in Figure 3.39).

**Note:** A yellow circle is drawn around each matching search result (Figure 3.40).

**Step 2 (Optional):** It may be necessary to zoom out and scan the map to locate additional matching results, as the map view does not adjust to include results that may fall outside of the visible window.

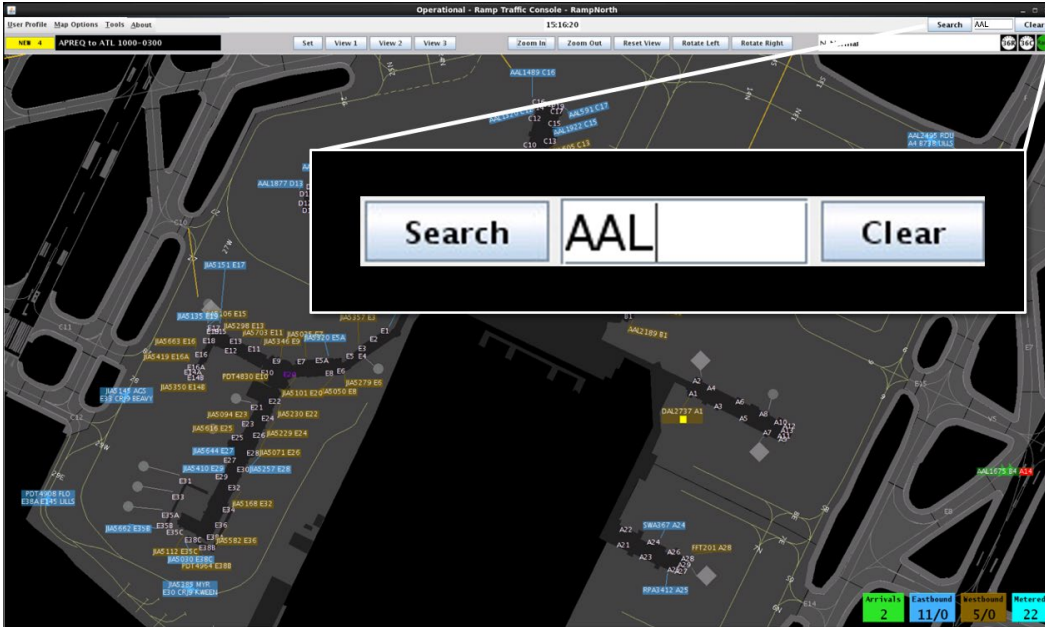


Figure 3.39. Enter criteria in the search field (in this example, “AAL”).



Figure 3.40. A yellow circle is drawn around matching search results.

If a search for a call sign, flight number, destination airport, or for general aviation (GA) is executed, but the matching result is outside of the visible window, a popup message is displayed. In Figure 3.41, for example, AAL1687 is outside of the current display.



Figure 3.41. Search result(s) outside of visible display.

Once at least three characters have been entered (or “GA” for General Aviation flights), if the search entry does not match any flights in the system, the search field changes to red, as shown in Figure 3.42. It also turns red if an incomplete flight or tail number is entered and “Search” is selected.

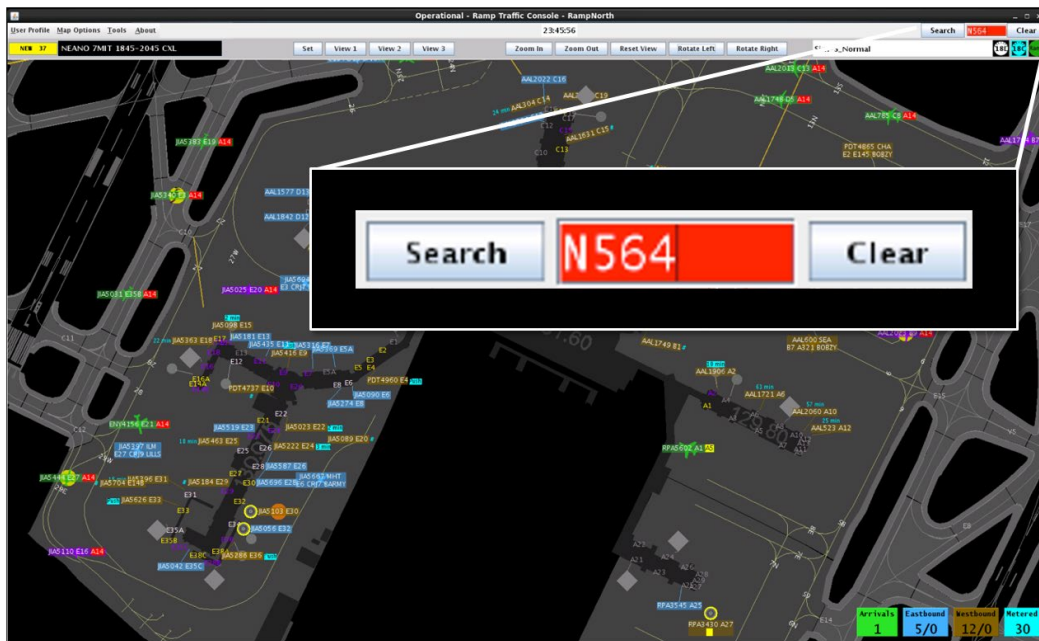


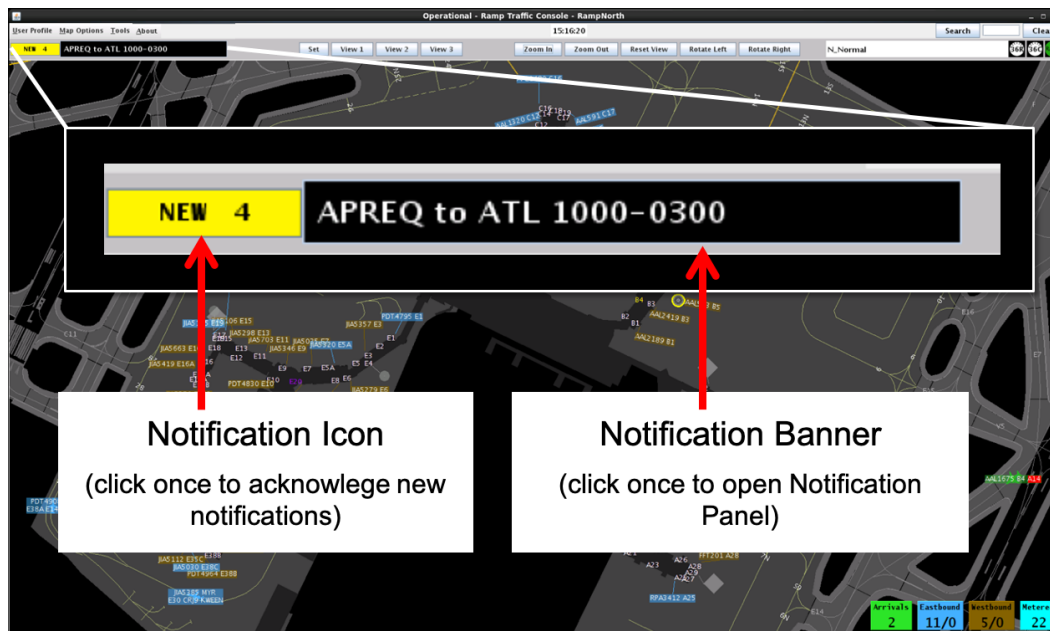
Figure 3.42. Search criteria does not return a result.

### 3.6 Notifications

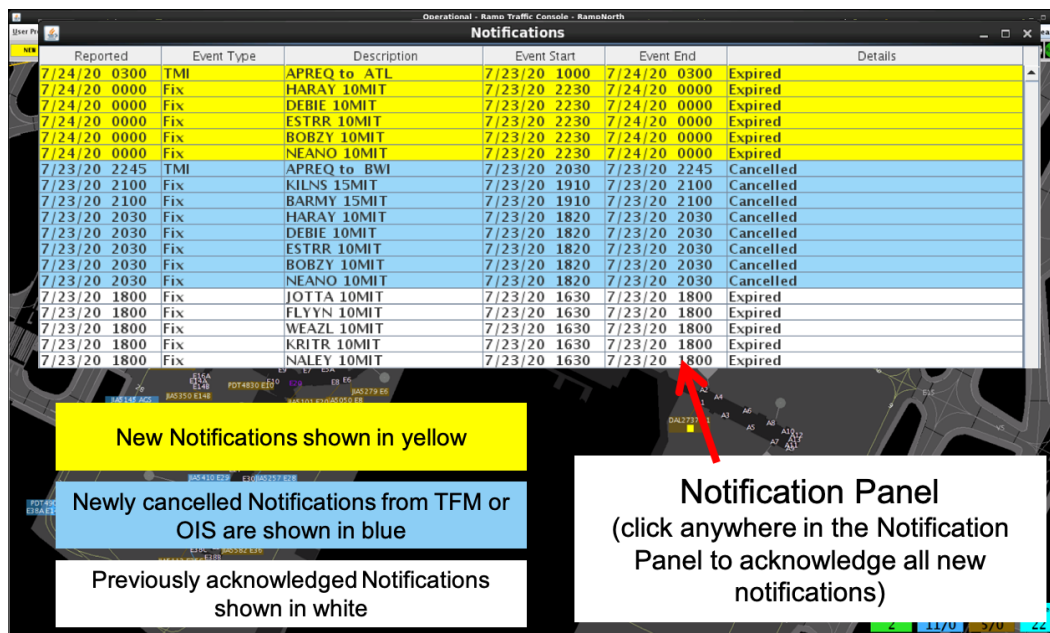
RTC displays notifications in the form of a:

- **Notification Icon** to indicate the number of *new* notifications (e.g., Four new notifications in Figure 3.43),
- **Notification Banner** to cycle through new notifications (e.g., “APREQ to ATL 1000-0300” in Figure 3.43), and

- **Notification Panel** to display a full list of new (yellow), newly cancelled (blue), and previously acknowledged notifications (white) (Figure 3.44).



**Figure 3.43. Notification Icon (yellow field) and Notification Banner.**



**Figure 3.44. Notification Panel: New notifications (yellow), new cancellation notifications (blue), and previously acknowledged notifications (white).**

Notifications may originate from information entered in the STBO Client by ATC or from an outside source, such as the System-Wide Information Management (SWIM), the

FAA Operational Information System (OIS), or the Traffic Flow Management System (TFM). Notifications are always related to events that impact multiple flights or the airport (e.g., TMIs, airport-related, and, where applicable, Surface Metering Program (SMP) status), and are never issued for single flights. Information on restrictions related to an individual flight are available on the flight strip/data tag (see Section 5) or Flight Menu (see Section 7).

When new notifications are received, the **Notification Icon** turns yellow and displays the number of new notifications (e.g., “NEW 4” for eight new notifications in Figure 3.43).

The **Notification Banner** displays the subject of the notification and the time range of the event (e.g., “APREQ to ATL 1000-0300” in Figure 3.43). The Notification Banner cycles through all unacknowledged notifications.

The **Notification Panel** displays all notifications and the list is automatically cleared each day at 0800 UTC. New notifications are highlighted in yellow and notifications newly cancelled by TFM or OIS are highlighted in blue (Figure 3.44). For example, if a TMI is cancelled by TFM or OIS before its scheduled end time, the notification is highlighted in blue.

Examples of notifications include:

***Examples of ATC-related Notifications:***

- [EWR] GDP (Ground Delay Program: *in effect / cancelled (CXL) / expired*)
- [TPA] STOP (Ground Stop: *in effect / cancelled (CXL) / expired*)
- APREQ to [JFK] (APREQ: *in effect / cancelled (CXL) / expired / obsolete*)
- [JOJO] CLOSED (Departure Fix Closure: *in effect / cancelled (CXL) / expired*)
- [JOJO] OPENED (Departure Fix Opened)
- [KRITR] 20MIT (Miles-in-Trail restriction: *in effect / cancelled (CXL) / expired*)

***Examples of Airport-related Notifications:***

- VMC (example meteorological conditions)
- North (example of airport configuration)
- N\_Normal (example of runway utilization)
- RWY 18L CLOSED (example of runway closure)

***Examples of Ramp-related Notifications:***

- RAMP OPENED (example of ramp status: *open*)
- C9 CLOSED (example of gate status: *closed*)
- C9 OPEN (example of gate status: *open*)

***Examples of Surface Metering Program (SMP) Notifications:***

- NO METERING [SMP Metering mode: *off*]
- TIME BASED METERING (SMP Metering mode: *Time-Based Metering*)
- 18L AFFIRMED (SMP *affirmed (enabled)*, but not *active* on Runway 18L)
- 18L ACTIVE (SMP on Runway 18L *active*)
- 18L COMPLETED (SMP on Runway 18L *completed*)

- 18L OBSOLETE (SMP on Runway 18L *obsolete*)
- 18L EXPIRED (SMP on Runway 18L *expired*)

Once acknowledged, the Notification Panel is shown in white (Figure 3.45), “NONE” is displayed on a gray Notification Icon, and the Notification Banner is blank (Figure 3.46).

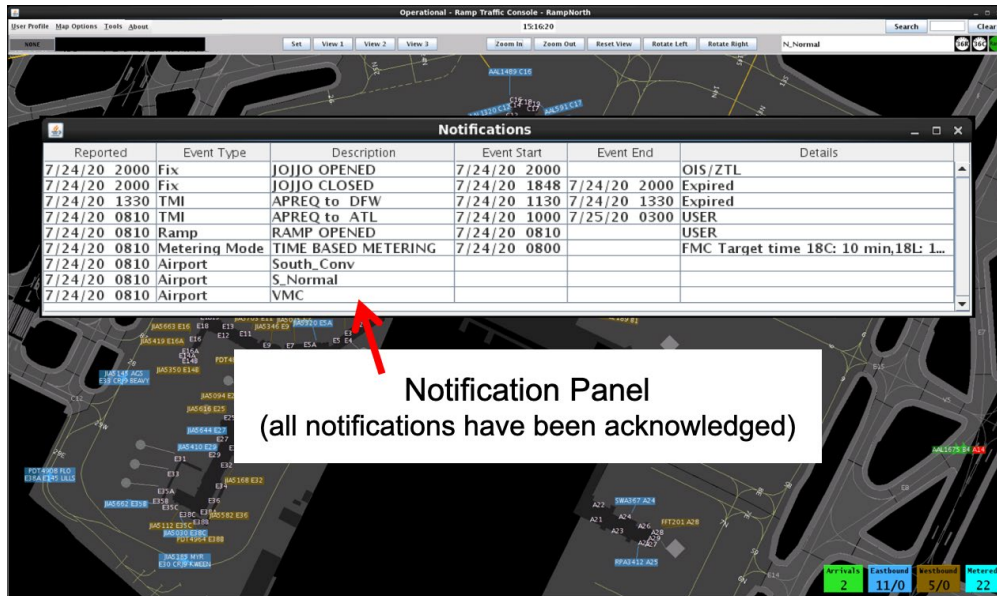


Figure 3.45. Notification Panel after notifications are acknowledged.

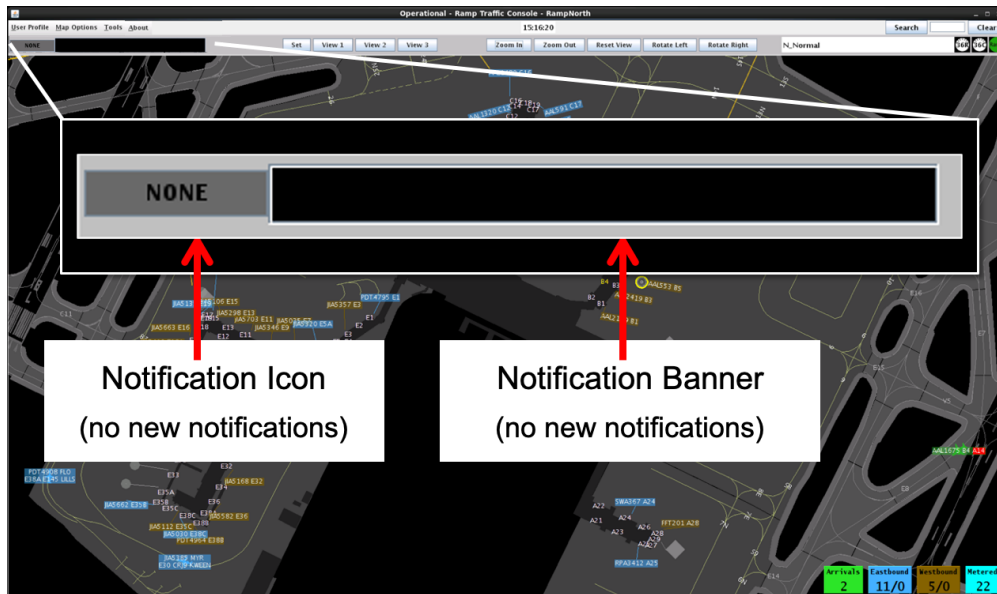


Figure 3.46. Notification Icon and Notification Banner after notifications are acknowledged.

## 3.7 Runway Utilization/Airport Configuration

The Runway Utilization field shows the current runway utilization and airport configuration in abbreviated text format (Figure 3.47). When the runway utilization and/or configuration information for the airport changes, the text in the Runway Utilization field updates to reflect this change. Runway utilization and airport configuration can be entered and changed by ATC in the STBO Client.



Figure 3.47. Runway Utilization.

## 3.8 Icons

Icons displayed in the upper right of the RTC display indicate the status of the Surface Metering Program (SMP), if applicable at that airport, and of the ramp.

### 3.8.1 Surface Metering Program (SMP) Status Icon

At airports where Surface Time-Based Metering (STBM) is used, information about the status of the Surface Metering Program (SMP) at each departure runway is displayed in the form of runway metering status icons (Figure 3.48). The icon changes color from gray with a red slash when metering is *off*, to white when metering is *on* (*i.e.*, *affirmed/enabled*) but not active, to cyan when metering is *on and active* (Figure 3.49). See Section 9 for a full description of Surface Metering.



Figure 3.48. Runway SMP status icons. In this example, metering is active on Runway 18C.

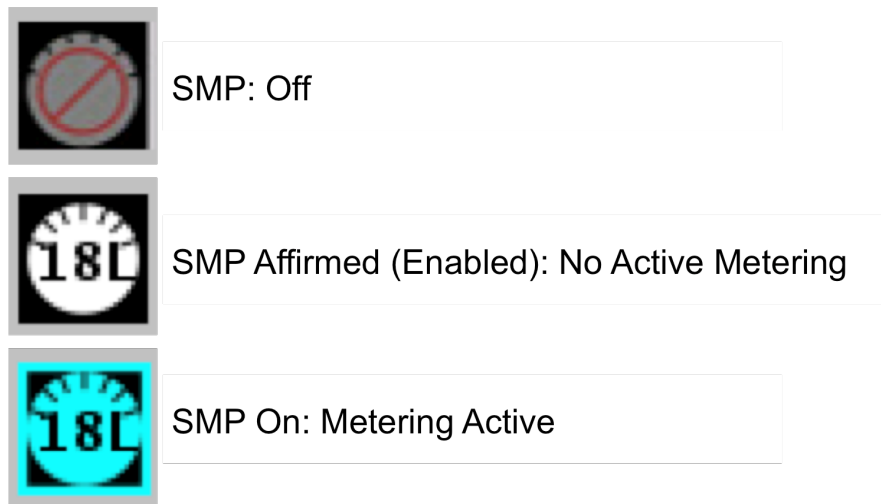


Figure 3.49. Runway Surface Metering Program (SMP) status icons.

### 3.8.2 Ramp Status Icon

The ramp status icon is displayed in the upper hand corner of the RTC window (Figure 3.50). The ramp status icon indicates the current ramp status: ramp open (green), ramp closure pending (yellow), or ramp closed (red) (Figure 3.51). Ramp status is updated by the Ramp Manager in RMTc (see Section 10.4.1 for description).





Figure 3.50. Ramp status icon.

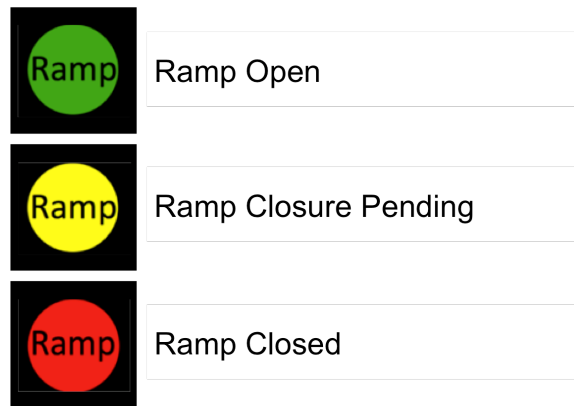


Figure 3.51. Ramp status icons.

## 4 Map

Information displayed on the Map includes: arrival, departure, and metered flight counts, parking gate status, taxiway closures, and runway configuration, and Surface Metering Program (SMP) status.

Individual flights (represented by individual Flight Strips/

### 4.1 Arrival, Departure, and Metered Counts

Arrival, Departure, and Metered Count windows are displayed in the lower right corner of the map (Figure 4.1).

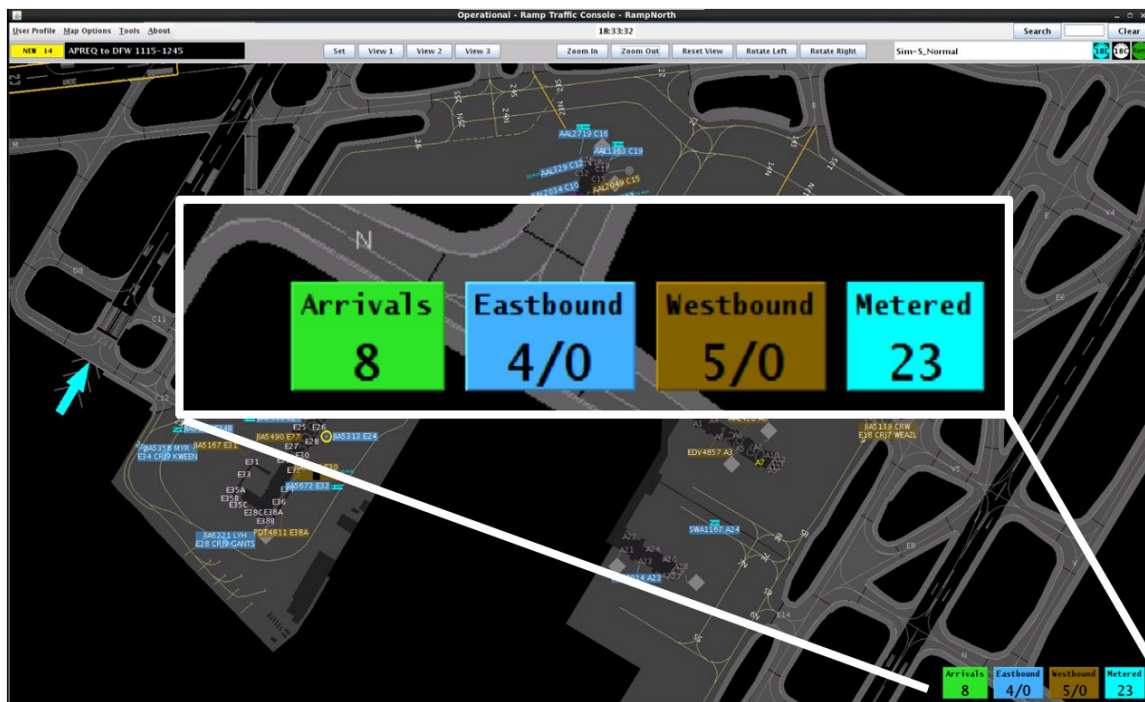


Figure 4.1. Arrival, Departure, and Metered Counts.

#### 4.1.1 Arrival Count

See Section 3.1.2.8 to display the green Arrival Count window if it is not already shown.

The Arrival Count reflects the number of flights scheduled to touchdown in the next 10 minutes (e.g., “13” in Figure 4.2). Arrival flights are removed from the count upon touchdown.

### 4.1.1.1 Arrival List

The flights that make up the arrival count can be viewed in a list (Figure 4.2).

**To open the Arrivals List:**

**Step 1:** Click once on the green Arrival Count window in the bottom right corner of the map to open the Arrivals List (Figure 4.2, left).

**Note:** Columns in the Arrivals List include (Figure 4.2, right):

- **Callsign**
- **Parking Gate**
- **Runway**
- **Estimated touchdown time (ON time)**

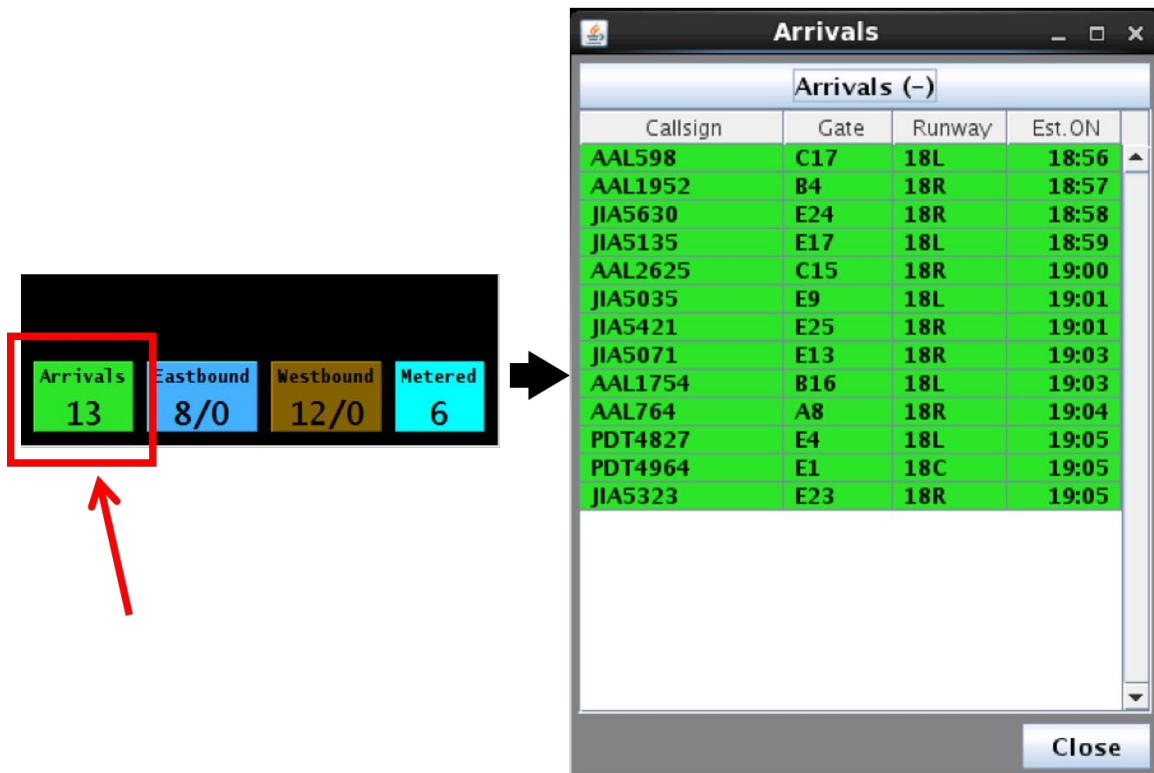


Figure 4.2. Click on the Arrival Count (left) to open the Arrival List (right).

To draw a tether between an arrival flight and its parking gate:

**Step 1:** Click on a flight in the Arrival List (e.g., JIA5559 in Figure 4.3).

**Note:** The selected row is highlighted in yellow and a tether is drawn from the arrival flight to its assigned parking gate (Figure 4.3).

**Note:** It may be necessary to zoom out and scan the map to locate the flight, as the map view does not adjust if the selected flight falls outside of the visible window.

**Alternatively:** To deselect the flight, click anywhere else on the map or select a different arrival flight.

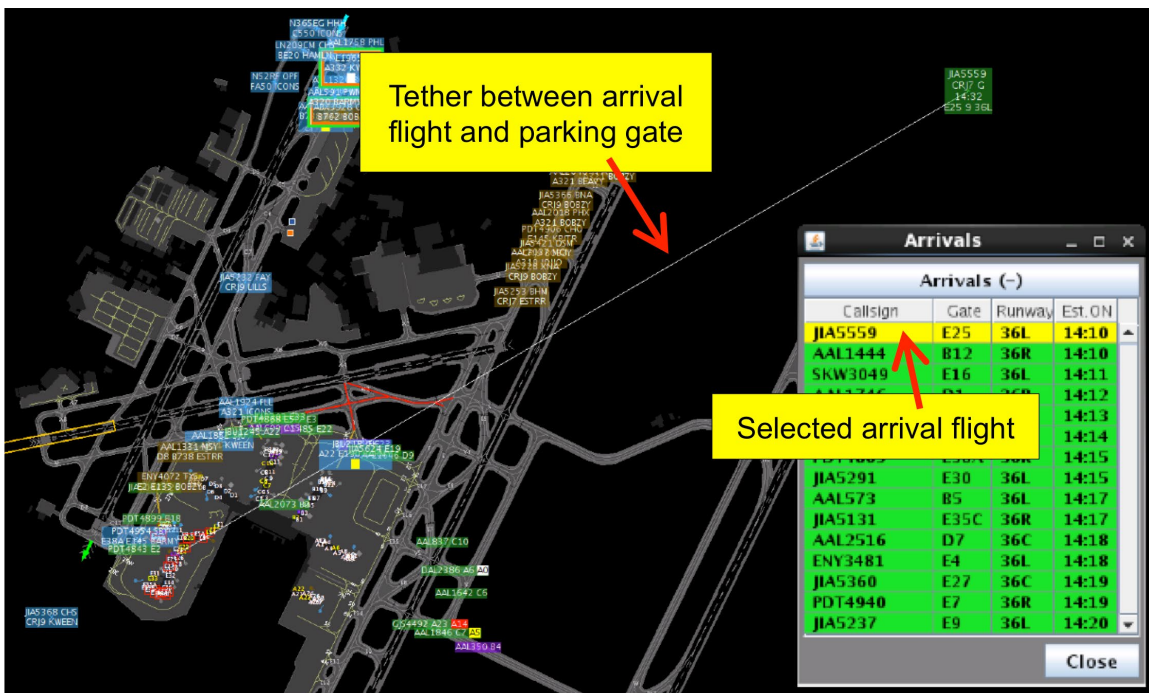


Figure 4.3. Select a flight in the Arrival List to draw a tether between the arrival flight (in this example, JIA5559) and its assigned parking gate.

## 4.1.2 Departure Count

Two Departure Count windows are automatically displayed on the map, the count of flights scheduled to takeoff on the eastbound runway (blue) and the count of flights scheduled to takeoff on the westbound runway (brown). Within each window, two numbers are displayed:

- The first (or, top) number reflects the number of departure flights that are currently pushing back from their gate and taxiing to the departure runway (e.g., “5” in Figure 4.4, left).
- The second (or, bottom) number reflects the number of departure flights that have been placed on hold at their gate (e.g., “2” in Figure 4.4, left). Placing a flight on hold is described in Section 5.1.1.2.7, Section 8.2.9, and Section 9.1.5.

Departure flights are removed from the count once they reach the departure runway.

#### 4.1.2.1 Departure List

The flights that make up each departure count can be viewed in a list (Figure 4.4).

##### To open a Departure List:

**Step 1:** Click on the blue Eastbound (or brown Westbound) Departure Count window in the bottom right corner of the map (in Figure 4.4, the *Eastbound* Departure List is shown).

**Note:** *Two sections are included in the Departure List with the following columns (Figure 4.4, right):*

##### Departures:

- *Sequence number (based on Target Takeoff Time; TTOT)*
- *Callsign*
- *Taxi Time (in mm:ss format). Current duration of taxi time, clock starts upon initiation of pushback.*
- *Destination*

##### Holds:

- *Callsign*
- *Hold Time (in mm:ss format): Current duration of hold time. The timer starts when the Ramp Controller selects “Hold” on the right-click menu.*

Two sections are included in the Departures List:

- **Departures.** Flights that are currently pushing back from their gate and taxiing to the departure runway are displayed in black text (i.e., flights 1-5 in Figure 4.4). Flights expected to push back soon, including flights on hold, are displayed in gray text (i.e., flights 6–15 in Figure 4.4).

- **Holds.** Departure flights that have been placed on hold are also displayed in the bottom half of the window with their associated hold time, which continues to count up until they push back.

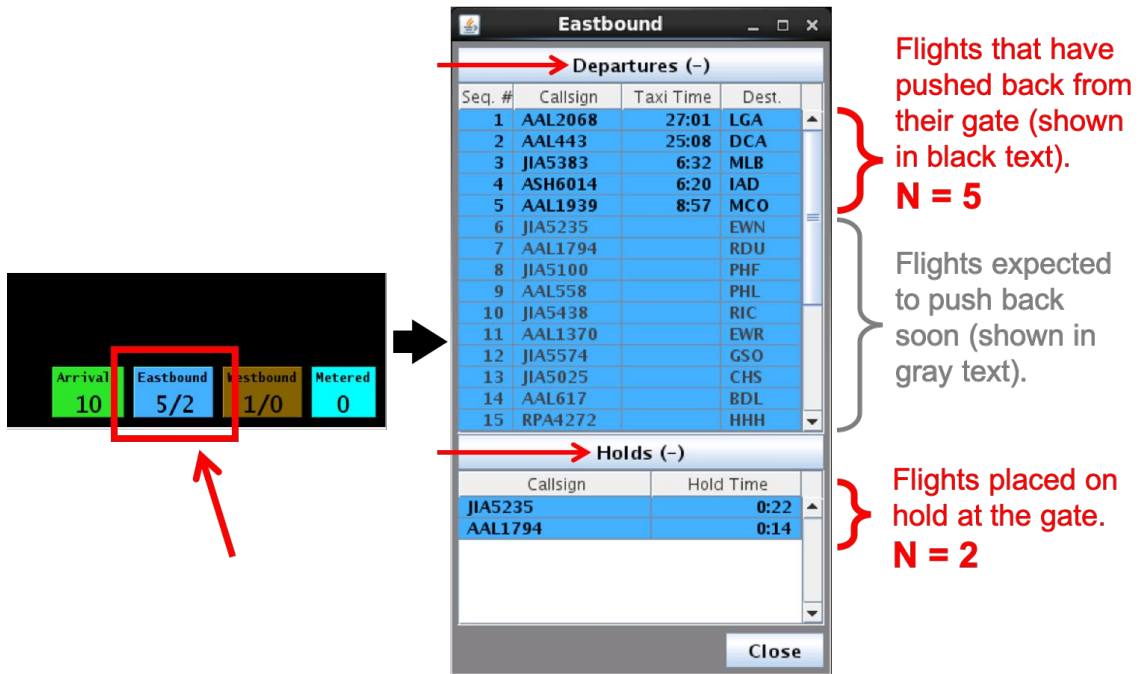


Figure 4.4. Click on the Departure Count window (left) to open the Departure List (right). In this example, the Eastbound Departure List is shown.

Flights placed on hold are included in both the Departures List and the Hold List (Figure 4.5).



Eastbound			
Departures (-)			
Seq. #	Callsign	Taxi Time	Dest.
1	AAL443	26:52	DCA
2	ASH6014	8:04	IAD
3	JIA5383	8:16	MLB
4	AAL1939	10:41	MCO
5	JIA5235		EWN
6	AAL1794		RDU
7	JIA5100		PHF
8	JIA5293		ORF
9	AAL558		PHL
10	JIA5438		RIC
11	AAL1370		EWR
12	JIA5574		GSO
13	JIA5439		ILM
14	JIA5025		CHS
15	AAL617		BDL

Holds (-)	
Callsign	Hold Time
JIA5235	2:06
AAL1794	1:58

Figure 4.5. Flights on hold are displayed in both the Departures list and the Holds list. In this example, AAL1794 has been placed on hold.

**To highlight a departure flight:**

**Step 1:** Click on a flight in the Departure List (e.g., AAL677 in Figure 4.6).

**Note:** The selected row is highlighted in yellow and, if the flight strip/data tag is minimized on the map, it is enlarged (e.g., AAL677 in Figure 4.6).

**Note:** It may be necessary to zoom out and scan the map to locate the flight, as the map view does not adjust if the selected flight falls outside of the visible window.

**Alternatively:** To deselect the flight, click anywhere else on the map or select a different departure flight.

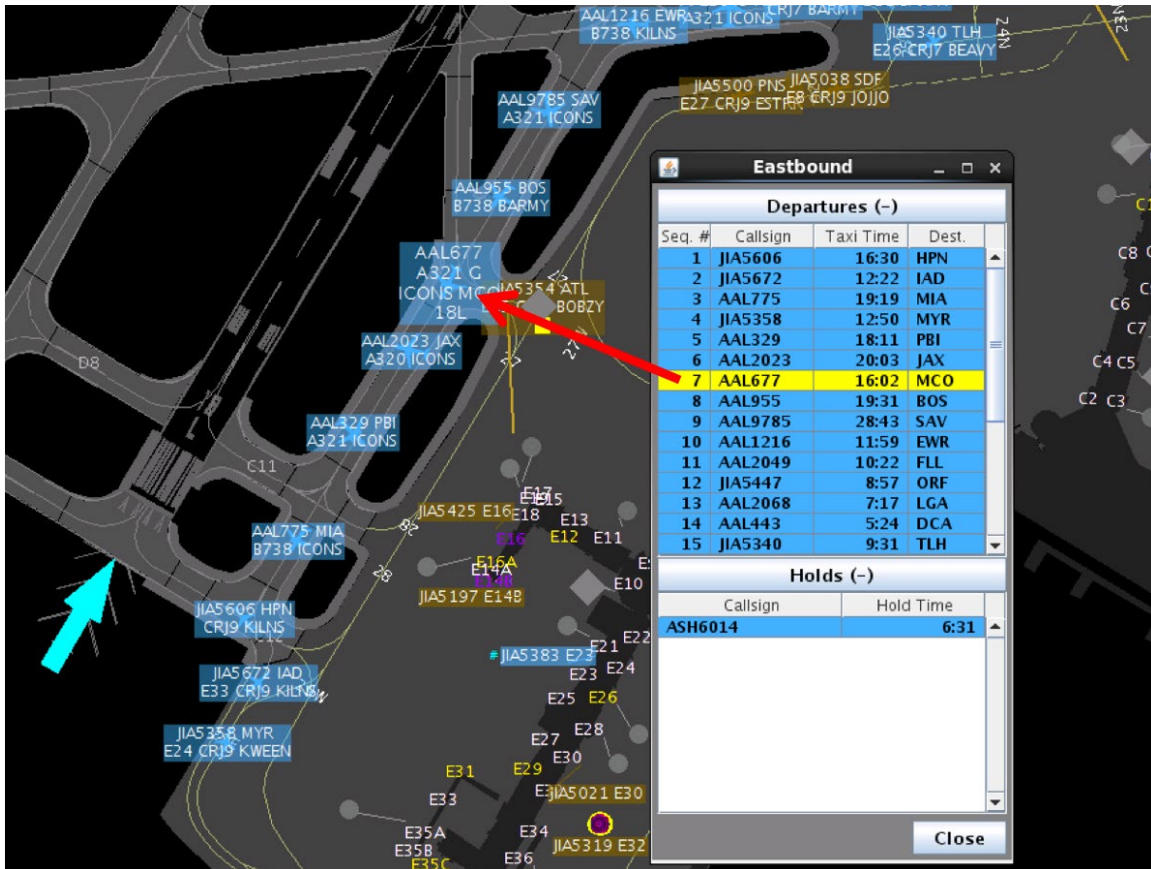


Figure 4.6. Select a flight in the Departure List to highlight it on the map (in this example, AAL677).

### 4.1.3 Metered Count

See Section 3.1.2.9 to display the cyan Metered Count window if it is not already shown.

The Metered Count reflects the number of flights, still at their gate, that are part of an affirmed or active Surface Metering Program (SMP). Flights with a TOBT within the next 30 minutes are included in the count.

Flights subject to an EDCT or APREQ are not subject to surface metering and, thus, not included in the Metered Count. Metered flights are removed from the count upon initiation of pushback or when an SMP becomes obsolete or reaches its scheduled end time.

#### 4.1.3.1 Metered List

The flights that make up the metered count can be viewed in a list (Figure 4.2).



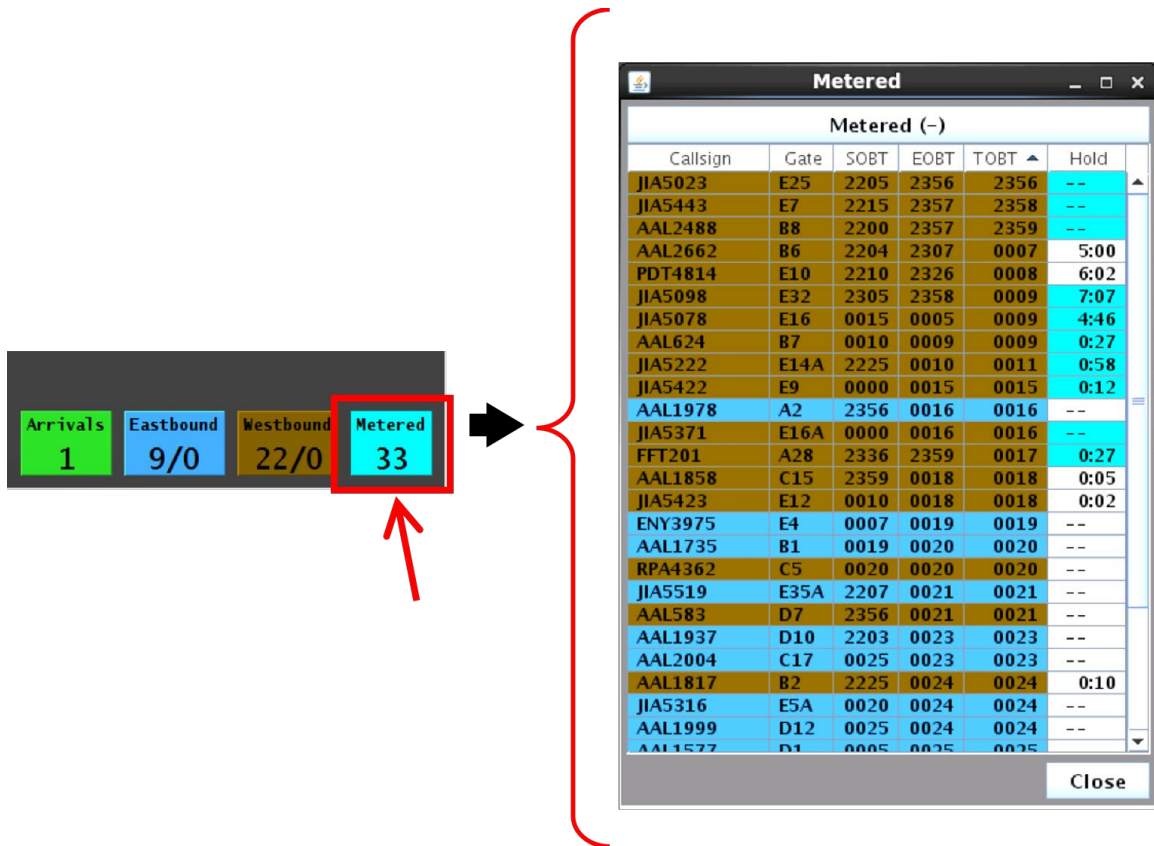
**To open the Metered List:**

**Step 1:** Click on the cyan Metered Count window in the bottom right corner of the map (Figure 4.7, left).

**Note:** The Metered List includes the following columns (Figure 4.7, right):

- Call sign
- Parking gate
- \*Scheduled Off-Block Time (SOBT) (hhmm UTC)
- \*Earliest Off-Block Time (EOBT) (hhmm UTC)
- \*Target Off-Block Time (TOBT) (hhmm UTC)
- \*Hold time (mm:ss) (see description of Hold time below)

\*Column can be used to sort the Metered List.



**Figure 4.7.** Click on the Metered Count (left) to open the Metered List (right) which consists of all flights part of the Surface Metering Program (SMP).

The Metered list can be sorted using the: SOBT, EOBT, TOBT, or Hold columns. Click on the column heading to sort the list using the times in that column. For example, the Metered List is sorted by TOBT (earliest to latest) in Figure 4.7.

### 4.1.3.1.1 Metered List: Eastbound and Westbound Flights

Rows in the Metered List are color-coded blue or brown. Blue represents flights scheduled to takeoff on the eastbound runway and brown, the westbound runway (Figure 4.8).

When a flight is selected, by clicking on a row in the Metered List or on a flight strip on the map, the row is highlighted in yellow (Figure 4.8).

**Brown:** Scheduled for Westbound runway.

**Blue:** Scheduled for Eastbound runway.

**Yellow:** Selected flight.

Metered (-)						
Callsign	Gate	SOBT	EOBT	TOBT ▲	Hold	
JIA5023	E25	2205	2356	2356	--	
JIA5443	E7	2215	2357	2358	--	
JIA5533	E28	2214	2358	2358	--	
AAL2488	B8	2200	2357	2359	--	
PDT4814	E10	2210	2326	0008	6:12	
AAL2662	B6	2204	2307	0009	6:37	
JIA5098	E32	2305	2358	0009	7:17	
JIA5078	E16	0015	0005	0009	4:46	
AAL624	B7	0010	0009	0009	0:27	
JIA5222	E14A	2225	0010	0011	0:58	
JIA5422	E9	0000	0015	0015	0:12	
AAL1978	A2	2356	0016	0016	--	
JIA5371	E16A	0000	0016	0016	--	
FFT201	A28	2336	2359	0017	0:27	
JIA5423	E12	0010	0018	0018	0:02	
AAL1858	C15	2359	0018	0019	1:10	
ENY3975	E4	0007	0019	0019	--	
AAL1735	B1	0019	0020	0020	--	
RPA4362	C5	0020	0020	0020	--	
JIA5519	E35A	2207	0021	0021	--	
AAL583	D7	2356	0021	0021	--	
AAL1937	D10	2203	0023	0023	--	
AAL2004	C17	0025	0023	0023	--	
AAL1817	B2	2225	0024	0024	0:10	
JIA5316	E5A	0020	0024	0024	--	
AAL1800	D12	0025	0024	0024	--	

Figure 4.8. Rows are color-coded for scheduled runway (blue/brown) and yellow when selected.

### 4.1.3.1.2 Metered List: Highlight a Flight

Select a flight in the Metered List to highlight it on the map.

**To highlight a Metered flight:**

**Step 1:** Click on a row in the Metered List (Figure 4.9).

**Note:** The selected row is highlighted in yellow and, if the flight strip is minimized on the map, it is enlarged (e.g., PDT4874 in Figure 4.9).

**Note:** It may be necessary to zoom out and scan the map to locate the flight, as the map view does not adjust if the selected flight falls outside of the visible window.

**Alternatively:** To deselect the flight, click anywhere else on the map or select a different flight.

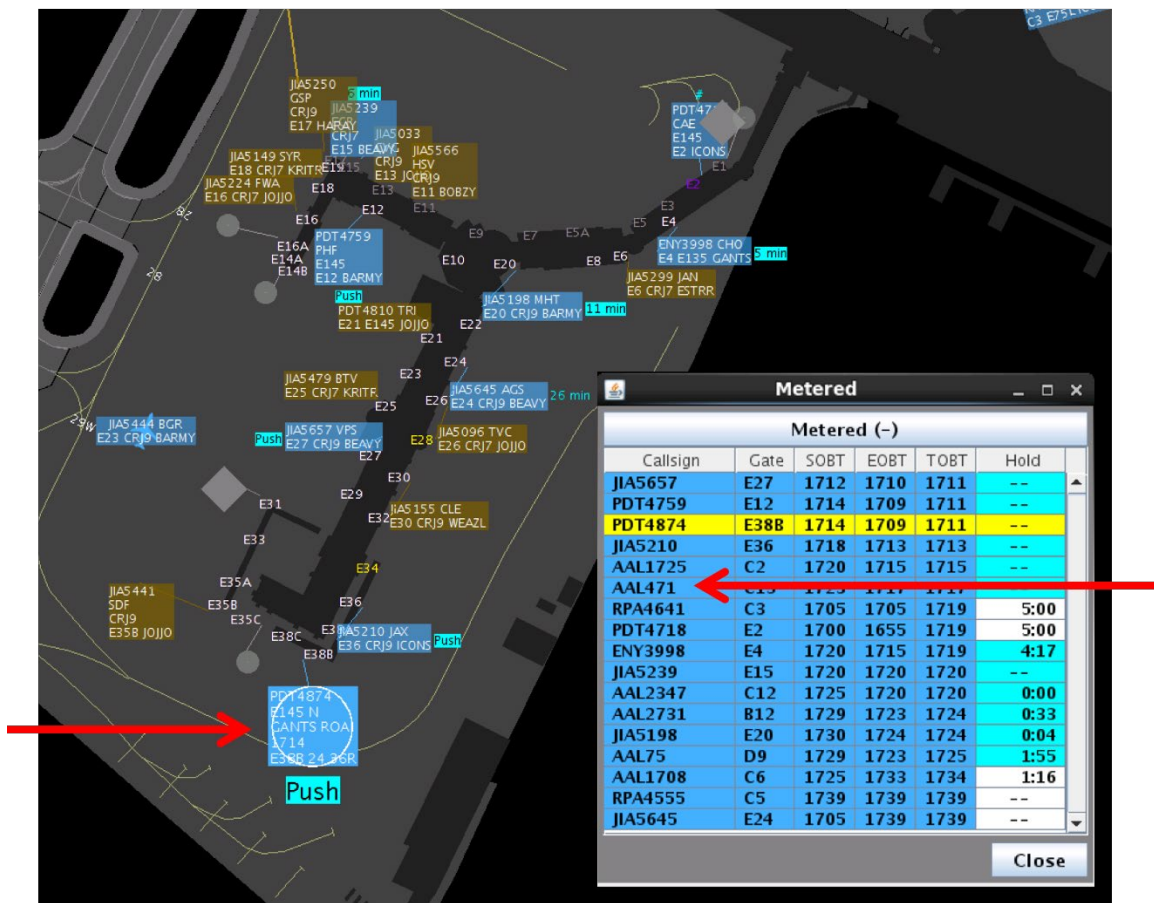


Figure 4.9. Selected metered flight (e.g., PDT4874 in this example).

**4.1.3.1.3 Metered List: Hold Time**

The Hold column represents the Scheduler-recommended gate hold. Gate holds are recommended only for some flights that are part of a Surface Metering Program (SMP).

### 4.1.3.1.3.1 Recommended Gate Hold: Prior to EOBT

Prior to reaching a flight's Earliest Off-Block Time (EOBT), the time in the Hold column represents the **ATD-2 Scheduler-recommended gate hold**, calculated as:

- Target Off-Block Time (TOBT) minus Undelayed Off-Block Time (UOBT), where UOBT is typically equal to the Earliest Off-Block Time (EOBT).

In Figure 4.10, the Scheduler recommends a 9-min gate hold for this flight. As shown in the Metered List, TOBT (2233 UTC) minus EOBT (2224 UTC) equals 9 minutes (rounded to the minute). In *mm:ss* format, the recommended gate hold is 8 minutes and 54 seconds, as displayed in the Hold column.

Note that, *prior to reaching the flight's EOBT*, the time shown in the Hold column is calculated differently than the gate advisory (the cyan countdown timer next to the flight strip). The gate advisory represents TOBT minus Current Time. As indicated on the flight strip in Figure 4.10, it is currently 24 minutes prior to the flight's TOBT.

Callsign	Gate	SOBT	EOBT	TOBT	Hold
JIA5682	E14B	2212	2214	2214	--
PDT4737	E7	2203	2218	2218	--
PDT4960	E2	2220	2218	2219	--
JIA5067	E11	2224	2219	2219	--
AAL1069	B9	2225	2220	2221	0:51
AAL443	D1	2222	2219	2222	2:25
AAL1906	C16	2226	2221	2223	2:31
JIA5222	E28	2225	2223	2227	3:59
JIA5585	E35B	2215	2212	2228	7:54
JIA5634	E8	2235	2229	2229	--
PDT4842	E5	2230	2224	2230	5:53
AAL1893	B6	2204	2230	2230	--
JIA5443	E29	2215	2210	2232	11:48
<b>AAL484</b>	<b>C12</b>	<b>2230</b>	<b>2224</b>	<b>2233</b>	<b>8:54</b>
AAL606	B5	2231	2229	2233	4:10
JIA5638	E20	2245	2240	2240	--
AAL2226	B1	2240	2234	2242	7:44
AAL2060	D10	2225	2245	2245	--

**Scheduler-Recommended Gate Hold Time = TOBT minus EOBT.**

In this example, 2233 UTC - 2224 UTC = 8 min and 54 sec (in *mm:ss*).

**Gate Advisory = TOBT minus Current Time.**

In this example, 24 min prior to TOBT.

Figure 4.10. Prior to the EOBT, the Scheduler-recommended gate hold is displayed in the Hold column. The gate advisory next to the flight strip displays the countdown to the TOBT.

### 4.1.3.1.3.2 Recommended Gate Hold: After EOBT

If the flight is still at the gate after reaching its Earliest Off-Block Time (EOBT), the time in the Hold column is now an active countdown timer and represents the remaining ATD-2 Scheduler-recommended gate hold, calculated as:

- Target Off-Block Time (TOBT) minus Current Time.

In the example in Figure 4.11, current time is approximately 2030 UTC. Thus, remaining Scheduler-recommended hold time is TOBT (2233 UTC) minus Current Time (2030 UTC, in this example) which is 3 minutes (rounded to the minute). In *mm:ss* format, remaining gate hold is 2 minutes and 42 seconds, as displayed in the Hold column (Figure 4.11).

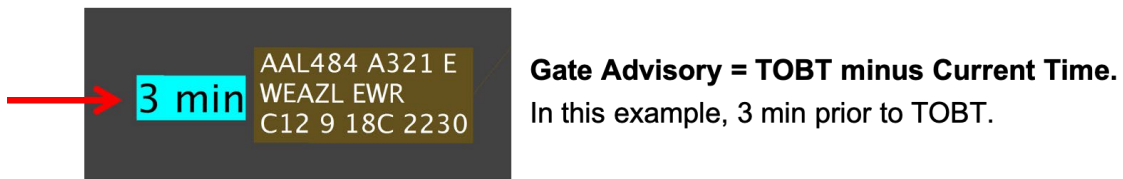
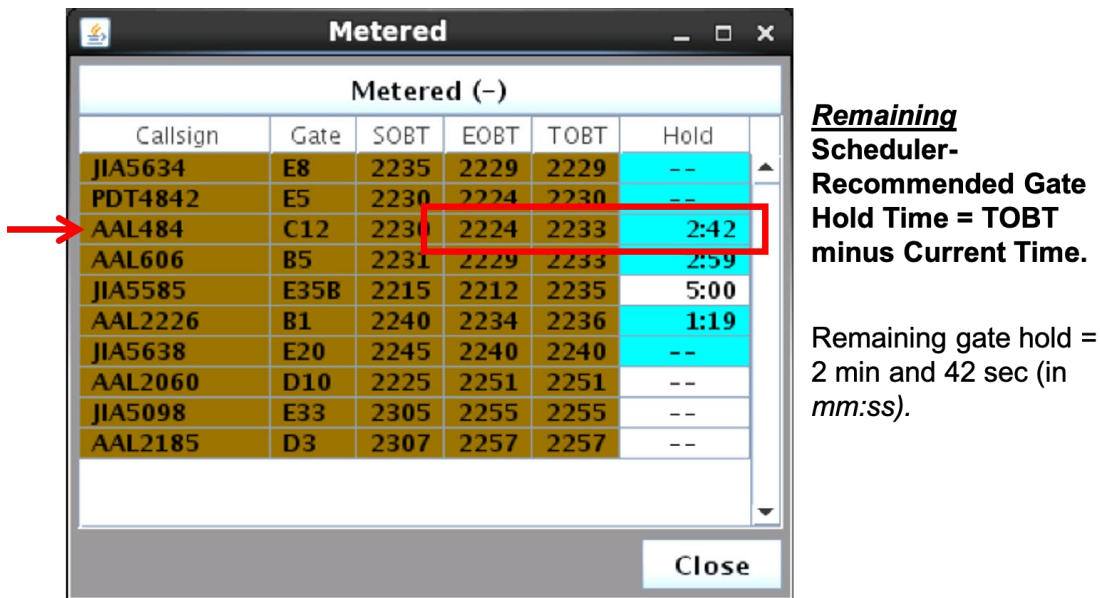


Figure 4.11. After the EOBT, the remaining Scheduler-recommended gate hold is displayed in the Hold column. The gate advisory next to the flight strip continues to display the countdown to the TOBT.

### 4.1.3.1.3.3 Recommended Gate Hold: After TOBT

If the flight is still at the gate upon reaching its Target Off-Block Time (TOBT), the remaining ATD-2 Scheduler-recommended gate hold time has run out and is now at zero. At this point, dashes (“--”) are displayed in the Hold column (Figure 4.12).

Likewise, when the gate advisory countdown timer on the flight strip reaches zero at the TOBT, the word “Push” is displayed (Figure 4.12).

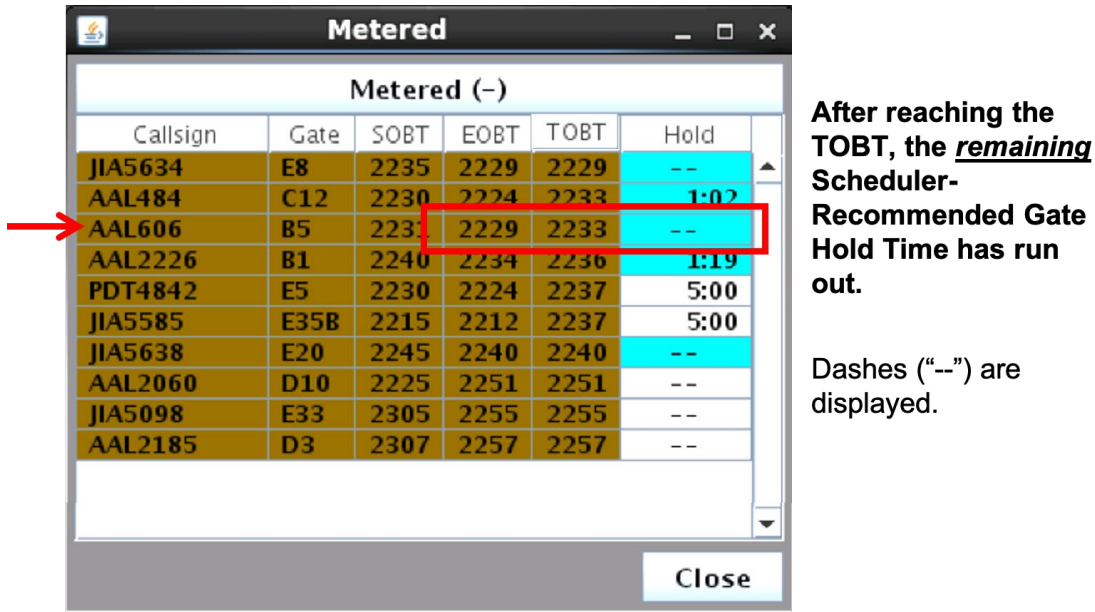


Figure 4.12. When the remaining Scheduler-recommended gate hold runs out at the TOBT, dashes (“--”) are displayed in the Hold column. At TOBT, gate advisory next to the flight strip displays “Push.”

#### 4.1.3.1.3.4 No Recommended Gate Hold

Only some of the flights that are part of an SMP are assigned a gate hold. If the Scheduler does not recommend a gate hold for the flight, that is, if the TOBT is equal to the EOBT, as they are in Figure 4.13, dashes (“--”) are displayed in the Hold column.

Note that, regardless of whether the Scheduler recommends a gate hold for the flight or not, a gate advisory (a timer counting down to the TOBT) is displayed next to the flight strip.

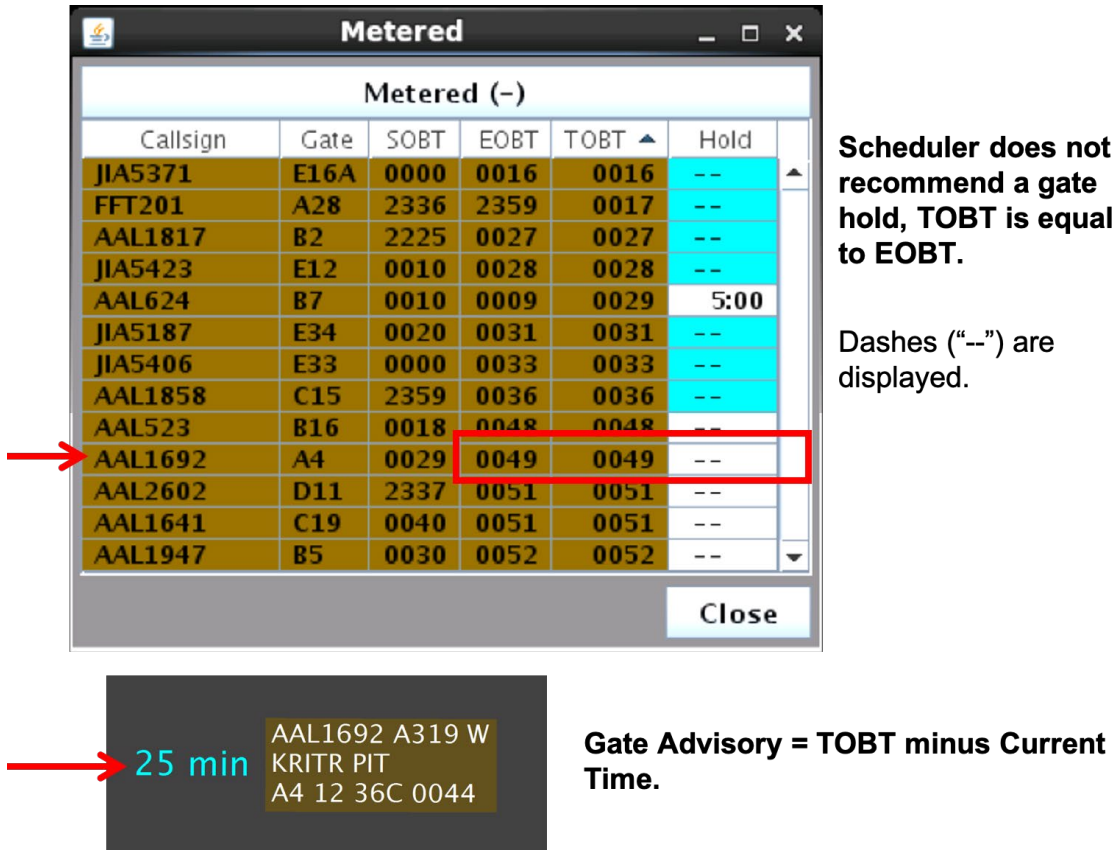


Figure 4.13. When the Scheduler does not recommend a gate hold, that is, when the TOBT is equal to the EOBT, dashes (“--”) are displayed in the Hold column.

#### 4.1.3.1.4 Metered List: Frozen Gate Advisory

The “Hold” column is displayed in **white** or highlighted in **cyan**.

- **White.** When the Hold time is displayed in white, the flight’s TOBT and TMAAT are *not frozen* and can change. In other words, if the ATD-2 Scheduler adjusts a metered flight’s target time at the runway (TTOT), the flight’s TOBT and TMAAT can change, and, as a result, the corresponding gate advisory may also adjust, or “jump” (Figure 4.14).

**Metered**

Metered (-)

Callsign	Gate	SOBT	EOBT	TOBT ▲	Hold
JIA5023	E25	2205	2356	2356	--
AAL2488	B8	2200	2357	2359	--
JIA5098	E32	2305	2358	0009	6:17
JIA5078	E16	0015	0005	0009	4:46
AAL624	B7	0010	0009	0009	0:27
JIA5222	E14A	2225	0010	0011	0:58
JIA5422	E9	0000	0015	0015	0:12
JIA5371	E16A	0000	0016	0016	--
FFT201	A28	2336	2359	0017	0:27
JIA5423	E12	0010	0018	0019	0:18
AAL1858	C15	2359	0018	0020	1:26
RPA4362	C5	0020	0020	0020	0:08
AAL583	D7	2356	0021	0021	0:14
AAL1817	B2	2225	0024	0024	0:26
JIA5406	E33	0000	0027	0029	1:41
JIA5465	E38C	0005	0026	0032	6:19

Close

Hold time is shown in white, the TOBT and TMAT are not frozen.

AAL583 A321 E  
 JOJJO ORD  
 D7 24 36C 0021

18 min

Gate Advisory on the flight strip is not frozen.

Figure 4.14. The Hold column is displayed in white when the TOBT and TMAT are *not* frozen.

- **Cyan.** When the Hold time is highlighted in cyan, the flight’s TOBT and TMAT are *frozen*. That is, regardless of changing conditions on the surface, the TOBT, TMAT, and corresponding gate advisory will not change. When the target times are frozen, the flight’s gate advisory is also displayed in black text and highlighted in cyan (Figure 4.15). See Section 9.1.3 for more information about frozen target times and gate advisories.



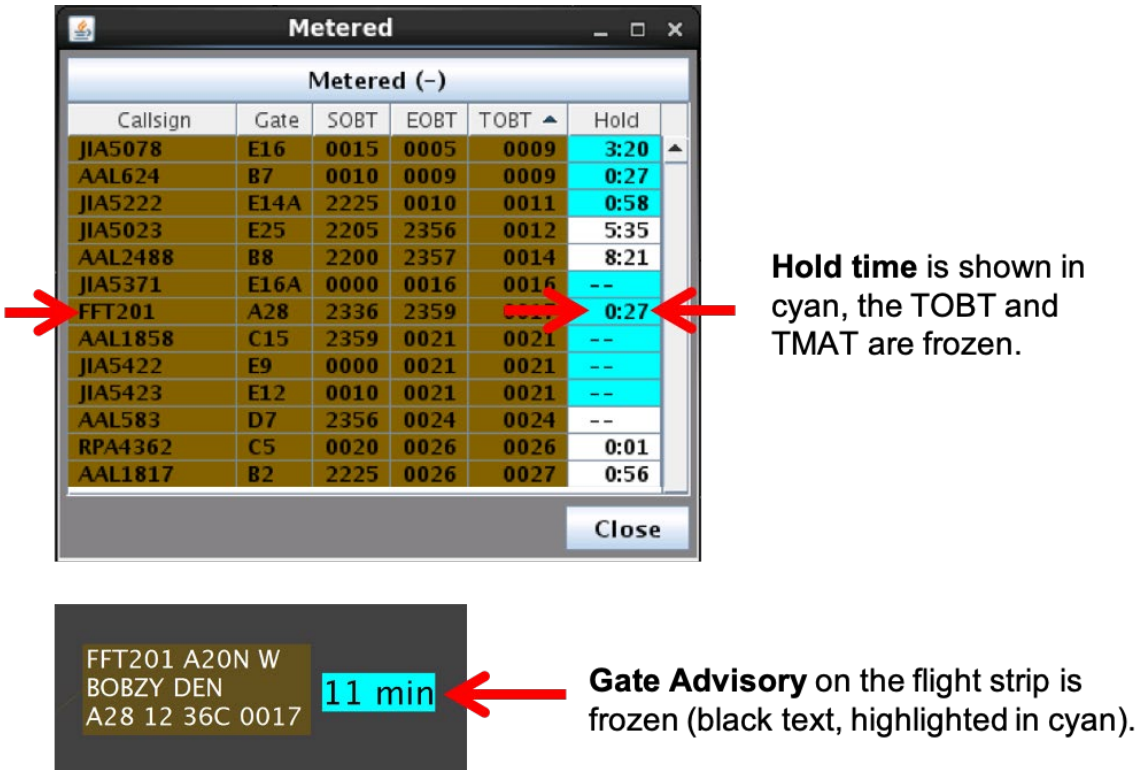


Figure 4.15. The Hold column is highlighted in cyan when the TOBT, TMAT, and gate advisory are frozen.

There is one exception to frozen gate advisories. If “Compression” is applied to surface metering gate holds, the TOBT and TMAT can be adjusted to an earlier time. See Section 3.1.2.12 and Section 4.6 for a description of metering compression.

#### 4.1.3.1.5 Metered List: Candidate for Leveraging Surface Metering

When a flight is identified as a Candidate for Leveraging Surface Metering, the gate advisory (i.e., the countdown timer next to the flight strip) is highlighted in *light green* rather than cyan (Figure 4.16, right).

When a flight is a Candidate, the Hold column in the Metered List is also highlighted in *light green*, rather than cyan (Figure 4.16, left).

Metered (-)					
Callsign	Gate	SOBT	EOBT	T... ▲	Hold
RPA4687	C3	2024	2022	2305	8:48
RPA4272	C9	2020	2246	2305	9:15
JIA5406	E36	2011	2306	2306	--
PDT4828	E38B	2019	2306	2306	--
JIA5634	E12	2030	2244	2306	9:54
AAL1775	D1	2020	2014	2306	10:20
ASH6295	A21	2045	2252	2306	10:31
JIA5078	E35A	2030	2050	2307	10:52
AAL1923	A2	2024	2320	2320	0:31
JIA5158	E18	2010	2320	2320	0:34
JIA5579	E19	2040	2320	2321	0:54
JIA5416	E5A	2150	2322	2322	0:04
AAL522	B6	2015	2321	2323	1:36
AAL2488	B5	2200	2322	2324	1:30

ASH6295 E75L W  
 ICONS IAH  
 A21 25S 18L 2306

11 min



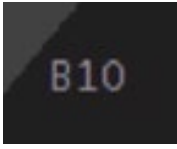
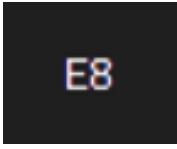
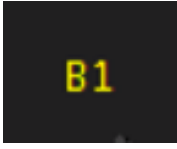
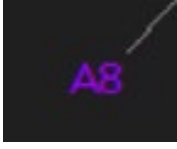
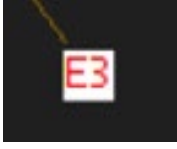
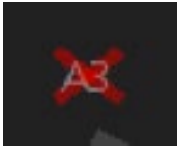
Figure 4.16. When a flight is identified as a Candidate for Leveraging Surface Metering, the Hold column is also highlighted in light green, like the gate advisory.

See Section 3.1.2.3 for a description of identifying Candidates for Leveraging Surface Metering.

## 4.2 Parking Gate Status

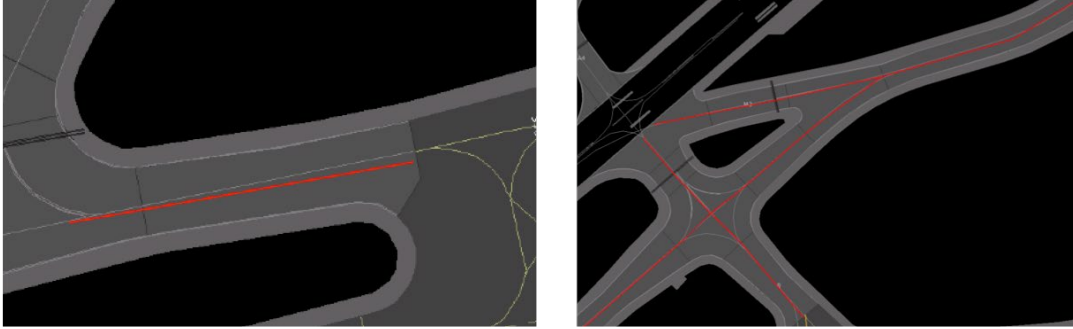
Gate number color coding can indicate ramp sector/terminal ownership, expected arrival, gate conflict, emergency on flight, airport-specific procedures/restrictions, and gate closed (Table 2).

**Table 2. Parking Gate Labels**

<b>Gate Number</b>	<b>Example</b>	<b>Description</b>
Gray		Gate is under control of another ramp sector/terminal when the “Highlight All Gates” Map Option is turned off.
White		Gate is under control of this ramp sector/terminal.
Yellow		Arrival flight, tethered to the gate is wheels-down on the surface (gate is unoccupied).
Magenta		Gate Conflict: An arrival flight is expected while the gate is occupied by a departure flight or gate is blocked by a ‘heavy’ aircraft at a neighboring gate.
Red text, highlight in white		Emergency (general or medical) has been designated for the flight tethered to that gate.
Red “X”		Gate closed (displayed in RTC and RMTC). However, only the Ramp Manager can close/open gates using RMTC, see Section 10.5.

### 4.3 Taxiway Closure

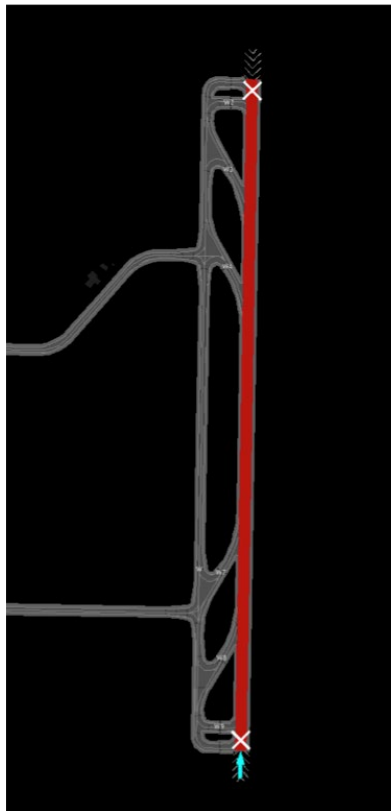
When a section of the airport is closed to air traffic, it is denoted with centerlines red lines. These closures are input using the STBO Client tool in the ATCT, but are viewable on the RTC map. These closures can be on any part of the airport, such as the ramp, taxiways, or the runways (Figure 4.17).



**Figure 4.17. Taxiway closure: Red line denotes a closed taxiway.**

## 4.4 Runway Closure

When a runway is closed, it is displayed in red with a white “X” at each end. Runway closures are input using the STBO client tool in the ATCT, but are shown on the RTC map (Figure 4.18).



**Figure 4.18. Runway closure: Closed runways are shown in red in a white “X” at each end.**

## 4.5 Runway Configuration

Arrows are displayed on the map to indicate arrival and departure runways (Figure 4.19). Arrows are shown automatically based on airport configuration and runway utilization.

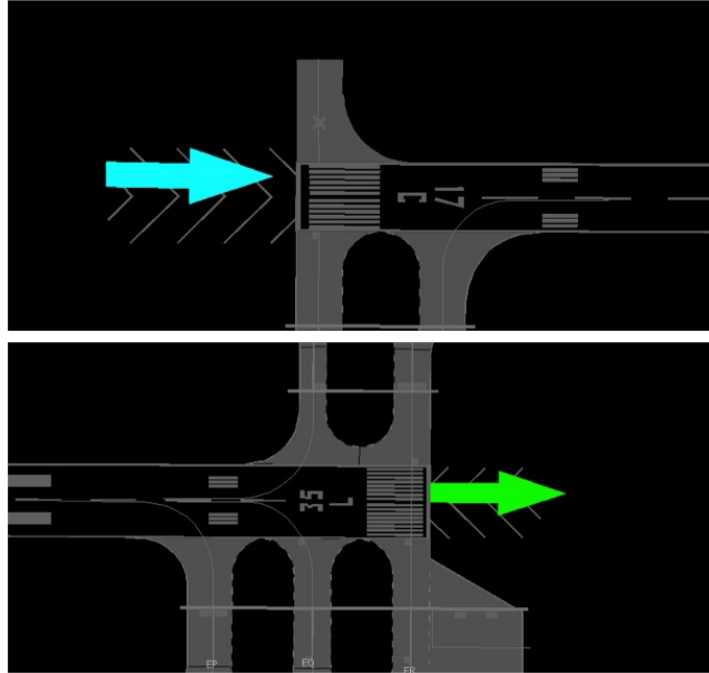
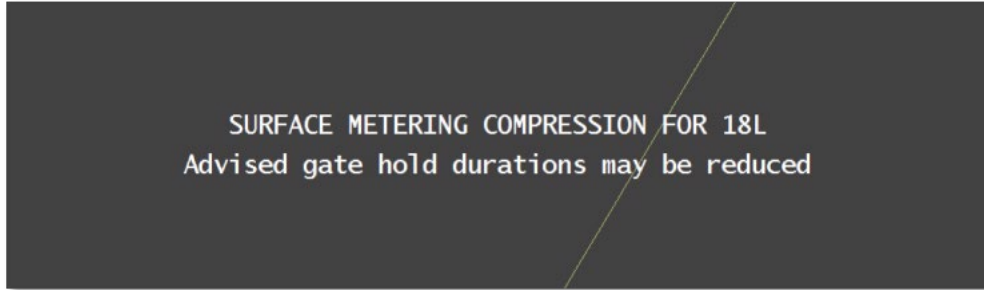


Figure 4.19. Runway configuration arrows: Arrival shown in cyan (top) and departure shown in green (bottom).

## 4.6 Surface Metering Program (SMP) “Compression” Message

When Surface Metering gate hold times are compressed, a message is displayed on the RTC map to alert Ramp Controllers that advised gate times may be reduced for flights scheduled for a particular runway (e.g., Runway 18L in Figure 4.20). This can apply to already-frozen advisories too.

The alert is visible for seven seconds, but can be dismissed sooner by clicking on the map.

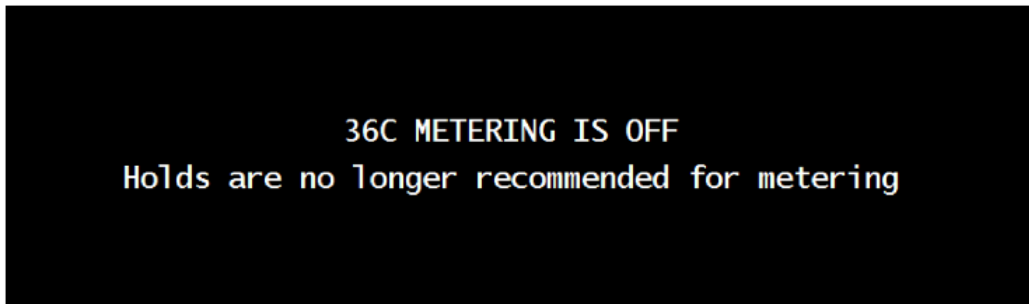


**Figure 4.20. Surface Metering Compression message.**

## **4.7 Surface Metering Program (SMP) “Off” Message**

When Surface Metering ends, a message is displayed on the RTC map to alert the Ramp Controller that metering advisories will no longer be shown for a particular runway (e.g., Runway 36C in Figure 4.21). No action is required of the user.

The alert is visible for seven seconds, but can be dismissed sooner by clicking on the map. Unlike the “Metering Compression,” the “Metering Off” message cannot be disabled.



**Figure 4.21. Surface Metering Program (SMP) Off Message.**

# 5 Flight Strips and Icons

Flights are depicted on the RTC map using digital flight strips and icons (Figure 5.1).





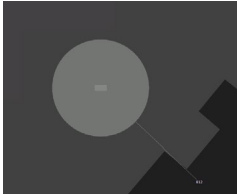

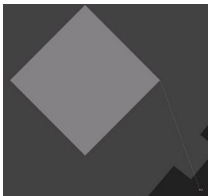



Figure 5.1. RTC map with flight strips and icons representing departure and arrival flights.

The appearance of flight strips and icons varies depending on the flight’s current state and characteristics of the flight/aircraft. An overview of flight strips and icons, in each departure and arrival state, is shown in Table 3.

Table 3. Overview of Departure and Arrival States

Departure State	Flight Strip/Icon Display	Description
At the gate		Flight strip (blue or brown) tethered to gate.
Pushback and Spool-Up		Flight strip (blue or brown) with attached engine icon.

Following pushback, during taxi-out	 	Flight icon and data tag (blue or brown). <b>Hollow Icon (left):</b> No track data. <b>Solid Icon (right):</b> With track data.
<b>Arrival State</b>	<b>Flight Strip/Icon Display</b>	<b>Description</b>
During taxi-in	 	Flight icon and data tag (green). <b>Hollow Icon (left):</b> No track data. <b>Solid Icon (right):</b> With track data.
After arriving at gate	 	Circle icon (gray). Flight information is shown with mouse hover (right).
At gate, after flight assignment is removed	 	Square icon (gray). Aircraft information is shown with mouse hover (right).

## 5.1 Flight States and Ramp Controller Inputs

Ramp Controllers can view and update a flight's current state using the RTC interface. For example, when a flight is cleared to push back from the gate, the Ramp Controller can update the flight's state to Pushback/Spool-Up. Likewise, when a flight completes spool-up and is cleared to the spot, the Controller can update the flight's state to reflect that it is taxiing to the spot.

Updates like these are reflected on the RTC display and also propagate throughout the ATD-2 scheduling system to accurately reflect each flight's current state and increase the accuracy of scheduling predictions. Providing these flight status inputs to the system is important to keep the ATD-2 scheduling system up-to-date, as well as other tools which are dependent on this information.

A full description of flight strips/icons and the user inputs available in each flight state is provided in the following sections.



## 5.1.1 Departure State: Parked at Gate

Beginning approximately 60 minutes prior to scheduled pushback, a departure is depicted as an active flight parked at the gate.

### 5.1.1.1 Flight Strip

While parked at the gate, prior to pushback, departure flights are shown as flight strips tethered to their gates. Flights scheduled to depart on the airport's west runway(s) are brown and flights scheduled to depart on the airport's east runway(s) are blue (Figure 5.2).

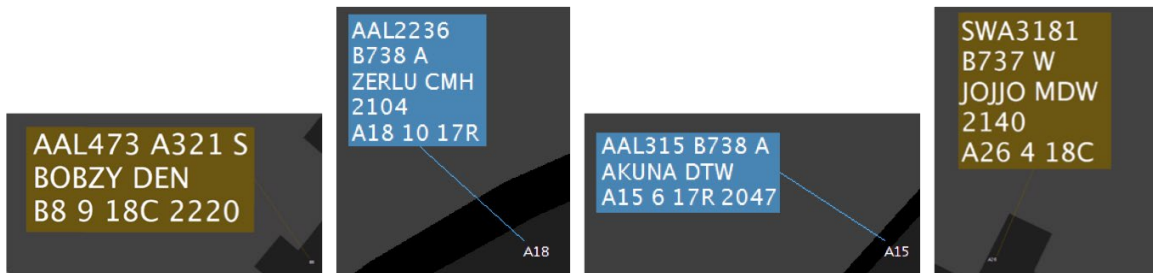


Figure 5.2. Examples of flight strips of a departure flight parked at the gate.

As described in Figure 5.3, while a departure flight is parked at the gate, flight and schedule information are displayed on the flight strip.

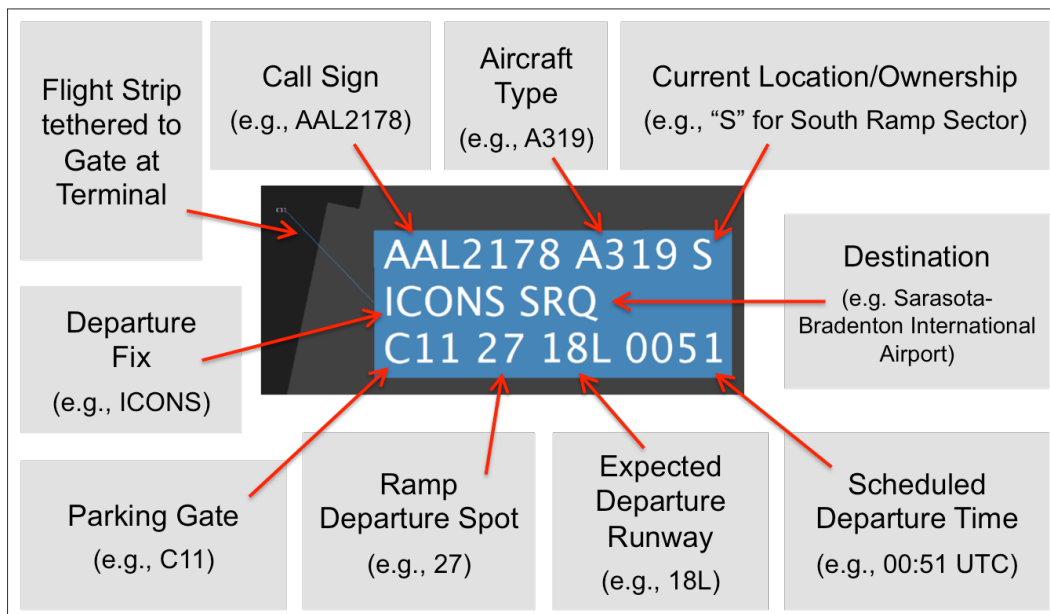


Figure 5.3. Flight and aircraft information on the digital flight strip while parked at the gate.

### 5.1.1.1.1 Select Flight Strip

The flight strip of a departure flight parked at the gate can be selected using the mouse.

**To select a departure flight parked at the gate:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Note:** *The flight strip will be highlighted and a white circle will be shown in the center of the flight strip (Figure 5.4).*

**Step 2:** Deselect the flight strip by moving the mouse away from the flight strip or by clicking elsewhere on the display.

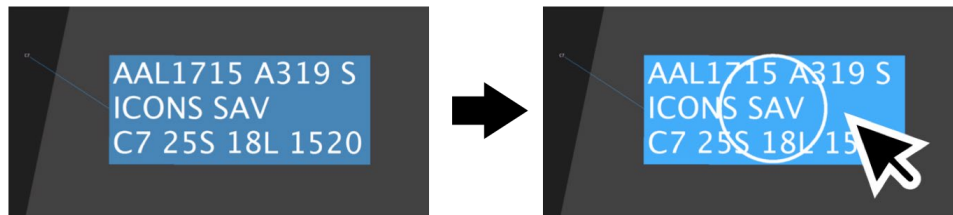


Figure 5.4. Hover over flight strip or click once to select it. Flight strip will be highlighted and a white circle will be shown in the center of the flight strip.

### 5.1.1.1.2 Reposition Flight Strip

While a departure flight is parked at the gate, the flight strip can be repositioned, but will remain tethered to the gate.

**To reposition the flight strip of a departure flight parked at the gate:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Click and hold *inside* the white circle.

**Step 3:** Drag and drop flight strip at the new location.

**Step 4:** Deselect flight strip by clicking elsewhere on the display.

**Note:** *The flight strip will remain tethered to the gate.*

### 5.1.1.1.3 Rotate Flight Strip

While a departure flight is parked at the gate, the flight strip can be rotated, but will remain tethered to the gate.

### **To rotate the flight strip of a departure flight parked at the gate:**

*Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.

*Step 2:* Click and hold *outside* the white circle.

*Step 3:* Drag to rotate flight strip.

*Step 4:* Deselect flight strip by clicking elsewhere on the display.

*Note:* *The flight strip will remain tethered to the gate.*

### **5.1.1.2 Right-Click Menu Options**

Several options are available on the right-click menu when a departure flight is parked at the gate.

#### **5.1.1.2.1 Pushback Flight**

After receiving the pilots' pushback request and issuing the verbal pushback clearance, the Controller can change the flight's current state in the ATD-2 scheduling systems using the RTC interface.

### **To change the state of a departure flight parked at the gate to pushback/spool-up:**

*Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.

*Step 2:* Right-click on the flight strip to open the menu.

*Step 3:* Select "Pushback Flight" from the menu.

When "Pushback Flight" is selected on the right-click menu, the flight changes to the pushback/spool-up state and is displayed as a flight strip with an attached engine icon surrounded by a yellow circle (Figure 5.5). The flight strip is no longer tethered to its gate.

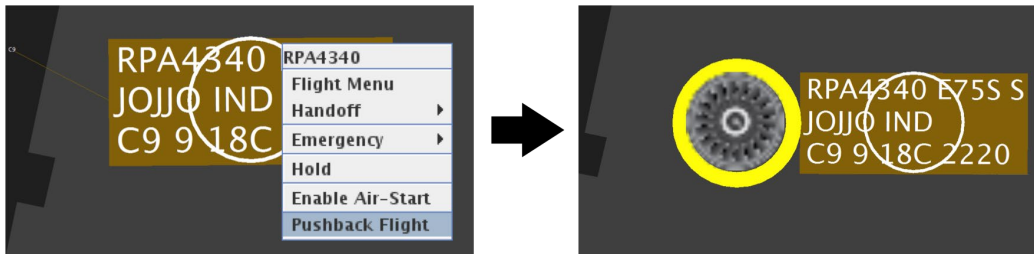


Figure 5.5. Right-click menu with “Pushback Flight” selected (left). Flight strip with attached engine icon surrounded by a yellow circle is in the pushback/spool-up state (right).

### 5.1.1.2.2 Pushback with Direction

At some airports, the option to specify a pushback direction (e.g., North, West, South, or straight back) or specific “drop point” location, is also available (Figure 5.6). This may not be applicable to all airports or to all gates at an airport.

**To select a pushback direction (where applicable):**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Pushback w/ Direction” from the menu.

**Step 4:** Select direction from the menu.

**Note:** The selected tail direction or drop point will be displayed inside the engine icon (e.g., “N” for North in Figure 5.6 right).

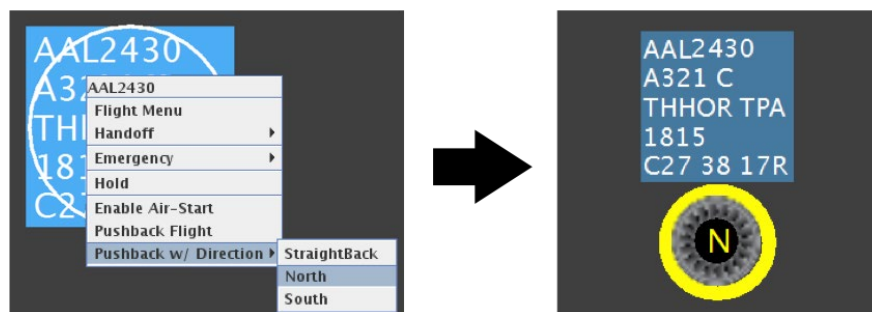


Figure 5.6. Right-click menu with “Pushback Flight w/ Direction” and “North” selected (left). In the pushback/spool-up state the attached engine icon displays an “N” to indicate push tail North (right).

#### 5.1.1.2.2.1 Undo Pushback Flight

If “Pushback Flight” was selected in error, or if the aircraft encounters a mechanical issue and cannot pushback from the gate, right-click on the flight strip again to re-open the

menu and select “Undo Pushback.” The flight will return to a flight strip tethered to the gate (Figure 5.7).

**To undo Pushback:**

- Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.
- Step 2:* Right-click on the flight strip to open the menu.
- Step 3:* Select “Undo Pushback” from the menu. The flight will return to a flight strip tethered to the gate (Figure 5.7).

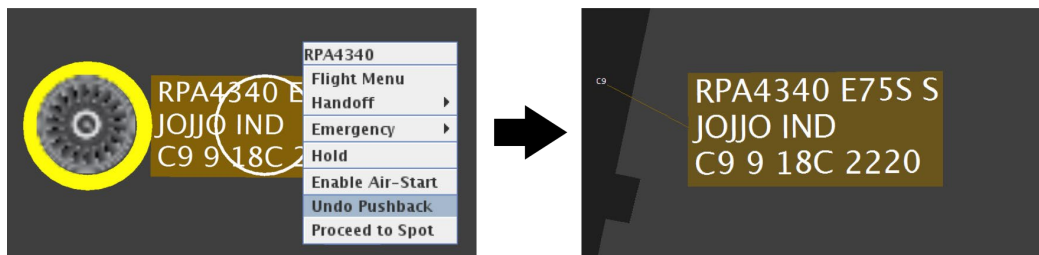


Figure 5.7. Right-click menu with “Undo Pushback” selected (left). The flight returns to a flight strip tethered to the gate (right).

### 5.1.1.2.3 Flight Menu

The Flight Menu can be accessed through the right-click menu (Figure 5.8). See Section 7 for a description of the Flight Menu.

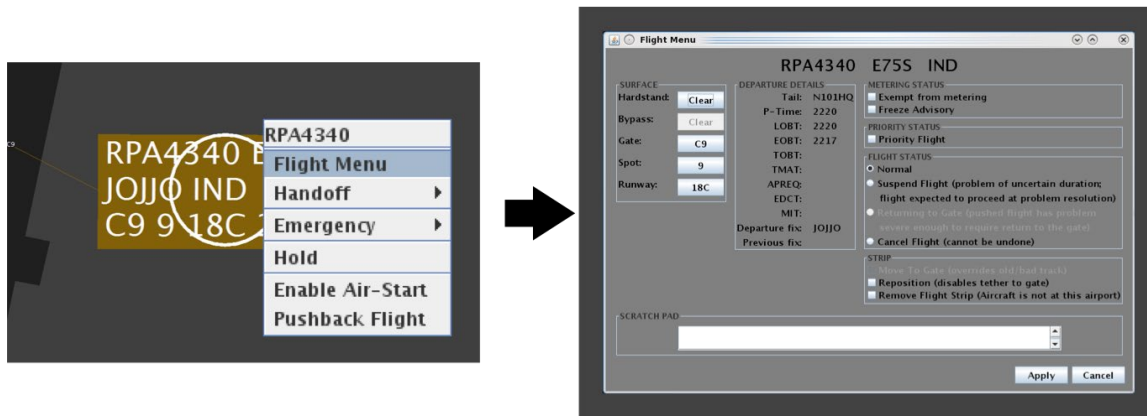


Figure 5.8. Select “Flight Menu” from the right-click menu (left) to access the Flight Menu (right).

#### 5.1.1.2.4 Change Spot Assignment

At some airports, spot assignment changes can be accessed through the right-click menu. This is not applicable to all airports. (An alternative method for changing spot assignment using the Flight Menu is described in Section 7.1.4.)

**To change the spot assignment of a departure flight parked at the gate using the right-click menu (where applicable):**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Change Spot” from the menu.

**Step 4:** Upon selecting “Change Spot,” a yellow circle is displayed around each spot number on the map (see Figure 5.9). Click within the yellow circle to select the new spot.

**Note:** The flight’s current spot cannot be selected (e.g., Spot 42 in Figure 5.8).

**Step 5:** Upon selecting the new spot number, a message will be displayed on the map to confirm the change (see Figure 5.10). The new spot assignment is also reflected on the flight strip.

**Alternatively:** To cancel the spot change and retain the current spot assignment, click anywhere else on the map.

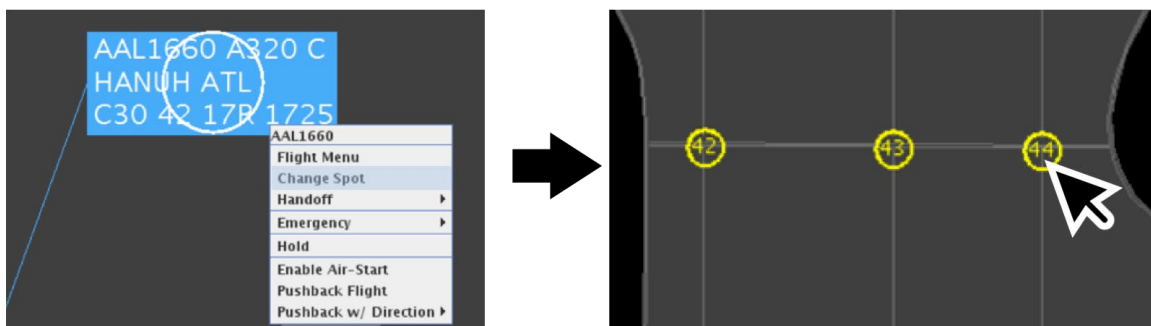


Figure 5.9. Right-click menu with “Change Spot” selected (left). A yellow circle is displayed around each spot number (right).

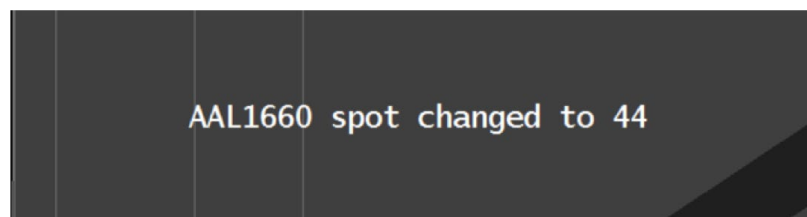


Figure 5.10. A message confirming the new spot assignment is displayed on the map for 2 seconds.

There is no limit on the number of times the spot number can be changed. At airports where “Change Spot” is not available on the right-click menu, the Spot assignment can only be changed by accessing the Flight Menu (see Section 7.1.4) for a description.

### 5.1.1.2.5 Handoff

An airport’s ramp area may be controlled by multiple Ramp Controllers and divided into different sectors or terminals. The ramp sector/terminal that currently has “ownership” of a flight is indicated on the flight strip. Generally, the handoff is automatic because the indicated ramp sector/terminal updates based on surveillance information about the flight’s current location (e.g., ramp sector/terminal or AMA). The indicator automatically changes to “G” for Ground Control when the aircraft is taxiing in the AMA. Examples are shown in Figure 5.11.

**To reassign (handoff) ownership of a flight to another ramp sector/terminal:**

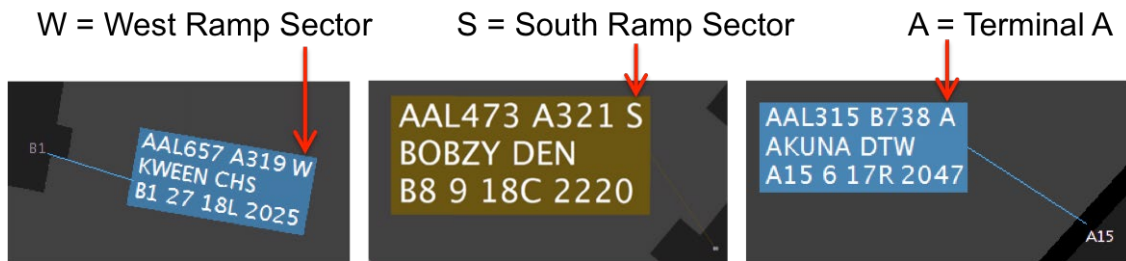
**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Handoff” from the menu.

**Step 4:** Select ramp sector/terminal.

**Note:** The indicated ownership (ramp sector/terminal) on the flight strip may change immediately. As a result, it may no longer reflect the flight’s current location.



**Figure 5.11. Examples of ramp sector/terminal indicators at different airports with different ramp configurations.**

A handoff within the ramp area can be done manually. Available handoff options will be specific to a given airport. See Figure 5.12 for examples.



Figure 5.12. Right-click menu with “Handoff” selected. Options vary by airport.

### 5.1.1.2.6 Emergency

If pilots report an emergency on their flight, emergency status can be assigned to the flight in RTC. The flight can be designated as either a medical emergency (Figures Figure 5.13 and Figure 5.14) or as a general (non-medical) emergency (Figure 5.15 and Figure 5.16). Making this entry in RTC supports common situation awareness and serves as a visual reminder. The emergency status is also sent to the ATD-2 scheduler, which automatically gives the highest priority to this flight across all flights (not just that carrier’s flights).

**To designate a flight as a *medical* emergency:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Emergency” from the menu.

**Step 4:** For a medical emergency, select: “Set as Medical” (Figure 5.13).

**Step 5:** At the “Set [call sign] as Medical Emergency?” prompt, select “Yes.”

**Note:** *Flights flagged as a medical emergency are displayed as a red flight icon. The attached white flight strip is displayed with red text and red plus signs (+) before and after the call sign (Figure 5.14).*



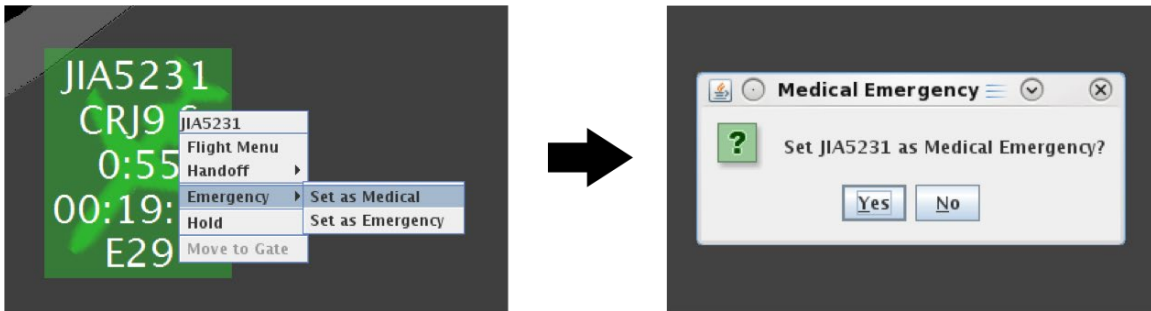


Figure 5.13. Right-click menu with “Emergency” and “Set as Medical” selected (left). Set medical emergency confirmation prompt (right).



Figure 5.14. Medical emergency examples: Flight icon and attached data tag (left) with red text and red plus signs (+). Flight strip tethered to gate (right).

**To designate a flight as a *general (non-medical) emergency*:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Emergency” from the menu.

**Step 4:** For a general (non-medical) emergency, select: “Set as Emergency” (Figure 5.15).

**Step 5:** At the “Set [call sign] as Emergency?” prompt, select “Yes.”

**Note:** *Flights flagged as a general (non-medical) emergency are displayed as a red flight icon. The attached white flight strip is displayed with red text and black exclamation signs (“!”) before and after the call sign (Figure 5.16).*

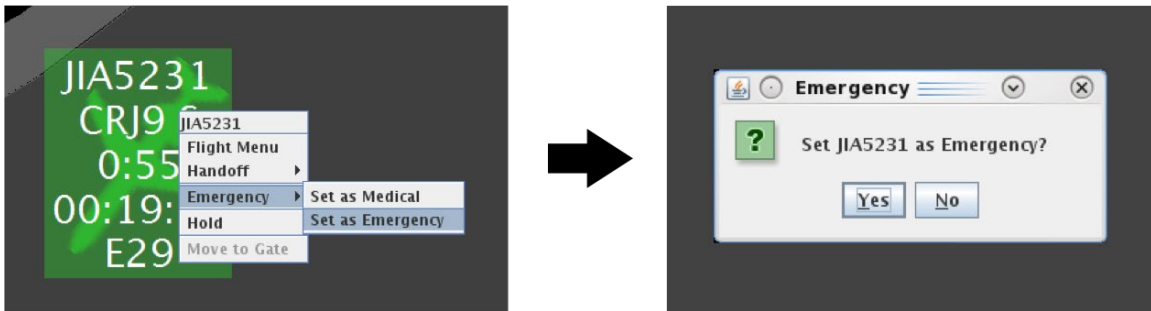


Figure 5.15. Right-click menu with “Emergency” and “Set as Emergency” selected (left). Set emergency confirmation prompt (right).



Figure 5.16. General emergency examples: Flight icon with attached data tag (left). Flight strip tethered to gate (right).

Once an emergency has been indicated, the alternate emergency type (i.e., medical or general) can be selected by following the respective steps above. The emergency designation can also be removed.

**To remove either the medical or general emergency:**

- Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.
- Step 2:* Right-click on the flight strip to open the menu.
- Step 3:* Select “Emergency” from the menu.
- Step 4:* Select “Remove Medical” or “Remove Emergency” from the menu (Figure 5.17).

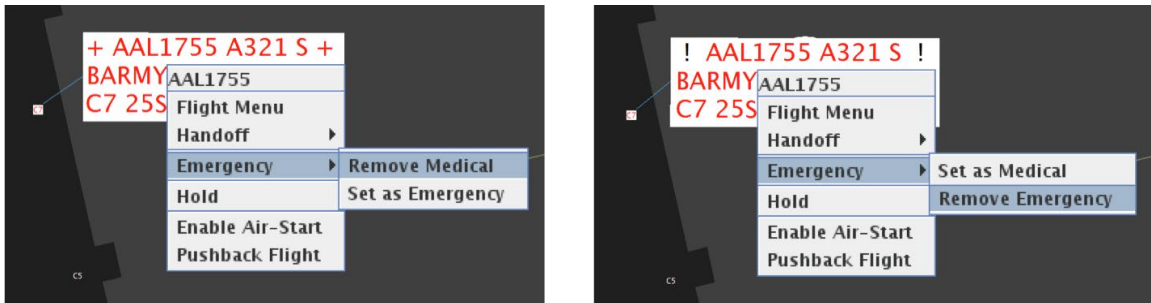


Figure 5.17. Remove emergency status: Right-click menu with “Remove Medical” selected (left) and “Remove Emergency” selected (right).

### 5.1.1.2.7 Hold

Use the right-click menu to place a flight on “hold.” It is recommended that Ramp Controllers place a flight on hold if the flight deck calls “ready,” but the flight cannot be pushed back right away because of a circumstance in the ramp area, like traffic blocking the pushback.

Putting a flight on hold provides a visual cue/reminder to the Ramp Controller that the flight deck has called “ready” and serves as an important input into the ATD-2 scheduling system.

#### To place a flight on hold:

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Hold” from the menu.

**Note:** Once the hold is applied, the flight strip is shown with a red border and a red timer that begins counting up from zero (Figure 5.18).

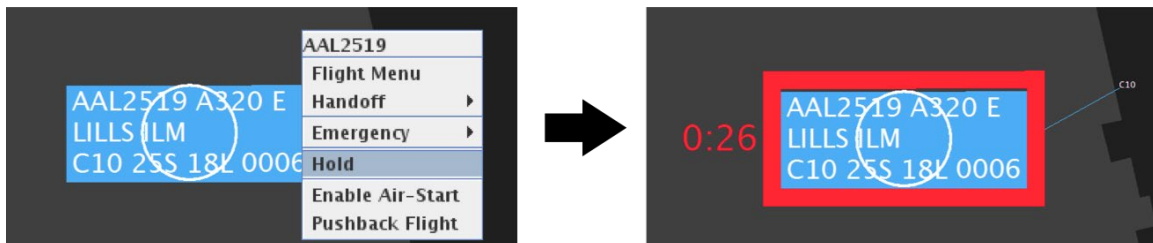


Figure 5.18. Right-click menu with “Hold” selected (left). Once the hold is applied, the flight strip is shown with a red border and a red count-up timer (right).

Applying holds to EDCT- and APREQ-flights is described in Section 8.2.9 and to metered flights in Section 9.1.5.

### 5.1.1.2.7.1 Undo Hold

The hold can also be removed.

**To remove (undo) the hold:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Undo Hold” from the menu.

**Note:** *The red border and red count-up will be removed from the flight strip (Figure 5.19).*



Figure 5.19. Right-click menu with “Undo Hold” selected (left). Red border and accompanying timer are removed from the flight strip (right).

### 5.1.1.2.8 Ready

Another option can be presented on the right-click menu when a flight is part of an active Surface Metering Program (SMP). Some metered flights are placed in the “Uncertain” group by the ATD-2 Scheduler because of uncertainty around their EOBT (Section 3.1.2.11). If a flight in the “Uncertain” group calls to pushback, the Ramp Controller can select “Ready” from the flight’s right-click menu.

When “Ready” is selected, the Scheduler freezes the TOBT and TMAT to prevent the gate advisory from adjusting, or “jumping,” so that the Ramp Controller is presented with a stable advisory. As described in Section 8.2.8, a “frozen” gate advisory is displayed in black text and highlighted in cyan.

If the option to display “Uncertain” gate advisories as a hashtag (“#”) is enabled (Section 3.1.2.11), the gate advisory changes from a hashtag to a countdown timer, or the word “Push,” if the countdown timer has already reached zero (i.e., the TOBT) when “Ready” is selected.

## To indicate that an “Uncertain” metered flight is Ready:

*Note: This option applies only to metered flights in the “Uncertain” scheduling group.*

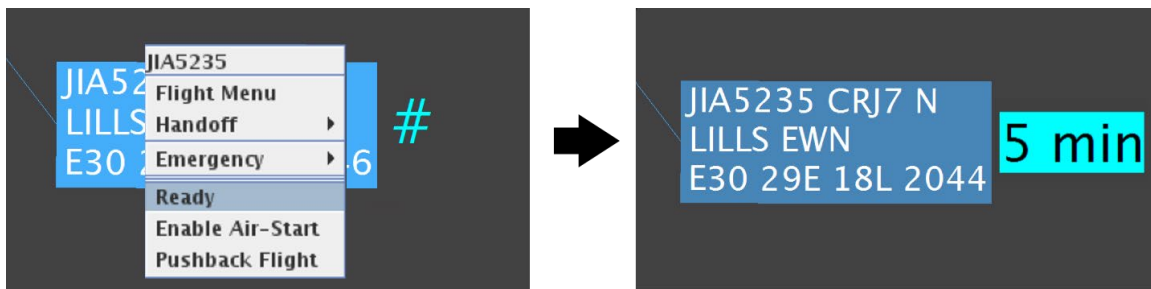
**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Ready” from the menu.

**Note: Once “Ready” is selected:**

- *The TOBT and TMAF are frozen and the gate advisory is displayed in black text and highlighted in cyan,*
- *If the gate advisory was displayed as a hashtag (“#”), it is now displayed as a countdown timer, or the word, “Push” (Figure 5.20).*



**Figure 5.20.** Right-click menu with “Ready” selected (left). Once “Ready” is selected, the gate advisory is displayed as a frozen countdown timer, or, the word “Push,” if the countdown timer has already reached zero (i.e., the TOBT).

If time is remaining on the gate advisory (like in Figure 5.20, where five minutes remain until the TOBT), the Ramp Controller can place then flight on “Hold” (see Section 5.1.1.2.7). If the flight has already reached its TOBT, the Scheduler recommends push back.

### 5.1.1.2.8.1 Undo Hold

The “ready” input can also be undone.

### To undo “Ready”:

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Undo Ready” from the menu.

**Note:** *The TOBT and TMAF no longer frozen. If the option to display “Uncertain” gate advisories as a hashtag (“#”) is enabled, a “#” is displayed (Figure 5.21), if not, an unfrozen gate advisory is displayed.*

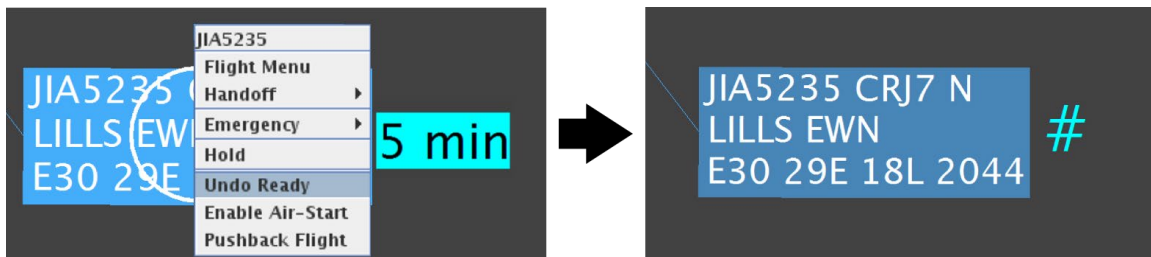


Figure 5.21. Right-click menu with “Undo Ready” selected (left). If the option to display “Uncertain” gate advisories as a hashtag (“#”) is enabled, a “#” is displayed.

Surface metering is discussed in detail in Section 9 and metered flights in the “Uncertain” group are discussed in Section 3.1.2.11.

### 5.1.1.2.9 Enable/Disable Air-Start

When a flight requires an air-start, the requirement can be indicated in RTC. Making this designation in RTC supports common situation awareness, but does not impact the ATD-2 scheduling systems.

#### To indicate that a departure flight parked at the gate requires an air-start:

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Enable Air-Start” from the menu. An engine icon, surrounded by a red circle, will be shown next to the flight strip (Figure 5.22).

**Note:** *The flight remains parked and tethered to the gate until “Pushback Flight” is selected.*

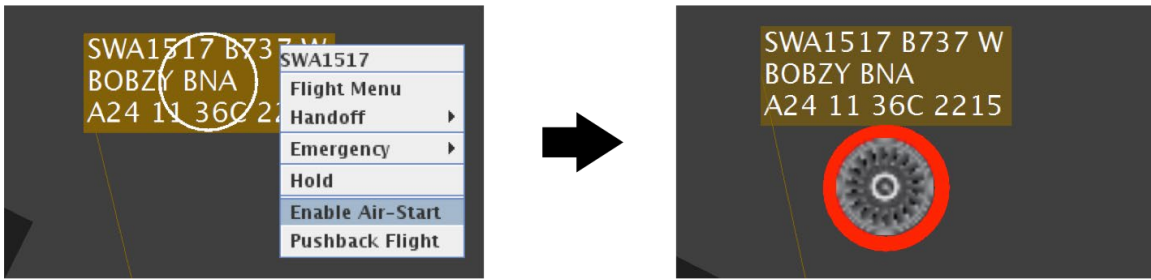


Figure 5.22. Right-click menu with “Enable Air-Start” selected (left). Flight strip, tethered to the gate, with attached engine icon surrounded by a red circle (right).

If “Enable Air-Start” is selected in error or if the aircraft no longer requires an air-start, it can be disabled.

**To disable (undo) air-start:**

*Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.

*Step 2:* Right-click on the flight strip to open the menu.

*Step 3:* Select “Disable Art-Start” from the menu.

*Note:* The attached engine icon will be removed (Figure 5.23).

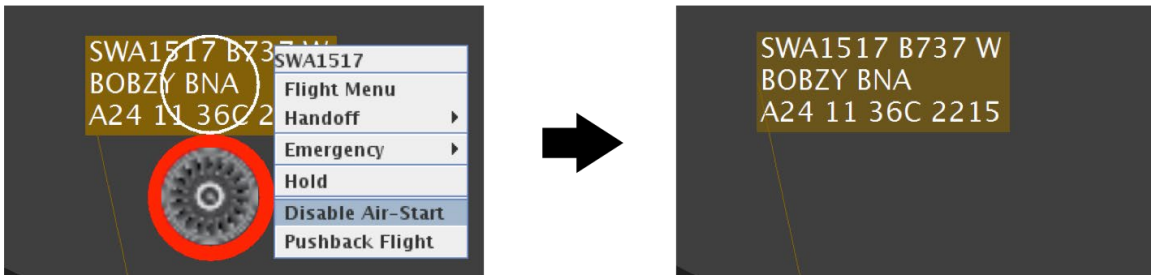


Figure 5.23. Right-click menu with “Disable Air-Start” selected (left). The attached engine icon is removed from the flight strip (right).

## 5.1.2 Departure State: Pushback/Spool-Up

Once “Pushback Flight” is selected from the right-click menu, a departure flight advances to the pushback/spool-up state.

### 5.1.2.1 Flight Strip/Engine Icon

As shown in Figure 5.24, flights in the pushback/spool-up state are depicted as flight strips with attached engine icons. The flights are no longer tethered to their gates. Where

applicable, a pushback direction (e.g., North, East, West, South, and straight back) or a specific “drop point” location can also be selected. The option to select a pushback direction is not available at all airports.



Figure 5.24. Examples of flight strips with attached engine icons in the pushback/spool-up state.

While in the pushback/spool-up state, the flight strip displays the same information that was shown while parked at the gate (see Figure 5.25).

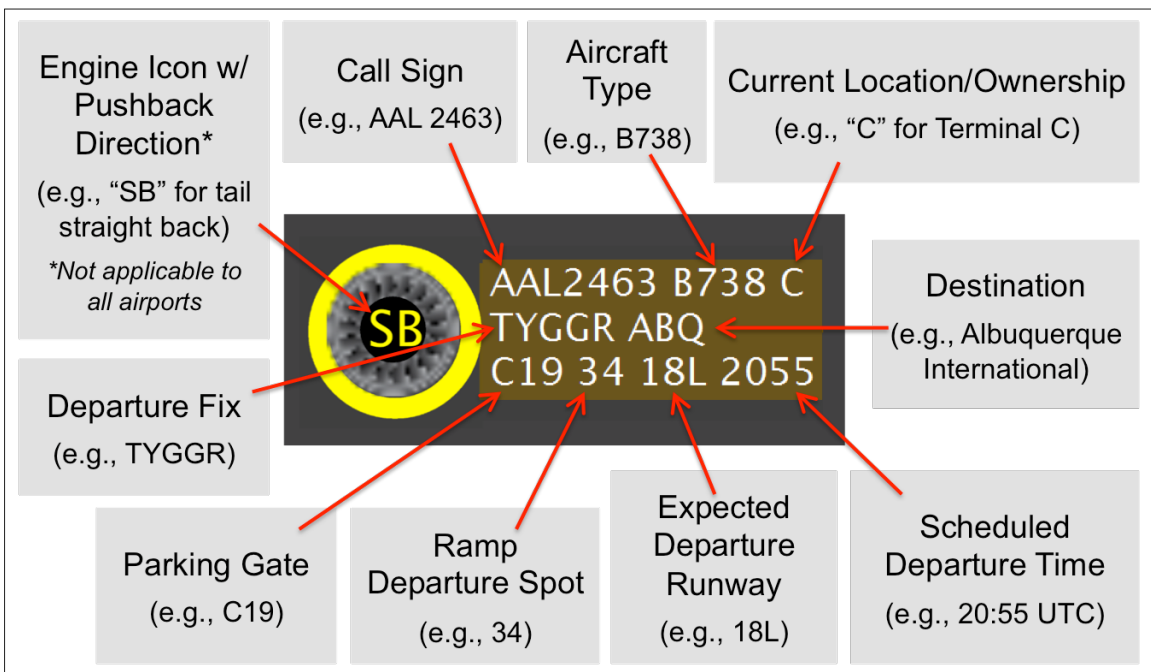


Figure 5.25. Flight and aircraft information on the digital flight strip in the pushback/spool-up state.

### 5.1.2.1.1 Select Flight Strip/Engine Icon

The flight strip of a departure flight in the pushback/spool-up state can be selected using the mouse.



### To select a departure flight parked at the gate:

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Note:** *The flight strip will be highlighted and a white circle will be shown in the center of the flight strip (Figure 5.26).*

**Step 2:** Deselect the flight strip by moving the mouse away from the flight strip or by clicking elsewhere on the display.

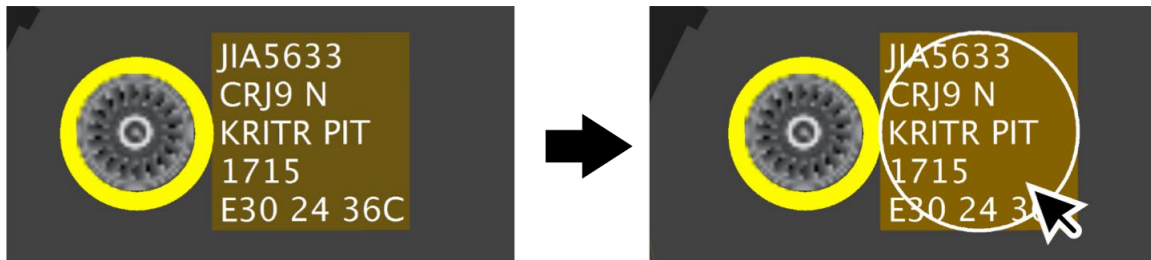


Figure 5.26. Hover over flight strip or click once to select it. Flight strip will highlight and a white circle will be shown in the center of the flight strip.

### 5.1.2.1.2 Relocate Flight Strip/Engine Icon

While a departure flight is in the pushback/spool-up state, the flight is untracked by surface surveillance. Therefore, the flight strip/engine icon can be relocated.

#### To relocate a departure flight in the pushback/spool-up state:

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Click and hold *inside* the white circle.

**Step 3:** Drag and drop flight strip/engine icon at the new location.

**Step 4:** Deselect flight strip by clicking elsewhere on the display.

### 5.1.2.1.3 Rotate Flight Strip/Engine Icon

While a departure flight is in the pushback/spool-up state, the flight strip/engine icon can be rotated.

### **To rotate a departure flight in the pushback/spool-up state:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Click and hold *outside* the white circle.

**Step 3:** Drag to rotate.

**Step 4:** Deselect flight strip by clicking elsewhere on the display.

## **5.1.2.2 Right-Click Menu Options**

Several options are available on the right-click menu when a departure flight is in the pushback/spool-up state.

### **5.1.2.2.1 Proceed to Spot**

After receiving the pilots' call to taxi to the spot and issuing clearance to the spot, the Ramp Controller can change the flight's current state in the ATD-2 scheduling systems using the RTC interface.

### **To change the state of a flight from pushback/spool-up to proceeding to the spot:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu (Figure 5.27).

**Step 3:** Select "Proceed to Spot" from the menu.

**Alternatively:** As a shortcut, click once on the engine icon (Figure 5.28).

**Note:** *When "Proceed to Spot" is selected on the right-click menu, the flight changes to the taxi-out state and appears as a flight icon with a data tag (Figure 5.27 and Figure 5.28).*

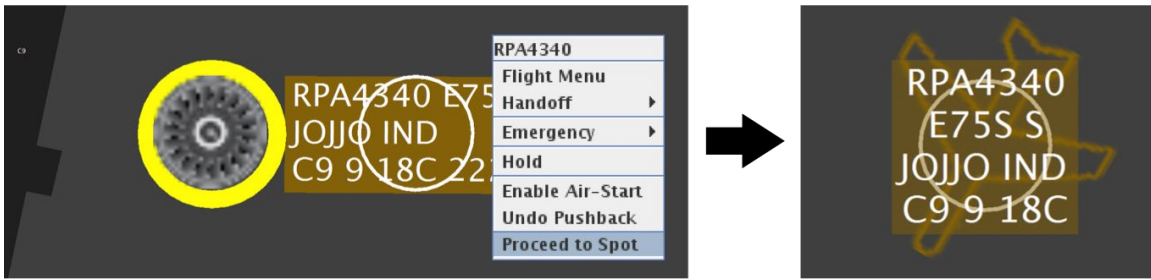


Figure 5.27. Select “Proceed to Spot” from the right-click menu (left) to advance to the proceed-to-spot/taxi-out state (right).

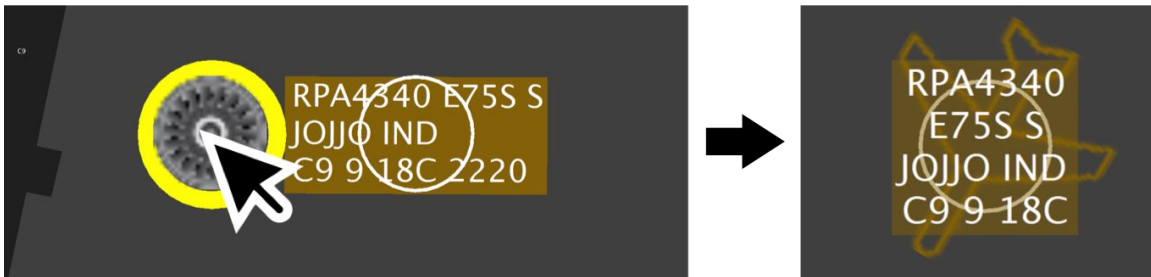


Figure 5.28. Click once on engine icon (left) to advance to the proceed-to-spot/taxi-out state (right).

### 5.1.2.2.1.1 Undo Proceed to Spot

If “Proceed to Spot” is selected in error, or if the aircraft encounters a mechanical issue and cannot proceed to the spot, proceed to spot can be undone.

**To undo the Proceed to Spot selection:**

- Step 1:* Hover mouse over the flight strip or click once on the flight strip to select it.
- Step 2:* Right-click on the flight strip to open the menu.
- Step 3:* Select “Undo Proceed to Spot” from the menu. The flight will return to the pushback/spool-up state (Figure 5.29).

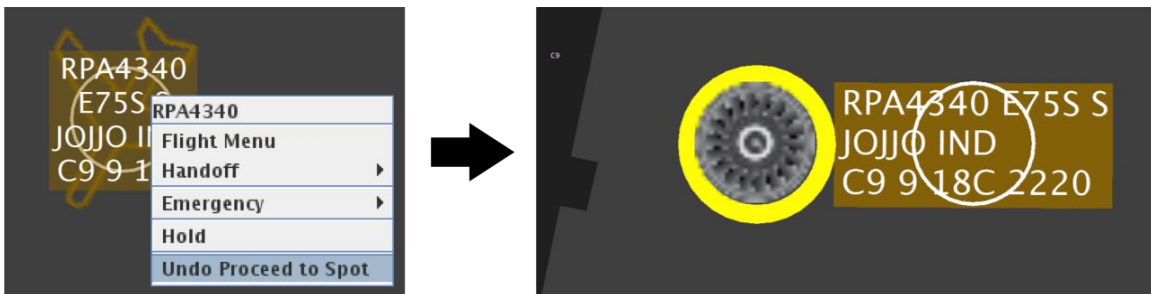


Figure 5.29. When “Undo Proceed to Spot” is selected from the right-click menu (left), the flight returns to the pushback/spool-up state.

### 5.1.2.2.2 Enable/Disable Air-Start

An air-start indication can also be made in the pushback/spool-up state. Making this designation in RTC supports common situation awareness, but does not impact the ATD-2 scheduling systems.

**To indicate that a flight in the pushback/spool-up state requires an air-start:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Enable Air-Start” from the menu.

**Note:** A red circle is added to the regular pushback/spool-up engine that is already surrounded by a yellow circle (Figure 5.30).

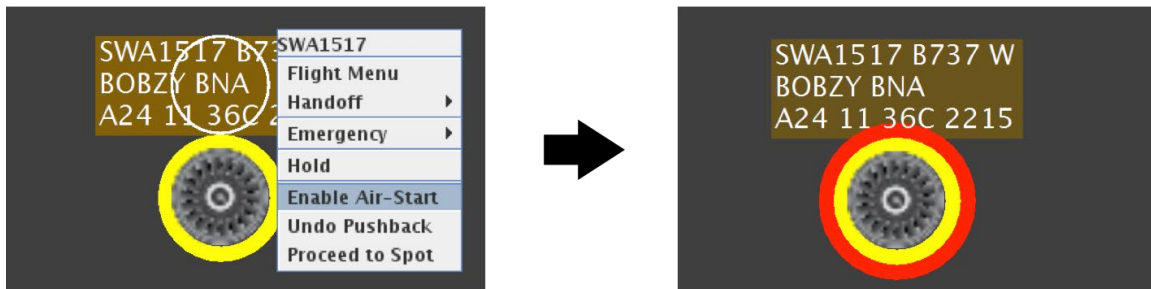


Figure 5.30. When “Enable Air-Start” is selected from the right-click menu (left), a red circle is displayed around the engine icon (right).

If “Enable Air-Start” is selected in error or if the aircraft no longer requires an air-start, it can be disabled.

**To disable (undo) air-start:**

**Step 1:** Hover mouse over the flight strip or click once on the flight strip to select it.

**Step 2:** Right-click on the flight strip to open the menu.

**Step 3:** Select “Disable Art-Start” from the menu (Figure 5.31).

**Note:** The red circle is removed from pushback/spool-up engine icon (Figure 5.31).

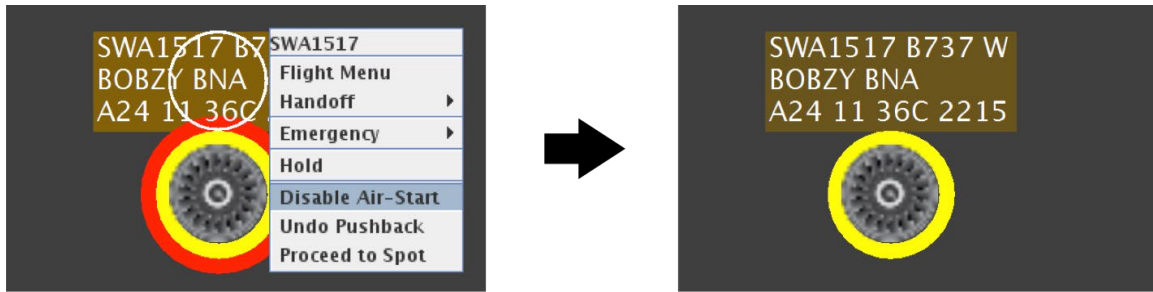


Figure 5.31. When “Disable is Air-Start” is selected from the right-click menu (left), the red circle around the engine icon is removed (right).

### 5.1.2.2.3 Flight Menu

See Section 7 for a description of the Flight Menu.

### 5.1.2.2.4 Change Spot Assignment

At some airports, spot change can be accessed through the right-click menu. This is not applicable to all airports. See Section 5.1.1.2.4 for description.

### 5.1.2.2.5 Handoff

Ownership of a flight can be reassigned. See Section 5.1.1.2.5 for description.

### 5.1.2.2.6 Emergency

Emergency status can be assigned to the flight. See Section 5.1.1.2.6 for description.

### 5.1.2.2.7 Hold

The flight can be placed on hold. See Section 5.1.1.2.7 for description.

## 5.1.3 Departure State: Proceed-to-Spot/Taxi-Out

Once “Proceed to Spot” is selected from the right-click menu, a departure flight advances to the proceed-to-spot/taxi-out state.

### 5.1.3.1 Departure Flight Icon

A departure flight in the proceed-to-spot/taxi-out state is depicted as a blue (or brown) flight icon with attached data tag.

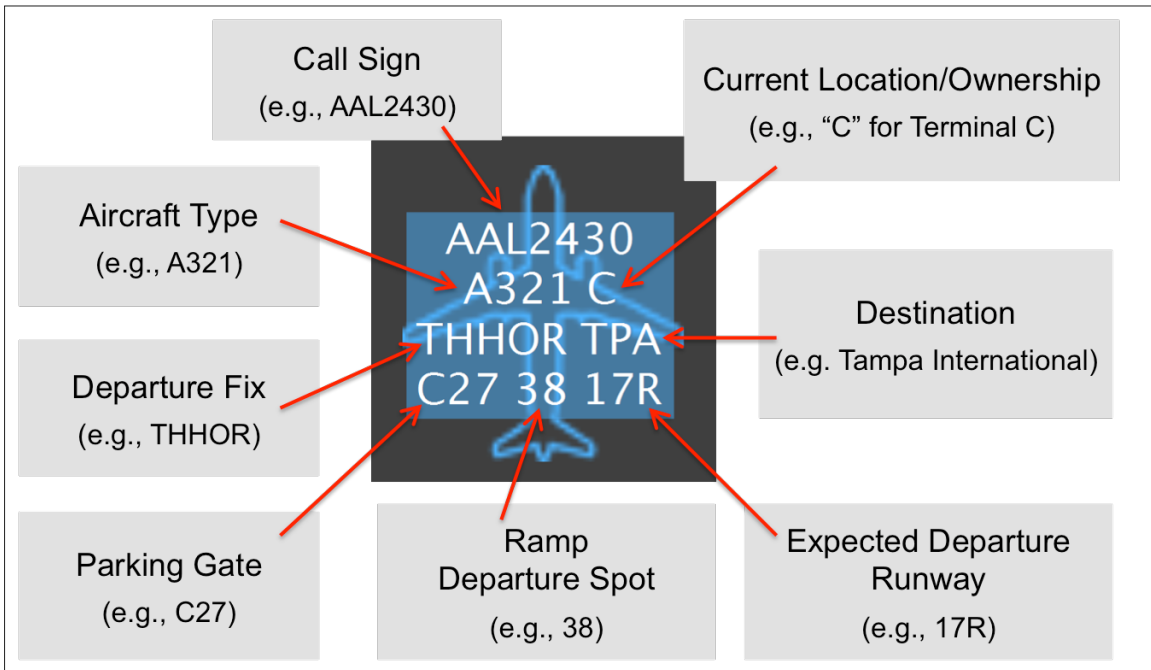
A flight that is not tracked by surface surveillance is displayed as a *hollow* flight icon (Figure 5.32 left). A flight that is tracked by surface surveillance is displayed as a *solid* flight icon (Figure 5.32 right). When surface surveillance first begins tracking a flight, the flight may reappear or snap to its current location.



Figure 5.32. Departure flight: Not tracked by surveillance displayed as a *hollow* flight icon (left) and tracked by surveillance displayed as a *solid* flight icon (right).

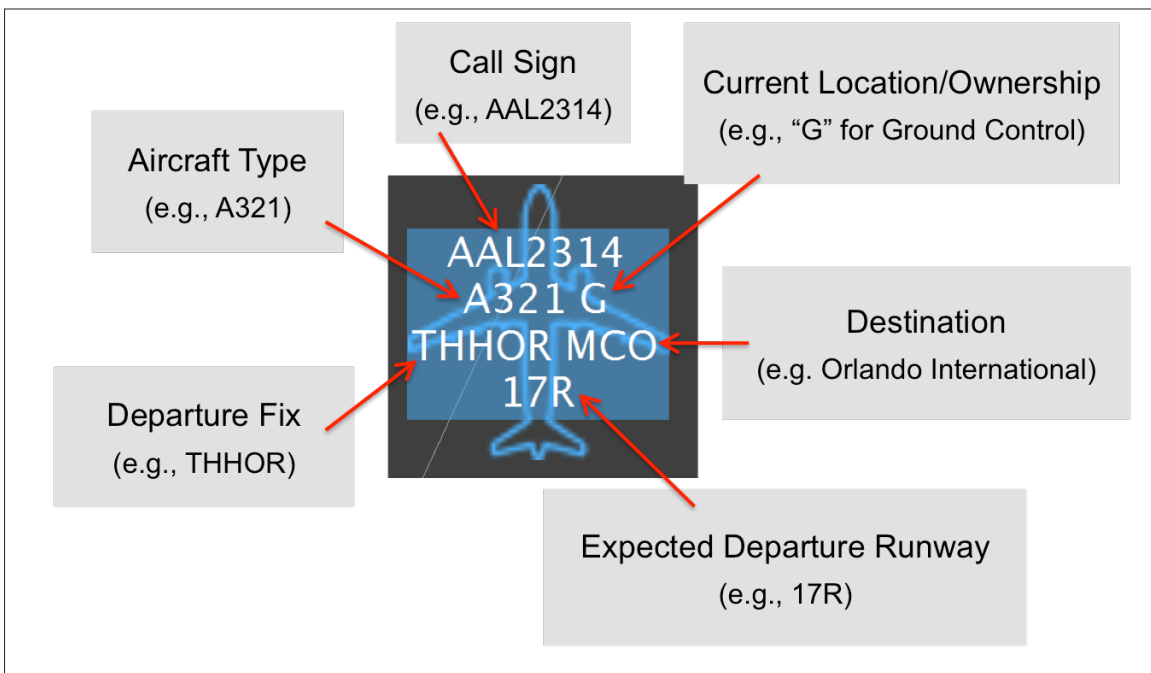
### 5.1.3.2 Departure Data Tag

While still in the ramp area, the data tag displays flight and aircraft information, including the parking gate and assigned spot (Figure 5.33).



**Figure 5.33. Flight and aircraft information on the data tag while the departure flight is in the ramp area.**

After crossing the spot, leaving the ramp area, and entering the AMA, the gate and spot are removed from the data tag (Figure 5.34).



**Figure 5.34. Flight and aircraft information on the data tag after the departure flight has crossed the spot, left the ramp, and entered AMA.**

### 5.1.3.3 Untracked Departure Flights (Hollow Icon)

When a departure flight is not tracked by surface surveillance, the data tag is displayed on top of a *hollow* flight icon. While the data tag and icon cannot be separated, they can be relocated together and the icon can be rotated for situation awareness.

#### 5.1.3.3.1 Select Flight Icon/Data Tag

The (hollow) flight icon/data tag of an untracked departure flight can be selected using the mouse.

**To select an untracked departure flight:**

**Step 1:** Hover mouse over the flight icon/data tag or click once on the flight icon/data tag to select it.

**Note:** A white circle will be shown in the center of the data tag (Figure 5.35).

**Step 2:** Deselect the data tag/flight icon by clicking elsewhere on the display.

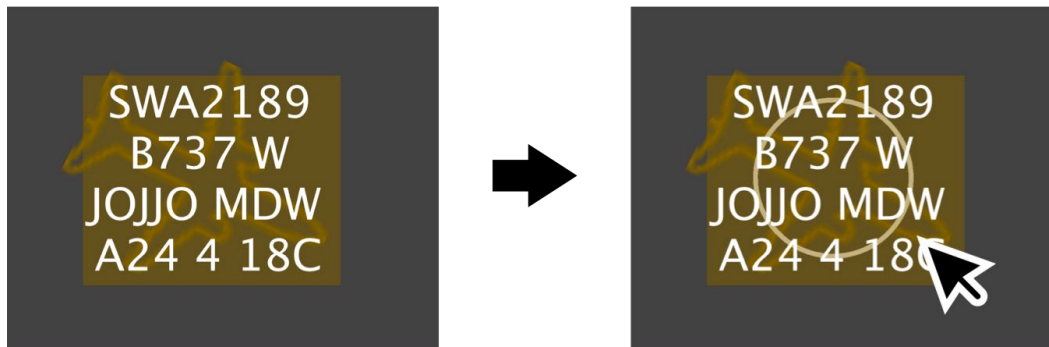


Figure 5.35. Hover over flight icon/data tag or click once to select it. Flight strip will be highlighted and a white circle will be shown in the center of the flight icon/data tag.

#### 5.1.3.3.2 Relocate Flight Icon/Data Tag

When a departure flight is *untracked* by surveillance, the flight (i.e., the hollow flight icon and data tag) can be manually relocated.



### To relocate an untracked departure flight:

**Step 1:** Hover mouse over the flight icon/data tag or click once on the flight icon/data tag to select it.

**Step 2:** Click and hold *inside* the white circle.

**Step 3:** Drag and drop data tag/hollow flight icon at the new location.

**Step 4:** Deselect the data tag/flight icon by clicking elsewhere on the display.

If a flight is not being tracked by surveillance, it may be useful to drag and drop the data tag/hollow flight icon to its known (real-world) location. Moving an untracked flight to the known location may help to maintain situation awareness until surveillance begins tracking the flight.

### 5.1.3.3 Rotate Flight Icon

When a departure flight is *untracked* by surveillance, the (hollow) flight icon can be rotated.

### To rotate an untracked departure flight:

**Step 1:** Hover mouse over flight icon/data tag or click once on the flight icon/data tag to select it.

**Step 2:** Click and hold the *outside* the white circle.

**Step 3:** Drag to rotate flight icon.

**Step 4:** Deselect flight icon by clicking elsewhere on the display.

If a flight is not being tracked by surveillance, it may be useful to rotate the flight icon to its known (real-world) orientation. Rotating an untracked flight to its known orientation may help to maintain situation awareness until surveillance begins tracking the flight.

### 5.1.3.4 Tracked Departure Flights (Solid Icon)

When a departure flight is tracked by surface surveillance, the data tag is displayed on top of a *solid* flight icon. While a tracked flight cannot be relocated or rotated, the data tag can be repositioned.

### 5.1.3.4.1 Select Flight Icon/Data Tag

The (solid) flight icon and/or data tag of a tracked departure flight can be selected using the mouse.

#### To select a tracked departure flight:

**Step 1:** Click on the flight icon/data tag, or, if the data tag has been repositioned, click on either the flight icon or data tag (Figure 5.36).

**Step 2:** Deselect the flight icon/data tag by clicking elsewhere on the display.



Figure 5.36. Click on data tag or flight icon to select the flight.

### 5.1.3.4.2 Reposition Data Tag

As stated earlier, when a departure flight is *tracked* by surface surveillance, the flight icon cannot be relocated. However, the data tag can be repositioned while it remains tethered to the flight icon.

#### To reposition the data tag of a tracked departure flight:

**Step 1:** Click and hold the data tag.

**Step 2:** Drag and drop data tag at the new location.

**Step 3:** Deselect the data tag by clicking elsewhere on the display.

**Note:** *The data tag will remain tethered to the flight icon and will maintain its relative position to the flight icon as the flight taxis.*

### **To reconnect the data tag of a tracked departure flight:**

*Step 1:* Click and hold the data tag.

*Step 2:* Drag and drop the data tag over the flight icon to reconnect it.

*Step 3:* Deselect the data tag by clicking elsewhere on the display.

## **5.1.3.5 Right-Click Menu Options**

Several options are available on the right-click menu in the departure proceed-to-spot/taxi-out state.

### **5.1.3.5.1 Flight Menu**

See Section 7 for a description of the Flight Menu.

### **5.1.3.5.2 Change Spot Assignment (Ramp Area)**

At some airports, spot assignment changes can be accessed through the right-click menu. This is not applicable to all airports. See Section 5.1.1.2.4 for description. (An alternative method for changing spot assignment using the Flight Menu is described in Section 7.1.4.)

### **5.1.3.5.3 Handoff**

Ownership of a flight can be reassigned. See Section 5.1.2.2.5 for description.

### **5.1.3.5.4 Emergency**

Emergency status can be assigned to the flight. See Section 5.1.1.2.6 for description.

### **5.1.3.5.5 Hold**

The flight can be placed on hold. See Section 5.1.1.2.7 for description.

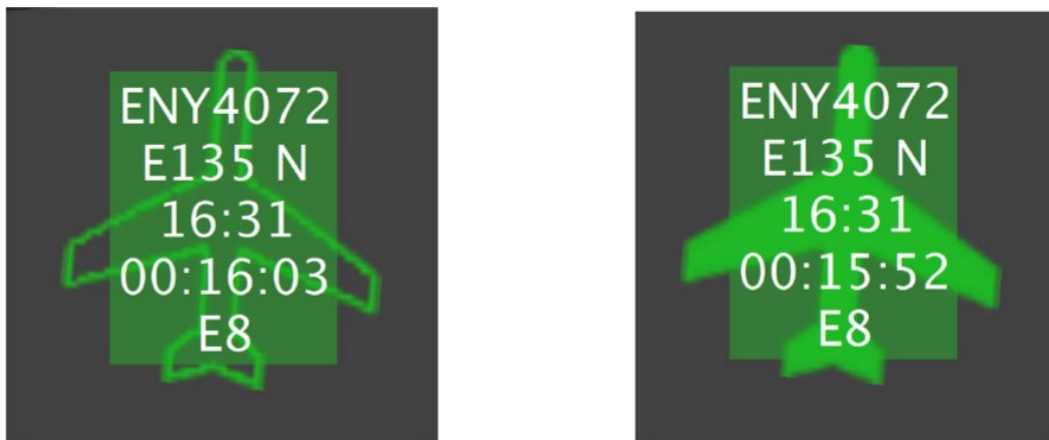
## 5.1.4 Arrival State: Taxi-In

Arrival flights are depicted in RTC beginning in the terminal area, through touchdown, taxi-in, and until parking at the gate.

### 5.1.4.1 Arrival Flight Icon

An arrival flight is depicted as a green flight icon with attached data tag.

A flight that is not tracked by surface surveillance is displayed as a *hollow* flight icon (Figure 5.37, left). A flight that is tracked by surface surveillance is displayed as a *solid* flight icon (Figure 5.37 right).

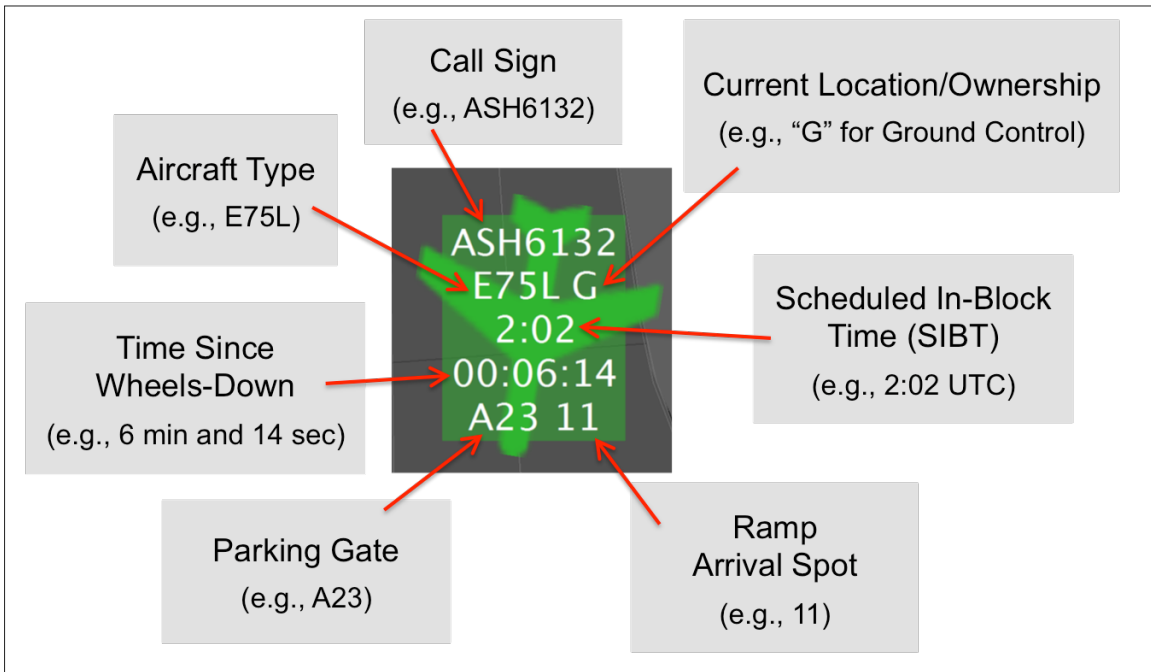


**Figure 5.37. Arrival flight: Not tracked by surveillance displayed as a *hollow* flight icon (left) and tracked by surveillance displayed as a *solid* flight icon (right).**

### 5.1.4.2 Arrival Data Tag

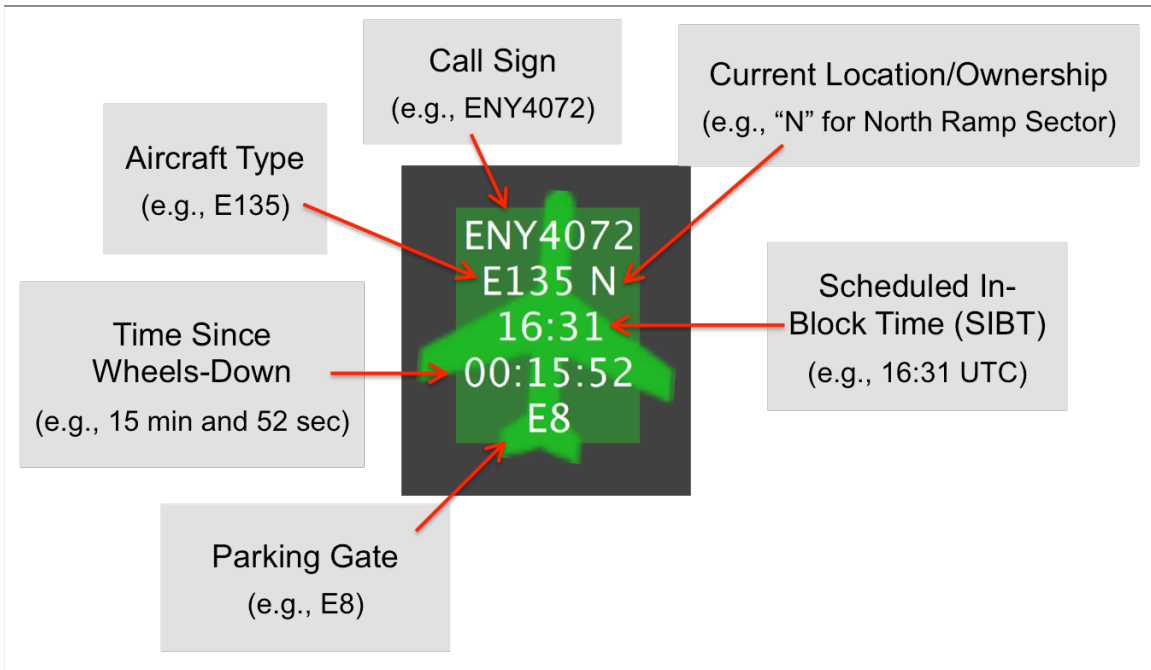
Arrival flights include a timer on the data tag to show how long the flight has been on the ground. The timer begins counting when the flight touches down on the runway.

While an arrival flight is in the AMA, the data tag displays flight and aircraft information, including the assigned spot (Figure 5.38).



**Figure 5.38. Flight and aircraft information on the data tag while the arrival flight is taxiing in the AMA.**

After crossing the spot and entering the ramp area, the spot is no longer shown on the data tag (Figure 5.39).



**Figure 5.39. Flight and aircraft information on the data tag when the arrival flight is in the ramp area.**

### 5.1.4.3 Untracked Arrival Flights (Hollow Icon)

When an arrival flight is not tracked by surface surveillance, the data tag is displayed on top of a *hollow* flight icon. While the data tag and icon cannot be separated, they can be relocated together and the icon can be rotated for situation awareness.

#### 5.1.4.3.1 Select Flight Icon/Data Tag

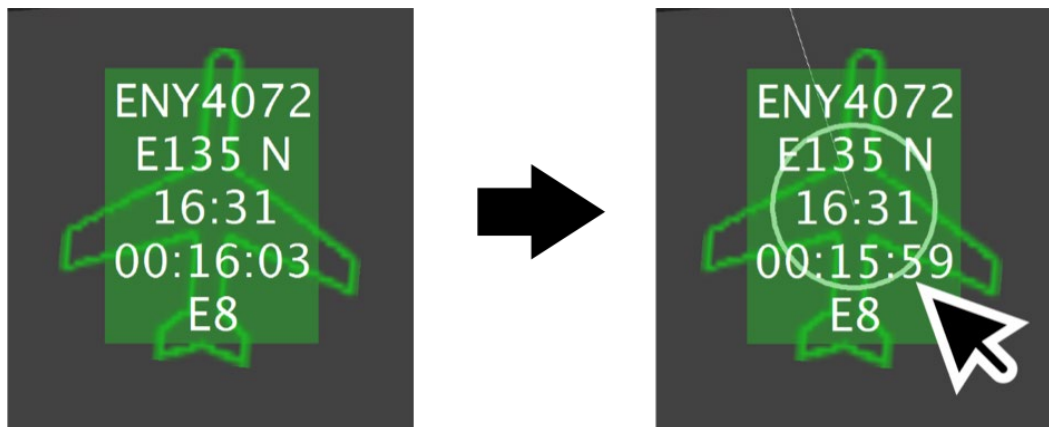
The (hollow) flight icon/data tag of an untracked arrival flight can be selected using the mouse.

**To select an untracked arrival flight:**

**Step 1:** Hover mouse over flight icon/data tag or click once on the flight icon/data tag to select it.

**Note:** *The flight strip is highlighted and a white circle is shown in the center of the flight strip (Figure 5.40).*

**Step 2:** Deselect the data tag/flight icon by clicking elsewhere on the display.



**Figure 5.40. Hover over flight icon/data tag or click once to select it. Flight icon/data tag will be highlighted and a white circle will be shown in the center of the flight strip.**

See Section 5.1.4.5 for a description of the tether that is drawn between the flight icon and its assigned parking gate when an arrival flight is selected.

#### 5.1.4.3.2 Relocate Flight Icon/Data Tag

When an arrival flight is *untracked* by surveillance, the flight (i.e., the hollow flight icon and data tag) can be manually relocated.

### **To relocate an untracked arrival flight:**

**Step 1:** Hover mouse over flight icon/data tag or click once on the flight icon/data tag to select it.

**Step 2:** Click and hold *inside* the white circle.

**Step 3:** Drag and drop data tag/hollow flight icon at new location.

**Step 4:** Deselect the data tag/flight icon by clicking elsewhere on the display.

If a flight is not being tracked by surveillance, it may be useful to drag and drop the data tag/hollow flight icon to its known (real-world) location. Moving an untracked flight to the known location may help to maintain situation awareness.

### **5.1.4.3.3 Rotate Flight Icon**

When an arrival flight is *untracked* by surveillance, the (hollow) flight icon can be rotated for situation awareness.

### **To rotate an untracked arrival flight:**

**Step 1:** Hover mouse over flight icon/data tag or click once on the flight icon/data tag to select it.

**Step 2:** Click and hold *outside* the white circle.

**Step 3:** Drag to rotate flight icon.

**Step 4:** Deselect flight icon by clicking elsewhere on the display.

If a flight is not being tracked by surveillance, it may be useful to rotate the flight icon to its known (real-world) orientation. Rotating an untracked flight to its known orientation may help to maintain situation awareness.

### **5.1.4.4 Tracked Arrival Flights (Solid Icon)**

When an arrival flight is tracked by surface surveillance, the data tag is displayed on top of a *solid* flight icon. While a tracked flight cannot be relocated or rotated, the data tag can be repositioned.

#### **5.1.4.4.1 Select Flight Icon/Data Tag**

The (solid) flight icon and/or data tag of a tracked arrival flight can be selected using the mouse.

### To select a tracked arrival flight:

- Step 1:** Click on the flight icon/data tag, or, if the data tag has been repositioned, click on either the flight icon or data tag (Figure 5.41).
- Step 2:** Deselect the flight icon/data tag by clicking elsewhere on the display.



Figure 5.41. Click on flight icon or data tag to select flight.

See Section 5.1.4.5 for a description of the tether that is drawn between the flight icon and its assigned parking gate when an arrival flight is selected.

#### 5.1.4.4.2 Reposition Data Tag

When an arrival flight is *tracked* by surface surveillance, the flight icon cannot be relocated or rotated. However, the data tag can be repositioned, while it remains tethered to the flight icon.

### To reposition the data tag of a tracked arrival flight:

- Step 1:** Click and hold the data tag.
- Step 2:** Drag and drop data tag at the new location.
- Step 3:** Deselect the data tag by clicking elsewhere on the display.
- Note:** *The data tag remains tethered to the flight icon and will maintain its relative position to the flight icon as the flight taxis.*

### To reconnect the data tag of a tracked arrival flight:

- Step 1:** Click and hold the data tag.
- Step 2:** Drag and drop the data tag over the flight icon to reconnect it.
- Step 3:** Deselect the data tag by clicking elsewhere on the display.



### 5.1.4.5 Tether between Arrival Flight and Parking Gate

A tether is drawn between an arrival flight (whether tracked or untracked) and its assigned parking gate.

To view the tether between an arrival flight icon and its parking gate:

**Step 1:** Click once on the data tag or flight icon of an arrival to select the flight.

**Alternatively:** Click once on a parking gate number.

**Note:** *If an en route arrival flight is scheduled to land within the next hour (Figure 5.42) or if the arrival is already on the surface (Figure 5.43), a tether is drawn between the flight icon and its assigned parking gate.*

**Step 2:** Deselect the data tag/flight icon by clicking elsewhere on the display.

See Section 7.1.3 for a description of how to change a parking gate assignment.

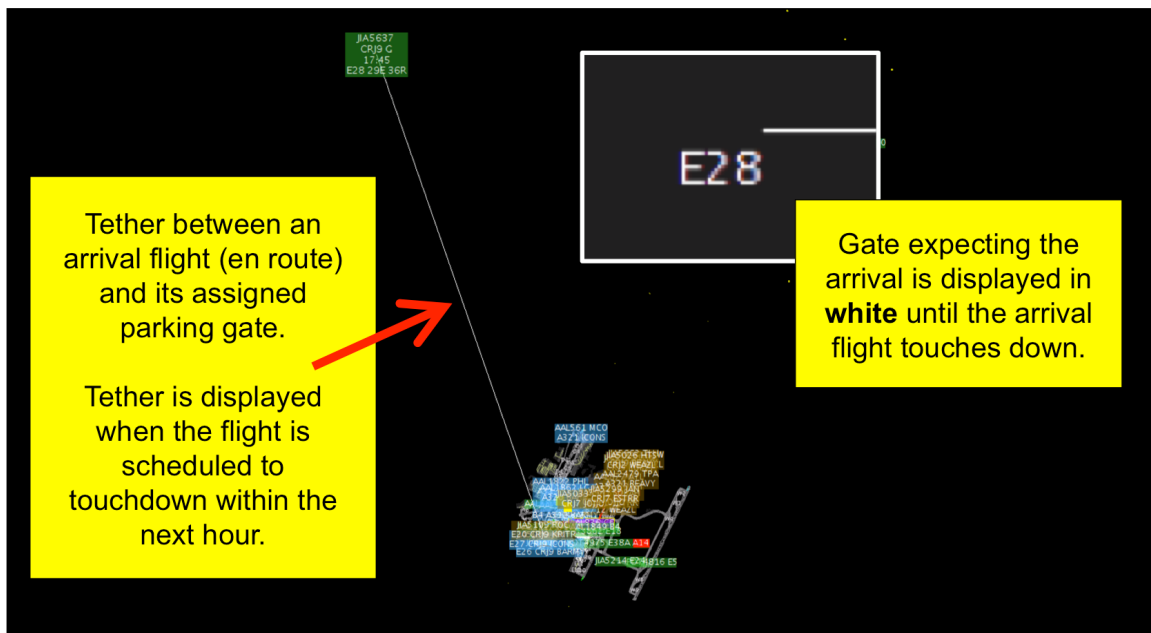


Figure 5.42. An en route arrival flight is tethered to its assigned gate (E28), shown in white.

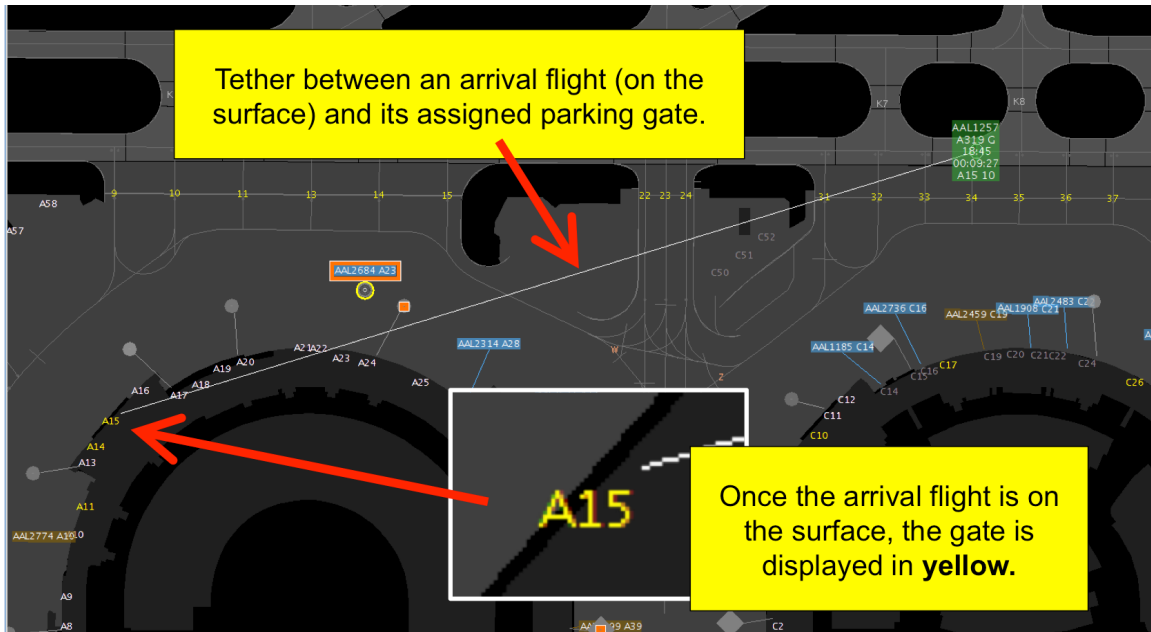


Figure 5.43. An arrival flight on the surface is tethered to its assigned gate (A15), shown in yellow.

#### 5.1.4.6 Data Tag: Arrival Metrics

A flight's Scheduled In-Block Time (SIBT; "1N"), duration of time since landing, and color-coded alerts when the flight is late – "A0," "A5," or "A14" – are displayed on arrival data tags in RTC.

In Figure 5.44, ENY3862 landed early, prior to its SIBT (20:53 UTC), but was delayed prior to entering the ramp.

- **No Delay:** ENY3862 landed prior to its SIBT. Because it was early, no alert was displayed. It has been on the surface for 21 min and 02 sec.
- **"A0" (past SIBT):** ENY3862 has now been on the surface for 23 min and 33 sec – and is past its SIBT.
- **"A5" (more than 5 min past SIBT):** ENY3862 has now been on the surface for 27 min and 54 sec – and is more than 5 min past its SIBT.
- **"A14" (more than 14 min past SIBT):** ENY3862 has now been on the surface for 37 min and 05 sec – and more than 14 min past its SIBT.

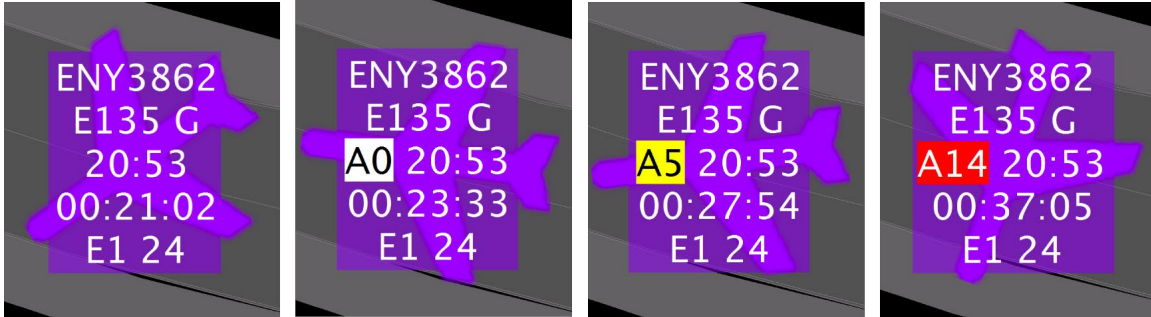


Figure 5.44. Arrival data tags show SIBT, duration of time since landing and color-coded alerts when the flight is past its SIBT, “A0,” “A5, and “A14.”

In this example, ENY3862 is displayed in magenta, rather than green, because a gate conflict was detected at its arrival gate (in this example, gate E1).

Additional information is displayed on arrival data tags in RMTC (see Section 10.2).

### 5.1.4.7 Gate Conflict

If an inbound arrival flight’s assigned gate is occupied, both the flight icon/data tag are displayed in magenta rather than green (see examples in Figure 5.45). Gate conflicts are also shown for gates blocked by a flight at a gate. When there is a ‘heavy’ aircraft blocking an adjacent gate and there is an inbound arrival for that gate, a gate conflict will be indicated. This only occurs at certain airports where there is limited spacing between gates. See Section 3.1.2.2 for gate conflict arrival-time setting.

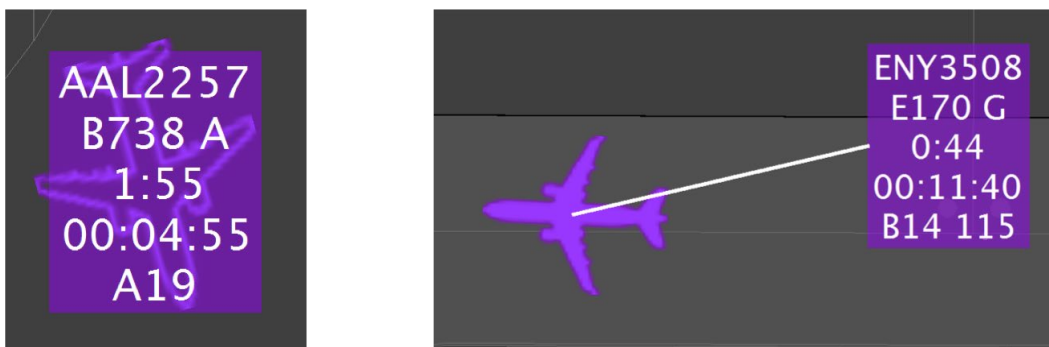


Figure 5.45. Inbound arrival flights with gate conflicts are displayed in magenta.

Like all arrival flights, the flight icon is tethered to its assigned arrival gate. To view the tether, click on the arrival flight’s icon/data tag, or the magenta gate number at the terminal, and a line will be drawn between the flight icon and the gate, regardless of where the arrival flight is on the surface (Figure 5.46).

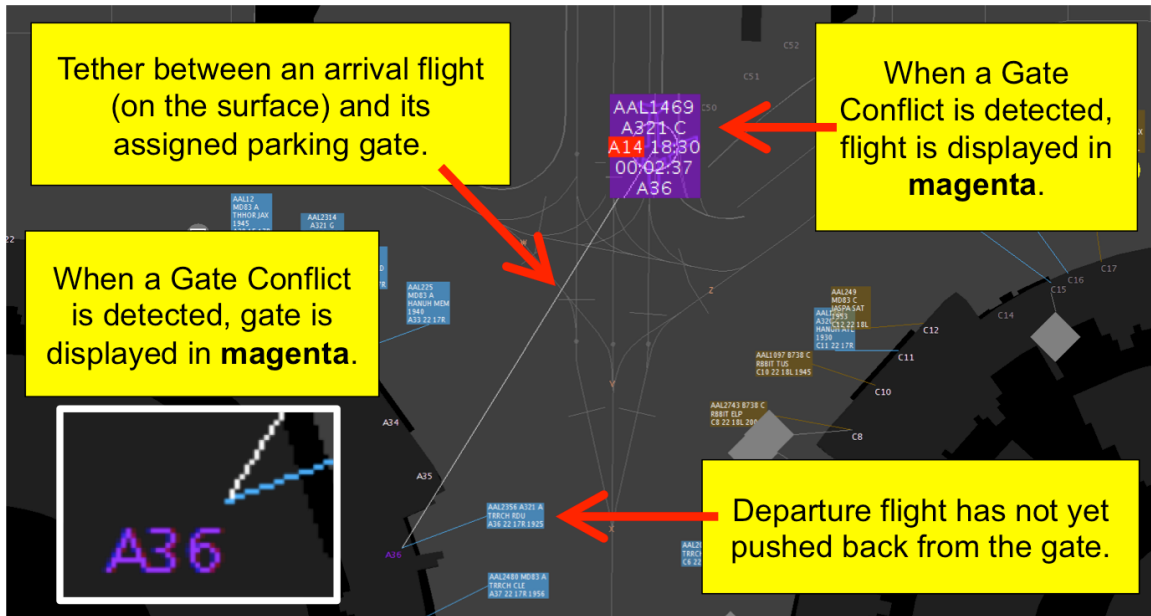


Figure 5.46. An arrival flight with a gate conflict (shown in magenta) is tethered to its assigned gate (A36 in this example, shown in magenta).

### 5.1.4.8 Right-Click Menu Options

Several options are available on the right-click menu in the arrival taxi-in state.

#### 5.1.4.8.1 Move to Gate

Once an arrival crosses the spot and enters the ramp, the flight can be moved directly to its assigned gate, regardless of whether it is tracked or untracked. On the right-click menu, select “Move to Gate.” The flight will move immediately to its assigned arrival gate, and appear as a gray disc tethered to the gate (see Figure 5.47). “Move to Gate” is available only after an arrival flight enters the ramp area and once it is selected, it cannot be undone.

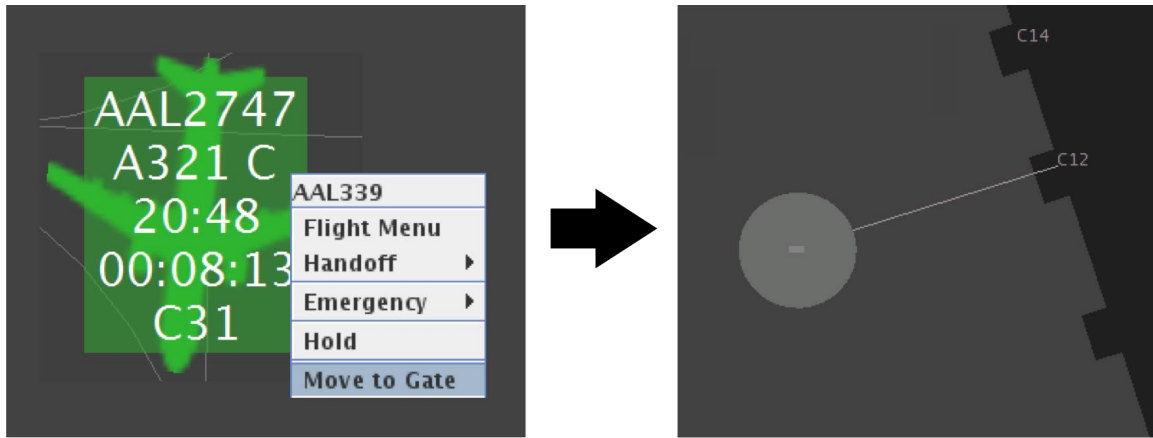


Figure 5.47. Right-click menu with “Move to Gate” selected (left). Flight parked at the gate, shown as a gray disc, tethered to the assigned arrival gate (right).

#### 5.1.4.8.2 Flight Menu

See Section 7 for a description of the Flight Menu.

#### 5.1.4.8.3 Change Spot Assignment (AMA)

At some airports, spot change can be accessed through the right-click menu, while the flight is still in the AMA, prior to entering the ramp area. This is not applicable to all airports. See Section 5.1.1.2.4 for description.

#### 5.1.4.8.4 Handoff

Ownership of a flight can be reassigned. See Section 5.1.1.2.5 for description.

#### 5.1.4.8.5 Emergency

Emergency status can be assigned to the flight. See Section 5.1.1.2.6 for description.

#### 5.1.4.8.6 Hold

The flight can be placed on hold. See Section 5.1.1.2.7 for description.

## 5.1.5 Arrival State: Flight at Gate

Once an arrival flight parks at the gate, or is moved to the gate using “Move to Gate” on the right-click menu, it is no longer depicted as an active flight.

### 5.1.5.1 Icon/Data Tag

Once parked at the gate, an arrival flight is displayed as a gray disc, tethered to the gate. While the icon and data tag cannot be separated if together, they can be repositioned together if apart.

#### 5.1.5.1.1 Select Icon/Data Tag

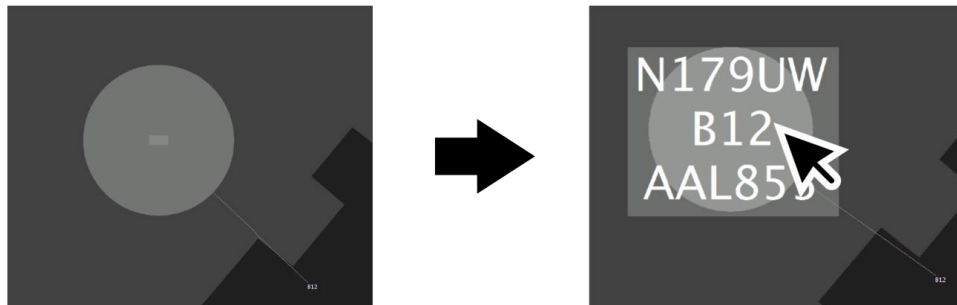
The icon/data tag of an arrival flight at the gate can be selected using the mouse.

**To select an arrival flight at the gate:**

**Step 1:** Hover the mouse over the icon/data tag or click once on the icon/data tag to select it.

**Note:** *Flight information from the previous arrival is displayed as shown in Figure 5.48.*

**Step 2:** Deselect the data tag/flight icon by clicking elsewhere on the display.



**Figure 5.48. Hover over icon/data tag or click once to select it. Flight information from the previous arrival is displayed.**

#### 5.1.5.1.2 Reposition Icon/Data Tag

While an arrival flight is parked at the gate, the icon/data tag can be repositioned, but will remain tethered to the gate.

### **To reposition an arrival flight at the gate:**

*Step 1:* Click and hold the icon/data tag.

*Step 2:* Drag and drop icon/data tag at the new location.

*Step 3:* Deselect flight by clicking elsewhere on the display.

*Note:* *The icon/data tag will remain tethered to the gate.*

## **5.1.5.2 Right-Click Menu Options**

Several options are available on the right-click menu when an arrival flight is parked at the gate.

### **5.1.5.2.1 Flight Menu**

See Section 7 for a description of the Flight Menu.

### **5.1.5.2.2 Handoff**

Ownership of a flight can be reassigned. See Section 5.1.1.2.5 for description.

### **5.1.5.2.3 Emergency**

Emergency status can be assigned to the flight. See Section 5.1.1.2.6 for description.

## **5.1.6 Aircraft State: Aircraft at the Gate**

Following the expiration of the previous arrival's flight information and prior to the assignment of the next departure, an aircraft (airframe), with no associated flight information, is parked at the gate.

### **5.1.6.1 Icon/Data Tag**

An aircraft (airframe) parked at the gate, without arrival flight or departure flight information associated with it, is displayed as a gray square diamond with attached data tag. While the icon and data tag cannot be separated, they can be repositioned together while remaining tethered to the gate.

### 5.1.6.1.1 Select Icon/Data Tag

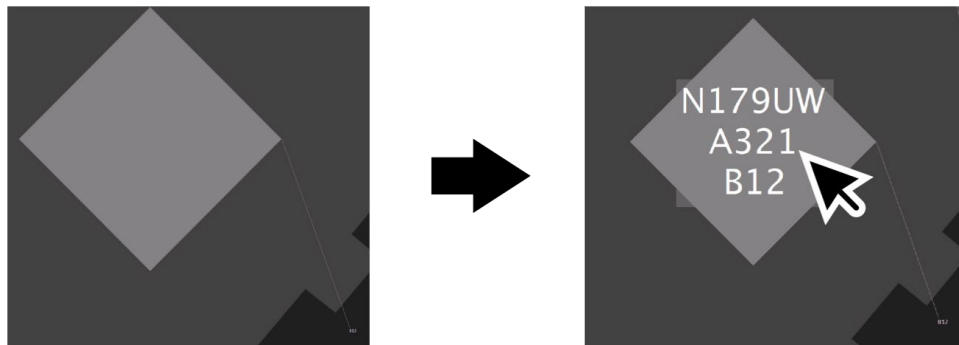
The icon/data tag of an aircraft at the gate can be selected using the mouse.

**To select an aircraft at the gate:**

**Step 1:** Hover mouse over icon/data tag or click once on icon/data tag to select it.

**Note:** Aircraft information is displayed as shown in Figure 5.49.

**Step 2:** Deselect the icon/data tag by clicking elsewhere on the display.



**Figure 5.49.** Hover over the icon/data tag or click once to select it. Aircraft information will be displayed.

### 5.1.6.1.2 Reposition Icon/Data Tag

While an aircraft, without flight information, is parked at the gate, the icon/data tag can be repositioned, but will remain tethered to the gate.

**To reposition the data tag of an aircraft parked at the gate:**

**Step 1:** Click and hold the icon/data tag.

**Step 2:** Drag and drop icon/data tag at the new location.

**Step 3:** Deselect flight by clicking elsewhere on the display.

**Note:** The icon/data tag remains tethered to the gate.

### 5.1.6.2 Right-Click Menu Options

One option, “Aircraft Menu,” is available on the right-click menu when an arrival aircraft is parked at the gate.



### 5.1.6.2.1 Aircraft Menu

See Section 7.9 for a description of the Aircraft Menu.

## 5.1.7 Aircraft State: Future Departure at Gate

A flight that has acquired information about the upcoming departure, but is more than 60 minutes away from its scheduled pushback time, is depicted as an inactive flight.

### 5.1.7.1 Icon/Data Tag

Future departures that have not yet become active flights, are depicted as a gray disc, tethered to the gate. While the data tag and icon cannot be separated, they can be repositioned together.

#### 5.1.7.1.1 Select Flight Icon/Data Tag

The icon/data tag of a future departure flight can be selected using the mouse.

**To select a future departure flight:**

**Step 1:** Hover mouse over icon/data tag or click once on the icon/data tag to select it.

**Note:** Flight information for the upcoming departure is displayed as shown in Figure 5.50.

**Step 2:** Deselect the data tag/flight icon by clicking elsewhere on the display.

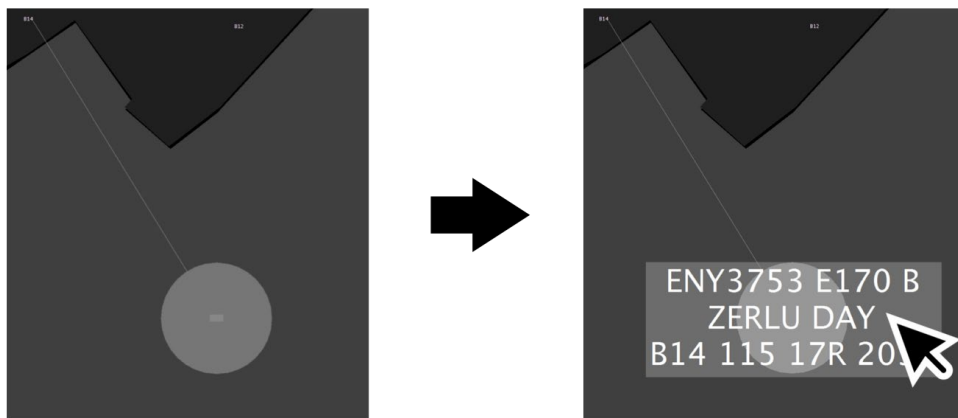


Figure 5.50. Hover over icon/data tag or click once to select it. Flight information for the upcoming departure is displayed.

The gray disc will turn into a blue or brown flight strip approximately 60 minutes prior to departure.

### **5.1.7.1.2 Reposition Icon/Data Tag**

When a future departure flight is parked at the gate, the icon and data tag can be repositioned together, but will remain tethered to the gate.

**To reposition the data tag of an aircraft parked at the gate:**

*Step 1:* Click and hold the icon/data tag.

*Step 2:* Drag and drop the icon/data tag at the new location.

*Step 3:* Deselect flight by clicking elsewhere on the display.

*Note:* **The icon/data tag remains tethered to the gate.**

### **5.1.7.2 Right-Click Menu Options**

Several options are available on the right-click menu when a future departure flight is parked at the gate.

#### **5.1.7.2.1 Flight Menu**

See Section 7 for a description of the Flight Menu.

#### **5.1.7.2.2 Change Spot**

At some airports, spot change can be accessed through the right-click menu. See Section 5.1.1.2.4 for description.

#### **5.1.7.2.3 Handoff**

Ownership of a flight can be reassigned. See Section 5.1.1.2.5 for description.

#### **5.1.7.2.4 Emergency**

Emergency status can be assigned to the flight. See Section 5.1.1.2.6 for description.

### 5.1.7.2.5 Hold

The flight can be placed on hold. See Section 5.1.1.2.7 for description.

### 5.1.7.2.6 Pushback Flight

The flight state can be changed to pushback/spool-up. See Section 5.1.1.2.1 for description.

### 5.1.7.2.7 Pushback Flight with Direction

At airports where it is applicable, pushback with direction can be selected. See Section 5.1.1.2.2 for description.

## 5.2 Flight Strips and Data Tags: Borders

Information about flights and aircraft are shown by different borders around flight strips and data tags. This section will describe each type of border used in RTC.

### 5.2.1 Aircraft Type

Borders around flight strips and data tags indicate certain types of aircraft classifications: B757, Heavy, and Super Heavy. These borders appear automatically based on the aircraft type.

#### 5.2.1.1 B757 Aircraft

B757-type aircraft are indicated using a blue and white border around the flight strip/data tag (Figure 5.51).

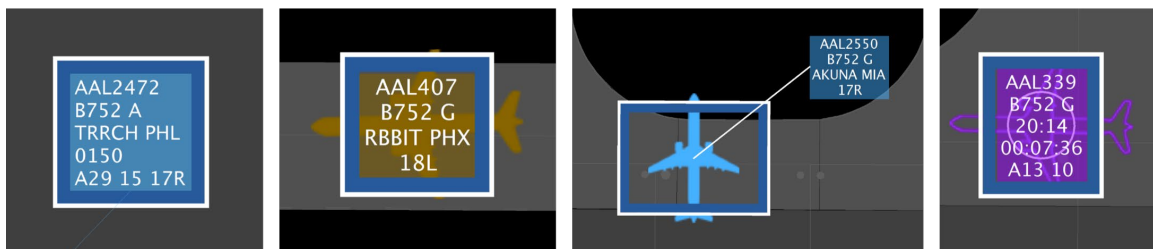


Figure 5.51. B757 aircraft are shown with a blue and white border.

### 5.2.1.2 ‘Heavy’ Aircraft

Aircraft classified as ‘heavy’ (e.g., B767, B777, B787, A330, A340, A350) are indicated with an orange and white border around the flight strip or flight icon (Figure 5.52).

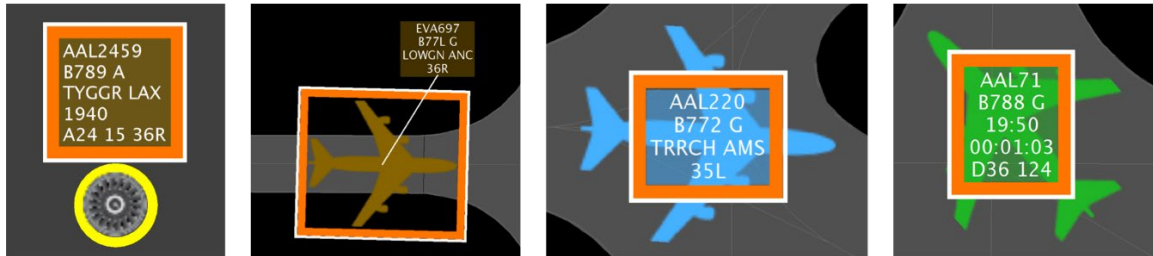


Figure 5.52. ‘Heavy’ aircraft are shown with an orange and white border.

### 5.2.1.3 ‘Super Heavy’ Aircraft

‘Super heavy’ aircraft (i.e., A380) are shown using a white and black border around the flight strip or flight icon (Figure 5.53).

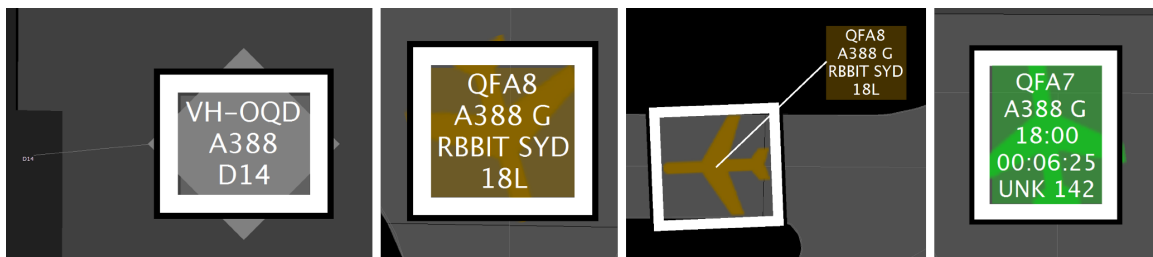


Figure 5.53. ‘Super Heavy’ aircraft are shown with a white and black border.

## 5.2.2 Hold

When a flight is placed on “hold,” using “Hold” on the right-click menu, a red border is displayed around the flight strip or flight icon (Figure 5.54). A red count-up timer is also automatically displayed to track how long the flight has been on hold.

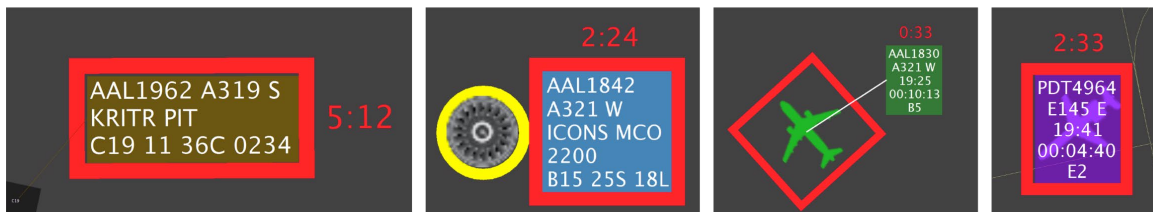


Figure 5.54. Flights on hold are shown with a red border and an automatic hold timer.

### 5.2.3 Hardstand Assignment

At airports where hardstands are used, flights that are being held in a hardstand are indicated using a yellow border around the flight strip or flight icon (Figure 5.55). See Section 7.1.1 for a description of changing a flight's hardstand assignment using the Flight Menu.



Figure 5.55. Departure flights holding in a hardstand are shown with a yellow border.

When an arrival flight enters the boundaries of a hardstand, a red hold timer that counts up from zero is automatically placed on the flight to track how long the flight has been in the hardstand (Figure 5.56).

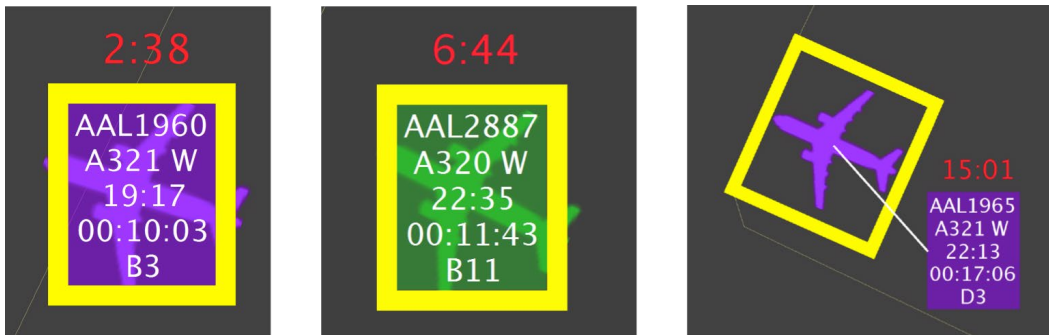


Figure 5.56. Arrival flights holding in a hardstand are shown with a yellow border and an automatic count-up timer (red).

### 5.2.4 Priority Status

When a flight is assigned a priority status, a green border is displayed around the flight strip or flight icon (Figure 5.57). See Section 7.5 for designating a flight with Priority Status.



Figure 5.57. Priority flights are depicted with a green border.

If a flight is originally displayed without priority status and is then assigned priority status by the Ramp Manager or by another Ramp Controller who does not currently own the flight, the priority border alternates between green and red to notify the Ramp Controller who owns the flight that priority status has been assigned to the flight (Figure 5.58). The flashing continues until the Ramp Controller clicks on the flight to acknowledge the notification.

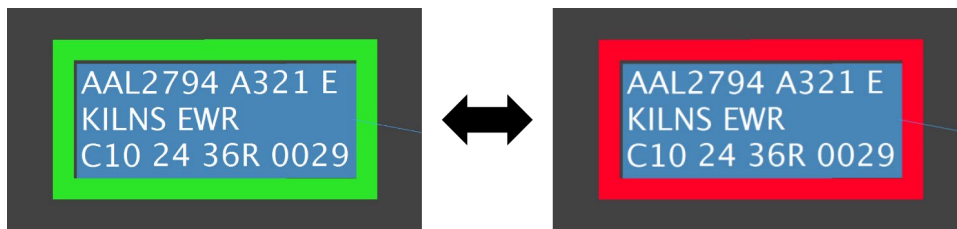


Figure 5.58. A flight with newly-assigned Priority Status alternates between green and red borders on the RTC display of the Ramp Controller who owns the flight until acknowledged.

## 5.2.5 Multiple Borders on same Flight

More than one border can be displayed on a flight at the same time (Figure 4.11).

- **Figure 5.59 (left):** Brown flight strip: Departure on westbound runway
  - Blue/white border indicates aircraft type B757.
  - Green border indicates priority flight.
- **Figure 5.59 (middle):** Blue flight strip: Departure on eastbound runway
  - Orange/white border indicates aircraft type ‘heavy’
  - Green border indicates priority flight,
  - Red border indicates the flight has been placed on hold (accompanied by a red hold timer).
- **Figure 5.59 (right):** Magenta flight icon/data tag: Arrival with gate conflict
  - Orange/white border indicates aircraft type ‘heavy’
  - Green border indicates priority flight

- Yellow border indicates a flight holding in the hardstand (accompanied by a red hardstand hold timer).



Figure 5.59. Examples of flights with multiple borders.

### 5.3 Long On Board

The RTC map also displays Long On Board (LOB) information for common situation awareness. LOB is displayed on the map using a colored disc behind the flight icon (Figure 5.60).

- For departures, the LOB timer starts at pushback and is continuously computed as the current time minus the Actual Off-Block Time (AOBT) until the departure takes off.
- For arrivals, the LOB timer starts at touchdown and is continuously computed as the current time minus the Actual Landing Time (ALDT) until the arrival is in the gate.

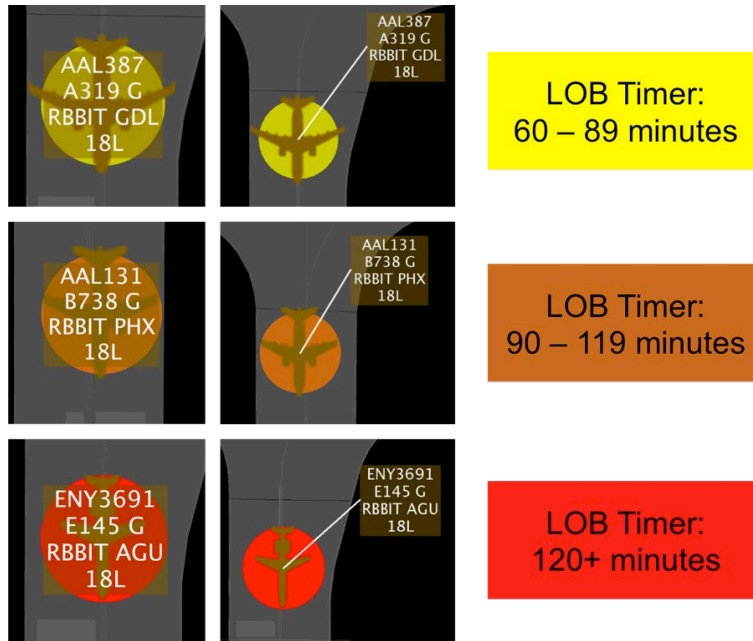


Figure 5.60. Long On Board (LOB) common situation awareness: 60+ (yellow), 90+ (orange), 120+ min (red).

LOB information is also displayed in the pushback/spool-up state (Figure 5.61).



Figure 5.61. Examples of Long On Board (LOB) indicators displayed in the pushback/spool-up state (e.g., red indicators = 120+ minutes).

## 5.4 Flight Menu Settings

Status changes made through the Flight Menu can be indicated on the flight strips/data tags. See Section 7 for a full description of the Flight Menu and procedures for making these changes.



## 5.4.1 Runway Change for Operational Necessity

At airports that can make a request for a runway assignment change for Operational Necessity (see Section 7.1.5), once confirmed, the new runway assignment is highlighted in green on the flight strip/data tag (Figure 5.62).

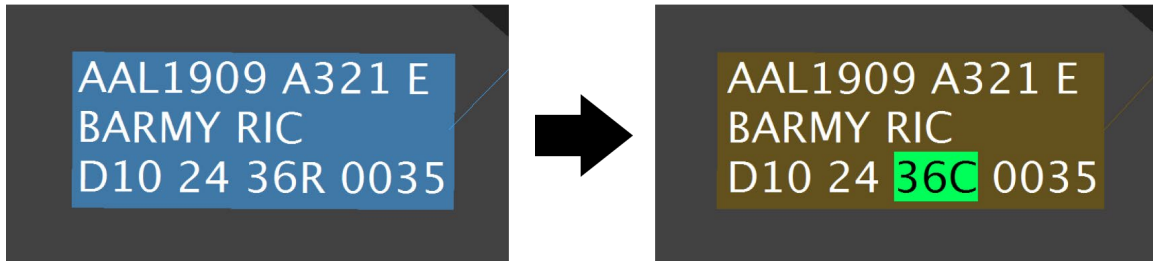


Figure 5.62. Runway change from 36R to 36C for Operational Necessity.

## 5.4.2 (MC) Bypass

Airport-specific routing procedures (e.g., the taxiway Mike-Charlie bypass) are indicated above the data tag (Figure 5.63). The bypass is displayed only at an airport where surface congestion requires that an arrival which has entered the ramp to then exit the ramp and use an AMA taxiway to bypass the congested area in the ramp. The aircraft can then re-enter the ramp at a spot closer to its gate. The bypass route is displayed in cyan above the arrival flight's data tag as soon as the bypass is assigned to the flight using the Flight Menu (see Section 7.1.2). The bypass route continues to display when the flight exits the ramp and taxis on the bypass route. When the flight re-enters the ramp, the bypass route is automatically removed.

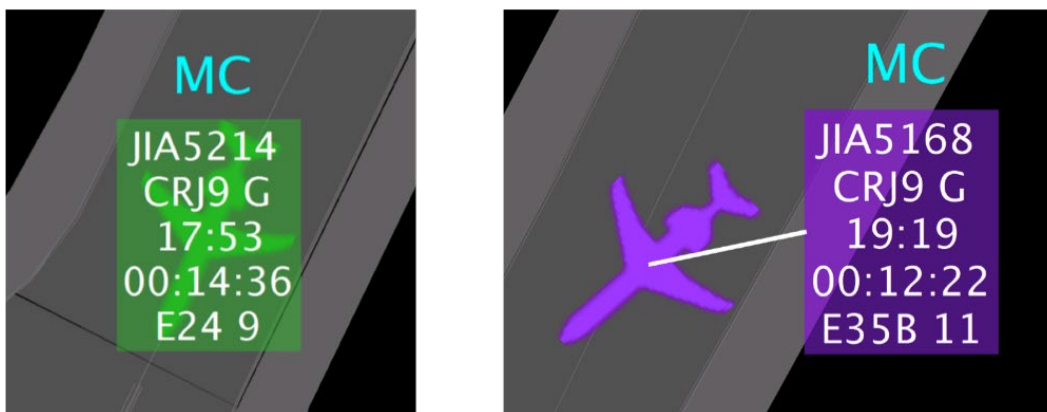


Figure 5.63. Arrival flights cleared to use the Mike-Charlie bypass have a cyan “MC” shown above data tag (airport-specific routing).

### 5.4.3 Suspend Flight

When a departure flight is temporarily delayed and “Suspended” via the Flight Status panel on the Flight Menu, the flight strip/data tag/flight icon are grayed out and the word “Suspended” is displayed in red (Figure 5.64).



Figure 5.64. Suspended flights in various flight states.

### 5.4.4 Return to Gate

The “Return to Gate” option can be selected on the Flight Status panel of the Flight Menu (see Section 7.6.3). When “Return to Gate” is selected for a *tracked* flight (solid icon), “RTG” is displayed on the data tag in white text on a black background (Figure 5.65). The location and orientation of the tracked flight continue to be shown based on surveillance data.

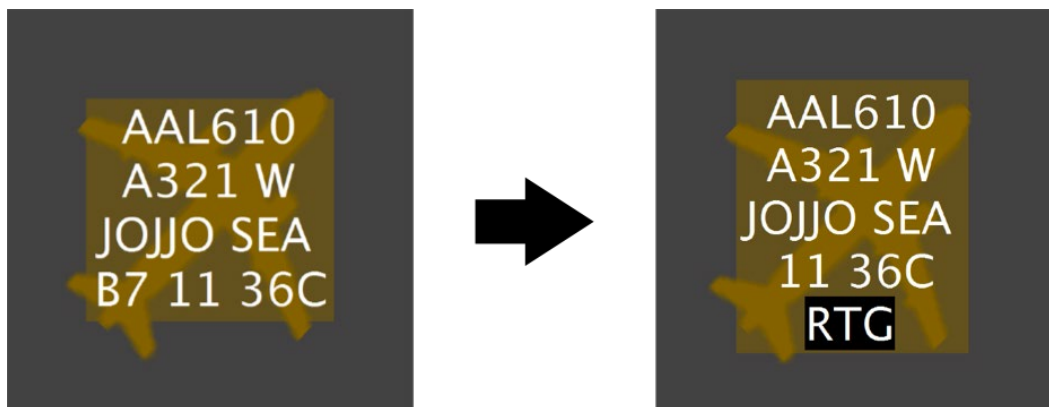


Figure 5.65. Tracked flight: Return to Gate (“RTG”) indicated on the data tag.

When “Return to Gate” is selected for an *untracked* flight (hollow icon), “RTG” is *momentarily* displayed on the data tag in white text on a black background (Figure 5.66 middle). The flight is then returned to the gate and its flight strip is tethered to its gate (Figure 5.66 right).

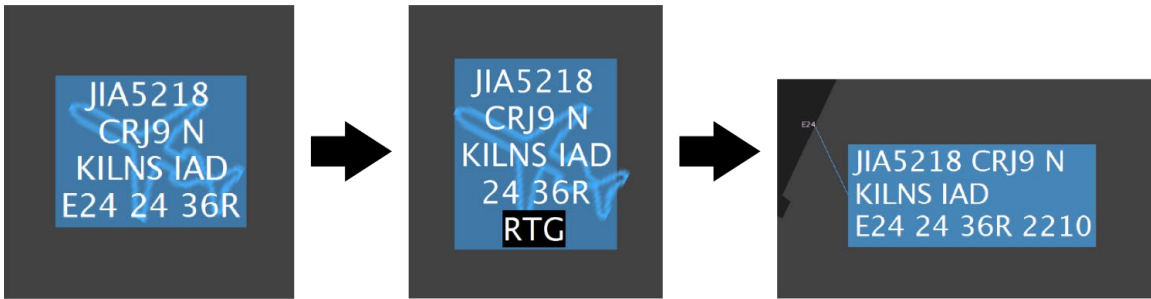


Figure 5.66. Untracked flight: Return to Gate (“RTG”) indicated on the data tag *momentarily* (middle) and then returned to gate.

### 5.4.5 Cancelled Flight

When a departure flight is cancelled using the Flight Status panel on the Flight Menu, the flight strip is “grayed out” and a large red “X” covers the flight strip for 60 seconds (Figure 5.67). After 60 seconds, the cancelled flight will display as a hollow gray icon with tail number.

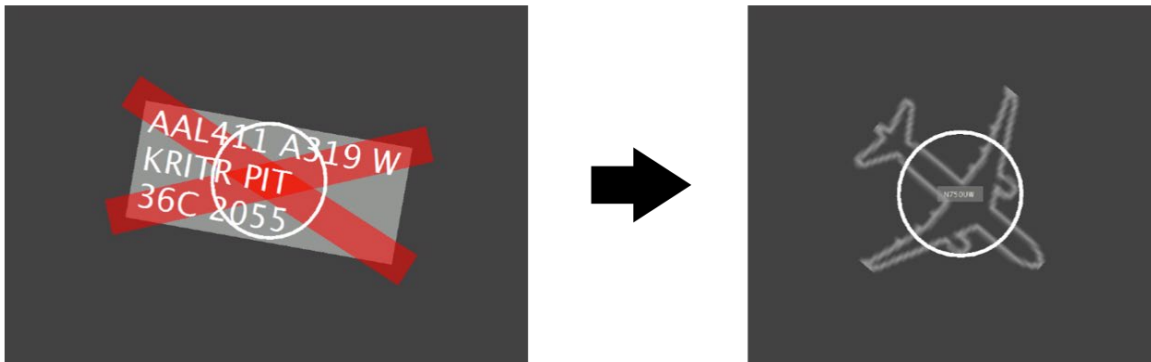


Figure 5.67. Grayed-out flight strip of cancelled flight covered by a large red “X” and then depicted as hollow gray flight icon with tail number.

### 5.4.6 Reposition Flight Strip

When a departure flight at the gate is repositioned using the “Reposition” option on the Flight Menu (which disables the tether to the gate), the new location is indicated on the flight strip and highlighted in green. Examples of repositioned flights strips are shown in Figure 5.68. A flight that is repositioned without selecting a specific location is labeled “Repo.” Specific location options vary by airport, for example, “SC” may represent “South Cargo Ramp” and “Hang” may represent “Hangar.”



**Figure 5.68. Examples of repositioned flight strips (reposition locations/labels vary by airport).**

## 6 Target and Aircraft Creation

Flights and aircraft that do not already exist in RTC, can be created manually. Right-click on an empty area of the RTC map to show the target creation menu (Figure 6.1).

- Select “**Add Flight Target**” to create a target for a call sign that is *already* in the system data, but *not* yet graphically represented on the RTC map (Section 6.1.1).
- Select “**Add Aircraft Target**” to create a target for a call sign that is *neither* in the system data nor graphically represented on the RTC map (Section 6.1.2).



Figure 6.1. Right-click on an empty area of the map to show the target creation menu.

### 6.1.1 Add Flight Target

A flight target can be added for a call sign that is *already* in the system, but *not* yet graphically represented on the RTC map. The first step is to locate the flight in the system data.

### To Add a Flight Target:

- Step 1:** Right-click on any empty area of the RTC map to open the target creation menu.
- Step 2:** Select “Add Flight Target” to open the Flight Target Creation window (Figure 6.2).
- Step 3:** To locate a flight in the system data, click on the Flight Selection list to see a dropdown list of *all* flights in the system data (Figure 6.3).

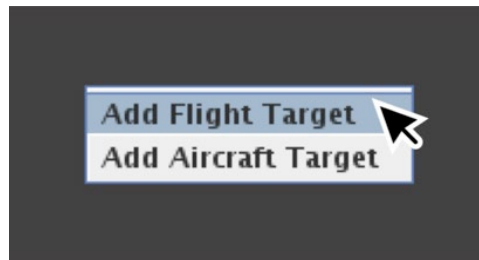


Figure 6.2. Select “Add Flight Target” from the target creation menu.

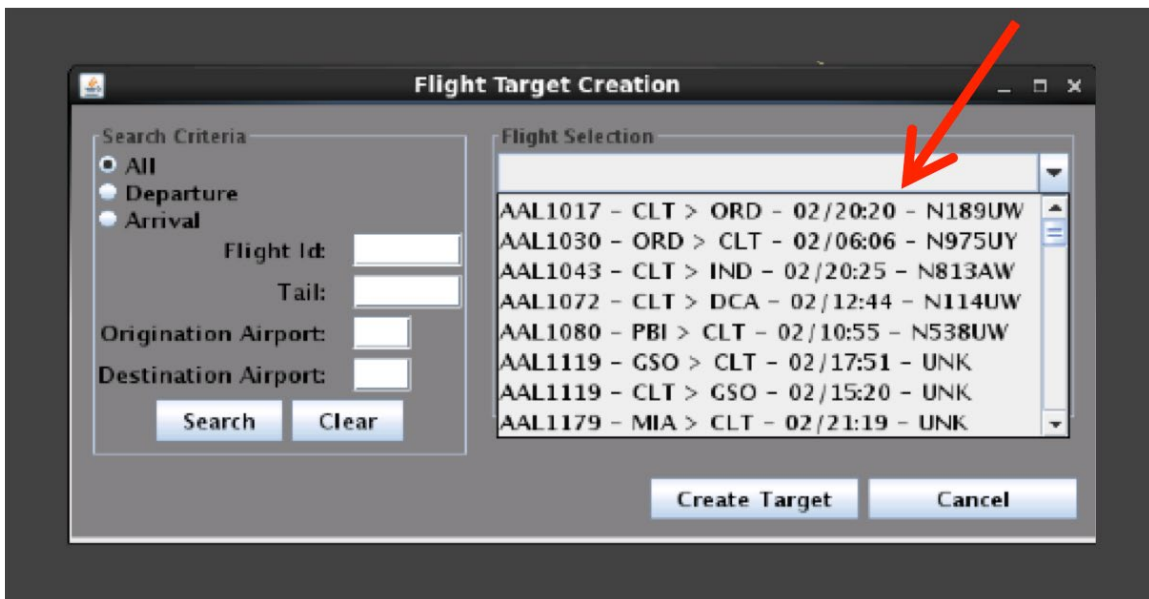


Figure 6.3. If no search criteria are entered, all flights in the system data will be included in the Flight Selection list.

*Or, Use search criteria to narrow the list of flights shown in the Flight Selection list.*

**Step 4 (Optional):** Use radio buttons to select search criteria:

- All, or
- Departure, or
- Arrival

**Step 5 (Optional):** Search on any combination of the following:

- Flight ID (call sign) (full or partial; e.g., “AAL” or “AAL123” or “123”)
- Tail number (full or partial)
- Origin airport
- Destination airport

**Step 6:** Select “Search.” Any flights in the system that match the search criteria will be shown in the dropdown list (Figure 6.4).

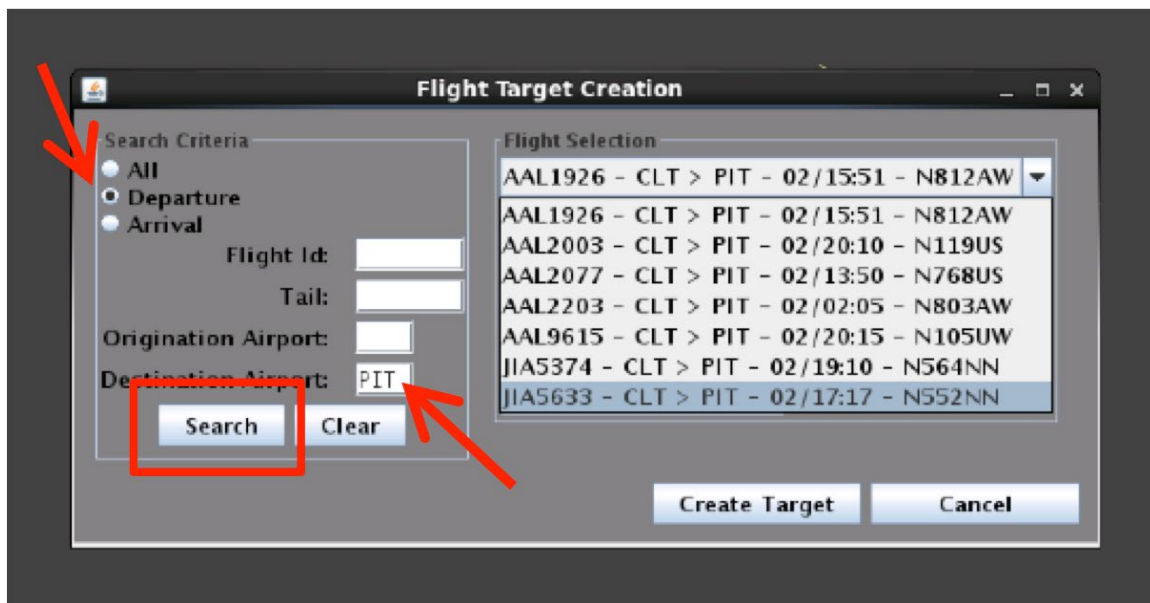


Figure 6.4. Flights matching the search criteria will be shown in the Flight Selection dropdown list.

**Step 7:** Select the flight in the dropdown menu.

**Step 8:** Select a target placement location:

- Mouse location, or
- Gate (enter gate number), or
- Hardstand (enter hardstand identifier)

**Step 9:** Select “Create Target” (Figure 6.5). A gray flight strip or hollow gray flight icon will appear at the specified location on the RTC map (Figure 6.6).

**Alternatively:** Select “Cancel” to exit the window without creating a flight target.

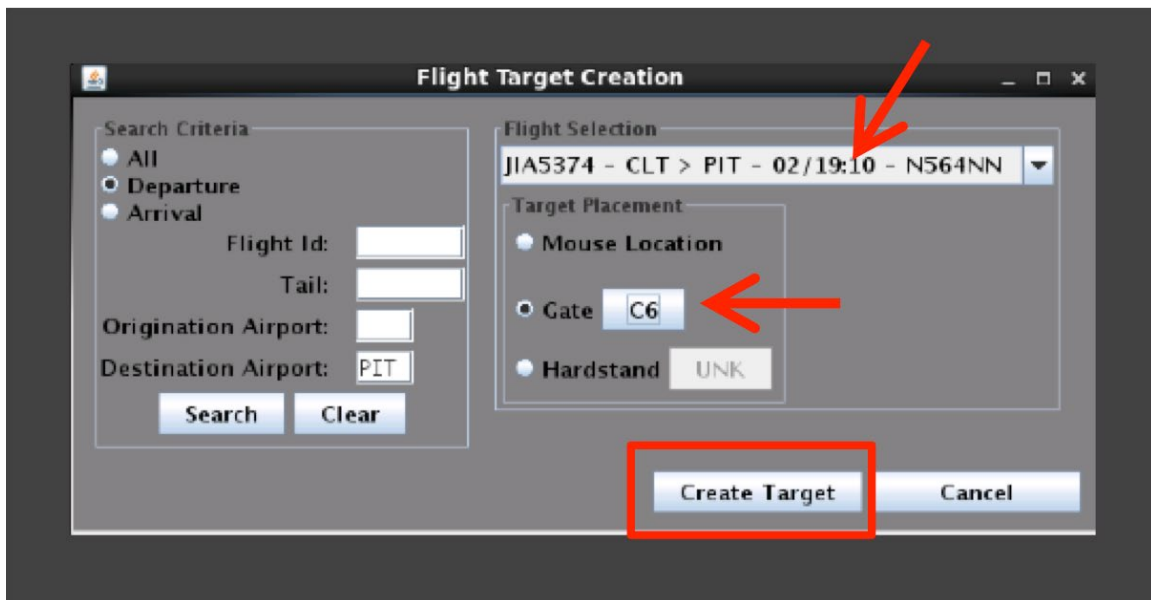


Figure 6.5. Select flight from dropdown list, select target placement, and select “Create Target.”

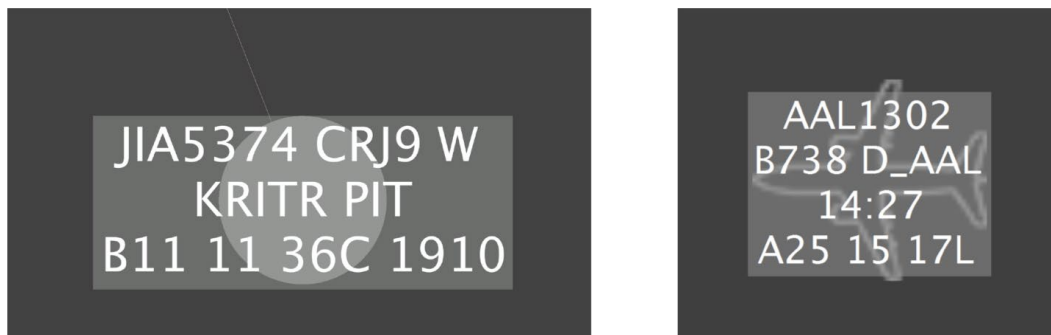


Figure 6.6. Examples of newly-created graphical flight targets on the RTC map.



To prevent RTC from displaying two different representations of the same flight, duplicate targets cannot be created. If this is attempted inadvertently, the message “Cannot create target, a target already exists for [call sign/tail number]” will be displayed (Figure 6.7). To view the already-existing flight on the RTC map, select “View Target” at this prompt.

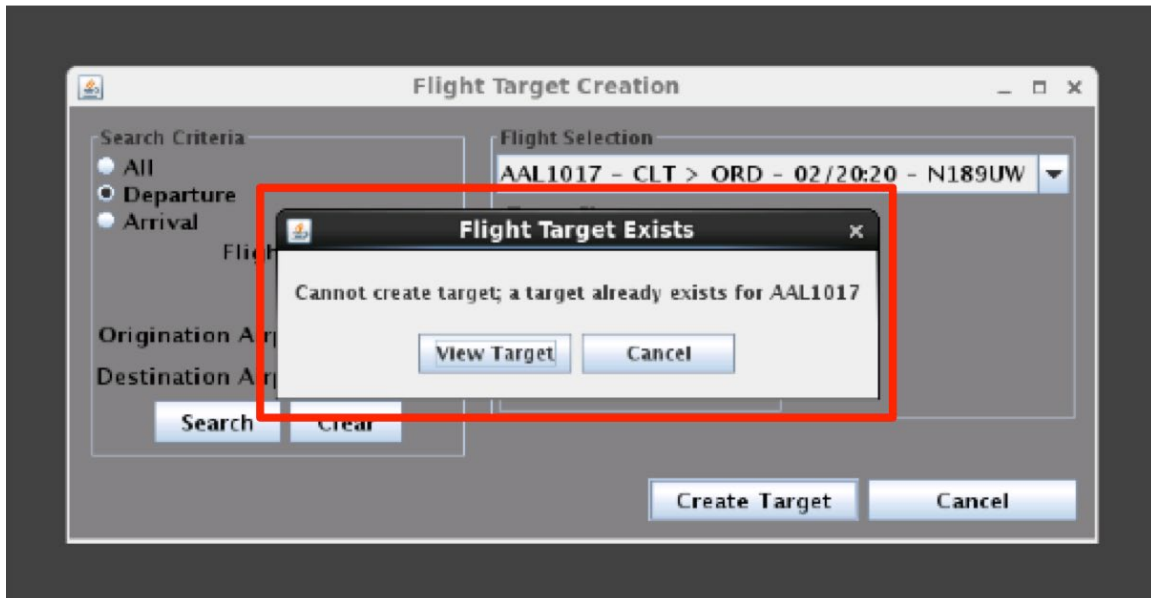


Figure 6.7. Target already exists prompt with option to view existing target.

## 6.1.2 Add Aircraft Target

An aircraft target can be created when an aircraft is neither in the system data nor graphically represented on the RTC map. A tail number is required for the creation of an aircraft target. The aircraft target may also be assigned an aircraft type. A gray diamond icon will appear at the specified location on the RTC map.

## To Add an Aircraft Target:

**Step 1:** Right-click on any empty area of the RTC map to open the target creation menu.

**Step 2:** Select “Add Aircraft Target” to open the Aircraft Creation window.

**Step 3:** Enter tail number (required) and aircraft type (optional) (Figure 6.8).

**Step 4:** Select a target placement location:

- Mouse Location, or
- Gate (enter gate number), or
- Hardstand (enter hardstand identifier)

**Step 5:** Select “Create Target.” A gray diamond icon will appear at the specified location (Figure 6.9). Hover or click once to view the data tag with aircraft information.

**Alternatively:** Select “Cancel” to exit the window without creating an aircraft target.

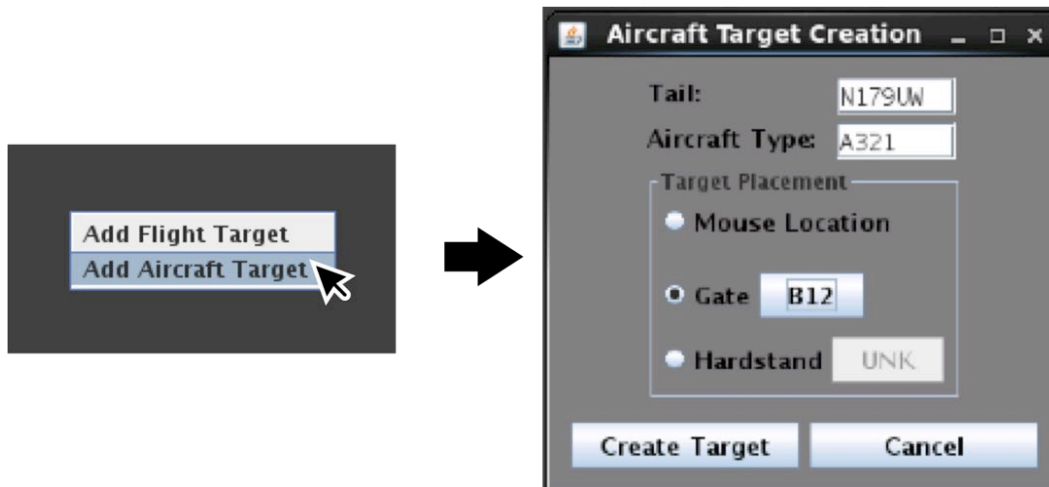


Figure 6.8. Create an aircraft target using tail number and aircraft type (optional).



**Figure 6.9. Newly created flight target. Hover, or click once, to view data tag.**

# 7 Flight Menu

The Flight Menu is available anytime departure or arrival information is associated with a flight. It includes aircraft information (e.g., tail number, aircraft type), surface information (e.g., gate, spot, and runway), schedule information (e.g., P-Time and EOBT), metering status, and flight status options (e.g., Normal, Suspend).

### To open the Flight Menu:

**Step 1:** Right-click on a flight strip, data tag, or icon to open the right-click menu (Figure 7.1).

**Step 2:** Select “Flight Menu” to open the Flight Menu window (Figure 7.2).

**Alternatively:** Double click on any flight strip, data tag, or icon.



Figure 7.1. Use the right-click menu to open the Flight Menu.

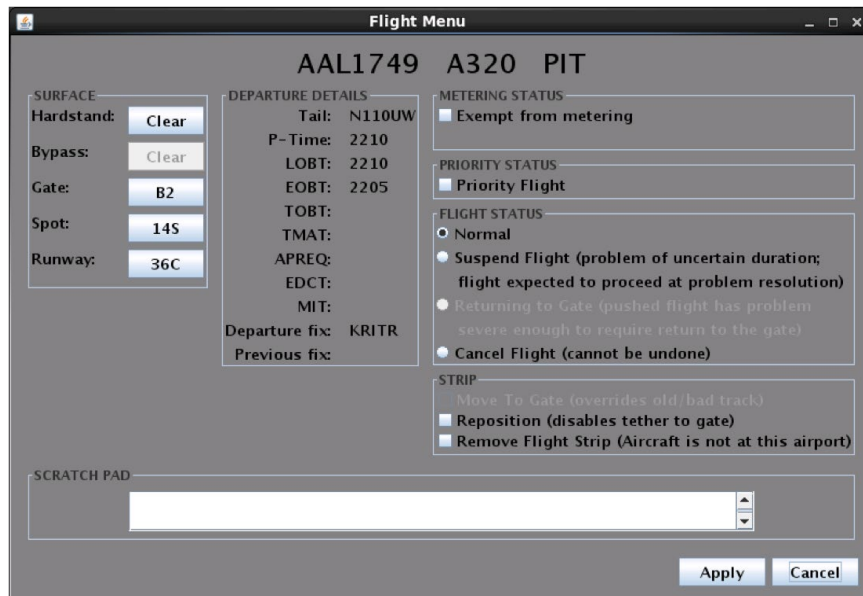


Figure 7.2. Example of a Flight Menu for a departure flight.

## 7.1 Flight Menu: Surface

Use the “Surface” section of the Flight Menu to view and update hardstand, gate, spot, and runway assignments (Figure 7.3).

The screenshot shows the 'Flight Menu' window for flight AAL2903, aircraft A319, and destination MDT. The 'SURFACE' section is highlighted with a red box and contains the following fields:

Field	Value	Action
Hardstand:		Clear
Bypass:		Clear
Gate:	C11	
Spot:	22	
Runway:	36C	

The 'DEPARTURE DETAILS' section includes:

- Tail: N704US
- P-Time: 1844
- LOBT: 1844
- EOBT: 1842
- TOBT:
- TMAT:
- APREQ:
- EDCT:
- MIT:
- Departure fix: KRITR
- Previous fix:

The 'METERING STATUS' section has a checkbox for 'Exempt from metering'.

The 'PRIORITY STATUS' section has a checkbox for 'Priority Flight'.

The 'FLIGHT STATUS' section has radio buttons for:

- Normal
- Suspend Flight (problem of uncertain duration; flight expected to proceed at problem resolution)
- Returning to Gate (pushed flight has problem severe enough to require return to the gate)
- Cancel Flight (cannot be undone)

The 'STRIP' section has checkboxes for:

- Move To Gate (overrides old/bad track)
- Reposition (disables tether to gate)
- Remove Flight Strip (Aircraft is not at this airport)

At the bottom, there is a 'SCRATCH PAD' text area and 'Apply' and 'Cancel' buttons.

Figure 7.3. Flight Menu: Surface information.

### 7.1.1 Hardstand Assignment

At airports which use hardstands in the ramp area to hold aircraft, use the Flight Menu to update a flight’s hardstand assignment.

**To assign a departure or arrival flight to a Hardstand:**

**Step 1:** Open the Flight Menu.

**Note:** The default hardstand setting for departures and arrivals is “Clear.”

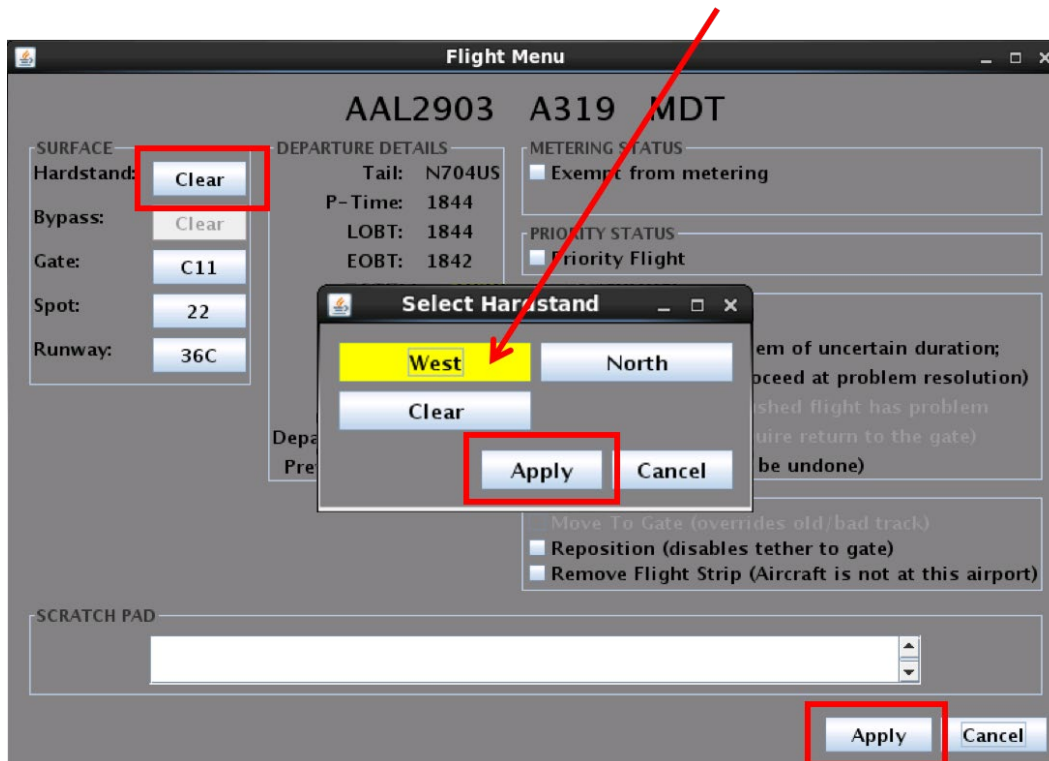
**Step 2:** Click on the “Hardstand” field where the current hardstand assignment, or “Clear,” is shown (Figure 7.4).

**Note:** Available hardstand options for a given airport are displayed in the “Select Hardstand” window (Figure 7.4).

**Step 3:** Select the hardstand assignment (e.g., “West” in Figure 7.4).

**Step 4:** Select “Apply” in the “Select Hardstand” window (Figure 7.4).

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”



**Figure 7.4.** Use the Flight Menu to change hardstand assignment.

When a departure or arrival flight is assigned to a hardstand, a yellow border is shown around the data tag/flight icon. When a departure flight, subject to a TMI restriction or Surface Metering, enters the hardstand, a light green timer is displayed and begins counting down to the target release time. See Section 8.2.10 for a description of data tags and timers in the hardstand.

### **To remove a Hardstand assignment:**

**Step 1:** Open the Flight Menu.

**Step 2:** Click on the “Hardstand” field where the current hardstand assignment is shown.

**Step 3:** Select “Clear.”

**Step 4:** Select “Apply” in the “Select Hardstand” window.

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”

## **7.1.2 Bypass**

Because traffic flows and procedures in and around the ramp vary by airport, some versions of RTC may offer an option to label flights that have been assigned a particular taxi route into the ramp area. Annotating a data tag in the RTC interface with this type of label supports common situation awareness of the flight’s intent.

The bypass option is only available at an airport where surface congestion requires that an arrival, which has entered the ramp, to then exit the ramp and use an AMA taxiway to bypass the congested area in the ramp. The arrival then re-enters the ramp at a spot closer to its gate. These bypass routes have been set up in advance through coordination with ATC and are available only for flights being routed through specific areas of the ramp.

Selection of a bypass route updates a flight’s surface trajectory, which in turn updates the time that a flight is predicted to reach its gate. This revised predicted IN time is passed to the ATD-2 Scheduler and to the ATD-2 gate conflict detection algorithm.

In this example, routing referred to as the “Mike-Charlie (MC) bypass” is assigned to flights and shown in RTC.

**To assign an arrival flight to a Bypass Route (such as the “Mike-Charlie” bypass):**

**Step 1:** Open the Flight Menu.

**Note:** *The default bypass setting for arrivals is “Clear.”*

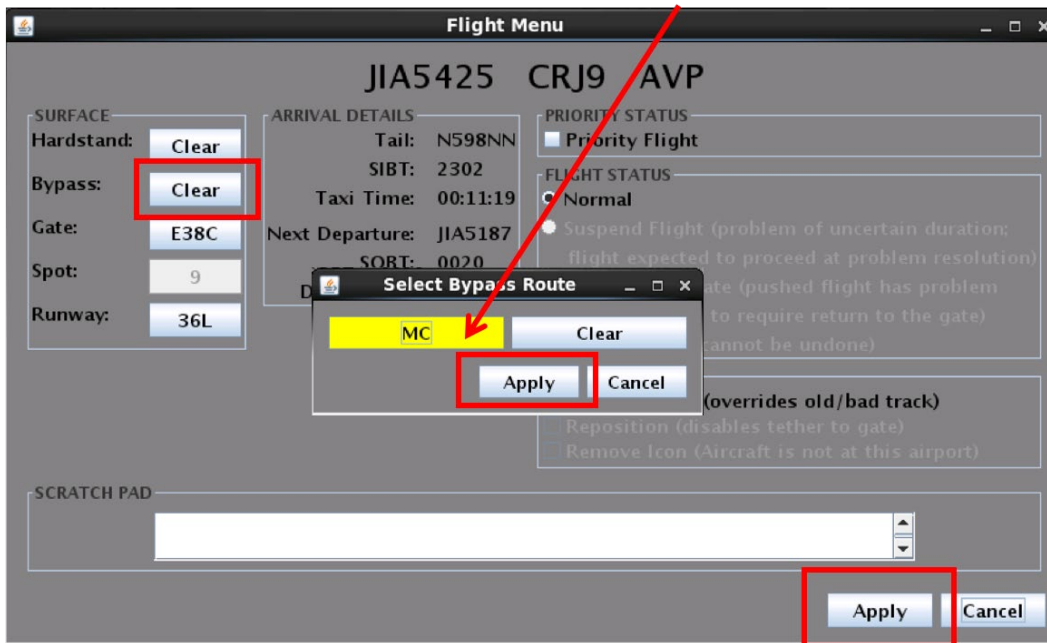
**Step 2:** Click on the “Bypass” field where the current Bypass Route, or “Clear,” is shown (Figure 7.5).

**Note:** *Available Bypass Route options for a given airport are displayed in the “Select Bypass Route” window (Figure 7.5).*

**Step 3:** Select the new bypass routing option (e.g., “MC” in Figure 7.5).

**Step 4:** Select “Apply” in the “Select Bypass Route” window (Figure 7.5).

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”



**Figure 7.5.** Use the Flight Menu to add a Bypass Route.

When an arrival flight is assigned to the Mike-Charlie bypass, “MC,” in cyan, is displayed above the data tag. The “MC” label is removed when the flight enters, or re-enters, the ramp area (see Section 5.4.2 for a description of the “MC” label).



### **To remove a Bypass Route assignment:**

**Step 1:** Open the Flight Menu.

**Step 2:** Click on the “Bypass” field where the current Bypass Route assignment is shown.

**Step 3:** Select “Clear.”

**Step 4:** Select “Apply” in the “Select Bypass Route” window.

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”

## **7.1.3 Gate Assignment**

Use the Flight Menu to change the gate assignment for a departure or arrival flight. Gate assignments are used to determine where a flight is displayed on RTC and impact the ATD-2 scheduling system (e.g., expected taxi time in the ramp and to the runway).

### **To change a departure or arrival flight’s Gate Assignment:**

**Step 1:** Open the Flight Menu.

**Step 2:** Click on the “Gate” field where the current gate assignment is shown (e.g., “C11” in Figure 7.6).

**Note:** *All available gate options for a given airport are displayed in the “Select Gate” window (Figure 7.6).*

**Step 3:** Select the new gate assignment (e.g., “C5” in Figure 7.6).

**Step 4:** Select “Apply” in the “Select Gate” window (Figure 7.6).

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”

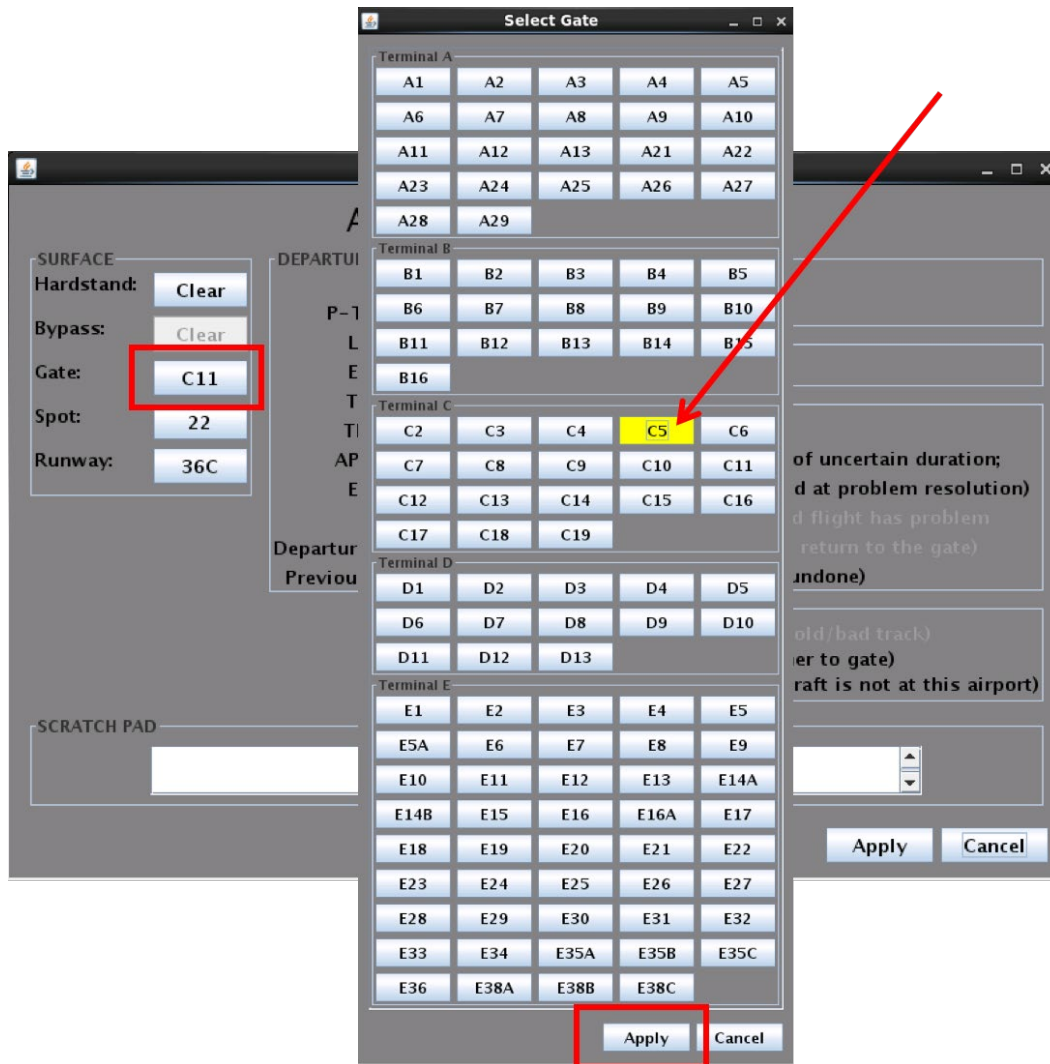


Figure 7.6. Use the Flight Menu to change gate assignment.

If another flight is already assigned to the chosen gate, a warning is displayed with the option to choose the gate or to cancel the gate change (Figure 7.7).

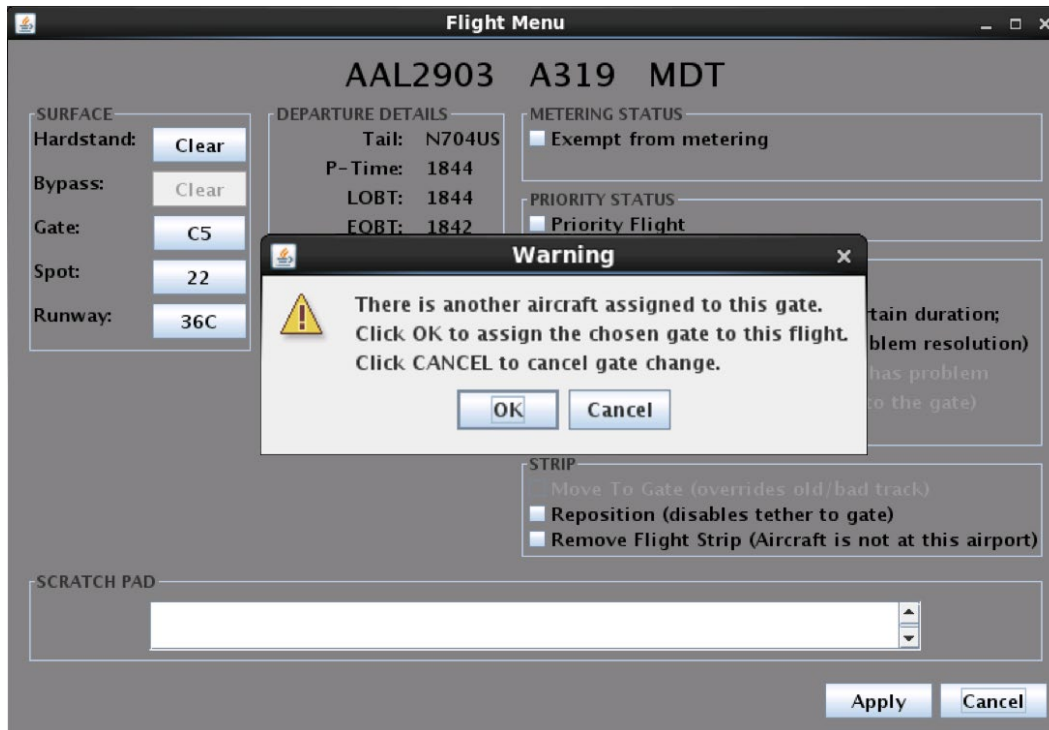


Figure 7.7. A warning message is displayed when the new gate selection is already occupied.

Once a new gate assignment is applied, a departure flight parked at the gate will immediately move and become tethered to its new gate. An arrival flight will immediately become tethered to its new gate, but will not immediately jump to the new gate. Gate changes are also reflected on the flight strip/data tag.

## 7.1.4 Spot Assignment

Use the Flight Menu to change the spot assignment for a departure or arrival flight. Spot assignments can impact the ATD-2 scheduling system (e.g., expected taxi time). The spot assignment can be changed for a departure flight that has not yet left the ramp area or an arrival that has not yet entered the ramp area.

## To change a departure or arrival flight's Spot Assignment:

**Step 1:** Open the Flight Menu.

**Step 2:** Click on the “Spot” field where the current spot assignment is shown (e.g., “22” in Figure 7.8).

**Note:** All available spot options for a given airport are displayed in the “Select Spot” window (Figure 7.8).

**Step 3:** Select the new spot assignment (e.g., “23S” in Figure 7.8).

**Step 4:** Select “Apply” in the “Select Spot” window (Figure 7.8).

**Step 5:** When finished making changes in the Flight Menu, select “Apply.”

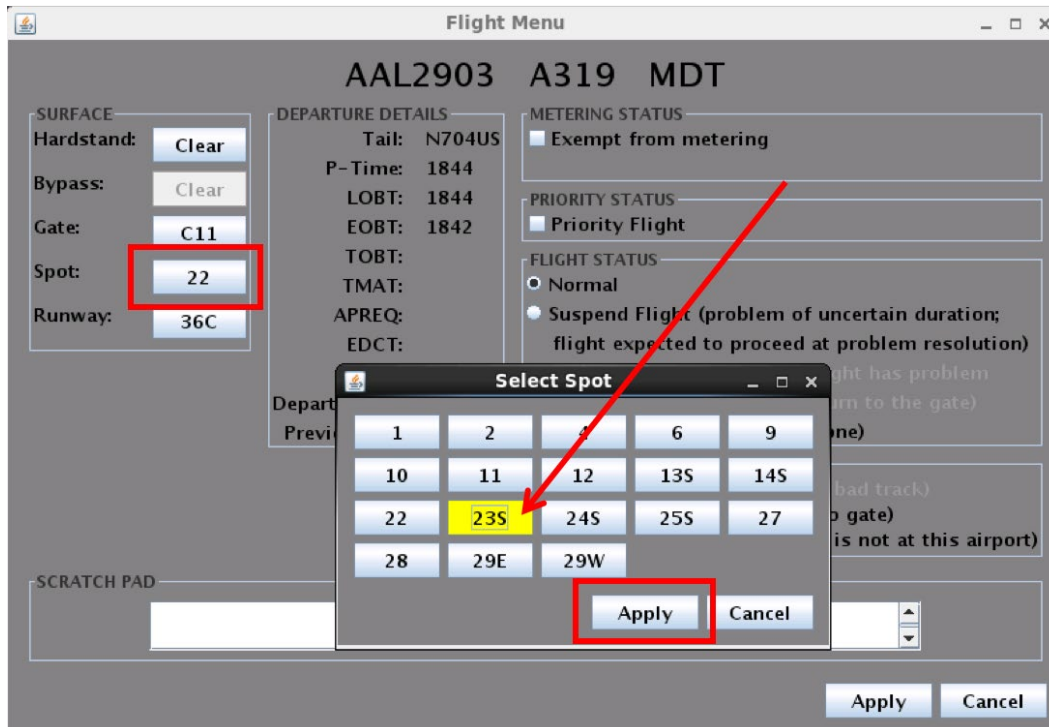


Figure 7.8. Use the Flight Menu to change spot assignment.

## 7.1.5 Runway Assignment (Operational Necessity)

At some airports, runway changes for departure flights can be requested only when the change is required for Operational Necessity. The request for runway change can only be made electronically once, per flight, at an airport where the Operational Necessity requirement applies.

## To change a departure flight's Runway for Operational Necessity:

**Step 1:** Open the Flight Menu.

**Step 2:** Click on the “Runway” field where the current runway assignment is shown (e.g., “36R” in Figure 7.9).

**Note:** All runways for a given airport are displayed in the “Select Runway” window (Figure 7.9).

**Note:** The runway assignment can only be changed once. After “Apply” is selected in the “Select Runway” window and selected in the Flight Menu window, the change cannot be undone, or changed again, within the RTC interface. Runway selections are grayed-out until this message is acknowledged by checking “Operational Necessity.”

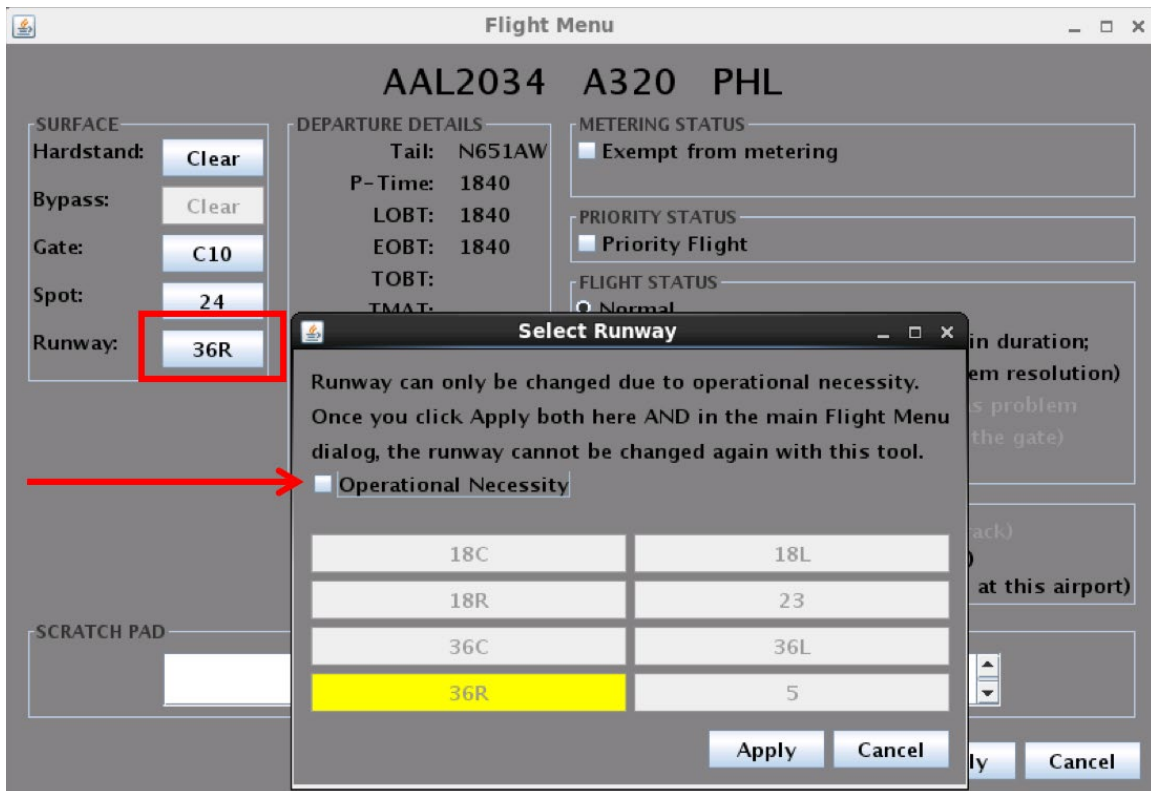


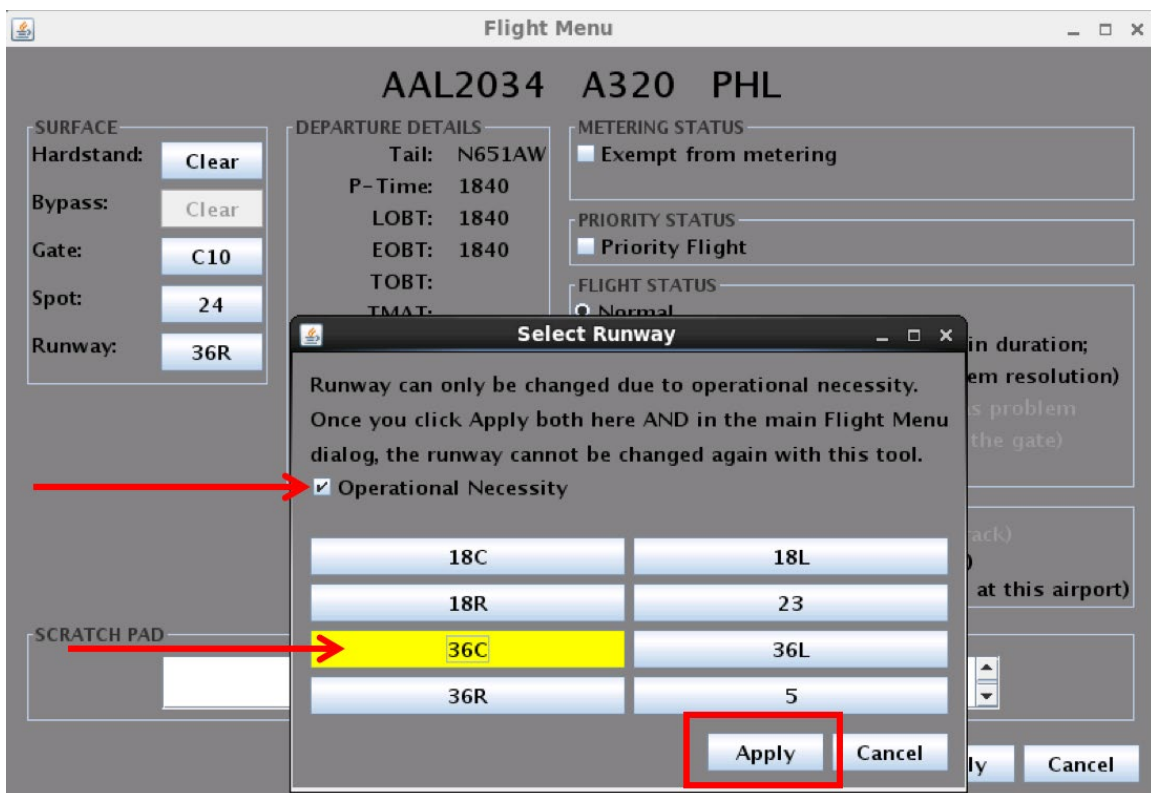
Figure 7.9. Use the Flight Menu to request a Runway change for Operational Necessity. Runway selections are grayed-out until the message is acknowledged.

**Step 3:** To acknowledge the message, check the “Operational Necessity” box (Figure 7.10).

**Note:** *Once the Operational Necessity message has been acknowledged (checked), runway options selectable (Figure 7.10).*

**Step 4:** Select the runway requested for Operational Necessity (e.g., “36C” in Figure 7.10).

**Step 5:** Select “Apply” to close the “Select Runway” window and return to the Flight Menu window (Figure 7.10).



**Figure 7.10.** Check the box next to “Operational Necessity” to acknowledge the message. Select the runway required for Operational Necessity.

**Note:** If the runway field is selected again, while the Flight Menu is still open, a prompt is displayed confirming the intent to undo the runway change (Figure 7.11).

**Step 6 (if Applicable):** Select “Clear” to undo the change and re-open the “Select Runway” window or “Cancel” to retain the newly selected runway.

**Step 7:** When finished making changes in the Flight Menu, select “Apply.”

**Note:** Once “Apply” is selected in the Flight Menu window, the runway change cannot be undone.

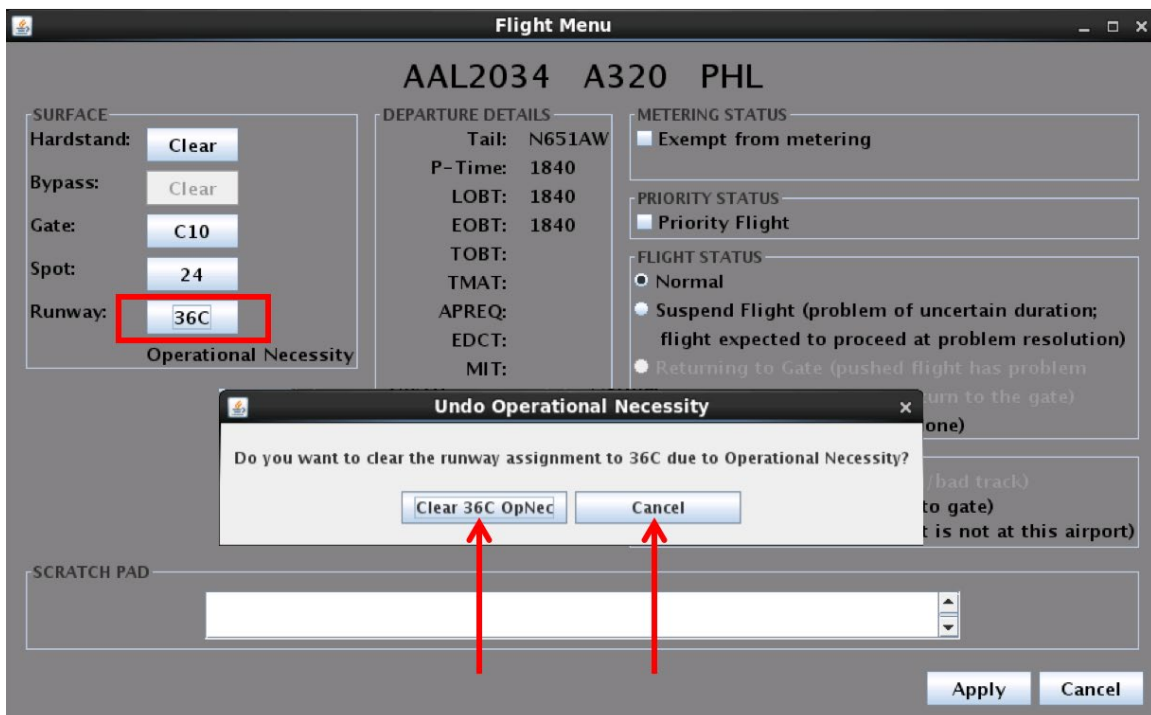


Figure 7.11. If the runway field is selected again, *prior* to closing the Flight Menu, a prompt is displayed. Select “Clear” to undo the change or “Cancel” to retain the newly selected runway.

Once the runway assignment change for Operational Necessity is confirmed by selecting “Apply” to close the Flight Menu, the new runway assignment is shown on the flight strip and highlighted in green (see example in Section 5.4.1).

## 7.2 Flight Menu: Departure Details

The Departure Details section of the Flight Menu includes schedule, TMI, and departure fix information (Figure 7.12).

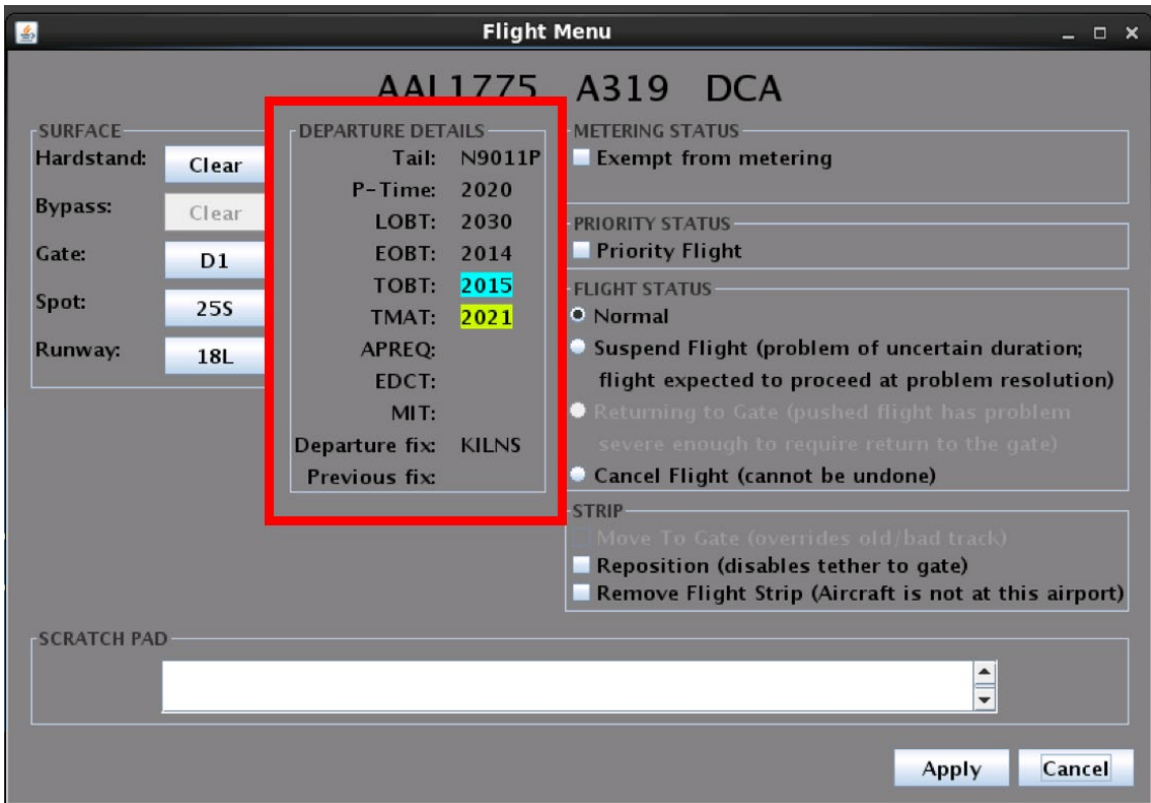


Figure 7.12. Flight Menu: Departure Details.

Each field in the Departure Details section of the Flight Menu is described below.

*Aircraft Information*

<b>Tail</b>	The tail number of the aircraft (e.g., N249PS).
-------------	---

*Schedule Information*

<b>P-Time</b>	Airline-provided published pushback time ( <i>hhmm</i> UTC).
<b>Latest Off-Block Time (LOBT)</b>	Estimated pushback time received from an airline either directly or through a CDM message to TFMS ( <i>hhmm</i> UTC).
<b>Earliest Off-Block Time (EOBT)</b>	Earliest expected pushback time, usually provided by the airline and based on real-time updates (e.g., tickets scanned at gate, baggage loaded) ( <i>hhmm</i> UTC). If no EOBT is provided for the flight, this field is blank.



*Schedule Information generated by the ATD-2 scheduling system when a flight is subject to Surface Metering or an EDCT/APREQ.*

<p><b>Target Off-Block Time (TOBT)</b></p>	<p>Generated by ATD-2 Scheduler, the advised pushback time (<i>hhmm</i> UTC).</p> <p>A TOBT is generated when the flight is part of a Surface Metering Program (SMP) or subject to an EDCT/APREQ.</p> <p>When the TOBT is <i>frozen</i>, it is highlighted in <i>cyan</i> (see descriptions in Sections 8.2.8 and 9.1.3).</p>
<p><b>Target Movement Area entry Time (TMAT)</b></p>	<p>Generated by ATD-2 Scheduler, the time at which the tactical scheduler plans for the flight to cross the spot (<i>hhmm</i> UTC).</p> <p>A TOBT is generated when the flight is part of a Surface Metering Program (SMP) or subject to an EDCT/APREQ.</p> <p>When the TOBT is <i>frozen</i>, it is highlighted in <i>light green</i> (see descriptions in Sections 8.2.8 and 9.1.3).</p>

*Traffic Management Initiative (TMI) Information*

<p><b>Approval Request (APREQ)</b></p>	<p>Once negotiated by ATC, the APREQ (wheels-up) time (<i>hhmm</i> UTC).</p>
<p><b>Expect Departure Clearance Time (EDCT)</b></p>	<p>The EDCT (wheels-up) time (<i>hhmm</i> UTC).</p>
<p><b>Miles-in-Trail (MIT)</b></p>	<p>The MIT restriction (e.g., “10 MIT”).</p>

*Departure Fix Information*

<p><b>Departure fix</b></p>	<p>The departure fix assigned as part of the departure route.</p>
<p><b>Previous fix</b></p>	<p>The previously assigned fix, if the departure route was changed.</p>

## 7.3 Flight Menu: Arrival Details

The Arrival Details section of the Flight Menu includes schedule and taxi time information, as well as, upcoming departure information for that aircraft (Figure 7.13).

The screenshot shows a software interface titled "Flight Menu" for flight "JIA5425 CRJ9 AVP". The "ARRIVAL DETAILS" section is highlighted with a red box and contains the following information:

- Tail: N598NN
- SIBT: 2302
- Taxi Time: 00:11:19
- Next Departure: JIA5187
- SOBT: 0020
- Destination: SDF

Other sections of the interface include:

- SURFACE:** Hardstand (Clear), Bypass (Clear), Gate (E38C), Spot (9), Runway (36L).
- PRIORITY STATUS:** Priority Flight (checkbox).
- FLIGHT STATUS:** Normal (radio), Suspend Flight (problem of uncertain duration; flight expected to proceed at problem resolution) (radio), Returning to Gate (pushed flight has problem severe enough to require return to the gate) (radio), Cancel Flight (cannot be undone) (radio).
- STRIP:** Move To Gate (overrides old/bad track) (checkbox), Reposition (disables tether to gate) (checkbox), Remove Icon (Aircraft is not at this airport) (checkbox).
- SCRATCH PAD:** A text input field.
- Buttons:** Apply, Cancel.

Figure 7.13. Flight Menu: Arrival Details.

### Aircraft Information

<b>Tail</b>	The tail number of the aircraft.
-------------	----------------------------------

### Schedule Information

<b>Scheduled In-Block Time (SIBT)</b>	Airline-provided scheduled arrival time ( <i>hhmm</i> UTC).
---------------------------------------	---

### Taxi Time

<b>Taxi Time</b>	Time on surface. Starts counting at ON (wheels-down) and stops counting at IN (in-gate) ( <i>hh:mm:ss</i> UTC).
------------------	---

*Next Scheduled Departure (after turn-around)*

<b>Next Departure</b>	Call sign of next scheduled departure flight for that aircraft.
<b>Scheduled Off-Block Time (SOBT)</b>	Airline-provided pushback time for next departure flight for that aircraft.
<b>Destination</b>	Destination of next scheduled departure flight for that aircraft.

## 7.4 Flight Menu: Exempt from Metering

Check the “**Exempt from Metering**” box in the Metering Status section of the Flight Menu to prevent a departure flight from becoming subject to metering as part of an SMP (Figure 7.14). That is, the flight will not be assigned a TOBT or TMAT, nor will a gate advisory be displayed.

If “Exempt from Metering” is selected for a departure flight already subject to surface metering, the TOBT, TMAT, and gate advisory will be removed. Departure flights can be exempted from metering while at the gate, during pushback/spool-up, and during taxi out.

This applies only to flights metered as part of an SMP and does not impact EDCT- and APREQ-flights.

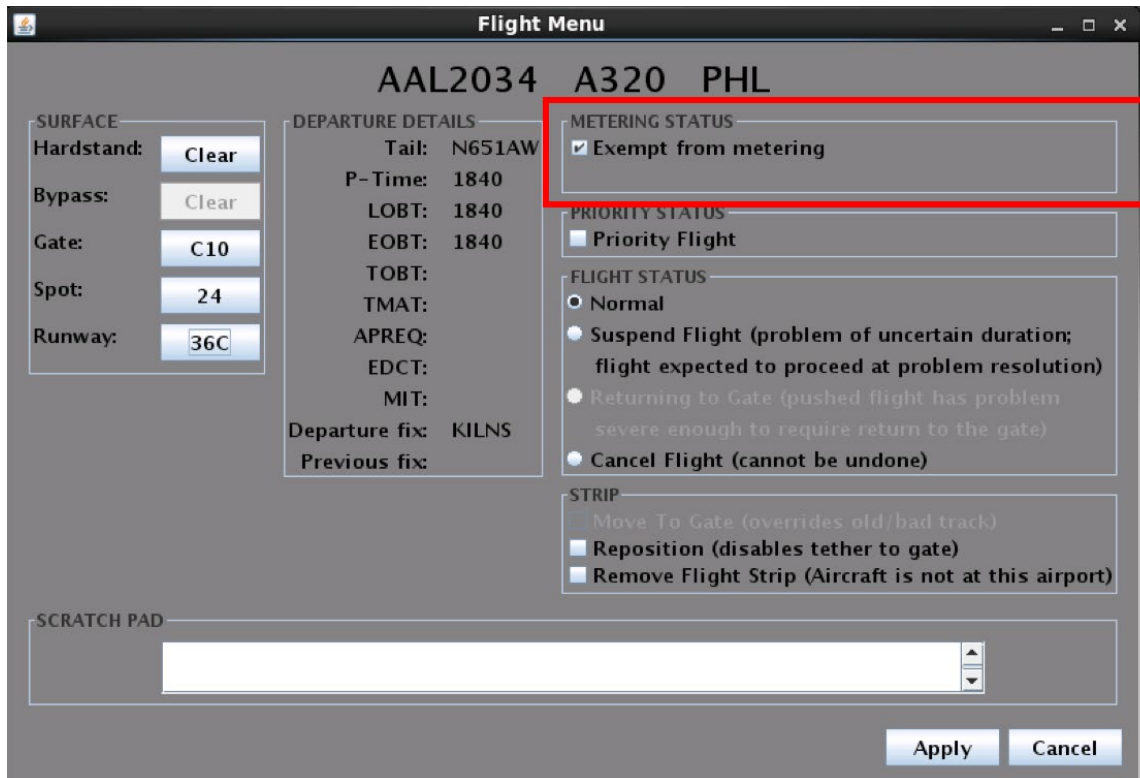


Figure 7.14. Flight Menu: Exempt from metering.

An additional option, “**Freeze Advisory**,” is available in the Metering Section of the Flight Menu in RMTC. This option is only available in RMTC and is described in Section 10.1.

## 7.5 Flight Menu: Priority Flight

Check the “**Priority Flight**” box to assign Priority Status to a flight (Figure 7.15). Priority status impacts the scheduling (metering) of flights during a Surface Metering Program (SMP). Departure flights designated as “**priority**” are given higher priority by the scheduler, compared to other flights from the *same* airline. For instance, when metering is active, the scheduler gives priority flights the first available slots in the schedule *within their airline* and thus reduces their advised gate hold time to the minimum value.

On the map, a priority flight is displayed with a green border around the flight strip/icon (see examples in Section 5.2.4).

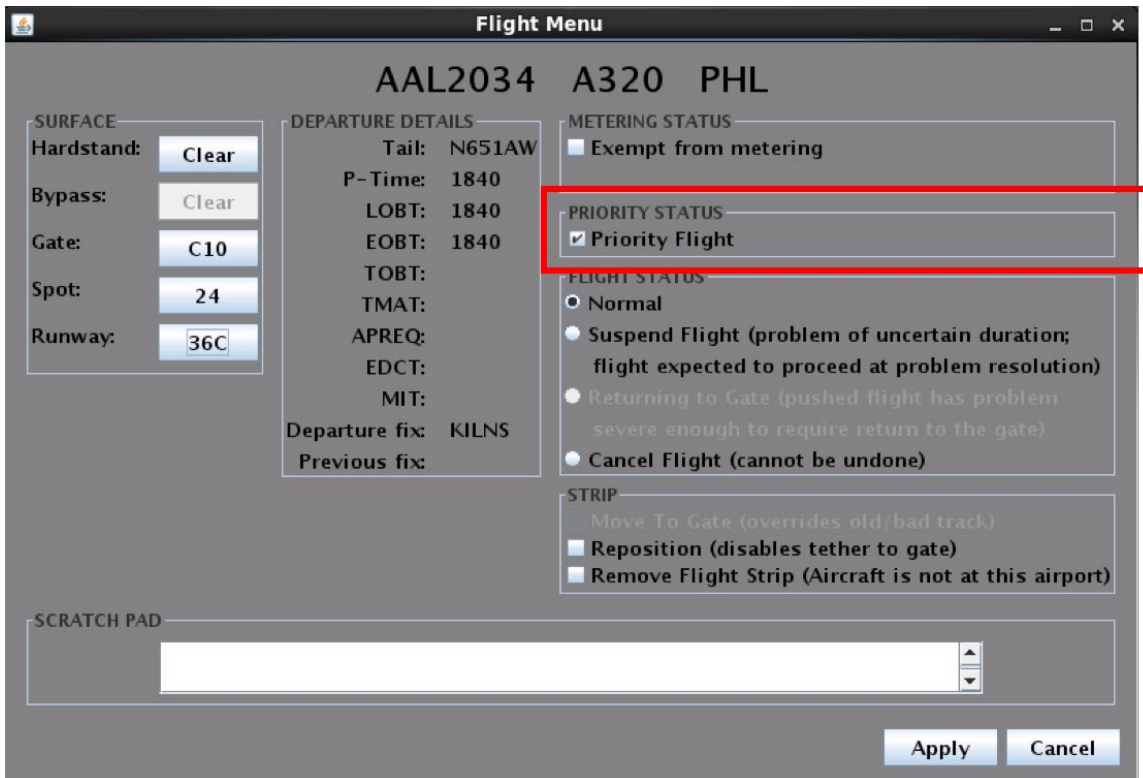


Figure 7.15. Flight Menu: Priority Flight.

In RMTC, a Priority Flight List for adding and managing priority flights is available to the Ramp Manager (described in Section 10.1).

## 7.6 Flight Menu: Flight Status

The Flight Status section of the Flight Menu includes four options for indicating the status of a departure or arrival on the surface: Normal (default), Suspend Flight, Returning to Gate, and Cancel Flight (Figure 7.16).

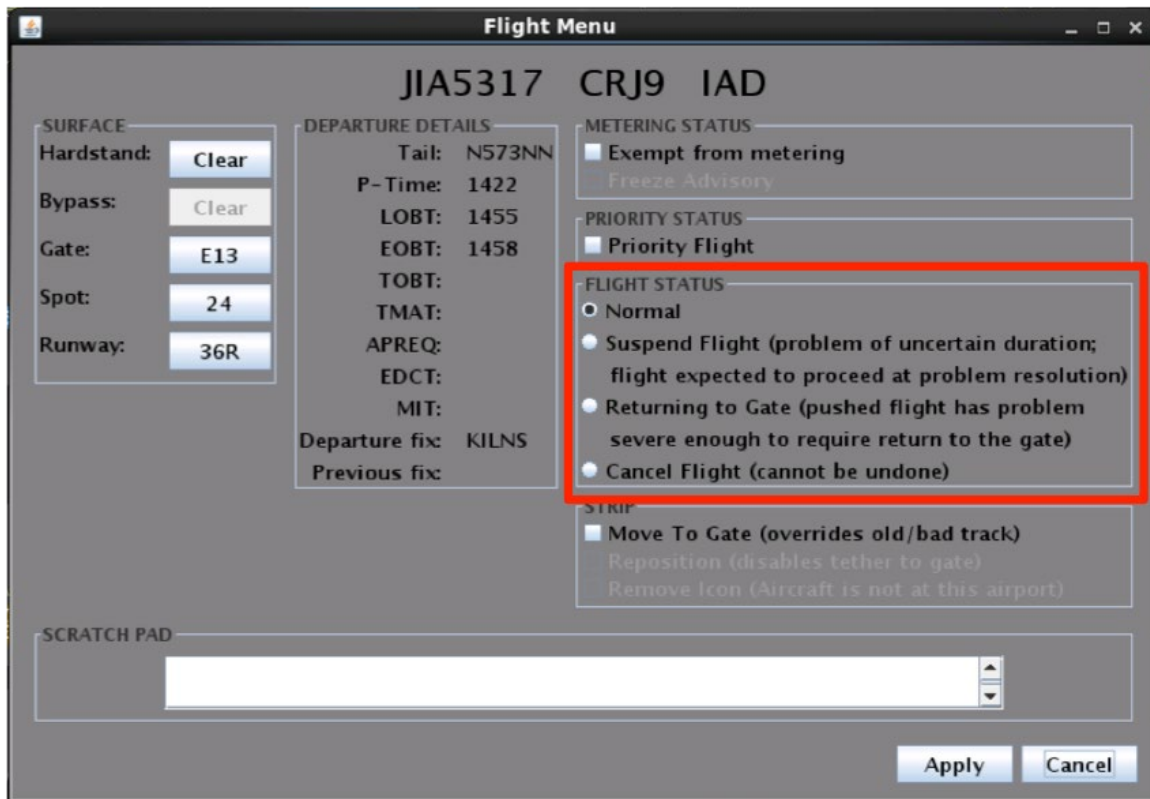


Figure 7.16. Flight Menu: Flight Status.

## 7.6.1 Normal

“Normal” is the default status for all departure and arrival flights on the surface and indicates that the flight is expected to proceed as normal.

## 7.6.2 Suspend Flight

The second option in the Flight Status section is “**Suspend Flight (problem of uncertain duration; flight expected to proceed at problem resolution).**” The “Suspend” option is available for departure flights and can be used when the flight is temporarily delayed (e.g., mechanical issue), but not permanently cancelled.

The purpose of suspending a flight is to provide a visual cue and reminder of a delay to Ramp Controllers. It also informs the ATD-2 Scheduler that the flight will likely not push back at the EOBT so it can be removed from the scheduling cycle.

When a flight is suspended, the flight strip/data tag is grayed-out and the word “Suspended” is displayed in red (see examples Section 5.4.3).

### 7.6.3 Return to Gate

Another status option for departure flights is **“Returning to Gate (pushed flight has problem severe enough to require return to gate).”** This option is available for a departure flight after pushback/spool-up is complete and “Proceed to Spot” has been selected from the right-click menu.

“Return to Gate” can be used when there is a malfunction or some other problem with a departure flight and it needs to return to its gate. Information about the flight’s status, predicted schedule, and advisories are cleared from the ATD-2 scheduler.

“RTG” is displayed on the data tag (see examples in Section 5.4.4).

### 7.6.4 Cancel Flight

If a departure flight cancellation is not detected by data feeds and needs to be cancelled manually, select **“Cancel Flight (cannot be undone).”** When this option is selected, a prompt is displayed to confirm cancellation of the flight. Once “Yes” is selected and “Apply” is selected in the Flight Menu window, the cancellation cannot be undone (Figure 7.17).

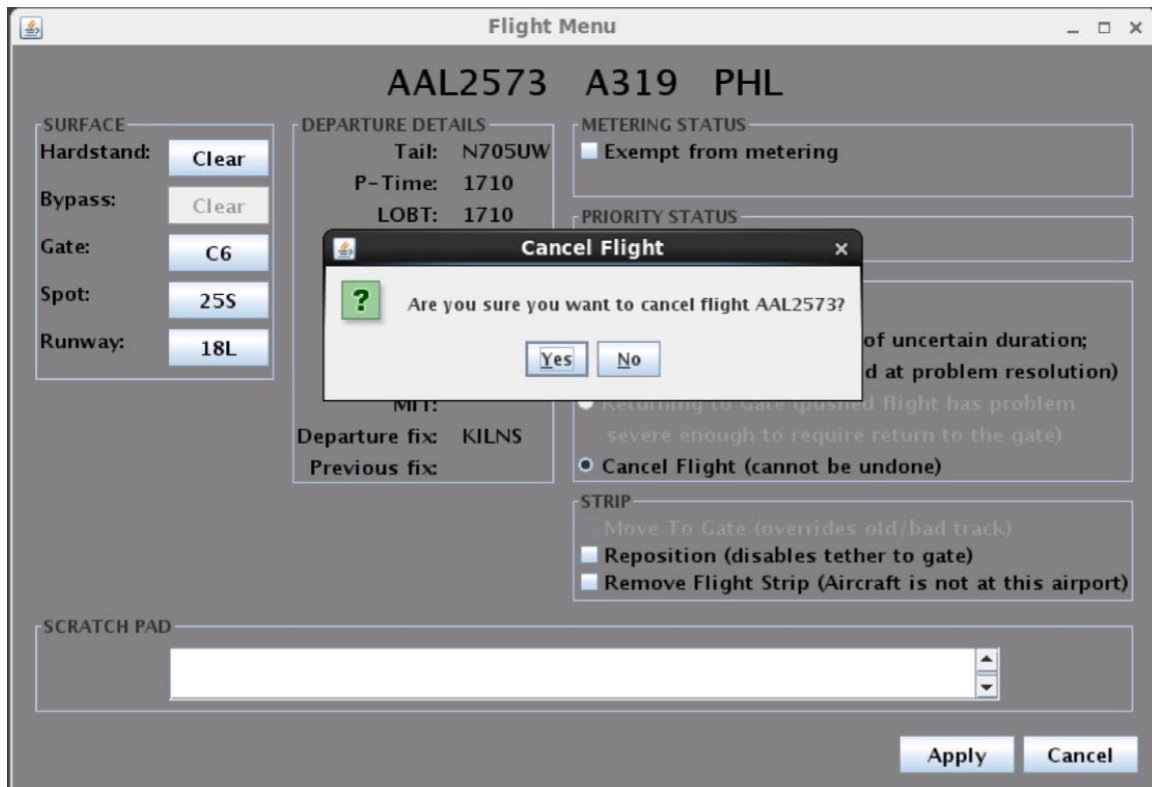


Figure 7.17. Flight Menu: Prompt to confirm cancellation of a flight. Once cancelled, the action cannot be undone.

When a departure flight is cancelled, the flight strip is “grayed out” and a large red “X” covers the flight strip for 60 seconds (see example in Section 5.4.5). After 60 seconds, the cancelled flight will display as a hollow gray icon.

## 7.7 Flight Menu: Strip

Three options for moving a flight strip are available in the Strip section of the Flight Menu (Figure 7.18): Move to Gate, Reposition, and Remove Flight.

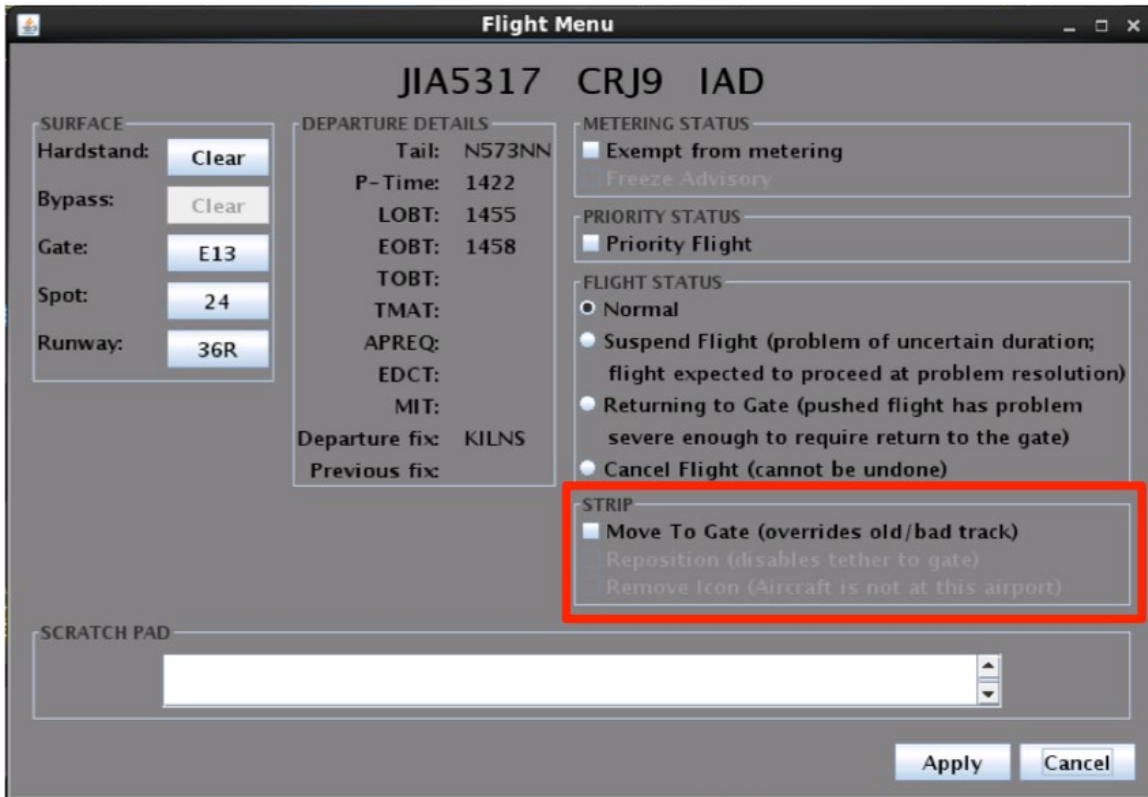


Figure 7.18. Flight Menu: Move to Gate.

### 7.7.1 Move to Gate

“**Move to Gate (overrides old/bad track)**” allows the Ramp Controller to override missing or incorrect surface surveillance data that would otherwise cause the flight to be displayed in an incorrect position.

For departure flights, “Move to Gate” is intended to be used when incorrect track hits have caused the departure to be shown as pushed back from the gate when it really has not left the gate yet. “Move to Gate” is an available option for departure flights that are:



- In the pushback state, as detected by the ATD-2 system from either an airline message or tracked hits (but not because a Ramp Controller selected “Pushback Flight” from the right-click menu).
- Taxiing in the ramp or in the AMA that have not yet reached the runway departure queue.

For arrival flights, “Move to Gate” is intended to be used when incorrect track hits due to incomplete radar coverage have caused the flight icon to be placed at its last tracked position instead of at its current position. “Move to Gate” can also be used as a speed-up convenience by the controller when the flight is given clearance all the way to its gate. “Move to Gate” is an available option for arrival flights that are:

- No longer tracked by surveillance (hollow icon), or
- Tracked by surveillance and located in the ramp sector/terminal in which its assigned gate is located.

## 7.7.2 Reposition

While a departure flight is parked at the gate, the option to “**Reposition (disables tether to gate)**” is available. Depending on the airport, a list of available location options may be displayed when this box is checked. In this example, the flight can be moved to the hangar, a hardstand, or a different ramp area (cargo), as shown in Figure 7.19.

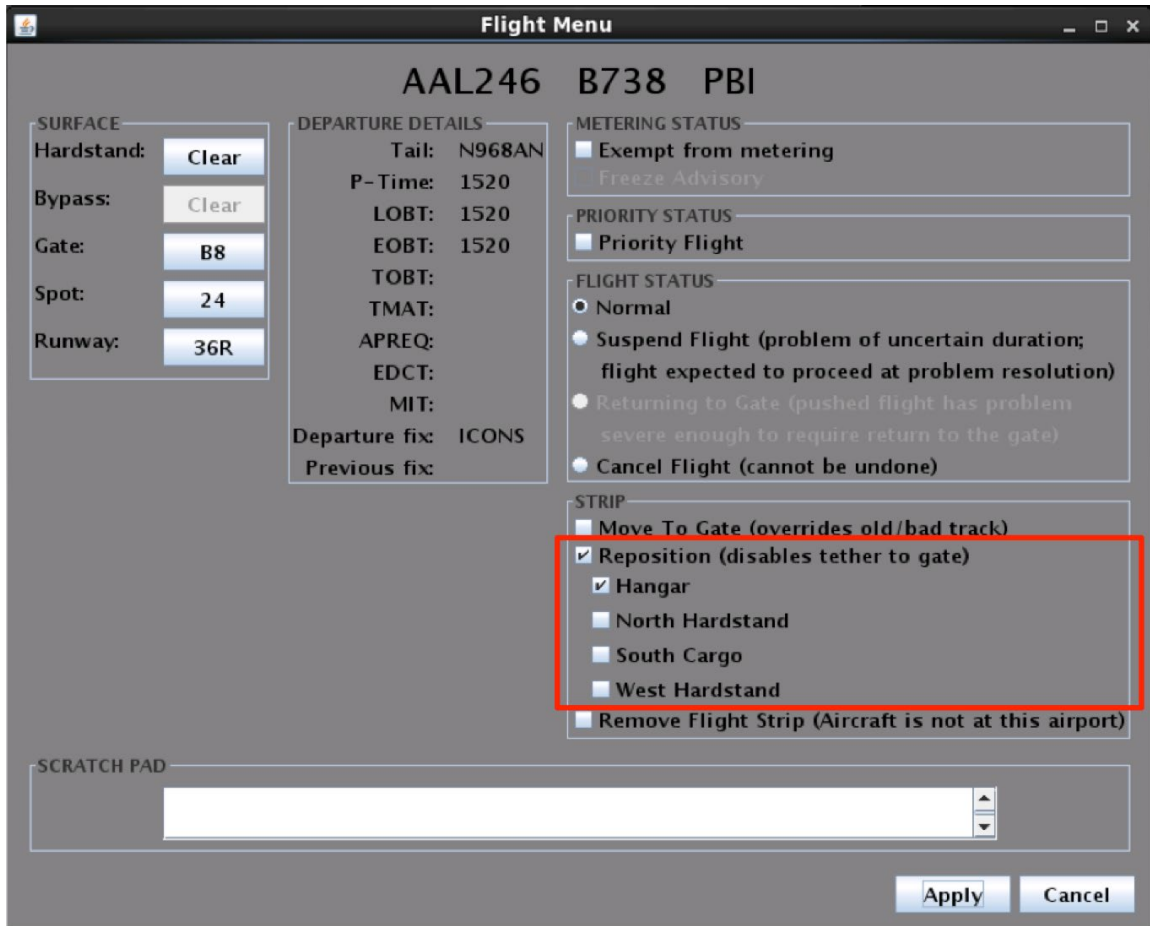


Figure 7.19. Flight Menu: Reposition. In this example, option include: Hangar, North Hardstand, South Cargo, West Hardstand.

If a new location is selected and “Apply” is selected in the Flight Menu window, the flight strip will be repositioned at that location and the new location assignment, for example, “Hang” is indicated on the flight strip and highlighted in green. If a new location is not selected, or at airports where specific location options are not available, “Repo” (for “reposition”) is displayed on the flight strip and the user can drag the flight strip/icon to any desired location on the airport surface (see examples in Section 5.4.6).

### 7.7.3 Remove Flight

When a departure flight is parked at the gate, the option to “**Remove Flight Strip (Aircraft is not at this airport)**” is available. This option is available only for departure flights parked at the gate. When this option is selected, a prompt is shown to confirm removal of the flight (Figure 7.20). Once “Yes” is selected in this window and “Apply” is selected in the Flight Menu window, the flight disappears from the RTC interface and the removal cannot be undone. The flight will also be removed from the ATD-2 STBO Client display.

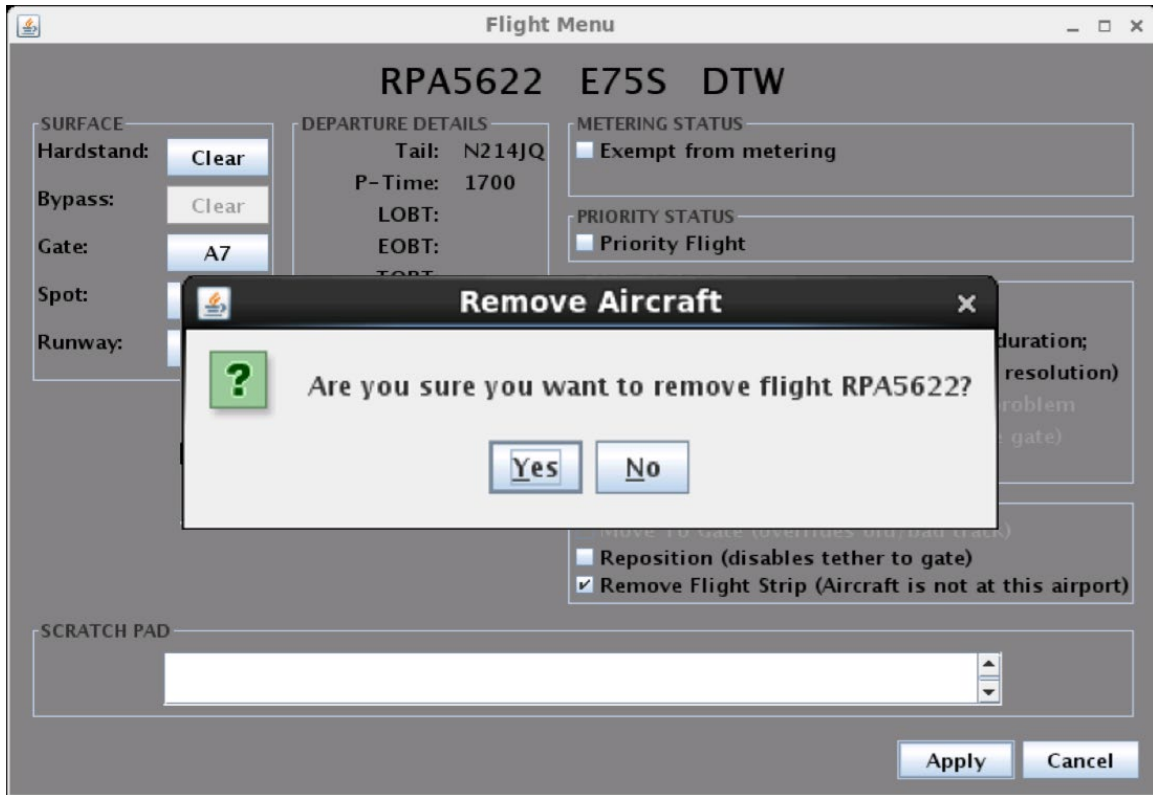


Figure 7.20. Flight Menu: Prompt to confirm removal of a flight. Once cancelled, the action cannot be undone.

## 7.8 Flight Menu: Scratch Pad

The **Scratch Pad** field in the Flight Menu is used to add a text label to the flight strip/data tag.

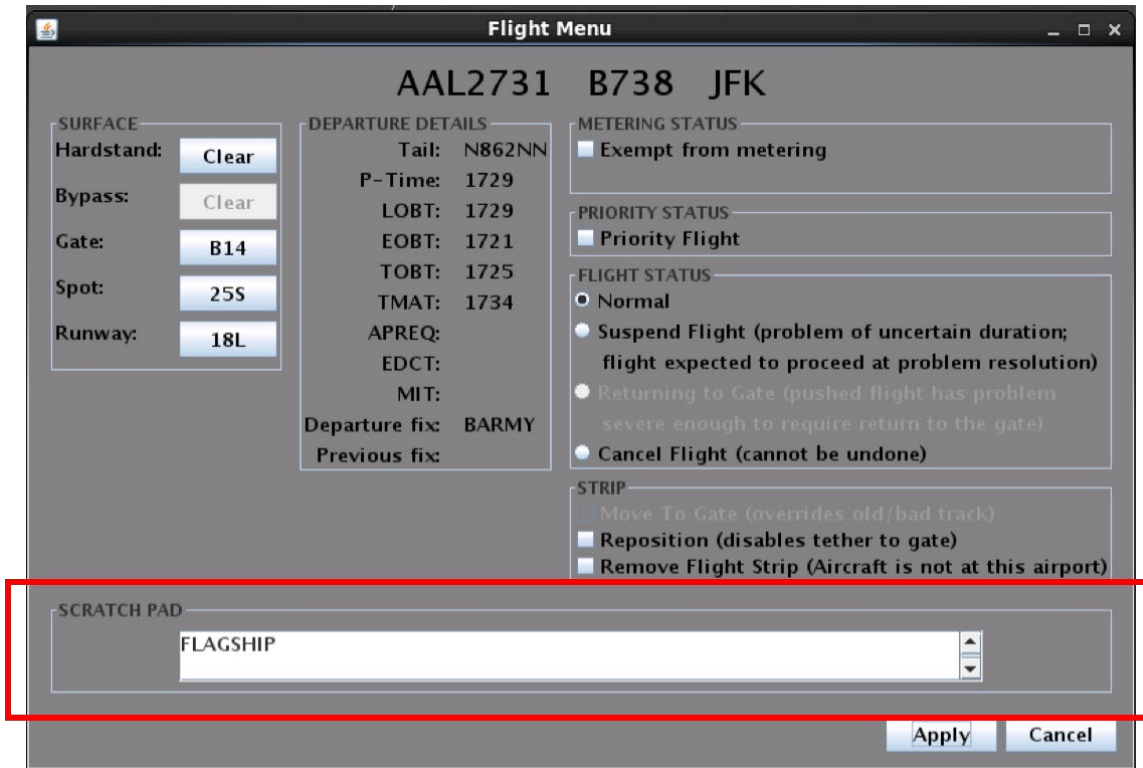


Figure 7.21. Flight Menu: Use the Scratch Pad to add text to a flight strip/data tag.

In Figure 7.22, the “FLAGSHIP” note on the flight strip was added using the scratch pad in the Flight Menu. Scratch pad entries are displayed in white text and highlighted in black.

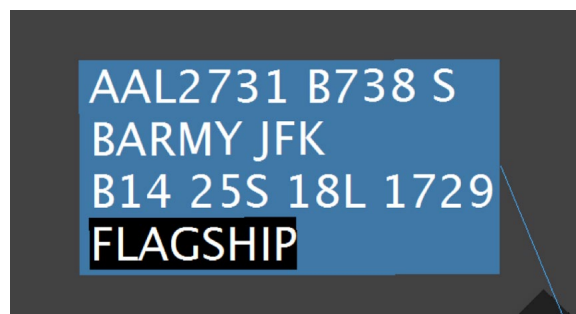


Figure 7.22. Scratch pad entry (in this example, “FLAGSHIP”).

At some airports, the scratch pad may be automatically populated for a certain class of flights, such as all flights of a given aircraft type for a specific airline. In this case, once the default scratch pad entry populates, it can be edited or removed by the user.

## 7.9 Aircraft Menu

Between the arrival flight and the upcoming departure flight, an aircraft may not have information associated with it. In this state, an Aircraft Menu is available.

### To open the Aircraft Menu:

**Step 1:** Right-click on a flight strip, data tag, or flight icon to open the right-click menu (Figure 7.23).

**Step 2:** Select “Aircraft Menu” to open the Aircraft Menu window (Figure 7.24).

**Alternatively:** Double click on any flight strip, data tag, or icon.

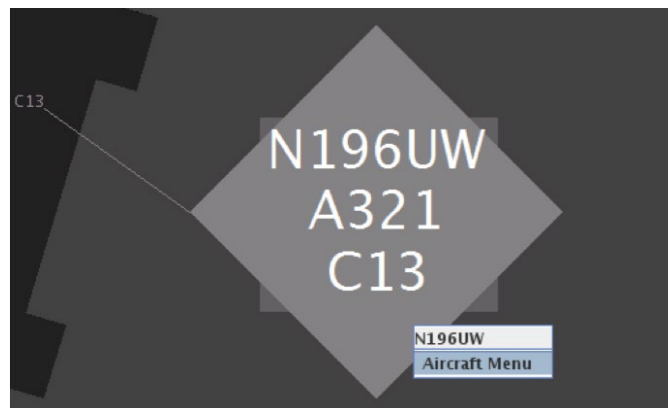


Figure 7.23. Use the right-click menu to open the Aircraft Menu.

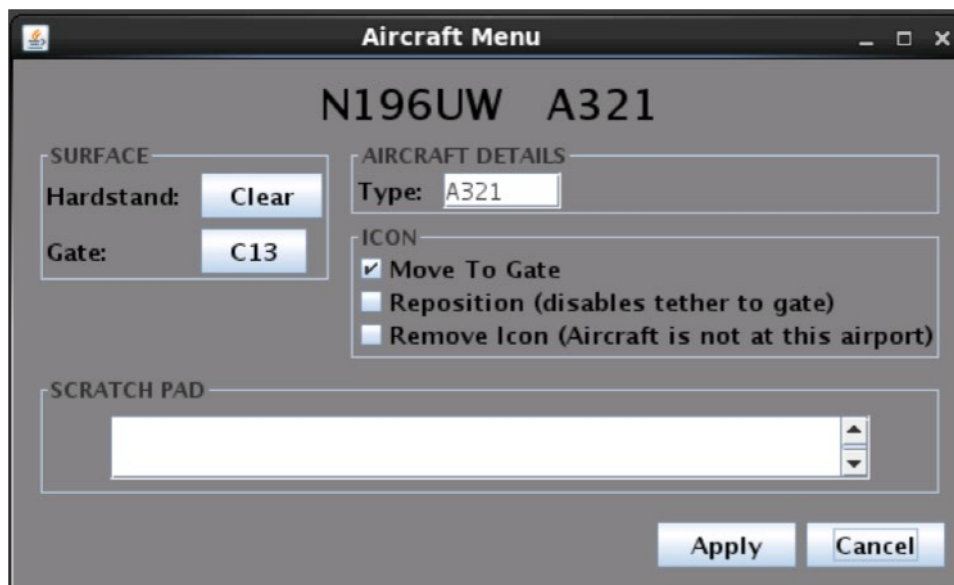


Figure 7.24. Aircraft Menu available for an aircraft with no flight information.

Options on the Aircraft Menu are more limited, but similar to those on the Flight Menu. Options include: assign aircraft to a hardstand, change gate assignment, move to a gate (if not already tethered to a gate), reposition, remove icon, and type in a scratch pad.

Unlike the Flight Menu, however, the Aircraft Menu offers an option to change the aircraft type in the “Aircraft Details” portion of the menu. The aircraft type can be changed by entering a different aircraft type (e.g., A319 or CRJ9).

## 8 Traffic Management Initiative (TMI) Information

### 8.1 General Airspace TMIs

Information about general airspace constraint Traffic Management Initiatives (TMIs) are indicated on flight strips/data tags. All times displayed are UTC.

#### 8.1.1 Departure Fix Closures

A departure fix closure with no alternate specified by ATC is indicated on the flight strip/data highlighted in red (Figure 8.1).



Figure 8.1. Closed departure fix (e.g., JOJJO, KRITR, AKUNA).

#### 8.1.2 Departure Fix Changes

If a departure fix is closed and an alternate fix is specified by ATC, the original departure fix will continue to be displayed on the strip with a yellow highlight (as shown in Figure 8.2). This is to notify Ramp Control that the pilot needs to be notified that a new route needs to be obtained. Ramp Control may use the Flight Menu (see Section 7.2) to view the alternate fix. The yellow highlight is cleared and the fix name is updated when a new flight plan is received by ATD-2.

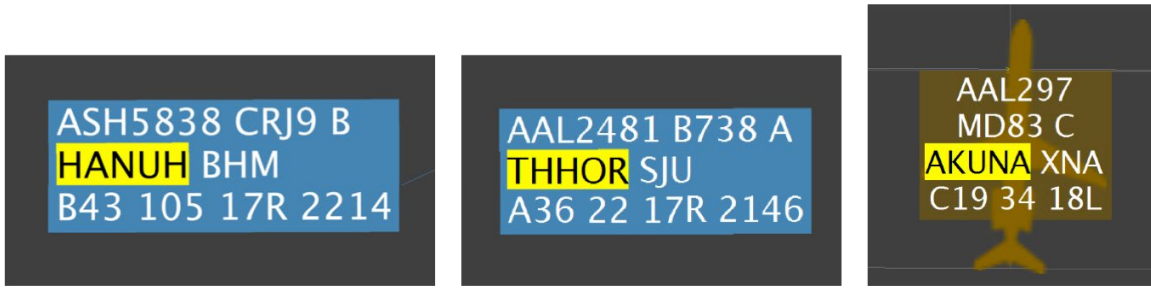


Figure 8.2. Closed departure fix (e.g., HANUH, THHOR, AKUNA). Reassigned alternate fix is displayed in the Flight Menu. Yellow highlight means pilot needs to be notified to get new route.

### 8.1.3 Miles-in-Trail Restrictions

Miles-in-Trail (MIT) restrictions are indicated on the flight strip/data tag highlighted in yellow (Figure 8.3). The restriction may have been applied to an airport, a departure fix, or a departure gate.



Figure 8.3. Miles-in-Trail (MIT) restrictions (e.g., 7, 15, and 35 miles).

### 8.1.4 Ground Stop/Closed Destination Airport

Ground stops and closed destination airports are highlighted in red on the flight strip/data tag (Figure 8.4).

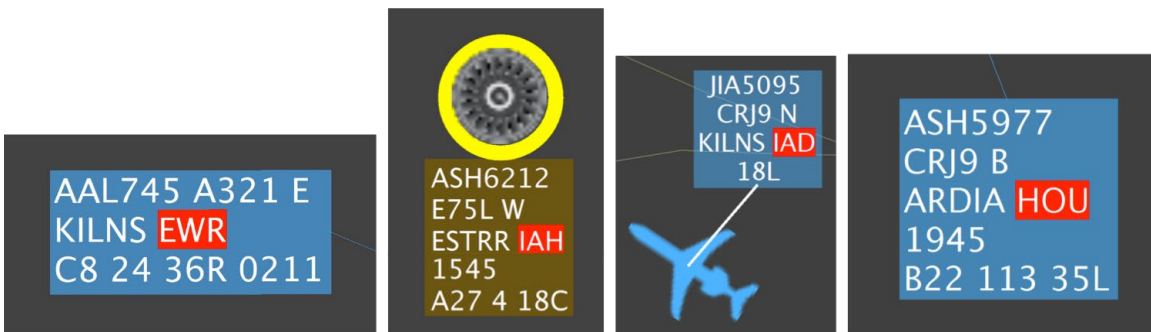


Figure 8.4. Ground stop or airport closure at destination (e.g., EWR, IAH, IAD, HOU).Flight-Specific TMIs



Flight-specific TMIs are also indicated on flight strips/data tags.

## 8.2 EDCT/APREQ TMIs

Expect Departure Clearance Time (EDCT) and Approval Request/Call for Release (APREQ/CFR) wheels-up times are displayed on flight strips. Supporting information (i.e., Scheduler-generated target times and gate advisories) are displayed on, or near, flight strips.

### 8.2.1 Expect Departure Clearance Time (EDCT)

When a flight is subject to an Expect Departure Clearance Time (EDCT), the EDCT wheels-up time is displayed on the flight strip (“*Ehhmm*”), highlighted in yellow (e.g., “E2117”) in Figure 8.5.

The ATD-2 Scheduler computes a schedule for EDCT flights based on the required wheels-up time. The Scheduler generates two target times in support of EDCT compliance:

- **Target Off-Block Time (TOBT).** TOBT is the Scheduler-advised pushback time. The TOBT is computed to enable the flight to meet its EDCT wheels-up time on the runway, but not burn excess fuel/create excess emissions waiting in the AMA/at the runway. The TOBT can be displayed on the flight strip (e.g., “2049” in Figure 8.5). See Section 3.1.2.1 for a description of how to display the TOBT on the flight strip.

The cyan time displayed next to the flight strip while the flight is parked at the gate (e.g., “16 min” in Figure 8.5), is the gate advisory. See Section 8.2.5 for a discussion of gate advisories for EDCT flights.

- **Target Movement Area entry Time (TMAT).** TMAT is the Scheduler-advised spot-crossing time. During pushback and while taxiing to the spot, the TMAT is displayed on the flight strip (“*ThhmmE*”), highlighted in yellow (e.g., “T2107E” in Figure 8.5).

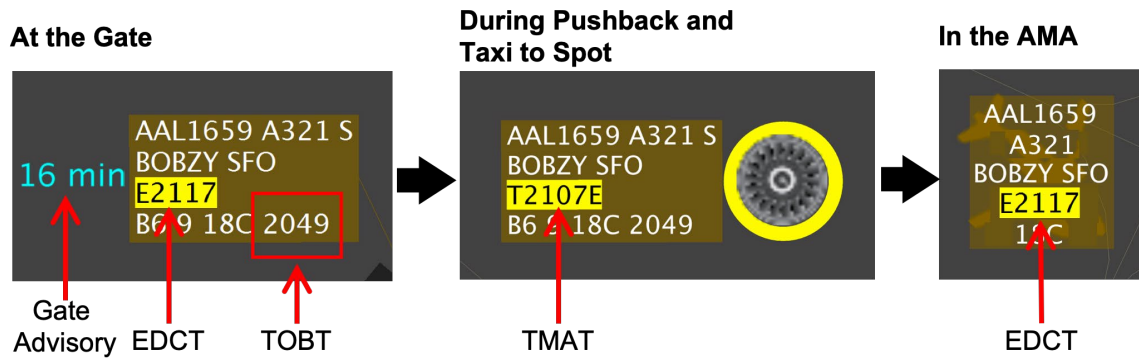


Figure 8.5. In this example, the EDCT wheels-up time is 2117 UTC. The TOBT is displayed on the flight strip (2049 UTC). During pushback and in the ramp, the TMAT is displayed (2107 UTC).

## 8.2.2 Approval Request/Call for Release (APREQ/CFR)

When a flight is subject to an APREQ/CFR, the wheels-up time is displayed on the flight strip (“*Ahhmm*”), highlighted in yellow (e.g., “A2032” in Figure 8.6). Prior to the APREQ time being negotiated, the word “APREQ” is displayed on the flight strip highlighted in yellow (Figure 8.6).

Once the APREQ time is negotiated, the ATD-2 Scheduler computes a schedule for APREQ flights based on the required wheels-up time. As with EDCT flights, the Scheduler generates two target times in support of APREQ compliance:

- **Target Off-Block Time (TOBT).** TOBT is the Scheduler-advised pushback time. The TOBT is computed to enable the flight to meet its APREQ wheels-up time on the runway, but not burn excess fuel/create excess emissions waiting in AMA/at the runway. The TOBT can be displayed on the flight strip (e.g., “2010” in Figure 8.6). See Section 3.1.2.1 for a description of how to display the TOBT on the flight strip.

The cyan time displayed next to the flight strip while the flight is parked at the gate (e.g., “4 min” in Figure 8.6), is the gate advisory. See Section 8.2.5 for a discussion of gate advisories for APREQ flights.

- **Target Movement Area entry Time (TMAT).** TMAT is the Scheduler-advised spot-crossing time. During pushback and while taxiing to the spot, the TMAT is displayed on the flight strip (“*ThhmmA*”), highlighted in yellow (e.g., “T2020A” in Figure 8.6).

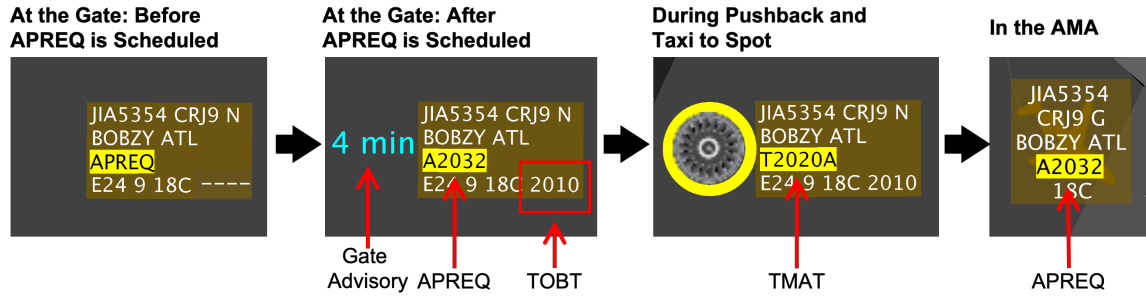


Figure 8.6. In this example, the APREQ wheels-up time is 2032 UTC. The TOBT is displayed on the flight strip (in this example, 2010 UTC) after the APREQ is scheduled. During pushback and in the ramp, the TMAT is displayed (in this example, 2020 UTC).

### 8.2.2.1 APREQ Flights that Push Back before they are Scheduled

If an APREQ-flight pushes back from the gate before the APREQ time is negotiated, the APREQ field changes from yellow to red upon pushback (Figure 8.7).

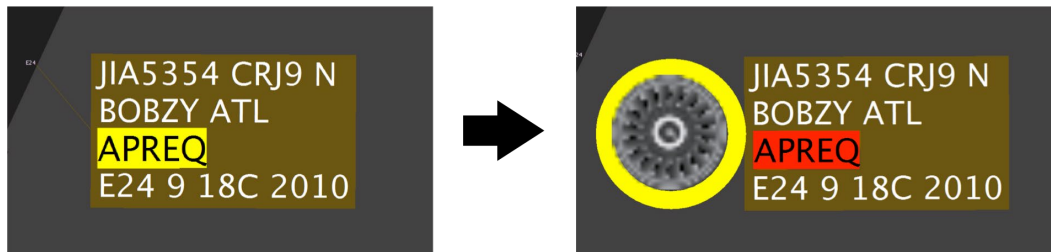


Figure 8.7. When an APREQ-flight pushes back before the APREQ is scheduled, the APREQ field turns red.

On the RTC display of the sector/terminal Ramp Controller who owns the flight, the APREQ field also flashes (inverted colors) until the Ramp Controller clicks on the flight to acknowledge the notification. The field remains red until an APREQ time is scheduled for that flight.



Figure 8.8. On the RTC display of the ramp sector owner, the APREQ field also flashes (inverted colors) until acknowledged.

### 8.2.3 Flight Subject to both EDCT and APREQ

When a flight is subject to both an EDCT and an APREQ, the EDCT is displayed on the flight strip (“EhhmmQ”), highlighted in yellow (e.g., “E1915Q” in Figure 8.9). A “Q” is displayed following the EDCT time to indicate that the flight is also subject to an APREQ, but that it has not yet been negotiated.

Once the APREQ time is available, the EDCT is removed from the flight strip and only the APREQ time is displayed (“Ahhmm”), highlighted in yellow (e.g., “1908” in Figure 8.9). However, both the EDCT and APREQ (once negotiated) are available on the Flight Menu (see Section 7.2 for a description of the Flight Menu).

See Section 8.2.5 for a discussion of gate advisories for EDCT and APREQ flights.

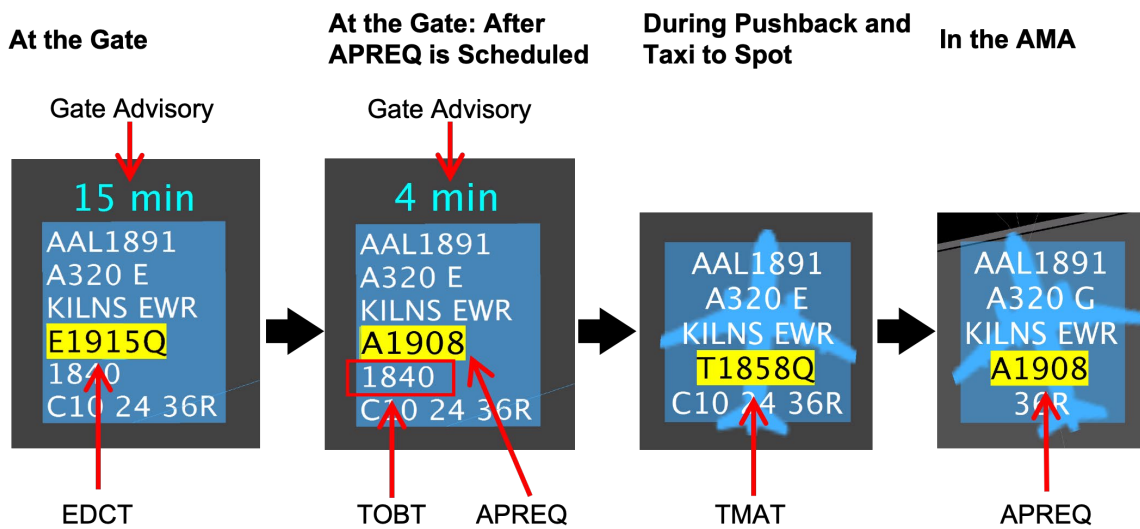


Figure 8.9. When a flight is subject to both an EDCT and an APREQ, the EDCT (in this example, 1915 UTC) is followed by a “Q,” until the APREQ time is available. Once scheduled, the APREQ time (in this example, 1908 UTC) replaces the EDCT on the flight strip. During pushback and in the ramp, the TMAT is displayed (in this example, 1858 UTC).

If a flight that is subject to both an EDCT and an APREQ pushes back from the gate prior to obtaining its APREQ time, the field (“EhhmmQ”) turns from yellow to red (Figure 8.10, right). The field remains red and continues to display the EDCT (“EhhmmQ”) until the APREQ time is scheduled.



Figure 8.10. When a flight that is subject to both an EDCT (in this example, the EDCT is 2135 UTC) and an APREQ pushes back *before* the APREQ is scheduled, the field turns red and the EDCT continues to be displayed.

### 8.2.4 Newly Assigned EDCT/APREQ

When an EDCT (Figure 8.11) or an APREQ (Figure 8.12) time newly populates on a flight strip, or when a revised time becomes available, the field “flashes,” or alternates between black/yellow text on the display of the Ramp Controller who owns the sector/terminal in which the flight is currently located. Click once on the flight strip to acknowledge the new information.

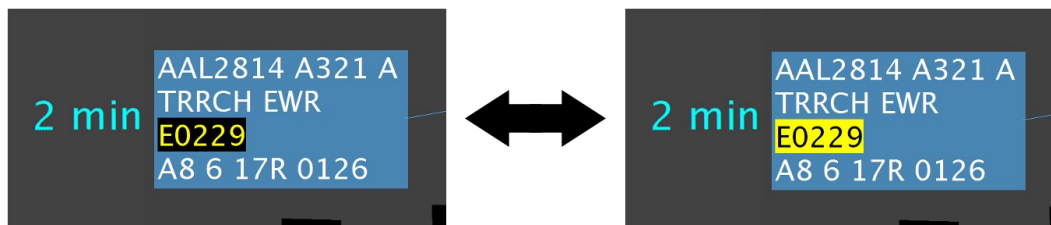


Figure 8.11. Alternating black/yellow text indicates new, or updated, EDCT information.

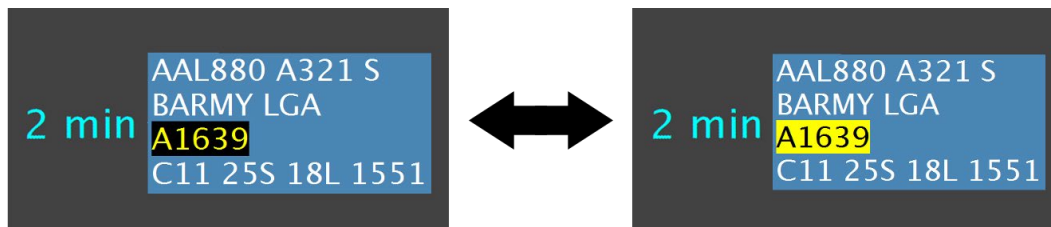


Figure 8.12. Alternating black/yellow text indicates new, or updated, APREQ information.

### 8.2.5 EDCT/APREQ: Gate Advisories

The ATD-2 Scheduler computes a schedule for EDCT- and APREQ-flights in accordance with the required wheels-up time. The Scheduler generates two target times: Target Off-Block Time (TOBT) and Target Movement Area entry Time (TMAT). If the Scheduler-computed TOBT is later than the airline-generated EOBT, a gate hold is advised.

Gate advisories are displayed in cyan, next to the flight strip, while parked at the gate. Though similar in appearance to gate advisories for metered flights during an active Surface Metering Program (SMP), gate advisories for EDCT- and APREQ-flights are *not* part of an SMP and are displayed whether or not an SMP is active at the airport.

**A gate advisory is presented in the form of a timer, counting down, in minute increments, to the Scheduler-recommended pushback time, the TOBT. Upon reaching the TOBT, “Push” is displayed (Figure 8.13).**

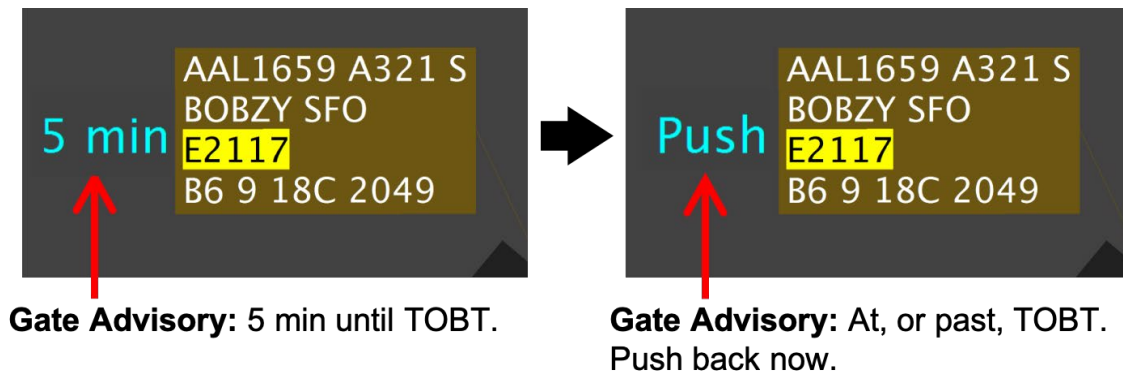


Figure 8.13. The gate advisory is a countdown timer, counting down to pushback time (TOBT).

## 8.2.6 EDCT/APREQ: Scheduler-Recommended Gate Hold

The Scheduler-recommended gate hold is calculated as Target Off-Block Time (TOBT) minus Undelayed Off-Block Time (UOBT), where UOBT is typically equal to the airline-provided Earliest Off-Block Time (EOBT).

For EDCT and APREQ flights, the TOBT is calculated to enable the flight to be in compliance with the assigned wheels-up time at the runway, but also allow the flight to take advantage of holding at the gate.

**Information Display.** Target times can be viewed in the RTC interface:

- Users have the option to display the EOBT or TOBT on the flight strip (see Section 3.1.2.1), and
- The EOBT and TOBT are displayed in the Flight Menu (see Section 7.2).

## 8.2.7 EDCT/APREQ: Overview

An overview of TOBTs and TMA Ts, as well as, pushback advisories, for EDCT- and APREQ-flights is shown in Figure 8.14.






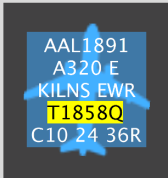

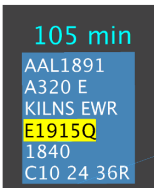
	At the Gate	Ramp Area During Pushback and Taxi to Spot	AMA Taxi to Runway
<b>Flight subject to an EDCT (19:04)</b>	 <p>TOBT = 1831</p>	 <p>TMAT = 1848</p>	
<b>Flight subject to an APREQ (18:45)</b>	  <p>TOBT = 1830</p>	 <p>TMAT = 1835</p>	
<b>Flight subject to an APREQ*</b> <i>*APREQ has not been negotiated by ATC</i>	 <p>TOBT = 1830</p> <p><i>*If APREQ is not scheduled</i> →</p>	 <p>TMAT not calculated</p>	
<b>Flight subject to an EDCT (19:15) and an APREQ (19:08)</b>	  <p>TOBT = 1840</p>	 <p>TMAT = 1858</p>	
<b>Flight subject to an EDCT (19:15) and an APREQ*</b> <i>*APREQ has not been negotiated by ATC</i>	 <p>TOBT = 1840</p> <p><i>*If APREQ is not scheduled</i> →</p>	 <p>TMAT not calculated</p>	

Figure 8.14. EDCT/APREQ flights: Overview of TOBTs, TMATs, and gate advisories.

## 8.2.8 EDCT/APREQ: Frozen

The ATD-2 Scheduler continuously recalculates and optimizes the runway schedule based on traffic and updated demand predictions. When this happens, the flight's TOBT and TMAT can also adjust. As a result, users may see the gate advisory (i.e., the cyan countdown timer displayed next to the flight strip) periodically change, or “jump,” because the time to which it is counting down to (i.e., the TOBT) has changed.

Once the TOBT is *frozen*, it will not adjust again regardless of changing conditions on the surface or at the runway. The gate advisory continues counting down to the now-frozen TOBT. Freezing the TOBT serves as a method for “stabilizing” the gate advisory countdown, so that a more reliable gate advisory can be presented to the Ramp Controller as the flight nears pushback.

For EDCT- and APREQ-flights, there are three scenarios in which the ATD-2 Scheduler freezes the TOBT and TMAT to prevent any further changes, or “jumps,” in the gate advisory.

- **Hold.** When a Ramp Controller places the flight on “hold” via the right-click menu. (It is suggested that Ramp Controllers place a flight on hold when the flight calls “ready” but has not yet reached its TOBT.) See the next section, Section 8.2.9, for a description of placing EDCT- APREQ-flights on hold.
- **Freeze Advisory (RMTC).** When the Ramp Manager manually freezes a flight's TOBT and TMAT using the Flight Menu in RMTC. This is only available in RMTC (see Section 10.1).
- **Static Time Horizon (STH).** The STH automatically freezes the TOBT and TMAT at a preset time (e.g., 15 minutes prior to the TOBT). However, for EDCT and APREQ flights, the STH is in effect *only* when a Surface Metering Program (SMP) is active.

In these scenarios, the “frozen” gate advisory continues counting down to the now-frozen TOBT. A frozen gate advisory is displayed in black text and highlighted in cyan, the inverse of a non-frozen gate advisory (Figure 8.15).



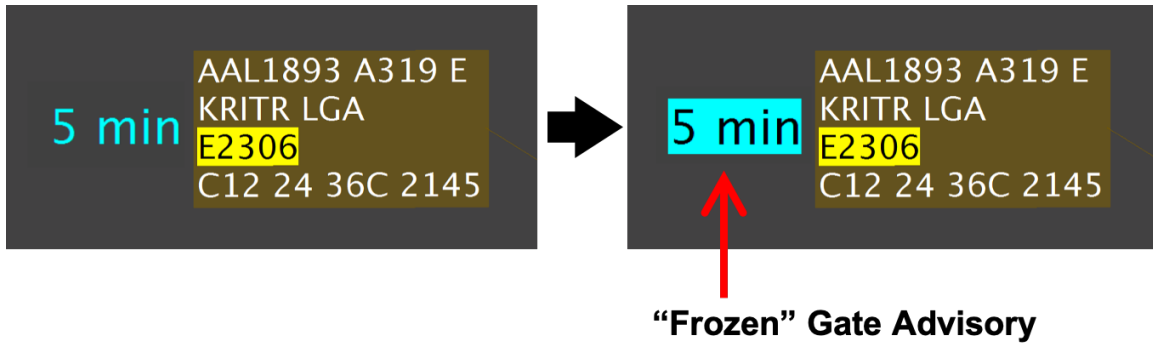


Figure 8.15. When the TOBT is frozen, the gate advisory is displayed in black text with a cyan background (right), the inverse of a non-frozen gate advisory (left). The gate advisory continues counting down to the now-frozen TOBT.

When the TOBT and TMAT are frozen, they are highlighted in cyan and light green, respectively, in the Flight Menu (Figure 8.16).

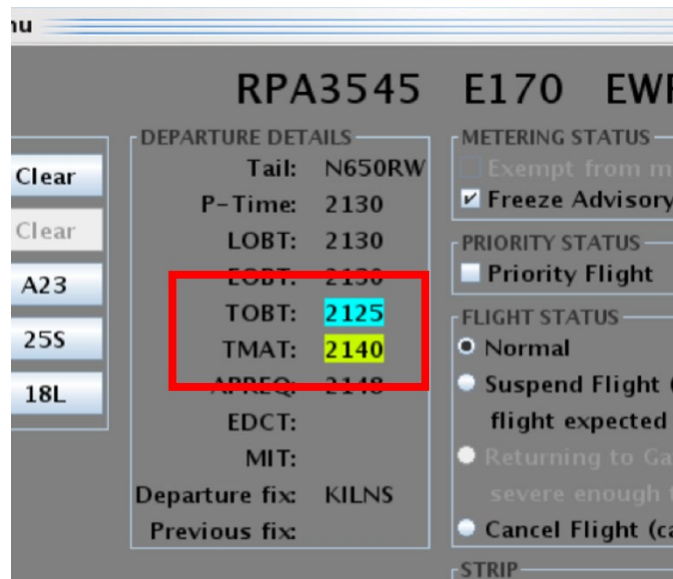


Figure 8.16. In the Flight Menu, the TOBT and TMAT are highlighted when they are frozen.

**Exception to Frozen Flights.** Note, however, that if the EDCT or APREQ wheels-up time itself changes, the TOBT and TMAT *can* change. As a result, the gate advisory can adjust, or “jump,” in accordance with the updated wheels-up time. This is true, even if the TOBT and TMAT are *already frozen*.

### 8.2.9 EDCT/APREQ: Hold

If an EDCT- or APREQ-flight calls “ready” for pushback *prior to* the TOBT (i.e., the gate advisory has not yet counted all the way down to zero), it is recommended that the

Ramp Controller use the right-click menu to place the flight on “hold” (Figure 8.17, 2<sup>nd</sup> image). Placing a an EDCT/APREQ flight on hold:

1. Informs the ATD-2 Scheduler that the flight is ready. As a result, the Scheduler freezes the TOBT (and TMA) to prevent the gate advisory from adjusting, or “jumping,” so that the Ramp Controller is presented with a reliable gate hold time. As described in Section 8.2.8, a “frozen” gate advisory is displayed in black text and highlighted in cyan (Figure 8.17, 3<sup>rd</sup> image).
2. Changes the gate advisory countdown timer from *minute* format to *mm:ss* format (Figure 8.17, 3<sup>rd</sup> image), and
3. Provides a visual cue/reminder to the Ramp Controller that the flight deck has called “ready” by displaying a red border around the flight strip (Figure 8.17, 3<sup>rd</sup> image).

When a flight is on hold, the gate advisory is presented differently for increased situation awareness (Figure 8.17):

- When the gate advisory reaches 2:00 (i.e., two minutes prior to the TOBT), it is highlighted in orange, rather than cyan (Figure 8.17, 4<sup>th</sup> image).
- And, when the gate advisory reaches 0:00 (i.e., the TOBT), a red count-*up* timer is displayed with the word “Push,” which pulsates (Figure 8.17, 5<sup>th</sup> and 6<sup>th</sup> images).



Figure 8.17. EDCT and APREQ flights: Put on hold when flight deck calls “ready.”

1. Gate advisory is counting down to the TOBT in one-minute increments. It is currently 16 min prior to TOBT. Because the TOBT is not yet frozen, it may be adjusted by the Scheduler. As a result, the gate advisory may change.

2. For EDCT/APREQ flights, the STH is in effect **only** when an SMP is active. In this example, the STH freezes the TOBT/TMAT at 10 min prior to the TOBT. Frozen gate advisories are displayed in black text, highlighted cyan.

3. The flight deck calls “ready” prior to the TOBT. Because there is still time remaining on the gate advisory countdown timer (4 min prior to TOBT), the Controller puts the flight on “Hold” using the right-click menu.

4. When a flight is put on hold:

- If not already, the TOBT is frozen.
- Gate advisory format is *mm:ss*.
- A red border is drawn around the flight strip.

5. When a flight is on hold, at 2 min prior to the TOBT, the frozen gate advisory is displayed with an orange highlight, rather than cyan (remains frozen).

6. (If the flight is still at the gate.) When the gate advisory reaches 0:00 (i.e., the TOBT), a red count-up timer is displayed with the word “Push”.

7. (If the flight is still at the gate.) The timer continues counting up until the flight pushes back. In this example, the flight is 52 sec past its TOBT.

## 8.2.10 EDCT/APREQ: Hold in Hardstand (Hardstand Release Advisory)

At airports where hardstands are used, when an EDCT- or APREQ-flight (scheduled) is sent to the hardstand, a hardstand release advisory is displayed (*mm:ss*). The release advisory provides guidance to the Ramp Controller on when to release the flight from the hardstand to ensure that it crosses the spot in compliance with its Target Movement Area entry Time (TMAT).

The release advisory is a countdown timer, counting down to the hardstand release time which takes into account time to taxi to the spot and includes a buffer. The Hardstand Release Time is equal to TMAT – Undelayed Spot Time – buffer (e.g., 2 minutes).

The countdown timer is displayed below the data tag in light green (Figure 8.18, left). At five minutes prior to the advised hardstand release time, the timer turns orange (Figure 8.18, middle). If the flight has not been released from the hardstand when the timer reaches zero, a red “Release” alert is displayed (Figure 8.18, right).

Like all flights holding in a hardstand, a yellow border is drawn around the data tag/icon.

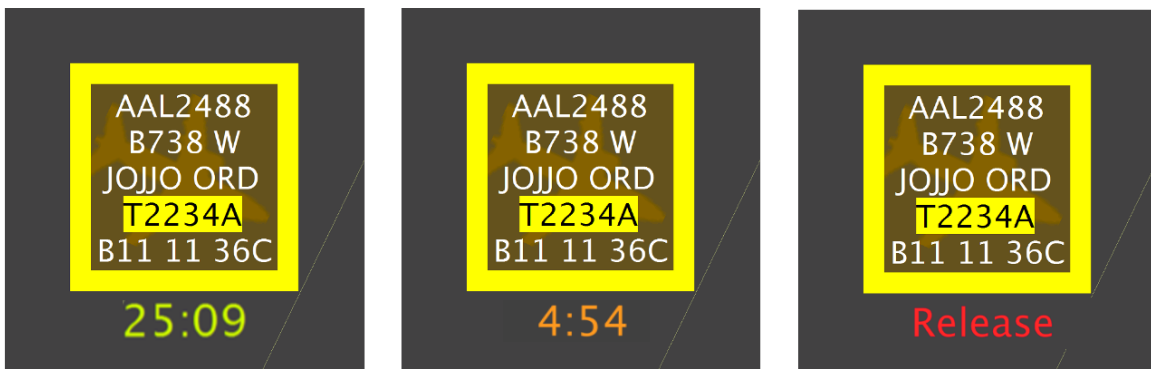


Figure 8.18. A hardstand release advisory is displayed for EDCT- and APREQ-flights. The TMAT is displayed on the data tag, highlighted in yellow (in this example, 2234 UTC).

## 8.2.11 EDCT/APREQ: Candidate for Leveraging Surface Metering

A flight is identified as a **Candidate for Leveraging Surface Metering** when it meets several requirements, including a configurable threshold of “x” minutes for Scheduler-recommended gate hold. See Section 3.1.2.3 for a full description of Candidates for Leveraging Surface Metering.

When a flight is identified as a Candidate for Leveraging Surface Metering, the gate advisory is highlighted in *light green*. The light green highlight distinguishes a flight with a frozen gate advisory (black text, highlighted in *cyan*) from a flight with a frozen gate advisory that is *also* a Candidate for Leveraging Surface Metering.

An example of an APREQ flight is shown in (Figure 8.19).

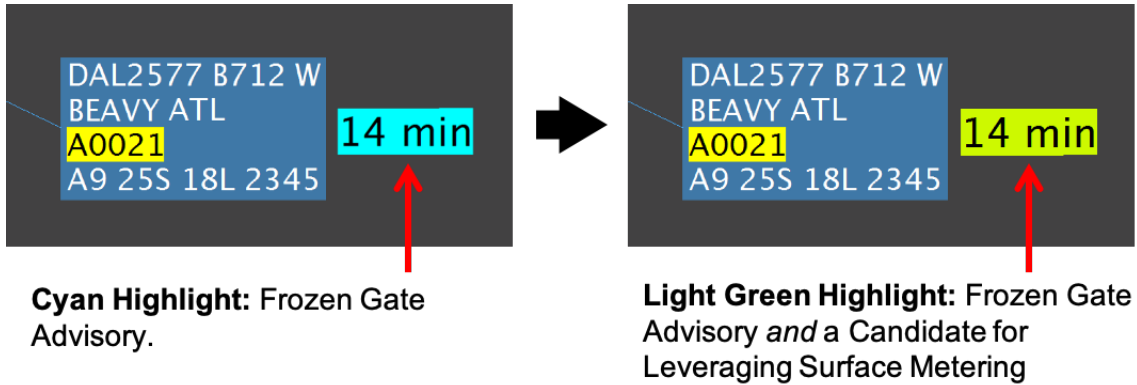


Figure 8.19. In this example, a flight subject to an APREQ is identified as a Candidate for Leveraging Surface Metering. The gate advisory is highlighted in light green.

## 9 Surface Metering Program (SMP)

The Surface Time-Based Metering (STBM) mode provides tactical gate hold advisories generated by the ATD-2 Scheduler based on multiple inputs, including scheduled departure times, EOBTs, nominal taxi times, and demand at the runway. Metering may not be available at all airports.

### 9.1 Surface Time-Based Metering (STBM)

The main purpose of STBM is to reduce AMA surface congestion. The ATD-2 Scheduler provides gate hold recommendations for flights which are expected to be treated as advisories for the Ramp Controller. These advisories are based on a selected target excess queue time (i.e., excess taxi time) to the runway and are calculated independently for each departure runway. The excess queue time is the acceptable amount of additional taxi time the departures may spend taxiing on the surface and waiting in the runway queue before taking off. When the demand from the ramp is predicted to exceed the set value, the STBM starts recommending gate holds.

The STBM uses EOBTs and undelayed taxi time estimations to predict when aircraft will arrive at the runways. EOBTs are generated by the airline based on various factors (e.g., percentage of passengers boarded, baggage loaded, etc.). Based on these predictions and operational constraints, STBM generates a schedule that calculates a Target Takeoff Time (TTOT) at the runway, a TMAAT at the spot, and a TOBT at the gate for each flight. Gate advisories are based on the TOBT.

The metering tool considers the demand and capacity imbalance for every departure runway before recommending gate holds. It may be observed, at times, that there are no gate holds recommended for flights departing from one runway, while at the same time there are gate holds recommended for flights departing from another runway. STBM takes into consideration several variables – taxi time estimates both in the ramp and the AMA, gate pushback duration estimates, flight spacing requirements based on the type of runway operations (e.g., converging runway operation, dual use runway operation, runway crossing), and EOBT certainty to generate a runway schedule for departures and their corresponding gate advisories.

#### 9.1.1 Metering: Gate Advisories

When a Surface Metering Program (SMP) is either automatically or manually affirmed, the ATD-2 Scheduler computes two target times based on the flight's target runway time (TTOT): the Target Off-Block Time (TOBT) and the Target Movement Area entry Time (TMAAT). To provide Ramp Controllers situation awareness of the TOBT and support surface metering, gate advisories are displayed in cyan, next to the flight strip, while the flight is parked at the gate.

A gate advisory is presented in the form of a timer, counting down, in minute increments, to the Scheduler-recommended pushback time, the TOBT. Upon reaching the TOBT, “Push” is displayed (Figure 9.1).

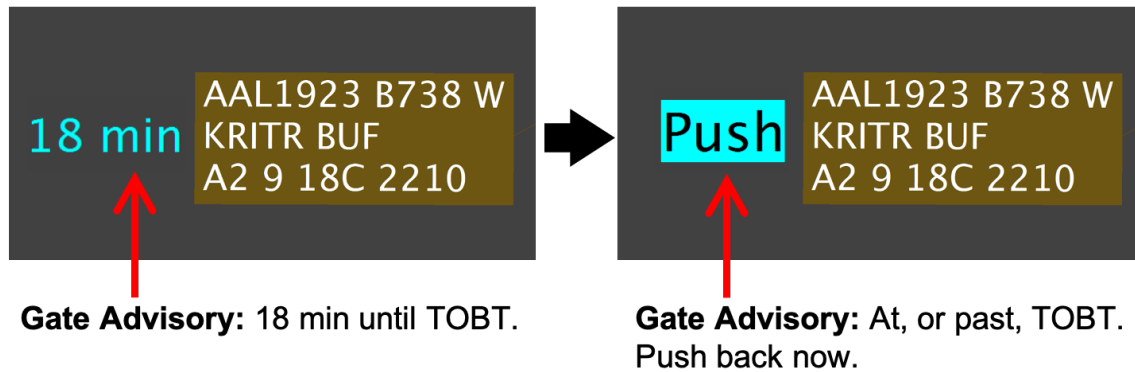


Figure 9.1. The gate advisory is a countdown timer, counting down to pushback time (i.e., TOBT).

## 9.1.2 Metering: Scheduler-Recommended Gate Hold

While gate advisories (the cyan countdown timers displayed next to the flight strip) are displayed for all flights part of an active SMP, the display of a gate advisory does not necessarily mean that the ATD-2 Scheduler has recommended *additional* gate holding time for the flight.

- A gate hold is recommended for a flight when the Scheduler-generated TOBT is *later than* the Undelayed Off-Block Time (UOBT), where UOBT is typically the airline-provided EOBT. The difference between the two times, TOBT minus EOBT, is the length of the Scheduler-recommended gate hold. (If the EOBT is unavailable, other time parameters are used by the Scheduler for computation and planning.)
- If the TOBT is *equal to* the EOBT, the Scheduler has *not* recommended a gate hold for that flight.

**Information Display.** There are several options for viewing target times and the Scheduler-recommended gate hold in the RTC interface:

- When a flight is part of an active SMP, users have the option to display the EOBT or TOBT on the flight strip (see Section 3.1.2.1).
- When a flight is part of an active SMP, the EOBT and TOBT are displayed in the Flight Menu (see Section 7.2).
- The Scheduler-recommended gate hold is displayed in the “Hold” column in the Metered List (see Section 4.1.3.1). Note that the timer in the “Hold” column is

dynamic and shown in real time. If current time is greater than the EOBT, the *remaining* recommended gate hold time is displayed. If current time is greater than the EOBT *and* TOBT, dashes (“--”) are displayed because the assigned gate hold has run out.

**Realized Gate Holds.** Ultimately, though, whether a flight is advised to hold at the gate or to push back, is primarily determined by when the flight deck calls “ready” *relative to the TOBT*.

- If the flight calls *prior to the TOBT*, it is recommended that it be held until the gate advisory (the cyan countdown timer) counts down to zero (i.e., the TOBT).
- If the flight calls *at, or after, the TOBT* (when “Push” is indicated next to the flight strip), it is recommended that the flight proceed with push back (assuming it is safe to do so given conditions at, and around, the gate, etc.).

### 9.1.3 Metering: Frozen

The ATD-2 Scheduler continuously recalculates and optimizes the runway schedule based on traffic and updated demand predictions. When the ATD-2 Scheduler adjusts a metered-flight’s target time at the runway (TTOT), the flight’s corresponding TOBT and TMAAT can also adjust. As a result, users may see the gate advisory (i.e., the cyan countdown timer next to the flight strip) periodically change, or “jump,” because the time to which it is counting down to (i.e., the TOBT) has changed.

Once the TOBT is *frozen*, it will not adjust again regardless of changing conditions on the surface or at the runway. The gate advisory (i.e., the cyan countdown timer next to the flight strip) continues counting down to the now-frozen TOBT. Freezing the TOBT serves as a method for “stabilizing” the gate advisory countdown, so that a more reliable gate advisory can be presented to the Ramp Controller as the flight nears pushback.

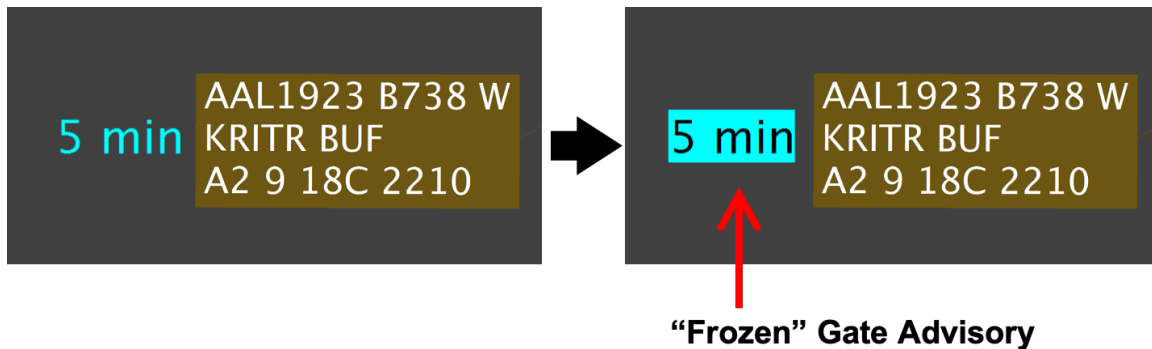
For flights subject to surface metering, there are three scenarios in which the ATD-2 Scheduler freezes the TOBT and TMAAT to prevent any further changes, or “jumps” in the gate advisory:

- **Hold.** When a Ramp Controller places the flight on “hold” via the right-click menu, the flight’s TOBT and TMAAT are frozen. It is recommended that the Ramp Controller place a flight on hold if the flight deck calls “ready” *prior to* the TOBT – that is, if the gate advisory is still counting down and has not yet reached zero. See Section 9.1.5 for a description of placing metered flights on hold.
- **Freeze Advisory (RMTC).** When the Ramp Manager manually freezes a flight’s TOBT and TMAAT using the Flight Menu in RMTC. This is only available in RMTC (see Section 10.1).
- **Static Time Horizon (STH).** The TOBT and TMAAT are automatically frozen at a preset time for flights part of an active SMP (e.g., 15 minutes prior to the TOBT).



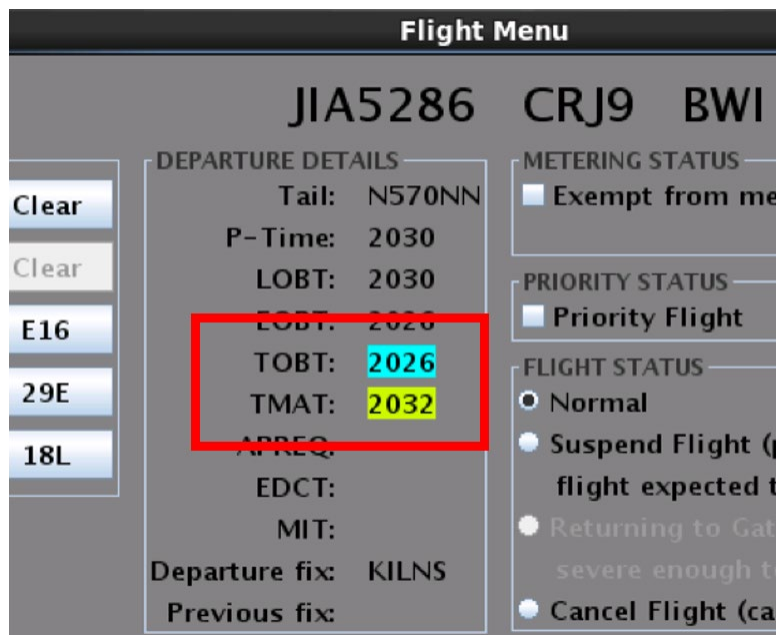
Note though, that flights that the ATD-2 Scheduler has placed in the “Uncertain” group (Section 3.1.2.11) are *not* subject to the Static Time Horizon (STH).

The “frozen” gate advisory continues counting down to the now-frozen TOBT. A frozen gate advisory is displayed in black text and highlighted in cyan, the inverse of a non-frozen gate advisory (Figure 9.2).



**Figure 9.2.** A metered-flight before (left) and after (right) the gate advisory is frozen. When the TOBT is frozen, the gate advisory is displayed in black text and highlighted in cyan (right), the inverse of a non-frozen gate advisory (left). The gate advisory continues counting down to the now-frozen TOBT.

When the TOBT and TMAT are frozen, they are highlighted in cyan and light green, respectively, in the Flight Menu (Figure 9.3).



**Figure 9.3.** In the Flight Menu, the TOBT and TMAT are highlighted when they are frozen.

## 9.1.4 Metering: Gate Hold Compression

Frozen target times will stay frozen, with one exception, surface metering Compression. Compression is used during an active Surface Metering Program (SMP) when departure queue time is predicted to fall below a lower threshold. Compression allows a *frozen* TOBT to be changed to an earlier time – **despite having already been frozen** – reducing the Scheduler-recommended gate hold time. The purpose of compressing gate hold times is to enable more flights to arrive at the runway departure queue sooner in order to maintain a minimum target demand at the runway.

See Section 3.1.2.12 for a full description of surface metering Compression.

## 9.1.5 Metering: Hold

If a metered-flight calls “ready” for pushback *prior to* the TOBT (i.e., if the gate advisory is still counting down and has not yet reached zero), it is recommended that the Ramp Controller use the right-click menu to place the flight on “hold” (Figure 9.4, 3<sup>rd</sup> image). Placing a flight on hold:

1. Informs the ATD-2 Scheduler that the flight is ready. If they are not already frozen, the Scheduler freezes the TOBT and TMAT to prevent the gate advisory from adjusting, or “jumping,” so that the Ramp Controller is presented with a reliable hold time. As described in Section 9.1.3, a “frozen” gate advisory is displayed in black text and highlighted in cyan.
2. Changes the gate advisory countdown timer from *minute* format to *mm:ss* format (Figure 9.4, 4<sup>th</sup> image), and
3. Provides a visual cue/reminder to the Ramp Controller that the flight deck has called “ready” by displaying a red border around the flight strip (Figure 9.4, 4<sup>th</sup> image).

When a flight is on hold, the gate advisory is presented differently for increased situation awareness:

- When the frozen gate advisory reaches 2:00, it is highlighted in orange, rather than cyan (Figure 9.4, 5<sup>th</sup> image).
- And, when the gate advisory reaches 0:00 (i.e., the TOBT), a red count-*up* timer is displayed with the word “Push,” which pulsates (Figure 9.4, 6<sup>th</sup> and 7<sup>th</sup> images).



1. Gate advisory is counting down to the TOBT in one-minute increments. It is currently 16 min prior to TOBT. Because the TOBT is not yet frozen, it may be adjusted by the Scheduler. As a result, the gate advisory may change.

2. At the **Static Time Horizon (STH)** (in this example, 10 min prior to the TOBT), the TOBT and TMAT are frozen. Frozen gate advisories are displayed in black text and highlighted in cyan.

3. The flight deck calls “ready” prior to the TOBT. Because there is still time remaining on the gate advisory countdown timer (4 min prior to TOBT), the Controller puts the flight on “Hold” using the right-click menu.

4. When a flight is put on hold:

- If not already, the TOBT is frozen (in this case, already frozen at STH).
- Gate advisory format is *mm:ss*.
- A red border is drawn around the flight strip.

5. When a flight is on hold, at 2 min prior to the TOBT, the frozen gate advisory is displayed with an orange highlight, rather than cyan (remains frozen).

6. (If the flight is still at the gate.) When the gate advisory reaches 0:00 (i.e., the TOBT), a red count-up timer is displayed with the word “Push”.

7. (If the flight is still at the gate.) The timer continues counting up until the flight pushes back. In this example, the flight is 52 sec past its TOBT.

Figure 9.4. Metered-flight put on hold when flight deck calls “ready.”

## 9.1.6 Metering: Hold in Hardstand (Hardstand Release Advisory)

At airports where hardstands are used, when metered-flight is sent to the hardstand, a hardstand release advisory is displayed (*mm:ss*). The release advisory provides guidance to the Ramp Controller about when to release the flight from the hardstand to ensure that it crosses the spot in compliance with its Target Movement Area entry Time (TMAT).

The release advisory is a countdown timer, counting down to the hardstand release time which takes into account time to taxi to the spot and includes a buffer. The Hardstand Release Time is equal to TMAT – Undelayed Spot Time – buffer (e.g., 2 minutes).

The countdown timer is displayed below the data tag in light green (Figure 9.5, left). At five minutes prior to the advised hardstand release time, the timer turns orange (Figure 9.5, middle). If the flight has not been released from the hardstand when the timer reaches zero, a red “Release” alert is displayed (Figure 9.5, right).

Like all flights holding in a hardstand, a yellow border is drawn around the data tag/icon.



Figure 9.5. A hardstand release advisory is displayed for metered flights. The TMAT is displayed on the data tag (in this example, 2255 UTC).

## 9.1.7 Metering: Priority Flights

While surface metering is active, departure flights designated as Priority Status are given higher priority by the ATD-2 Scheduler, compared to other flights from the *same* airline. For instance, when metering is turned on, the scheduler gives priority flights the first available slots in the schedule – within their airline – and, thus, reduces their recommended gate hold times to the minimum values. Ramp Controllers may not see the change in the recommended hold time of a priority flight until the pilot calls and the flight is placed on hold.

A flight can be assigned Priority Status using the Flight Menu (described in Section 7.5). In RMTC, the Ramp Manager can also use the Priority Flight List to add and manage priority flights (see Section 10.4.2).

Priority flights are displayed with a green border (see examples in Section 5.2.4).

## 9.1.8 Metering: Candidate for Leveraging Surface Metering

A flight may be identified as a **Candidate for Leveraging Surface Metering** when it meets several criteria, including a configurable threshold of “x” minutes for Scheduler-recommended gate hold. See Section 3.1.2.3 for a full description of Candidates for Leveraging Surface Metering.

When a flight is identified as a Candidate for Leveraging Surface Metering, the gate advisory is highlighted in *light green*. The light green highlight distinguishes a flight with a frozen gate advisory (black text, highlighted in *cyan*) from a flight with a frozen gate advisory that is *also* a Candidate for Leveraging Surface Metering.

An example of a metered flight is shown in (Figure 9.6).

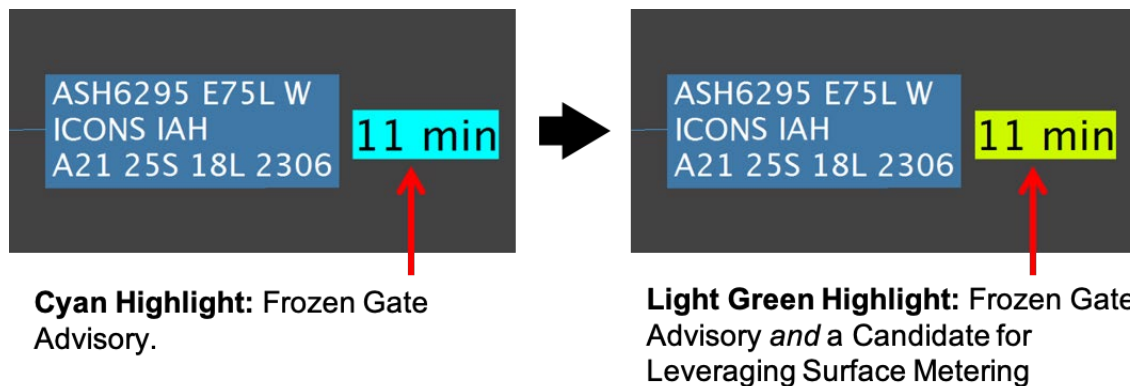


Figure 9.6. In this example, a flight subject to surface metering as part of an SMP is identified as a Candidate for Leveraging Surface Metering. The gate advisory is highlighted in light green.

## 9.1.9 Metering: Uncertain Flights

In some cases, the ATD-2 Scheduler may categorize a flight as “Uncertain.” This may be because:

- The EOBT is not available from the airline, or
- Current time is *x* minutes greater than EOBT (e.g., 8 minutes) and the flight deck has not yet called “ready.”

Gate advisories for “Uncertain” flights may appear unusually large because of the uncertainty around their expected pushback time. Users have the option to display gate advisories for “Uncertain” flights as a hashtag (“#”) (Figure 9.7, left) rather than as a countdown timer. Click on the hashtag to view the current gate advisory (e.g., 4 min in Figure 9.7, right).

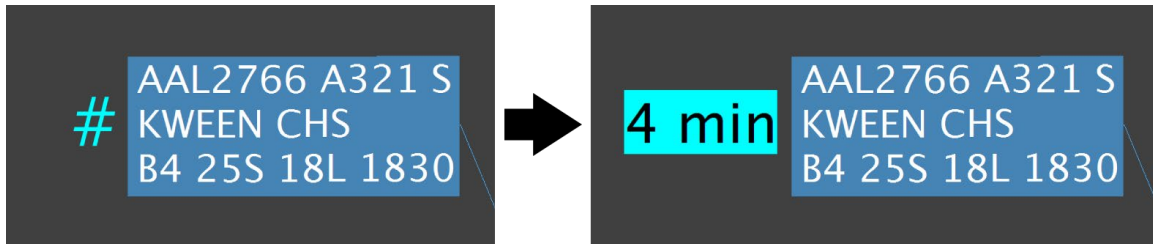


Figure 9.7. Uncertain Flight: Gate advisory is displayed as a hashtag (“#”) (left). Click on the hashtag to view the current gate advisory (e.g., 4 min) (right).

The option to display a hashtag, rather than the countdown timer, for “Uncertain” flights is a Map option described in Section 3.1.2.11.

### 9.1.10 Metering: Exceptions

There are two types of flights that are exempt from being part of a Surface Metering Program (SMP):

- *Exempt* flights are flights that will not be subject to metering. For example, cargo and military flights can be automatically placed in the exempted flight category. Surface metering gate advisories are not displayed for exempted flights, allowing the Ramp Controllers to push or hold the flight as they deem fit when the pilot calls ready for pushback. Ramp Control can also designate a specific flight as an exempt flight in either the RTC or the RMTC by using the Flight Menu (Section 7.4).
- EDCT and APREQ flights are *not* subject to surface metering. This is in order to avoid a potential double delay due to both metering and the TMI restriction.

# 10 Ramp Manager Traffic Console (RMTC)

The Ramp Manager Traffic Console (RMTC) is designed to support the Ramp Manager’s role. It provides the same RTC functions as described in the previous sections, plus additional functions that pertain to the Ramp Manager.

## 10.1 RMTC: Freeze Advisory

In RMTC, the Ramp Manager can use the “**Freeze Advisory**” option in the Flight Menu to manually freeze the TOBT, TMAT, and gate advisory. This option is available for:

- EDCT-flights and APREQ-flights (once the wheels-up time has been scheduled),
- Flights subject to surface metering as part of an SMP. This includes flights that the ATD-2 Scheduler has placed in both the “Planning” group and the “Uncertain” group.

When “**Freeze Advisory**” is checked, the TOBT, TMAT, and the corresponding gate advisory are frozen. That is, the target times will not adjust again regardless of changing conditions on the surface or at the runway. (However, if the EDCT or APREQ wheels-up time is updated, frozen target times can adjust as a result.)

In the Flight Menu, the frozen TOBT and TMAT are highlighted in cyan and light green, respectively (Figure 10.1, right). Frozen gate advisories for EDCT- and APREQ-flights are described in Section 8.2.8 and for metered flights in Section 9.1.3.

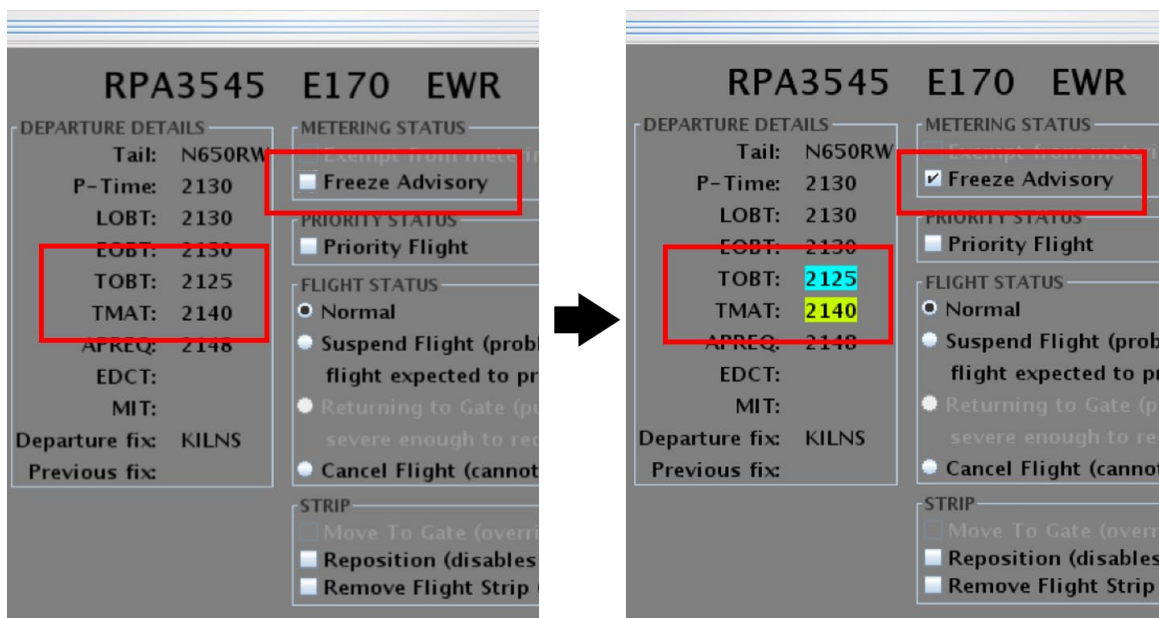


Figure 10.1. RMTC Flight Menu: Freeze Advisory. Frozen target times are highlighted (right).

Note that the “Freeze Advisory” function *cannot* be used to *unfreeze* target times that are already frozen when:

- The flight has already been placed on “Hold,” or
- A flight is within the Static Time Horizon (STH) (e.g., less than 15 min prior to its TOBT).

## 10.2 RMTC Arrival Data Tags (Arrival Metrics)

Like arrival data tags in RTC, the Scheduled In-Block Time (SIBT; “IN”), duration of time since landing, and color-coded alerts when the flight is late – “A0,” “A5,” or “A14” – are displayed on arrival data tags in RMTC.

However, in RMTC, when a flight is delayed beyond its SIBT, the duration of time past SIBT is also displayed on the data tag. In Figure 10.2, ENY3862 landed early, prior to its SIBT (20:53 UTC), but was delayed prior to entering the ramp.

- **No Delay:** ENY3862 landed prior to its SIBT. Because it was early, no alert was displayed. It has been on the surface for 21 min and 20 sec.
- **“A0” (past SIBT):** ENY3862 has now been on the surface for 23 min and 27 sec – and is 45 sec past its SIBT.
- **“A5” (more than 5 min past SIBT):** ENY3862 has now been on the surface for 27 min and 47 sec – and is 5 min and 5 sec past its SIBT.
- **“A14” (more than 14 min past SIBT):** ENY3862 has now been on the surface for 37 min and 01 sec – and is 14 min and 19 sec past its SIBT.

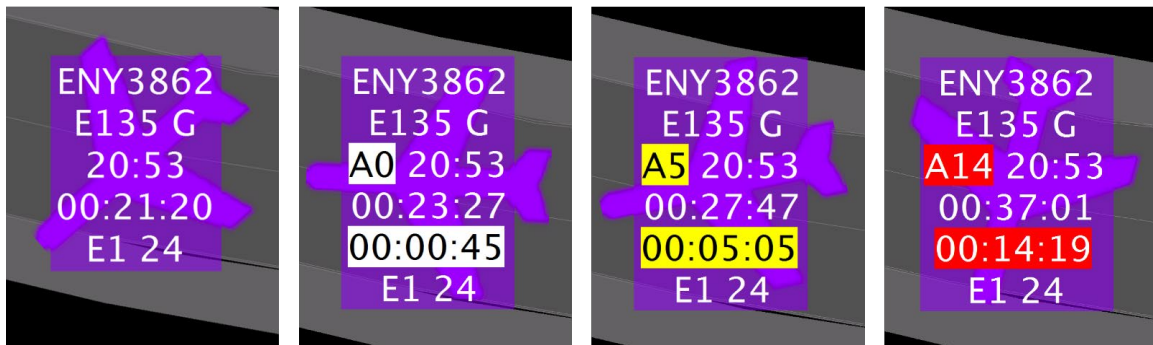


Figure 10.2. RMTC: Arrival data tags show delay past Scheduled-in-Block Time (SIBT; “IN”).

In this example, ENY3862 is displayed in magenta, rather than green, because a gate conflict has been detected at its arrival gate (in this example, gate E1).



Length of delay, beyond SIBT, is presented to provide increased situation awareness of arrival flights. See Section 5.1.4.6 for a description of arrival data tags in RTC.

### 10.3 RMTC: SMP Icon

In RMTC, an additional icon is displayed on the Toolbar. The ‘gear’ icon, displayed to the left of the runway metering icons, indicates when a proposed Surface Metering Program (SMP) is available (Figure 10.3).

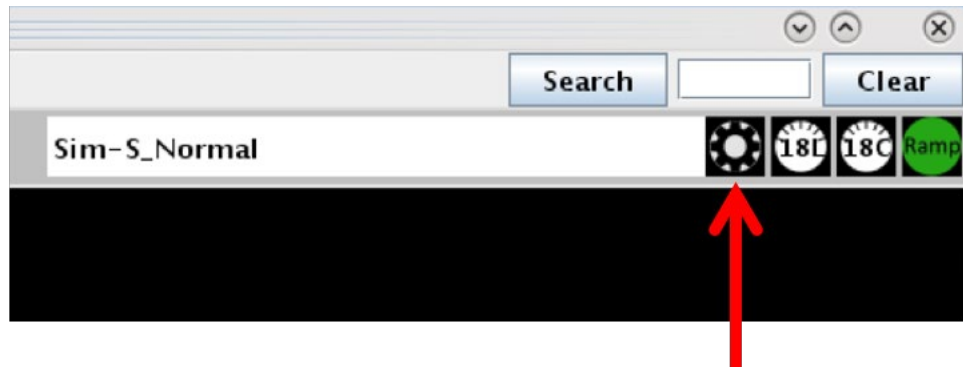


Figure 10.3. Proposed Surface Metering Program (SMP) icon.

The black gear icon turns yellow (Figure 10.4, bottom) when a newly proposed SMP is available to view on the Surface Metering Display (see SMD User Manual).

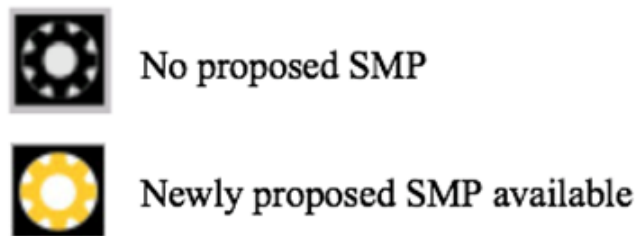


Figure 10.4. Proposed Surface Metering Program (SMP) indicator.

### 10.4 RMTC: Tools Menu

In RMTC, two additional options are available on the Tools menu (Figure 10.5): Ramp Status (Section 10.4.1) and Priority Flights (Section 10.4.2).

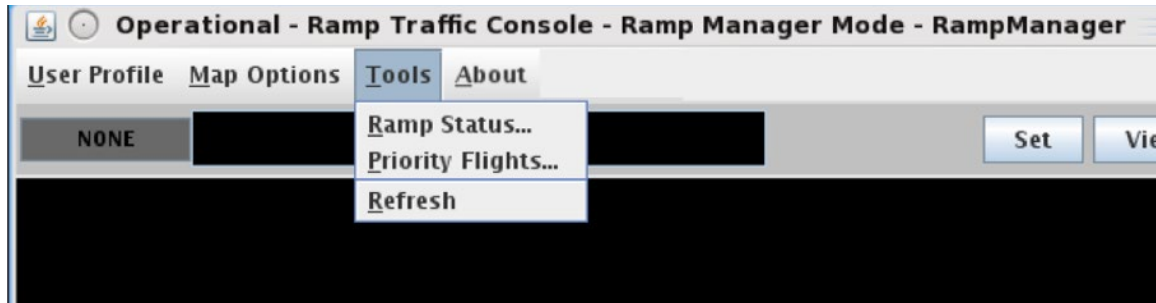


Figure 10.5. RMTC: Tools Menu.

## 10.4.1 Ramp Status

As part of the data exchange between the Ramp and the ATCT, the Ramp Manager can use RMTC to indicate a change in the operational status of the ramp. The change in status is reflected in both RTC/RMTC and the STBO Client in the Tower.

Note that a ramp closure does not impact the STBM Scheduler. For example, gate hold advisories do not take into account ramp closures.

### To change the Ramp Status:

*\*Note: Instructions apply to the Ramp Manager Traffic Console (RMTC).*

**Step 1:** Select “Tools” on the Menu Bar (Figure 10.6).

**Step 2:** Select “Ramp Status” (Figure 10.6).

**Step 3:** Select from one of three ramp statuses in the “Set Ramp Status” window (for example, in Figure 10.7, “Closed” is selected):

- Select “**Open**” if the ramp is currently open.
- Select “**Pending Closure**” if the ramp is expected to close.
- Select “**Closed**” if the ramp is currently closed (Figure 10.7).

**Step 4:** Select “Apply” to close the “Set Ramp Status” window (Figure 10.7).

**Note: Upon a change in ramp status:**

- *The Ramp Status icon on the Toolbar is updated (Figure 10.8). A red icon is displayed when the ramp is closed.*
- *A notification is generated and displayed in the Notification Banner and Notification Panel (Figure 10.9).*

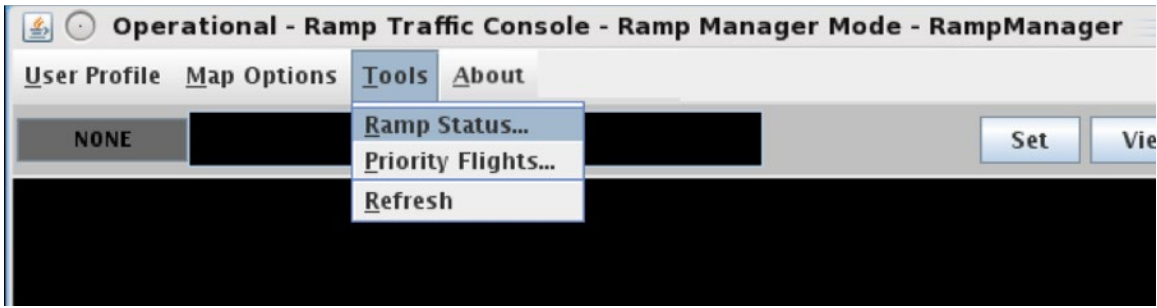


Figure 10.6. RMTC: Tools Menu. Select “Ramp Status.”

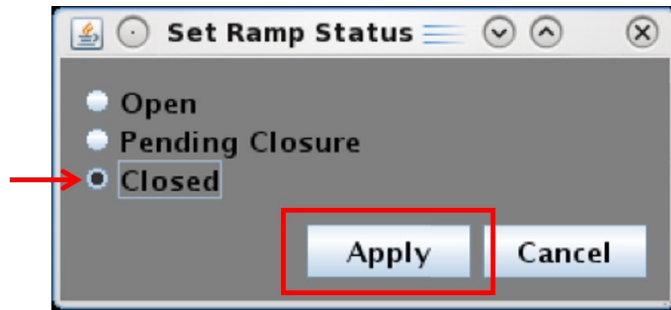


Figure 10.7. Set Ramp Status (in this example, Closed).

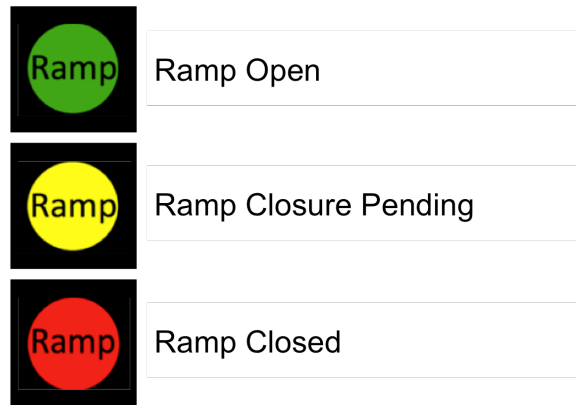
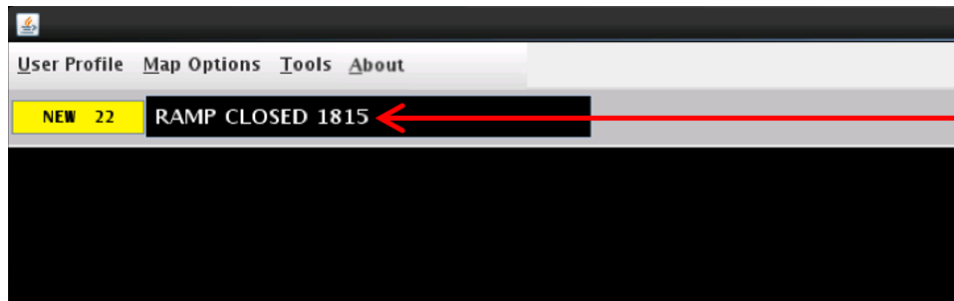


Figure 10.8. Ramp Status icon on the RTC/RMTC Toolbar.



Notifications					
Reported	Event Type	Description	Event Start	Event End	Details
7/18/20 18...	SMP	18L AFFIRMED	7/18/20 1830	7/18/20 1920	SCHEDULER Flight Count: 23 A...
7/18/20 18...	SMP	18C COMPLETED	7/18/20 1711	7/18/20 1716	Expired
7/18/20 18...	Ramp	RAMP CLOSED	7/18/20 1815		USER
7/18/20 17...	Parking Gate	A10 OPENED	7/18/20 1754		USER
7/18/20 17...	Parking Gate	A10 CLOSED	7/18/20 1717	7/18/20 1754	Cancelled
7/18/20 17...	Parking Gate	B6 OPENED	7/18/20 1754		USER
7/18/20 17...	Parking Gate	B6 CLOSED	7/18/20 1718	7/18/20 1754	Cancelled

Figure 10.9. “Ramp Closed” Notification. Notification Banner (top) and Notification Panel (bottom).

## 10.4.2 Priority Flights

While surface metering is active, departure flights designated as Priority Status are given higher priority by the scheduler, compared to other flights from the *same* airline. For instance, when metering is turned on, the scheduler gives priority flights the first available slots in the schedule within their airline and thus reduce their recommended gate hold times to the minimum values. Ramp Controllers may not see the change in the recommended hold time of a priority flight until the pilot calls and the flight is placed on hold.

There are two methods for adding/removing Priority Status for a flight. Recall that in both RTC and RMTC, the Flight Menu can be used to assign Priority Status (see Section 7.5).

### 10.4.2.1 RMTC: Priority Flight List

In RMTC, users can also manage priority flights using the Priority Flight List. In the Priority Flight List, RMTC users can select a flight from a dropdown list of all available flights in the system which are expected to arrive or depart within the next 24 hours, as well as, view a list of flights already added to the Priority list.

Note that even though arrivals can be selected in the Priority Flight List, they are not scheduled by the STBM scheduler. Marking an arrival as a priority will only cause the arrival to be displayed with the priority green border in RTC/RMTC, alerting Ramp Control that the flight should be expedited to its gate.

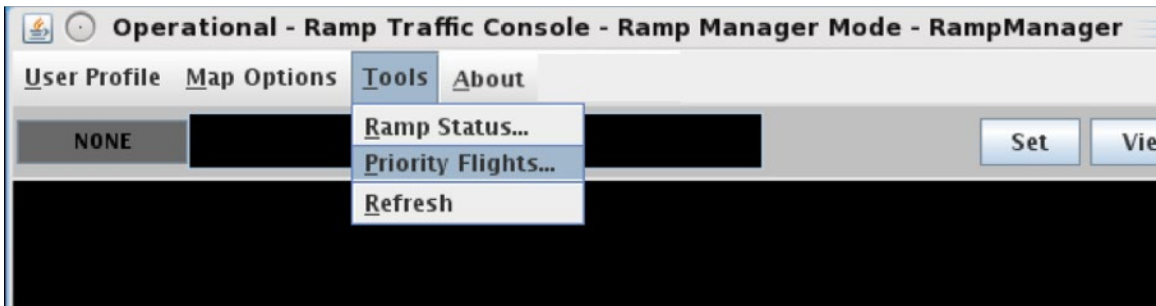
**To view a list of Priority Flights in RMTC:**

*\*Note: Instructions apply to the Ramp Manager Traffic Console (RMTC).*

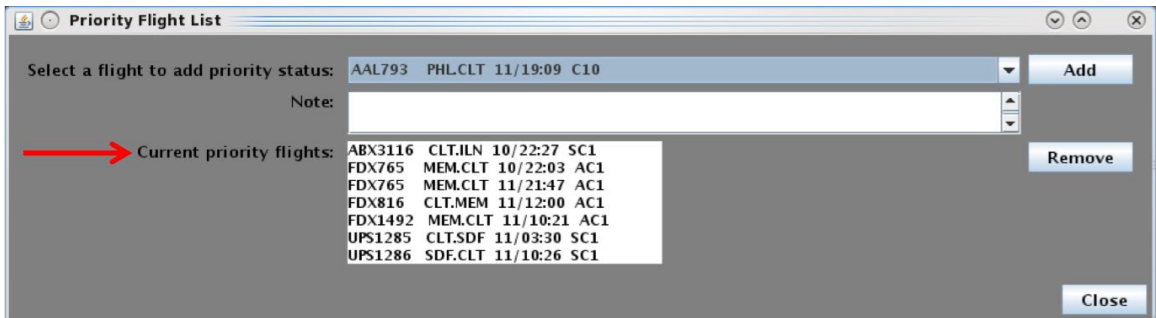
**Step 1:** Select “Tools” on the Menu Bar (Figure 10.10).

**Step 2:** Select “Priority Status” (Figure 10.10).

**Step 3:** Arrivals and departures *currently* designated as Priority flights are listed in the “Current Priority flights” field (Figure 10.11).



**Figure 10.10. RMTC: Tools Menu. Select “Priority Flights.”**



**Figure 10.11. RMTC: Priority Flight List. Arrivals and departures *currently* designated as Priority flights are listed in the “Current priority flights” field.**

## To add a flight to the Priority Flight List in RMTC:

*\*Note: Instructions apply to the Ramp Manager Traffic Console (RMTC).*

**Step 1:** Select “Tools” on the Menu Bar (Figure 10.10).

**Step 2:** Select “Priority Status” (Figure 10.10).

**Step 3:** Click on the “Select a flight to add priority status” field to open a dropdown list of all available flights in the system which are expected to arrive or depart within the next 24 hours (Figure 10.12). Flights are listed by call sign in alphabetical/numerical order.

**Note:** *Because the list of flights can be long, it is sometimes helpful to type – in quick succession – the first few characters of a flight’s call sign to jump to that part of the list. For example,*

- *Typing the letter “E,” will cause the list to jump to the first airline call sign that begins with an “E.”*
- *Quickly typing “ENY” will cause the list to jump to the first Envoy Airlines flight in the list.*
- *Quickly typing “ENY4” will cause the list to jump to the first Envoy call sign that begins with “ENY4 \_ \_ \_ .”*

**Step 4:** Select a flight from the list (e.g., flight AAL794 in Figure 10.12).

**Step 5 (Optional):** Add an entry in the “Note” field (e.g., “FLAGSHIP” in Figure 10.13). This entry can later be edited in the “Scratch Pad” field in the Flight Menu.

**Step 6:** Select “Add” (Figure 10.13).

**Note:** *In the Priority Flight List window, the flight is added to the “Current priority flights” list (e.g., “AAL794” in Figure 10.14).*

**Step 7:** Select “Close” to close the Priority Flight List window (Figure 10.14).

**Note:** *On the map, the flight strip/icon is shown with a green border. If a note was added, it is displayed on the flight strip/data tag (Figure 10.15).*

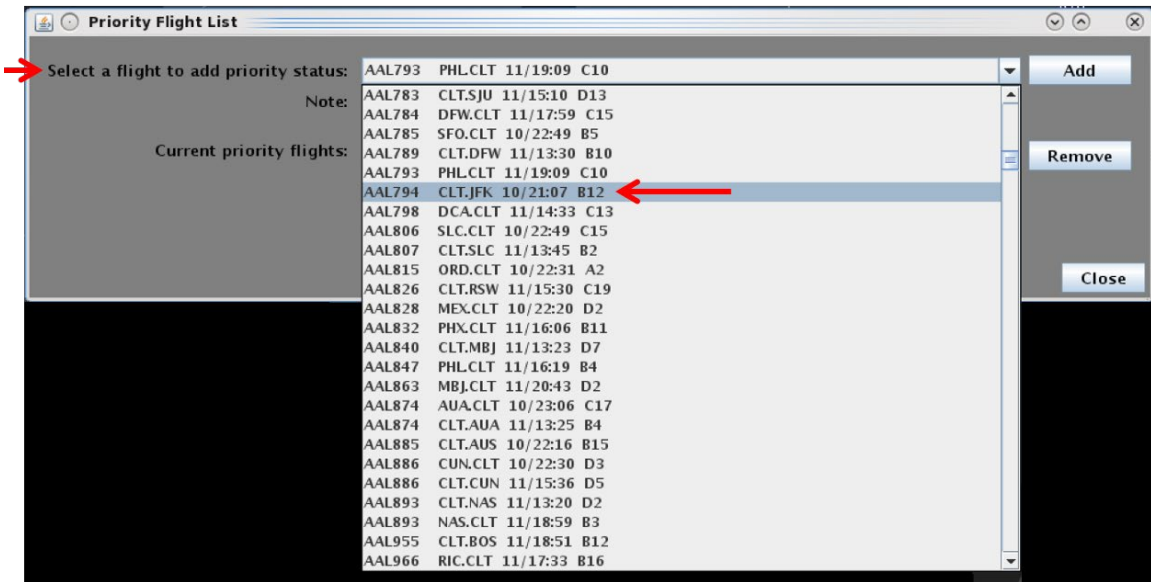


Figure 10.12. Priority Flight List: Select a flight (in this example, AAL794).

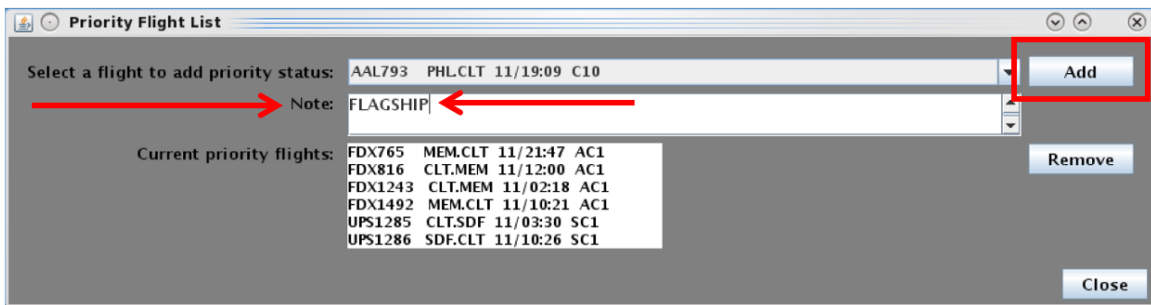


Figure 10.13. Priority Flight List: Add a note (a scratch pad entry) for a priority flight (in this example, “FLAGSHIP”).

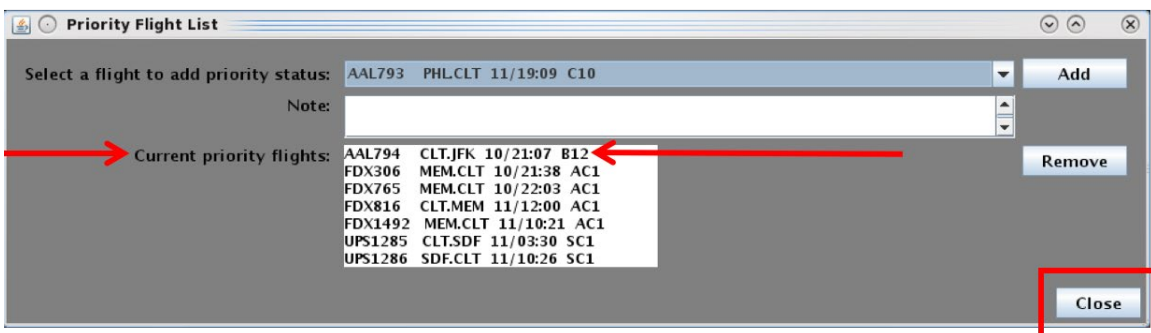


Figure 10.14. Priority Flight List: Flight is added to the “Current priority flights” list (in this example, AAL794).

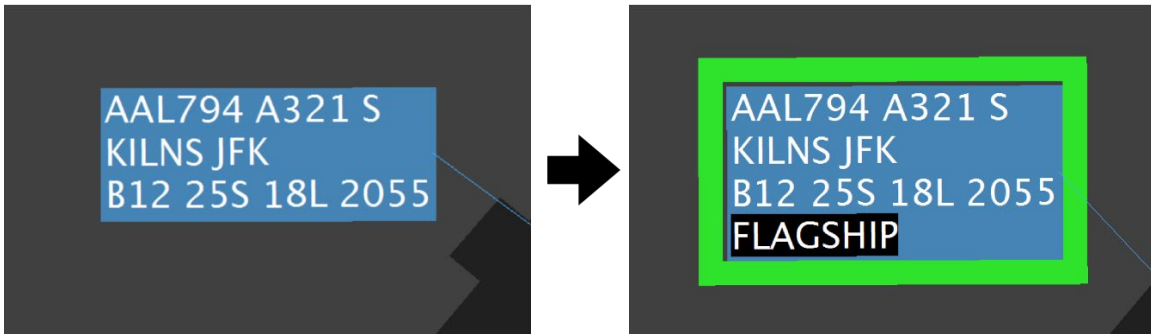


Figure 10.15. A flight, before and after being assigned Priority Status. A priority flight is shown with a green border and scratch pad entry, if applicable (in this example, “FLAGSHIP”).

### To remove a Flight from the Priority list:

*\*Note: Instructions apply to the Ramp Manager Traffic Console (RMTTC).*

**Step 1:** Select “Tools” on the Menu Bar (Figure 10.10).

**Step 2:** Select “Priority Status” (Figure 10.10).

**Step 3:** Select a flight in the “Current priority flights” list (e.g., RPA4488 in Figure 10.16).

**Step 4:** Select “Remove.”

**Note:** *The flight’s call sign will no longer appear in the “Current priority flights” list and the green border will be removed from the flight strip/icon on the map. To remove a scratch pad entry, use the Flight Menu.*

**Step 5:** Select “Close” to close the “Priority Flight List” window (Figure 10.16).

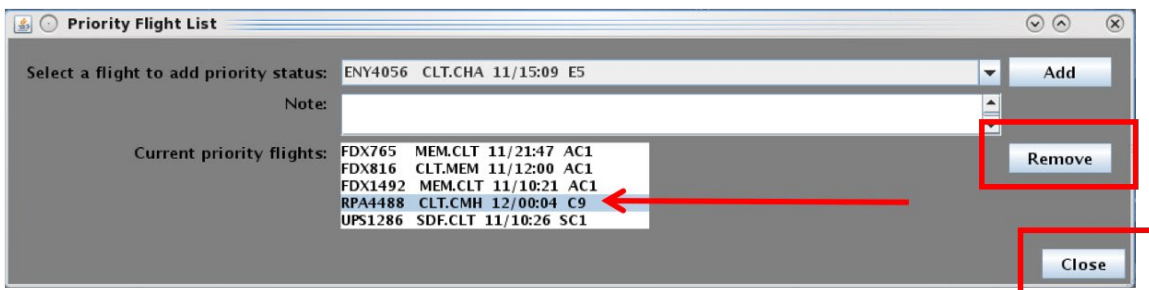


Figure 10.16. Priority Flight List: Remove a flight from Priority Status (in this example, RPA4488).



## 10.5 RMTC: Gate Closed

In RMTC, the Ramp Manager can mark a parking gate as closed. Right-click on the gate's label to select "Close Gate" (Figure 10.17, left). When a gate is closed, a semi-transparent red "X" is drawn over the gate label (Figure 10.17, right).

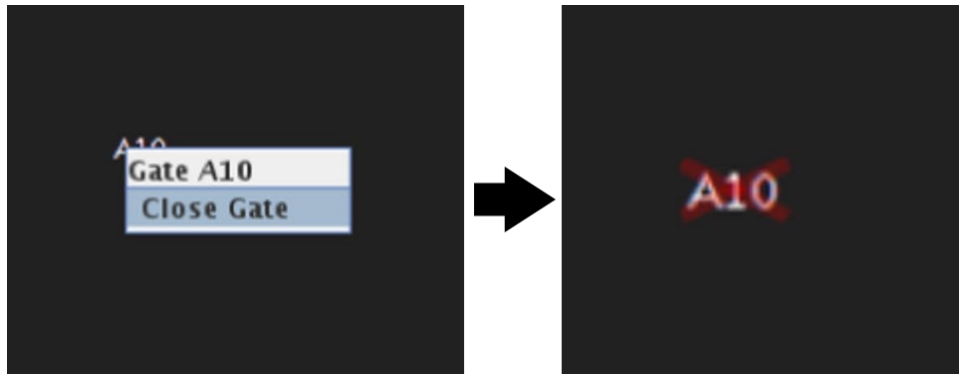
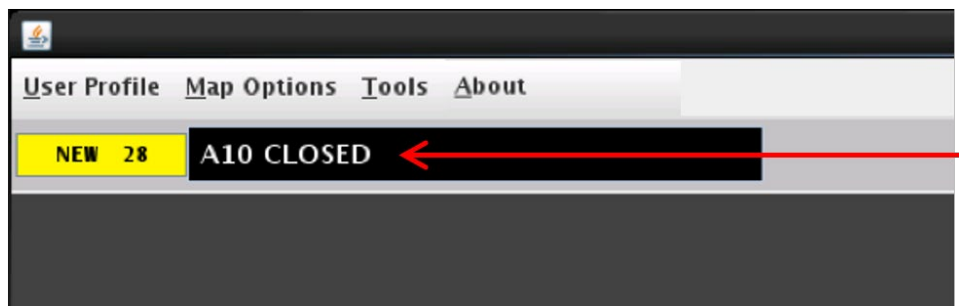


Figure 10.17. A transparent red "X" is displayed over a closed gate.

When a gate is closed, a Notification is generated and displayed in the Notification Banner (Figure 10.18, top) and Notification Panel (Figure 10.18, bottom). The notification is also displayed in RTC.



Reported	Event Type	Description	Event Start	Event End	Details
7/18/20 0652	Parking Gate	A10 CLOSED	7/18/20 0652	7/18/20 0652	Cancelled
7/18/20 0019	SMP	36C COMPLETED	7/17/20 2215	7/17/20 2319	Expired
7/17/20 2257	SMP	18C ACTIVE	7/17/20 2201	7/17/20 2257	Expired
7/17/20 2245	TMI	APREQ to ORD	7/17/20 2004	7/17/20 2245	Cancelled
7/17/20 2200	TMI	APREQ to EWR	7/17/20 1900	7/17/20 2200	Cancelled

Figure 10.18. Gate Closed Notification. Notification Banner (top) and Notification Panel (bottom).

Right-click on the gate's label again to select "Open Gate" (Figure 10.19, left). Upon being re-opened, the red "X" is removed (Figure 10.19, right).

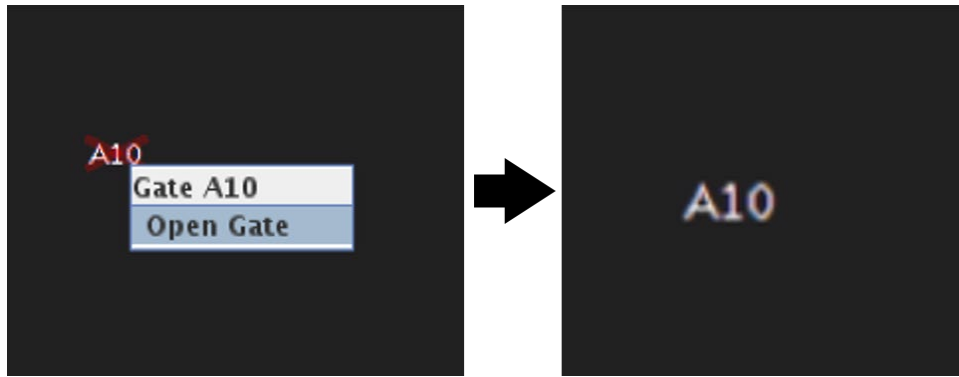
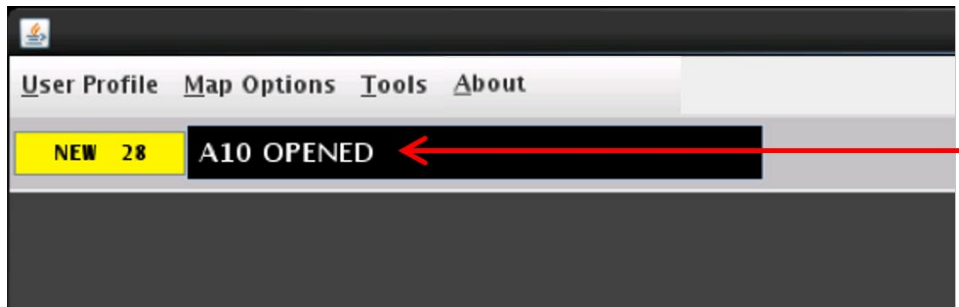


Figure 10.19. To reopen the gate, right-click on gate label and select “Open Gate.”

When a gate is re-opened, a Notification is generated and displayed in the Notification Banner (Figure 10.20, top) and Notification Panel (Figure 10.20, bottom). The notification is also displayed in RTC.



Reported	Event Type	Description	Event Start	Event End	Details
7/18/20 0652	Parking Gate	A10 OPENED	7/18/20 0652		USER
7/18/20 0652	Parking Gate	A10 CLOSED	7/18/20 0652	7/18/20 0652	Cancelled
7/18/20 0019	SMP	36C COMPLETED	7/17/20 2215	7/17/20 2319	Expired
7/17/20 2257	SMP	18C ACTIVE	7/17/20 2201	7/17/20 2257	Expired
7/17/20 2245	TMI	APREQ to ORD	7/17/20 2004	7/17/20 2245	Cancelled
7/17/20 2200	TMI	APREQ to EWR	7/17/20 1900	7/17/20 2200	Cancelled

Figure 10.20. Opening and closing of the parking gates are shown in Notifications.

If an aircraft is parked at the gate while it is closed, the gate number is highlighted in red, as shown in Figure 10.21.

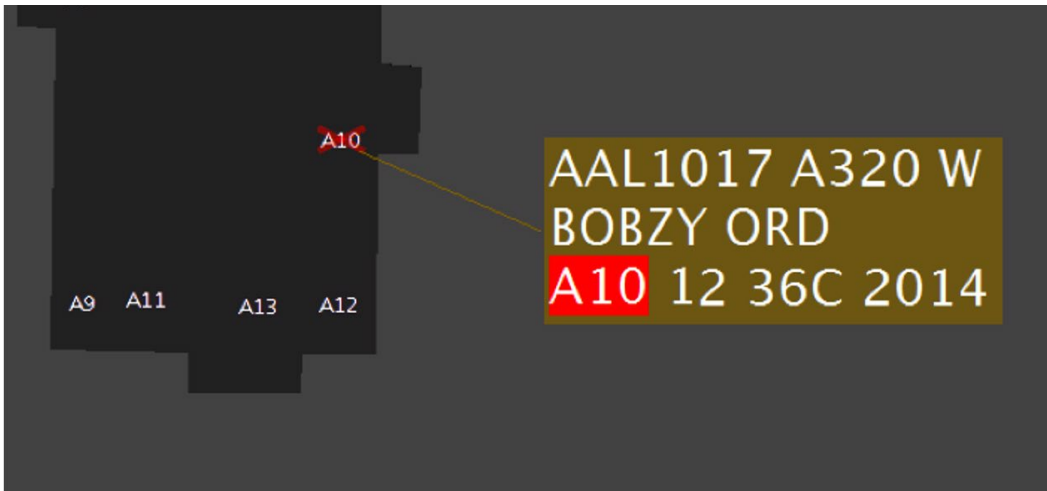


Figure 10.21. When a flight is parked at a closed gate, the gate number is highlighted in red (in this example, Gate “A10” is closed).

## Appendix A: Acronyms

This appendix defines acronyms and terms that are used in ATD-2 research.

Acronym	Term
AAL	American Airlines
ADW	Arrival-Departure Window
ALDT	Actual Landing Time
AMA	Airport Movement Area
AOBT	Actual Off-Block Time
APREQ / CFR	Approval Request / Call For Release
ATC	Air Traffic Control
ATCT	Airport Traffic Control Tower
ATD-2	Airspace Technology Demonstration-2
DAL	Delta Air Lines
EDCT	Expect Departure Clearance Time
EOBT	Earliest Off-Block Time
GA	General Aviation
GS	Ground Stop
IADS	Integrated Arrival, Departure, and Surface
LOB	Long On Board
LOBT, L-Time	Latest Off-Block Time
MIT	Miles-In-Trail
NASA	National Aeronautics and Space Administration
OIS	FAA Operational Information System
P-Time	Airline-Published Pushback Time
RMTC	Ramp Manager Traffic Console
RTC	Ramp Traffic Console
SIBT	Scheduled In-Block Time
STBM	Surface Time-Based Metering
STBO	Surface Trajectory-Based Operations
SWIM	System-Wide Information Management
TBFM	Time-Based Flow Management System

TMAT	Target Movement Area entry Time
TMI	Traffic Management Initiative(s)
TOBT	Target Off-Block Times
TTOT	Target Takeoff Time
UOBT	Undelayed Off-Block Time