

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

Airspace Technology Demonstration 2 (ATD-2) Team

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Abstract

This document serves as a user manual for the Ramp Traffic Console (RTC) Version 4.6.0 in the Ramp Control Tower. It describes the elements of the RTC interface and provides explanations for how to utilize RTC to manage ramp traffic. RTC provides live data for all flights including Earliest Off-Block Times (EOBTs) and Traffic Management Initiatives (TMIs). RTC augments management of ramp traffic by providing notifications of runway configurations, and lists flight arrivals, near arrivals, and departures as additional sources of information. This document also provides instructions for use of the Ramp Manager Traffic Console (RMTC) for Ramp Manager functions, such as adjusting 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 Getting Started: Opening RTC/RMTC

The thin green bar on the left side of the display (Figure 1.1) provides access to several different system views. Any local systems integrated with ATD-2 may be selected for observation.

To access “My Desktop”:

Step 1: Hover mouse over the green bar to display the menu.

Step 2: Select “My Desktop” from the menu.



Figure 1.1. Select “My Desktop” from the menu.

The NASA icon (Figure 1.2), on 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). To get started, first make sure that the correct desktop is displayed.

To open RTC (or RMTC, if applicable):

Step 1: Ensure that “My Desktop” has been selected.

Step 2: Click on the NASA icon on the lower left of the display, to open the ATD-2 suite.

Step 3: Select “RTC” (or “RMTC”, if applicable).

Step 4: Wait for RTC (or RMTC) to load. This may take a few minutes.

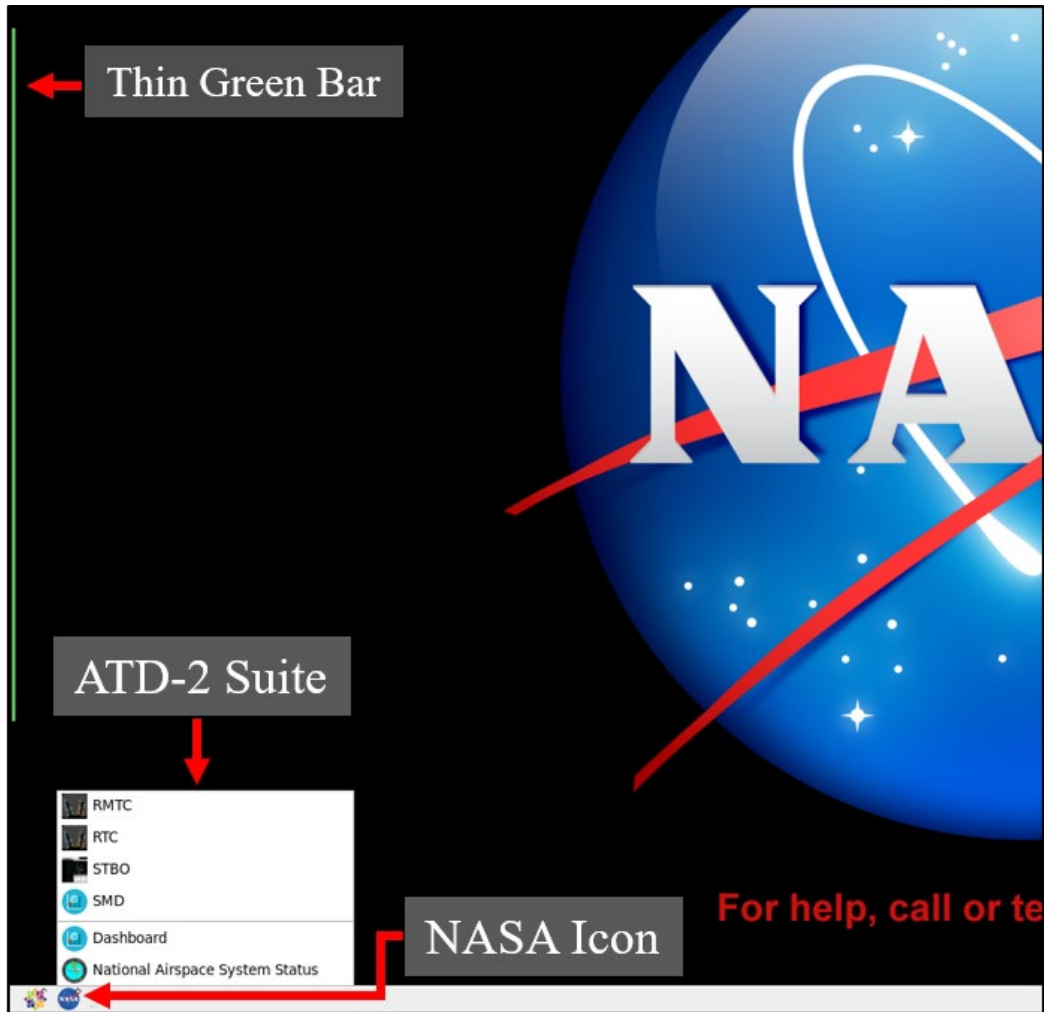


Figure 1.2. Select RTC or RMTC from the ATD-2 Suite.

2 RTC Overview

The Ramp Traffic Console (RTC) (Figure 2.1) is comprised of an interactive map display with “electronic flight strips” and flight icons that reflect the state of flights as well as user inputs. The RTC map displays flight position based on surveillance data and provides a visual representation of current flight positions in the ramp, Airport Movement Area (AMA), and near airspace. RTC also supports Surface Time-Based Metering (STBM), where applicable.

The Ramp Manager Traffic Console (RMTC) includes additional functionality for the Ramp Manager. Features specific to RMTC are described in Section 9.

Another ATD-2 tool, the Surface Trajectory-Based Operations (STBO) client, is used by Air Traffic Control (ATC). Many data elements are shared between the Ramp Tower (RTC/RMTC) and ATC (STBO client), including Traffic Management Initiative (TMI) information, notifications, ramp status, airport configuration, and closure information.

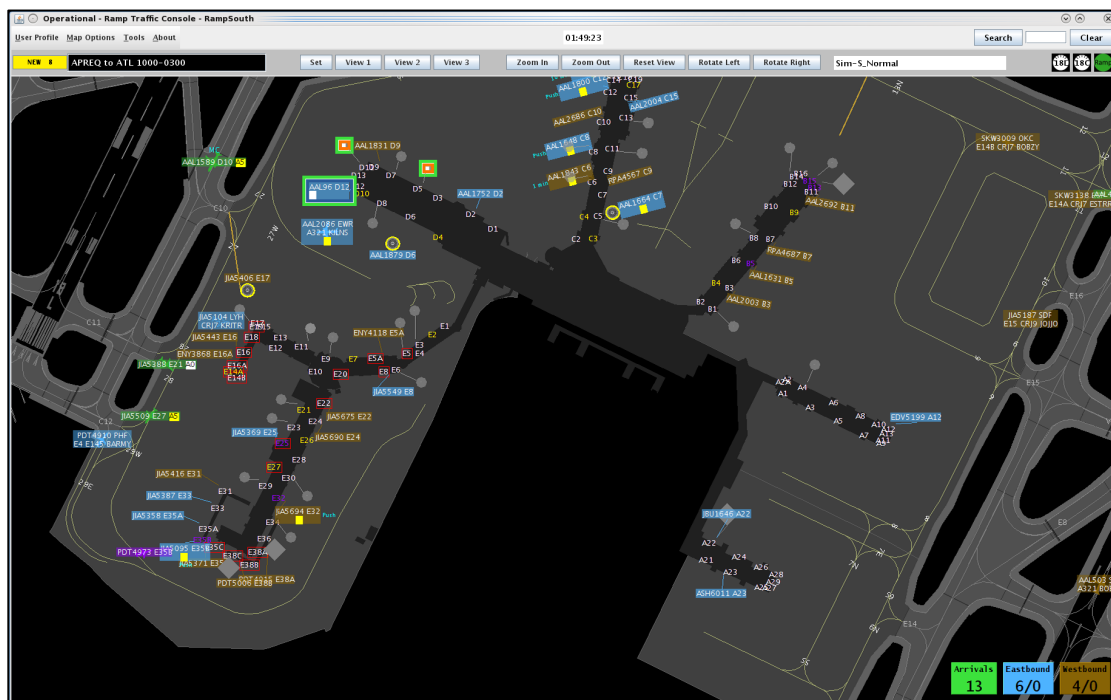


Figure 2.1. Ramp Traffic Console (RTC) interactive display.

This RTC/RMTC User Manual consists of the following sections:

- Section 3: Tools and Display
- Section 4: Flight Strips and Icons
- Section 5: Display of Traffic Management Initiative Information and Advisories
- Section 6: Target and Aircraft Creation
- Section 7: Flight Menu
- Section 8: Metering
- Section 9: Ramp Manager Traffic Console (RMTC)

3 Tools and Display

3.1 Toolbar

The RTC toolbar and menu bar present information pertinent to traffic management and provide various ways to customize the map display.

3.1.1 Clock

All times displayed in RTC/RMTC are in Coordinated Universal Time (UTC). Current time (UTC) is displayed in the toolbar (Figure 3.1).

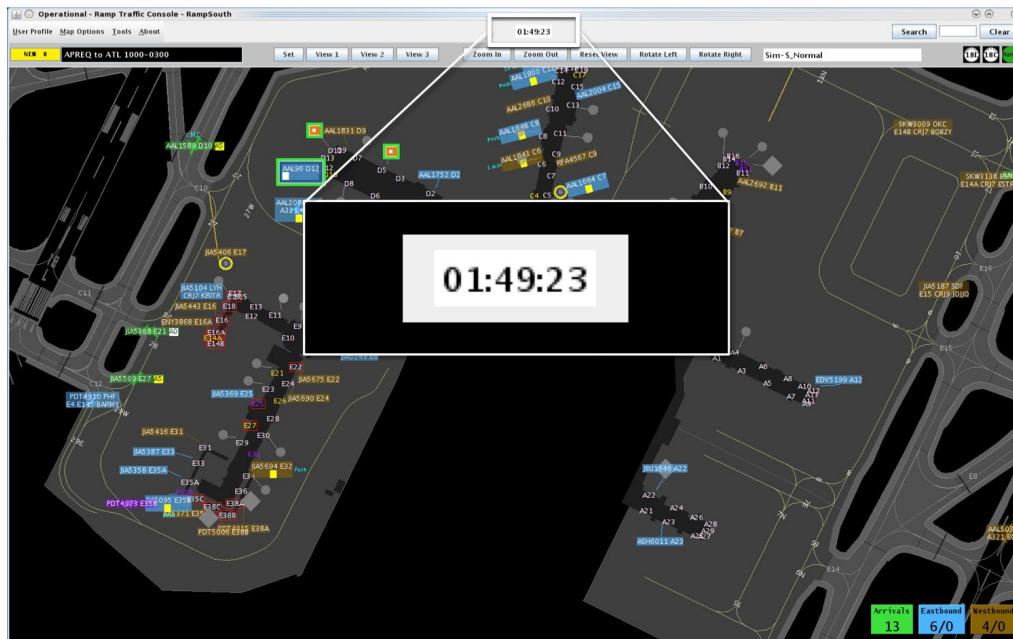


Figure 3.1. Current time (UTC)

3.1.2 Zoom and Rotate Map

In addition to using the mouse to click-and-drag to pan the map, the “Zoom”, “Reset”, and “Rotate” buttons allow for incremental adjustment to the zoom and the orientation of the map display (Figure 3.2).

To change the Zoom level:

Step 1: Select “Zoom In” or “Zoom Out” to incrementally increase or decrease the zoom level.

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

To Rotate the angle of the map display:

Step 1: Select “Rotate Left” or “Rotate Right” to incrementally rotate the map display.

To Reset the default view:

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



Figure 3.2. Zoom, Reset, and Rotate buttons.

3.1.3 Set Views

The “Set View” buttons allow display customization by setting and saving up to three different preset RTC display views (Figure 3.3).

To set a display view:

Step 1: Set the zoom and drag/rotate to display the desired view.

Step 2: Select “Set”. The “View 1”, “View 2”, and “View 3” buttons will highlight in green.

Step 3: Select View 1, View 2, or View 3 to save this view.

Step 4: Change the display to another desired view and repeat above steps until all three views are saved.

Step 5: After the views are set, click on View 1, View 2, or View 3 to toggle quickly between saved views.

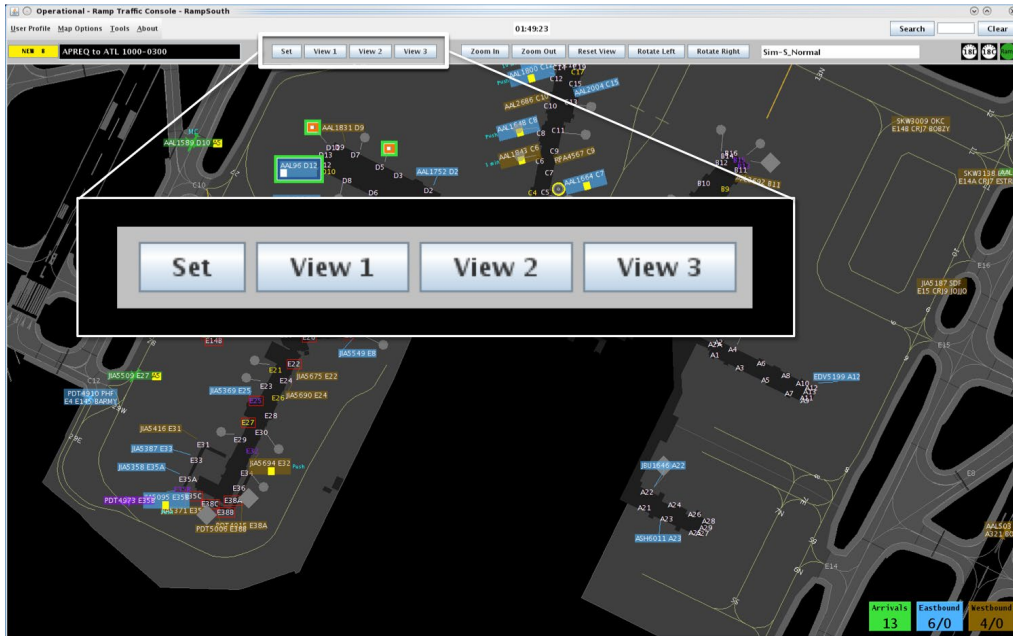


Figure 3.3. Set View buttons.

3.1.4 Search Map

To find a flight, or flights, on the RTC map, use the Search feature located at the top right of the map display (Figure 3.4). A search includes departure and arrival flights at the gate, in the ramp, 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.

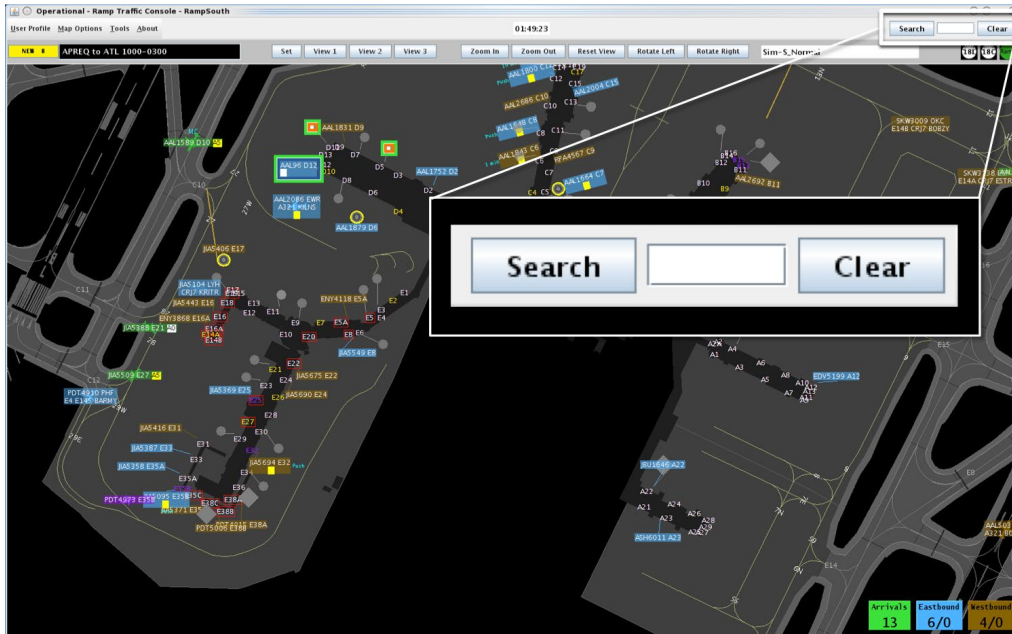


Figure 3.4. Search button, Search field, and Clear button.

A yellow circle is displayed around any matching search results (Figure 3.5). 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.

It may be necessary to zoom out and scan the map to locate the search result, as the map view will not change to include the location of the search result(s) if the result(s) does not appear in the current view.

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.

Step 2: Select the “Search” button.

Step 3: If needed, zoom out to see if search results are outside of the visible display window.

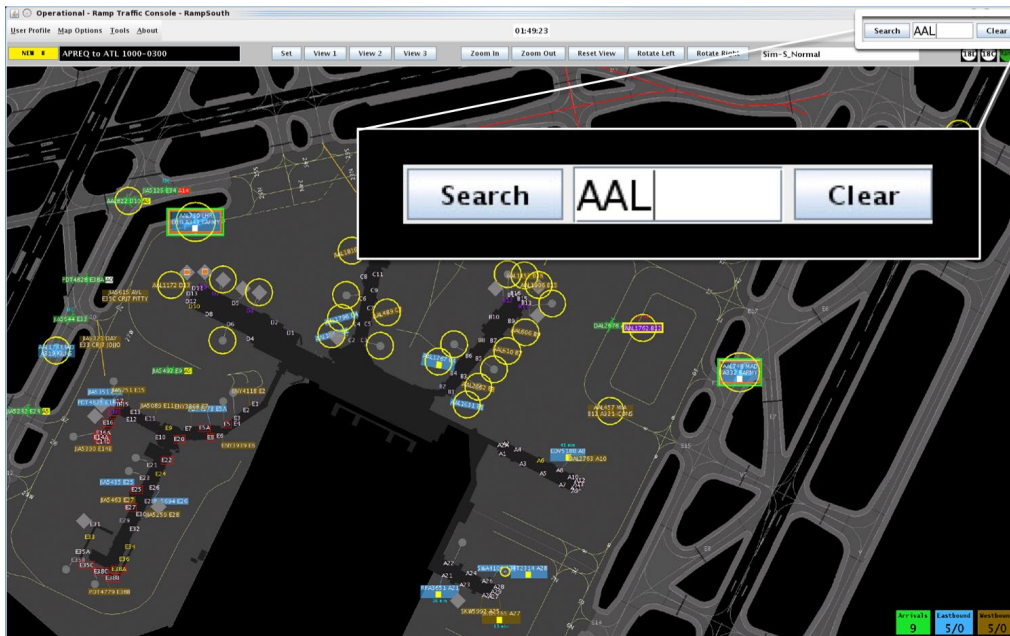


Figure 3.5. Matching results surrounded by a yellow circle.

If a match is outside of the visible display window, a message to zoom out is displayed. For example, if American Airlines (AAL) Flight 879 was not currently visible on the screen, the message would say “AAL879 is outside of current display, zoom out to view.” (Figure 3.6).



Figure 3.6. 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 anything in the system, the search entry will change to red, as shown in Figure 3.7 below. It will also turn red if an incomplete flight or tail number is entered and “Search” is pressed.



Figure 3.7. Tail number search does not return a match.

3.1.5 Notifications

RTC provides notifications in the form of a:

- **Notification Icon** to indicate the number of new notifications (Figure 3.8),
- **Notification Banner** to cycle through unacknowledged notifications (Figure 3.8),
- **Notification Panel** to display a list of notifications (Figure 3.9 and Figure 3.10).

These notifications are generated when new information is populated in the system. This new information may originate from the STBO client in the Airport Traffic Control Tower (ATCT) or from an outside source, such as the System-Wide Information Management (SWIM), the FAA Operational Information System (OIS), or other ATD-2 users. 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 events or restrictions related to an individual flight are available on the flight strip/data tag (see Section 4) or Flight Menu (see Section 4.1.1.2.3).

When new notifications are received, the Notification Icon turns yellow and displays the number of new notifications (e.g., “NEW 8” for eight new notifications in Figure 3.8).

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 3.8). The Notification Banner will cycle through all unacknowledged notifications.

The Notification Panel displays all notifications for the past 24 hours, and the list is automatically cleared each day at 0800 UTC. The notifications received in this panel pertain to the information exchange that will happen between the ATCT and the corresponding ramp. New notifications are highlighted in yellow and newly cancelled

notifications are highlighted in blue (Figure 3.9). For example, if a TMI is ended earlier than planned, the notification will be highlighted in blue. Examples of notifications are shown below.

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*)
- **[JOJJO] CLOSED** (Departure Fix Closure: *in effect / cancelled (CXL) / expired*)
- **[JOJJO] 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, notifications in the Notification Panel are no longer highlighted in yellow or blue (Figure 3.10) and the Notification Icon changes to gray and displays “NONE” to indicate there are no new notifications (Figure 3.11).

To open/close the Notification Panel:

Step 1: Click once on the Notification Banner (black box) shown in Figure 3.8 to view notifications in the Notification Panel.

Step 2: Click on the “X” in the upper right corner of the Notification Panel to close the Notification Panel.

Alternatively: Click again on the Notification Banner (black box).

To acknowledge new (yellow and blue) Notifications in the Notification Panel:

Step 1: Click once anywhere in the Notification Panel to acknowledge all new (yellow and blue) notifications.

Alternatively: Click once on the Notification Icon (yellow box) (Figure 3.8).

Note: Once new notifications have been acknowledged, the Notification Icon will turn gray and indicate “NONE”.

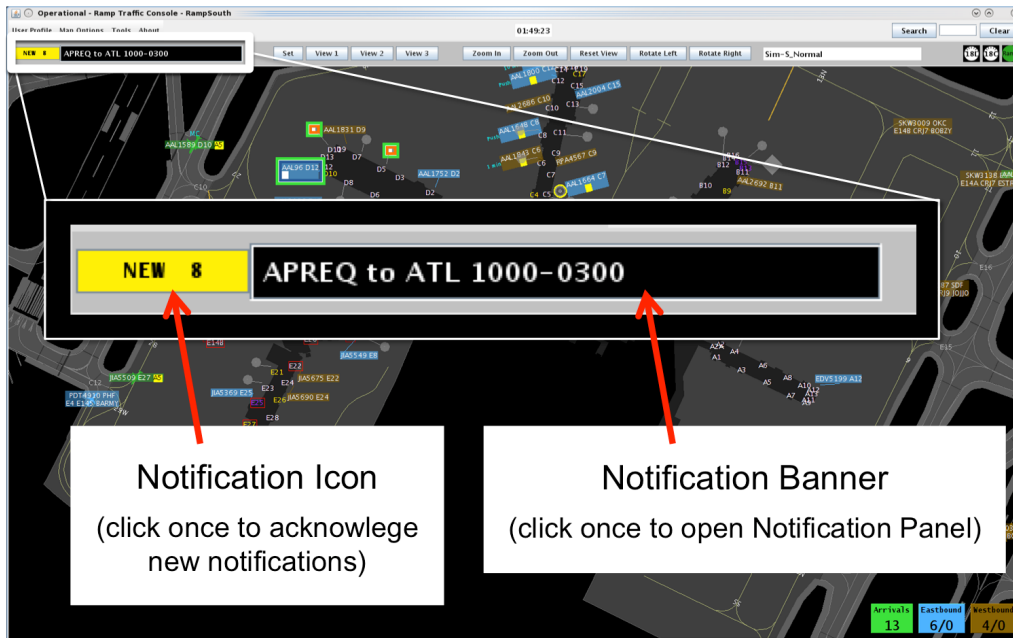


Figure 3.8. Notification Icon (yellow window) and Notification Banner (black window).

Notifications

Reported	Event Type	Description	Event Start	Event End	Details
4/15/19 0200	TMI	APREQ to DCA	4/14/19 12...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to LGA	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to EWR	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to JFK	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0159	TMI	PHL GDP	4/14/19 13...	4/15/19 0159	Expired
4/15/19 0155	TMI	LGA GDP	4/14/19 15...	4/15/19 0155	Cancelled
4/15/19 0024	TMI	JFK GDP	4/14/19 17...	4/15/19 0459	TFM
4/15/19 0009	TMI	JFK GDP	4/14/19 17...	4/15/19 0024	TFM INCL DLH400 JBU636 DAL...
4/14/19 2357	TMI	ATL STOP	4/14/19 22...	4/14/19 2357	Cancelled
4/14/19 2330	TMI	APREQ to ORD	4/14/19 21...	4/14/19 2330	Cancelled
4/14/19 2130	TMI	ORD STOP	4/14/19 20...	4/14/19 2130	Expired
4/14/19 2100	TMI	APREQ to IAH	4/14/19 19...	4/14/19 2100	Cancelled
4/14/19 2100	TMI	APREQ to IAD	4/14/19 18...	4/14/19 2100	Cancelled
4/14/19 2015	TMI	APREQ to HOU	4/14/19 18...	4/14/19 2015	Cancelled
4/14/19 2010	TMI	PHL GDP	4/14/19 13...	4/14/19 2025	TFM INCL NKS1008 LXJ452 PDT...
4/14/19 2006	TMI	ORD STOP	4/14/19 18...	4/14/19 2006	Cancelled

New Notifications shown in yellow

New Cancellation Notifications shown in blue

Previously acknowledged Notifications shown in white

Notification Panel
(click anywhere in the Notification Panel to acknowledge all new notifications)

Figure 3.9. Notification Panel: New notifications (yellow), new cancellation notifications (blue), and previously acknowledged notifications (white).

Notifications

Reported	Event Type	Description	Event Start	Event End	Details
4/15/19 0200	TMI	APREQ to DCA	4/14/19 12...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to LGA	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to EWR	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0200	TMI	APREQ to JFK	4/14/19 10...	4/15/19 0200	Cancelled
4/15/19 0159	TMI	PHL GDP	4/14/19 13...	4/15/19 0159	Expired
4/15/19 0155	TMI	LGA GDP	4/14/19 15...	4/15/19 0155	Cancelled
4/15/19 0024	TMI	JFK GDP	4/14/19 17...	4/15/19 0459	TFM
4/15/19 0009	TMI	JFK GDP	4/14/19 17...	4/15/19 0024	TFM INCL DLH400 JBU636 DAL...
4/14/19 2357	TMI	ATL STOP	4/14/19 22...	4/14/19 2357	Cancelled
4/14/19 2330	TMI	APREQ to ORD	4/14/19 21...	4/14/19 2330	Cancelled
4/14/19 2130	TMI	ORD STOP	4/14/19 20...	4/14/19 2130	Expired
4/14/19 2100	TMI	APREQ to IAH	4/14/19 19...	4/14/19 2100	Cancelled
4/14/19 2100	TMI	APREQ to IAD	4/14/19 18...	4/14/19 2100	Cancelled
4/14/19 2015	TMI	APREQ to HOU	4/14/19 18...	4/14/19 2015	Cancelled
4/14/19 2010	TMI	PHL GDP	4/14/19 13...	4/14/19 2025	TFM INCL NKS1008 LXJ452 PDT...
4/14/19 2006	TMI	ORD STOP	4/14/19 18...	4/14/19 2006	Cancelled

Notification Panel
(new notifications have been acknowledged)

Figure 3.10. Notification Panel: Notifications acknowledged.

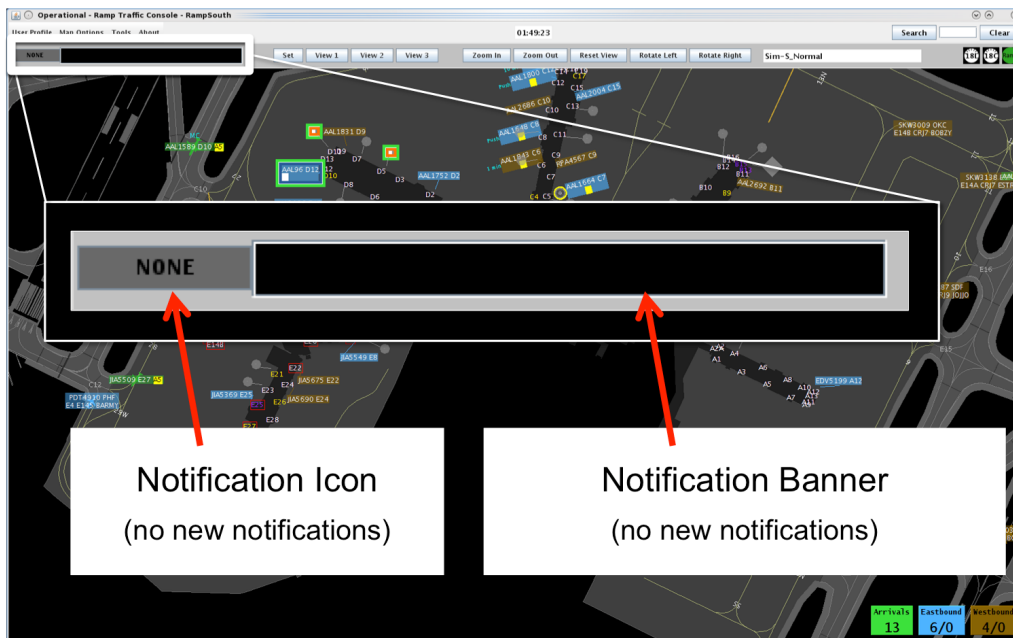


Figure 3.11. Notification Icon and Notification Banner: Notifications acknowledged.

3.1.6 Runway Utilization/Airport Configuration

The Runway Utilization field (Figure 3.12) shows the current runway utilization and airport configuration in abbreviated text format. 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 are entered into STBO in the ATCT.



Figure 3.12. Runway Utilization.

3.1.7 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.

3.1.7.1 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 3.13). 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 3.14). SMP status is updated by ATCT. See Section 8 for a full description of STBM.

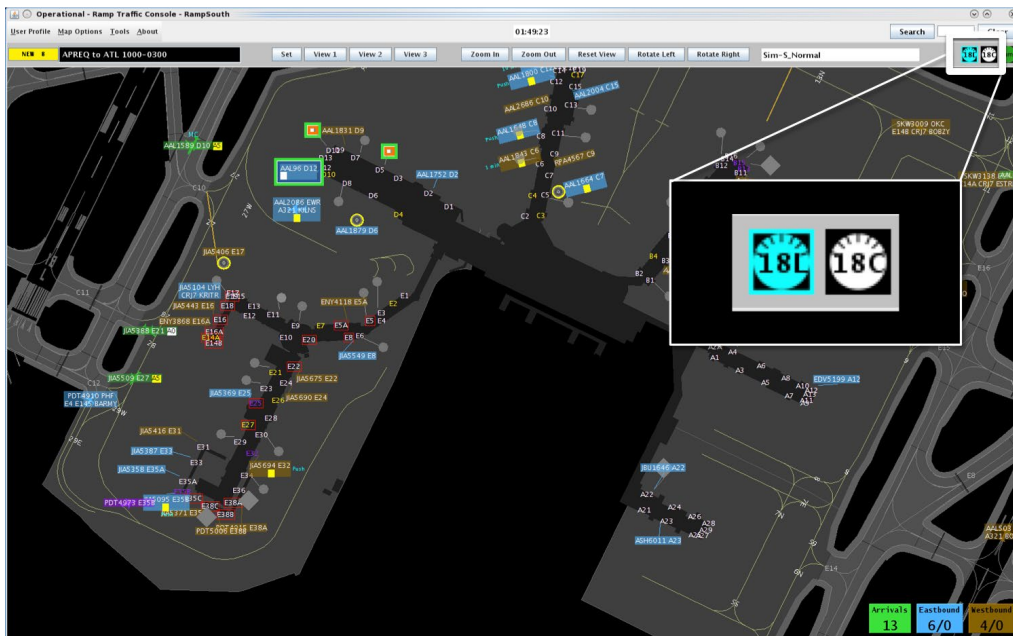


Figure 3.13. Runway SMP status icons.

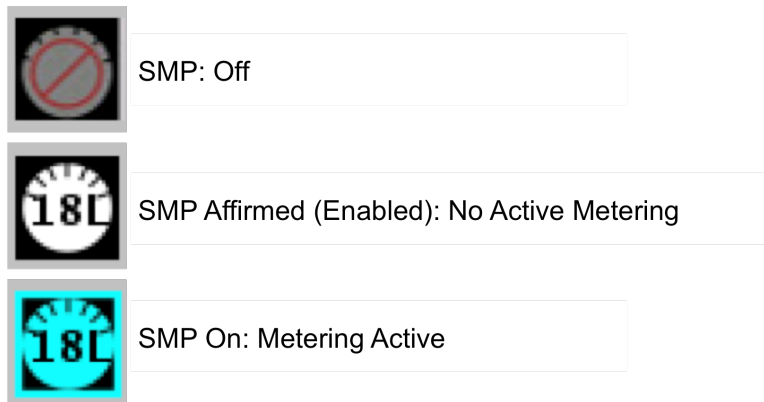


Figure 3.14. Runway Surface Metering Program (SMP) status icons.

At airports where STBM is not used, no SMP status icons are displayed in RTC.

3.1.7.2 Ramp Status Icon

The ramp status icon is displayed in the upper hand corner of the RTC window (Figure 3.15). The ramp status icon indicates the current ramp status: ramp open (green), ramp closure pending (yellow), or ramp closed (red) (Figure 3.16). Ramp status is updated by the Ramp Manager in RMTTC (see Section 9.5.1 for description).



Figure 3.15. Ramp status icon.

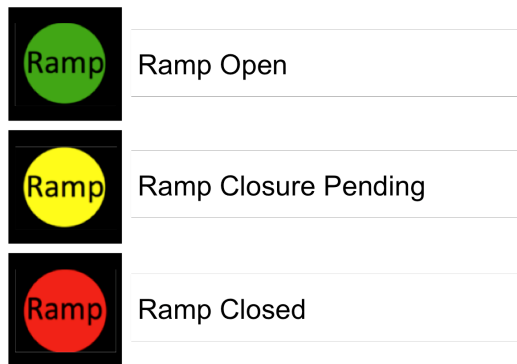


Figure 3.16. Ramp status icons.

3.2 Menu Bar

User profiles, map settings, and display options can be accessed through the Menu Bar (Figure 3.17).



Figure 3.17. Menu Bar.

3.2.1.1 User Profile

The “User Profile” menu allows the user to load/save user preferences and settings.

3.2.1.1.1 Load User Profile

Users can save/load user profiles to access customized view preferences and other RTC settings. The “User Profile” menu is located at the top left of the status bar. The “Load” button will access the list of saved profiles (Figure 3.18). Default user profiles have been updated to match airport-specific user preferences.

To load a user profile:

- Step 1:** Select “User Profile” from the Menu Bar .
- Step 2:** Select “Load” in the dropdown menu to open list of saved profiles.
- Step 3:** Select a user profile.
- Step 4:** Select the “Load” button.

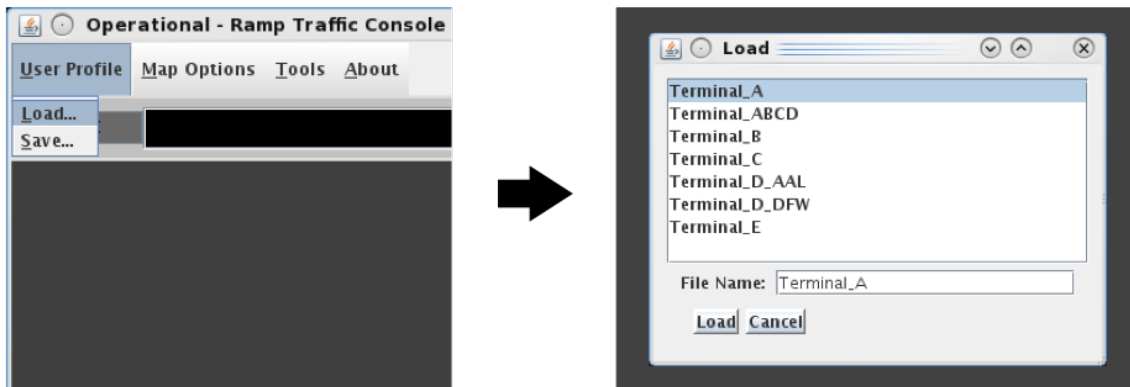


Figure 3.18. Load user profile.

3.2.1.1.2 Save User Profile

The “Save” option allows the user to save settings as a unique profile name, for example, “JohnDoe_RampSouth” (Figure 3.19). The saved user profile will then be available to “Load” from the User Profile Options.

To save your settings in a User Profile:

Step 1: Select “User Profile” from the Menu Bar.

Step 2: Select “Save” in the drop down menu to open the “Save” menu.

Step 3: Enter new profile name (e.g., “JohnDoe_RampSouth”)

Or, Select an existing profile to update it.

Step 4: Select “Save”

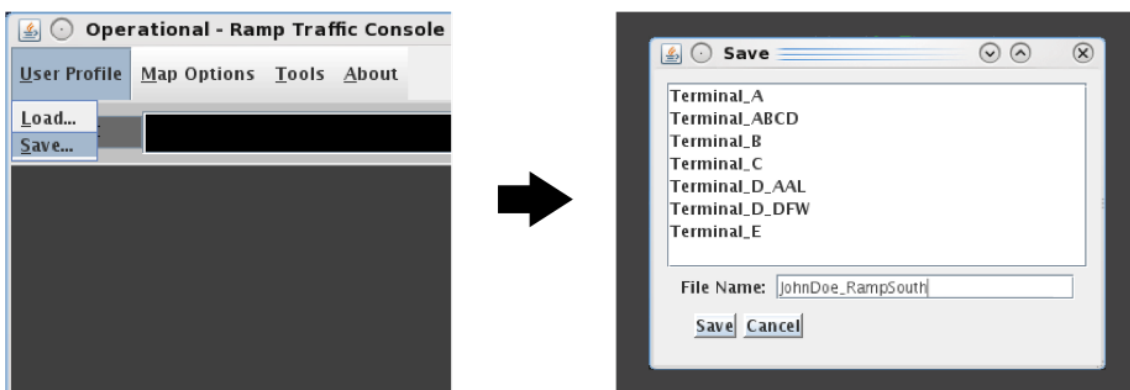


Figure 3.19. Save user profile.

3.2.1.2 Map Options

Settings available in the “Map Options” dropdown menu can be used to customize the RTC map display (Figure 3.20). An overview of each setting is shown in Table 1 with a full description in the following sub-sections. Not all options are applicable at all airports.

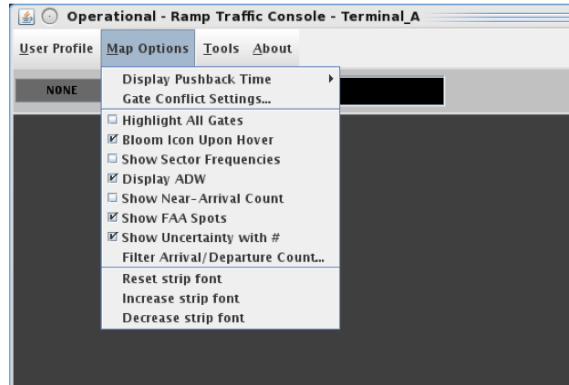


Figure 3.20. Example of the Map Options dropdown menu.

Table 1. Map Options Menu

Map Options Item	Description
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 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.
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.

3.2.1.2.1 Display Pushback Time

Use the “Display Pushback Time” option to select which time will be displayed on the departure flight strips (Figure 3.21 Select pushback time to display on flight strip (P-Time, EOBT, or TOBT).Figure 3.21):

- **P-Time:** the airline-published departure time, or Scheduled Off-Block Time (SOBT).
- **Earliest Off-Block Time (EOBT):** An updated departure time provided by the airline.
- **Target Off-Block Time (TOBT):** Calculated by Surface Time-Based Metering (STBM) (see Section 8).

The P-Time is the default pushback time displayed.

To choose which Pushback Time is displayed on the flight strips:

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Select “Display Pushback Time”.

Step 3: Select “P-Time”, “EOBT”, or “TOBT”.

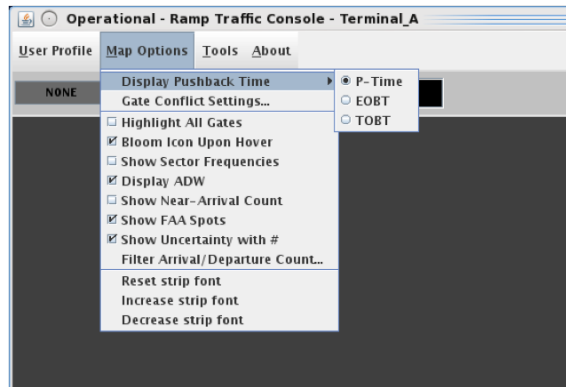


Figure 3.21 Select pushback time to display on flight strip (P-Time, EOBT, or TOBT).

3.2.1.2.2 Gate Conflict Settings

Select “Gate Conflict Settings” to set the number of minutes before an inbound arrival lands that a gate conflict should be shown on the map (Figure 3.22. Gate Conflict Settings: Arrival-time setting.) by a magenta flight icon and magenta gate number (see Section 4.1.4.7 for descriptions).

The default setting is 10 minutes. That is, a gate conflict will not show on the map until the inbound arrival is within 10 minutes of landing. Enter a different time, or enter zero (0) minutes so that gate conflicts are not shown until the arrival has landed.

Gate conflicts are also shown for gates blocked by a flight at an adjacent 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 shown. This only occurs at certain airports where there is limited spacing between gates.

To change the Gate Conflict arrival-time setting:

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Select “Gate Conflict Settings” from the dropdown menu.

Step 3: Use the up/down arrows or enter the number of minutes prior to landing for any gate conflicts to be displayed (Figure 3.22).

Step 4: Select “Apply”.



Figure 3.22. Gate Conflict Settings: Arrival-time setting.

3.2.1.2.3 Metering Candidate Settings (Leveraging Surface Metering)

Select “Metering Candidate Settings” to set the threshold, in minutes, at which a flight is considered a candidate to leverage surface metering (Figure 3.23). The default setting is 10 minutes.

An example of leveraging surface metering may be leaving the doors of the aircraft open a few minutes longer to accommodate late passengers, knowing the flight will be subject to a gate hold of at least “X” minutes, depending on what the time parameter has been set to. This time parameter, i.e. the difference between Target Off-Block Time (TOBT) and Undelayed Off-Block Time (UOBT), represents the flight’s recommended gate hold. Flights with advised gate hold times higher than the set threshold are candidates to leverage surface metering. Only flights whose gate hold advisory is *already* frozen (indicated by black text with a cyan background) are considered.

When a flight meets this criterion, that is when its recommended gate hold time (TOBT-UOBT) is higher than the set threshold (e.g., 10 min), the gate advisory is shown in black text with a *light green* background (Figure 3.24).

The light green background distinguishes a flight with a frozen gate hold advisory (black text with a *cyan* background) from a flight with a frozen gate hold advisory that is *also* a candidate for leveraging surface metering (e.g., a hold over 10 minutes).

To change the Metering Candidate Settings:

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Select “Metering Candidate Settings...” from the dropdown menu.

Step 3: Use the up/down arrows or enter the time parameter, i.e., the difference between the TOBT and UOBT that is required for the surface metering advisory to show up (Figure 3.23).

Step 4: Select “Apply”.

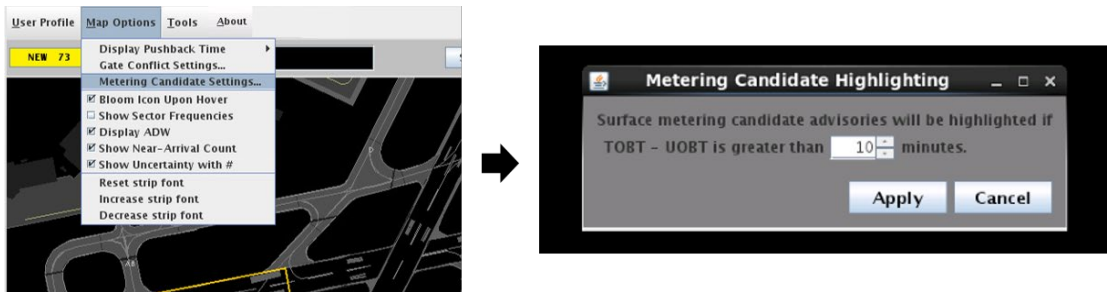


Figure 3.23. Metering Candidate Settings: Metering Candidate Highlighting setting.



Figure 3.24. Metering Candidate Settings: Surface Metering Candidate highlight example.

3.2.1.2.4 Highlight All Gates

By default, gates owned by a ramp sector/terminal are displayed in white, while gates under the ownership of another sector/terminal are displayed in gray. Use “Highlight All Gates” to display all gate numbers at the airport in white, whether under ownership of another sector/terminal or not (Figure 3.25).

When “Highlight All Gates” is selected, all gate numbers are white (none are grayed out) regardless of ownership (Figure 3.26).

To highlight all gate numbers:

Step 1: Select “Map Options” from the Menu Bar (Figure 3.25).

Step 2: Check “Highlight All Gates” to display all gate numbers at the airport, whether under ownership of another ramp sector/terminal or not, in **white** (Figure 3.26, right).

Alternatively: Uncheck “Highlight All Gates” to highlight in white *only* those gates controlled by the individual Ramp Controller.

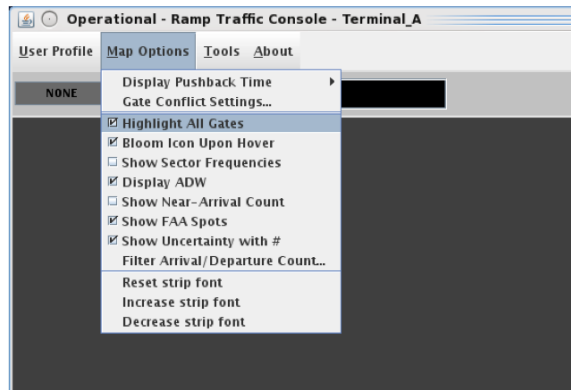
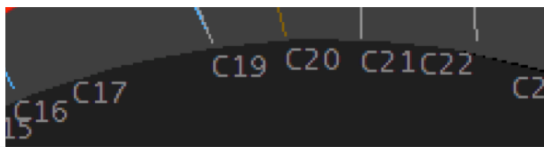
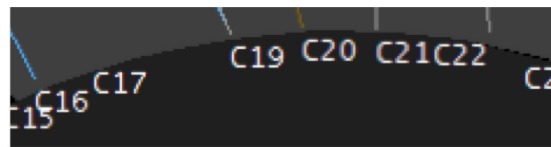


Figure 3.25. Highlight All Gates.



When “Highlight All Gates” is *unselected*, gates under the ownership of another sector/terminal are grey.



When “Highlight All Gates” is *selected*, gates under the ownership of another sector/terminal are white.

Figure 3.26. Highlight All Gates: Unselected/selected.

3.2.1.2.5 Bloom Icon Upon Hover

The “Bloom Icon Upon Hover” map option enables “bloom” of a minimized flight strip/icon (Figure 3.27). Use the mouse to hover over a flight strip/icon to enlarge, or “bloom”, it. Blooming increases the font size to improve readability. When a flight strip or icon is selected by clicking on it, it remains enlarged (bloomed) until it is deselected by clicking anywhere else on the map. If preferred, this bloom can be turned off.

To enable Bloom Icon Upon Hover:

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Check “Bloom Icon Upon Hover” to enable “bloom” of flight strips/icons (see example in Figure 3.28).

Alternatively: Uncheck to disable “bloom” of flight strips/icons.

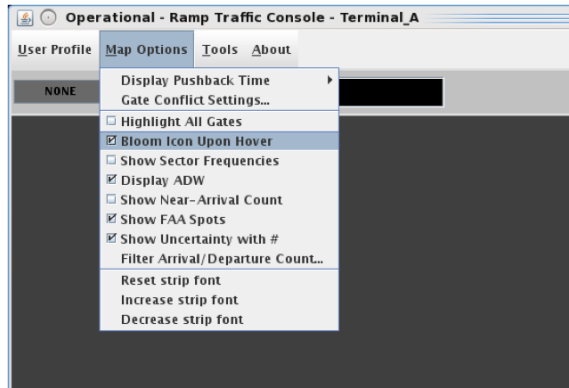


Figure 3.27. Bloom Icon Upon Hover.

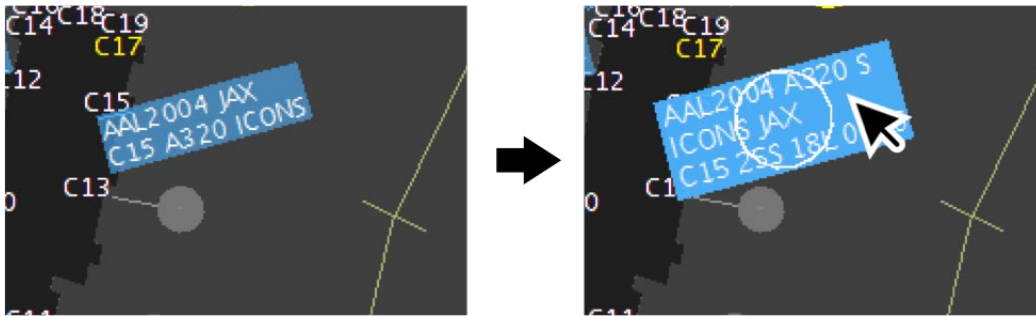


Figure 3.28. At higher zoom levels, hover mouse over a minimized flight strip (left). If “Bloom Icon” is enabled, the highlighted flight strip will expand (bloom) to full size (right).

3.2.1.2.6 Show Sector Frequencies

The radio frequency for each ramp sector/terminal can be displayed on the RTC map near each sector/terminal. This may not be applicable at all airports.

To display Ramp Sector/Terminal Frequencies on map (where applicable):

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Check “Show Sector Frequencies” to display the ramp sector/terminal frequencies on the map (see example in Figure 3.30).

Alternatively: Uncheck “Show Sector Frequencies” (Figure 3.29) to hide the frequencies.

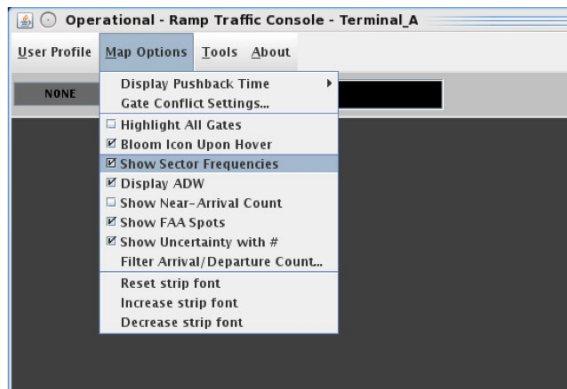


Figure 3.29. Show Sector Frequencies.



Figure 3.30. Example of sector/terminal radio frequencies displayed on the RTC map.

3.2.1.2.7 Display Arrival-Departure Window (ADW)

At airports where an ADW is used for converging runway operations, the ADW can be displayed on the map (Figure 3.32). This may not be applicable to all airports.

To display an ADW (where applicable):

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Check “Display ADW” to display the ADW for converging operations (see example in Figure 3.31).

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

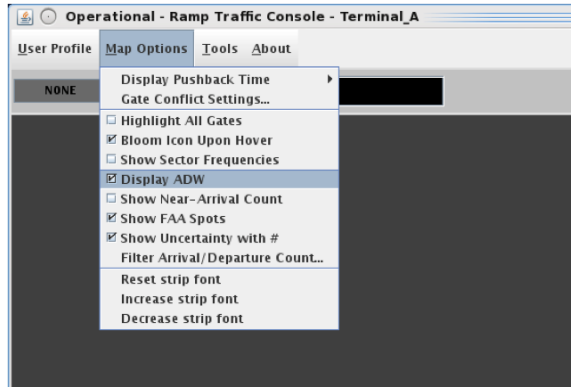


Figure 3.31. Display ADW.

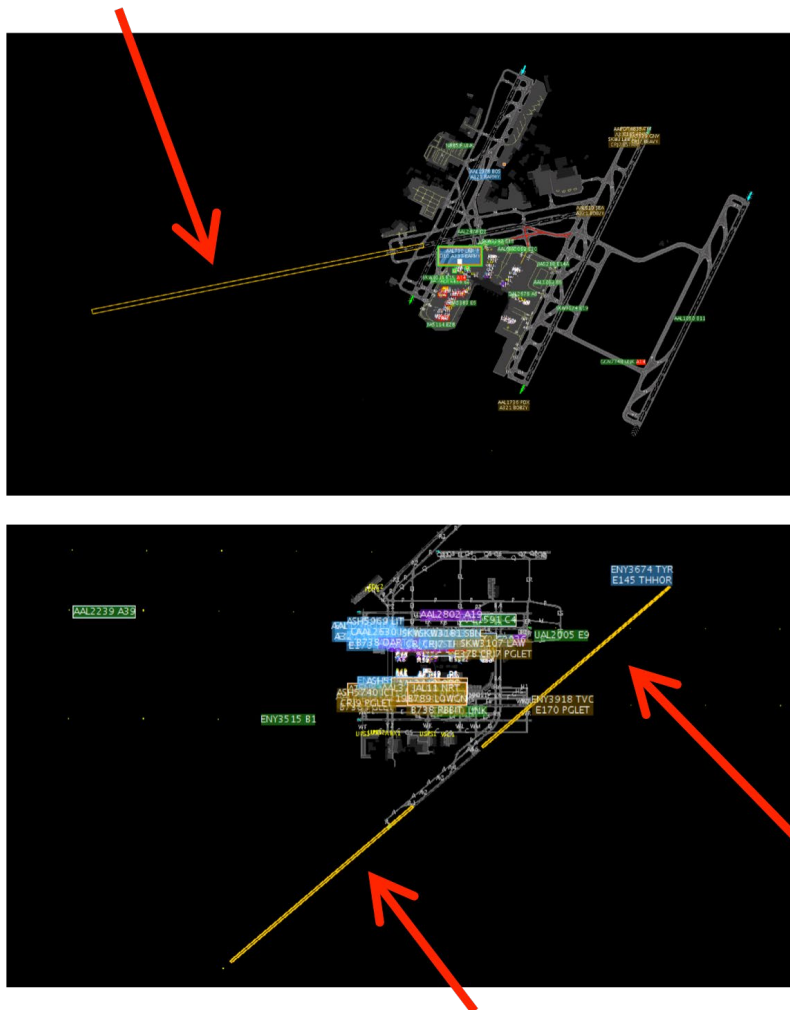


Figure 3.32. Arrival-Departure Window (ADW) display examples.

3.2.1.2.8 Show Near-Arrival Count

Use “Show Near-Arrival Count” to display the number of arrivals that are due to touch down within the next 10 minutes (Figure 3.33). It does not include arrivals already on the surface. See Section 3.3.1 for a full explanation of the Arrival- and Departure-Count windows.

To display the Arrivals-Count window:

Step 1: Select “Map Options” from the Menu Bar.

Step 2: Check “Show Near-Arrival Count” to display the count of all arrivals expected in the next 10 minutes.

Note: A green Arrival-Count window will be displayed in the lower right corner of the RTC map, to the left of the Eastbound- and Westbound-Count windows (Figure 3.33).

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



Figure 3.33. Show Near-Arrival count (see Section 3.3.1 for full explanation of these windows).

3.2.1.2.9 Show FAA Spots

Check “Show FAA Spots” to display spot numbers (i.e., transition points between ramp and AMA) on the RTC map (Figure 3.34). This may not be applicable to all airports.

To show/hide the display of FAA Spots on the RTC map (where applicable):

Step 1: Select “Map Options”.

Step 2: Check “Show FAA Spots” to display spot numbers on the map (see example in Figure 3.35).

Alternatively: Uncheck “Show FAA Spots” to remove spot numbers from the map.

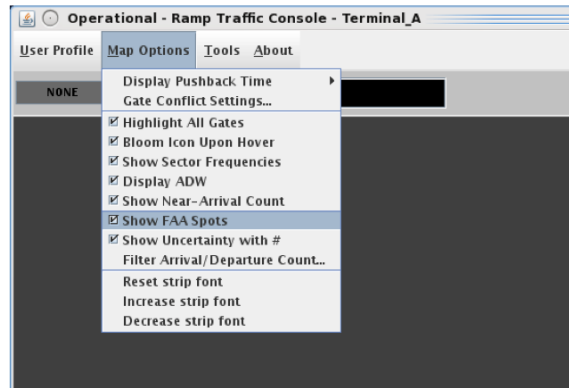


Figure 3.34. Show/hide FAA spots.

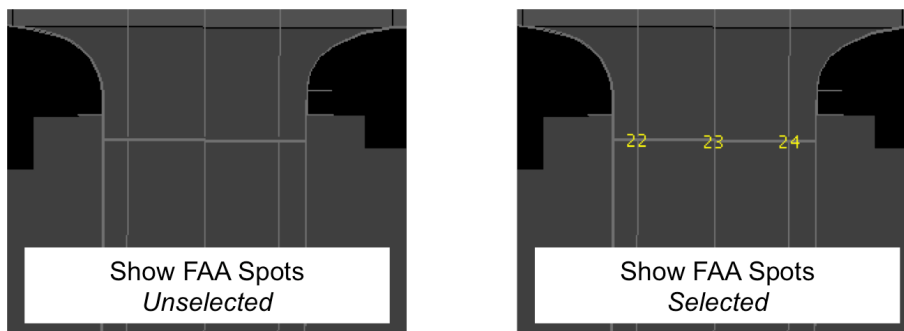


Figure 3.35. Show FAA Spots unselected (left) and selected (right).

3.2.1.2.10 Show Uncertainty with

“Show Uncertainty with #” is applicable only to airports using Surface Time-Based Metering (STBM) and impacts how gate hold advisories are displayed when a flight is subject to Surface Metering.

When the SMP is active, and a flight is subject to Surface Metering, the ATD-2 Scheduler calculates a TOBT and TMAF for that flight based on the runway schedule. A gate hold advisory, counting down to the TOBT, is displayed next to the flight strip.

Two types of flights are categorized by the ATD-2 Scheduler as “Uncertain”:

- Flights that do not have an EOBT, and
- Flights whose EOBT is 8 minutes or more away from the current time *and* whose pilots have not yet called in ready for pushback.

All other flights are categorized as belonging to the “Planning” group.

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

By using the “Show Uncertainty with #” option under Map Options, users have the option to display gate hold advisories for “Uncertain” flights in two different ways:

- 1) If a Ramp Controller/Manager prefers to see a “#” rather than gate advisories that may change (“jump”) each time the TOBT is adjusted, they can select “Show Uncertainty with #” (Figure 3.36).
- 2) If a Ramp Controller/Manager prefers to see a gate hold time that may change, in minute increments, they can deselect the “Show Uncertainty with #” option (Figure 3.37).

To Show Uncertainty with “#” :

Step 1: Select “Map Options” from Menu Bar.

Step 2: Check “Show Uncertainty with #” to view gate hold advisories for flights in the “Uncertain” group as a “#” (Figure 3.36).

Alternatively: Uncheck “Show Uncertainty with #” to view gate hold advisories for flights in the “Uncertain” group in minute increments (e.g., “17 min” in Figure 3.36). Note, however, that these gate hold advisories can change, or “jump”, if the TOBT changes.

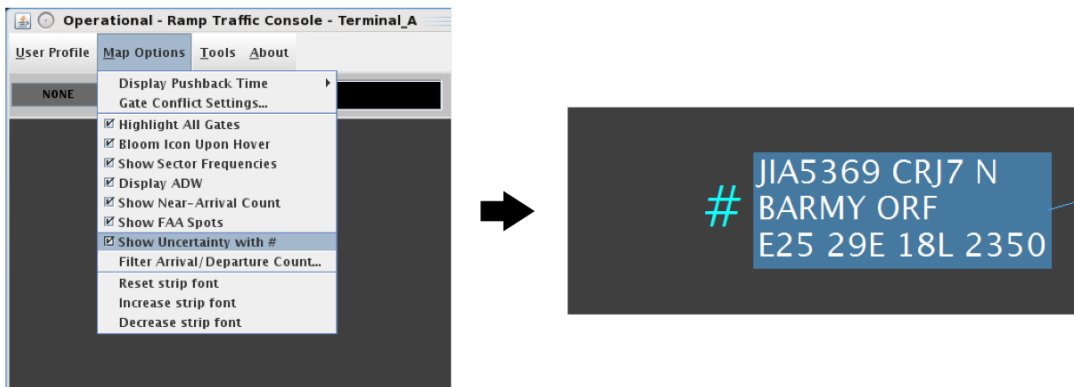


Figure 3.36. When “Show Uncertainty with #” is selected, gate hold advisories for flights in the “Uncertain” group are displayed as a “#”.

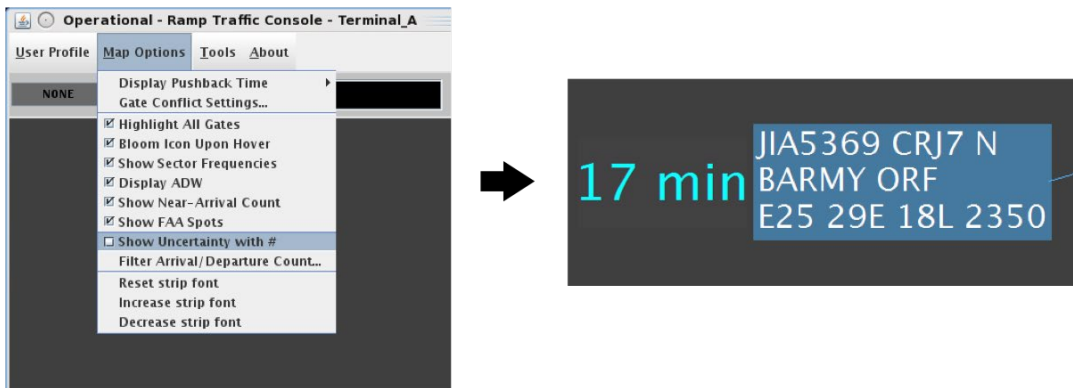


Figure 3.37. When “Show Uncertainty with #” is unselected, gate hold advisories for flights in the “Uncertain” planning group are displayed as a time (e.g., 17 min). This time may change.

See Section 8 for a complete description of how gate advisories are displayed for flights subject to Surface Metering.

3.2.1.2.11 Filter Arrival/Departure Count

Use the “Filter Arrival/Departure Count” menu to filter the arrival/departure count shown in the Arrival- and Departure-Count windows (Figure 3.38; described in Section 3.3.1). 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.
- Step 2:** Select “Filter Arrival/Departure Count” from the dropdown menu.
- Step 3:** In the Flight *Departure*-Count panel, select ramp terminals/sectors (as applicable at a given airport) to include departure flights from only those terminals/sectors Figure 3.38).
- Step 4:** In the Flight *Arrival*-Count panel, select ramp terminals/sectors (as applicable at a given airport) to include arrival flights to only those terminals/sectors Figure 3.38).
- Step 5:** Select “Apply”. The Arrival- and Departure-count boxes will update to reflect the checked/unchecked terminal/sector filters.

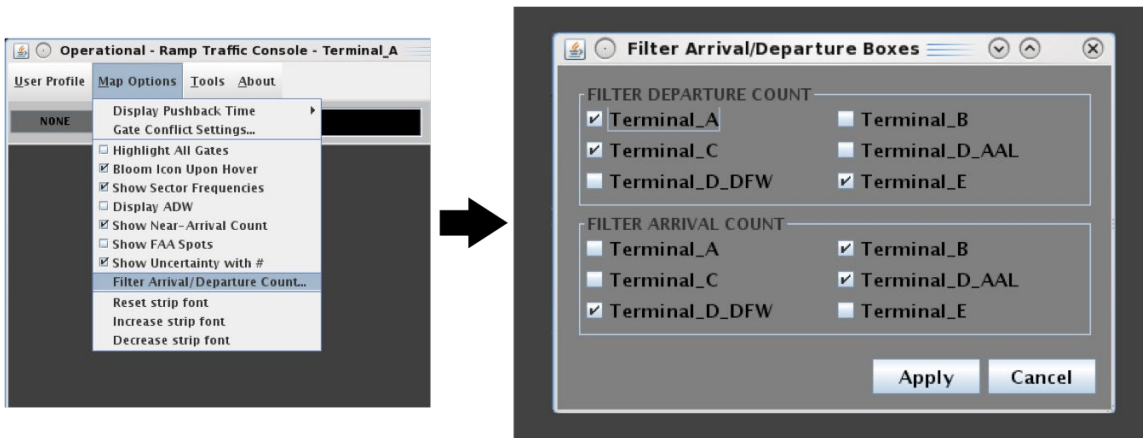


Figure 3.38. Filter Arrival/Departure Count. Example Filter Arrival/Departure Count selection menu (menu is airport-specific). Select ramp sectors/terminals by which to filter the arrival and departure counts (see Section 3.3.1).

3.2.1.2.12 Flight Strip Font Size

The default value of the flight strip font size is set at an optimal size for the display. However, the size of the text can be changed. The Reset, Increase, and Decrease strip font map options allow the font size to be adjusted (Figure 3.39).

To change the Flight Strip font size:

- Step 1:** Select “Map Options” from the Menu Bar.
- Step 2:** Select “Reset strip font” to reset font size to the default.
- Or:** Select “Increase strip font” to increase the font size.
- Or:** Select “Decrease strip font” to decrease the font size.

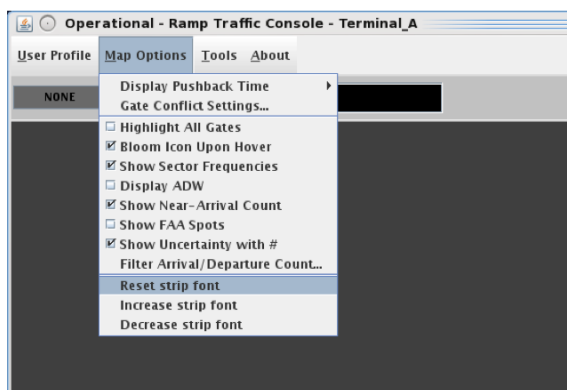


Figure 3.39. Reset, increase, and decrease flight strip font size.

3.2.1.3 Tools

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

3.2.1.3.1 Refresh

When “Refresh” is selected, all targets are removed from the display and re-created based on the latest flight and aircraft data in the system.

To Refresh the Map:

Step 1: Select “Tools” from the Menu Bar.

Step 2: Select “Refresh” (Figure 3.40).

Note: *When the refresh is complete, the message, “Data refresh is complete” is displayed (Figure 3.40).*

Step 3: Select “OK” to close the “Refresh Complete” window.

Alternatively: Click the “X” in the upper right corner to close the “Refresh Complete” window.



Figure 3.40. Refresh map data menu (left). Refresh complete popup message (right).

3.2.1.4 About

Select “About” from the Menu Bar and again from the dropdown menu to view the software version number.

To view RTC software version number:

- Step 1:* Select “About” from the Menu Bar.
- Step 2:* Select “About” from the dropdown menu to view the software version number (Figure 3.41).
- Step 3:* Select “OK” to close the “About” window.
- Alternatively:* Click the “X” in the upper right corner to close the “About” window.



Figure 3.41. About menu (left). RTC software version number (right).

3.3 Map Display

The RTC map display includes information about arrival and departure flight counts, parking gate status, Surface Metering Program (SMP) status, taxiway closures, and runway configuration.

3.3.1 Arrival and Departure Counts

Arrival- and Departure-Count windows are displayed in the lower right corner of the map (Figure 3.42).

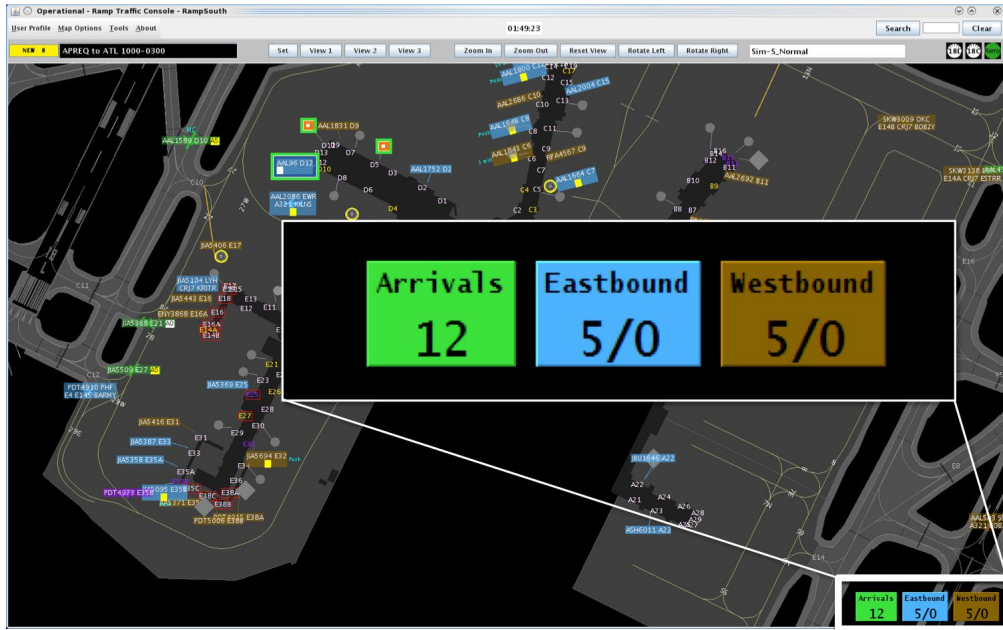


Figure 3.42. Arrival- and Departure-Count Windows.

3.3.1.1 Arrivals

See Section 3.2.1.2.8 to display the green Arrival-Count window if it is not already shown. The arrival count represents the number of flights scheduled to touchdown in the next 10 minutes (e.g., “12” in Figure 3.43). Arrival flights are removed from the count upon touchdown. The arrival flights included in this count can be viewed in a list (Figure 3.43).

To display the Arrival List:

Step 1: Click once on the green Arrival-Count window to open the Arrival List (Figure 3.43).

Note: *The call sign, parking gate, runway, and estimated touchdown time (ON time) are listed for each arrival flight expected to touchdown in the next 10 minutes.*

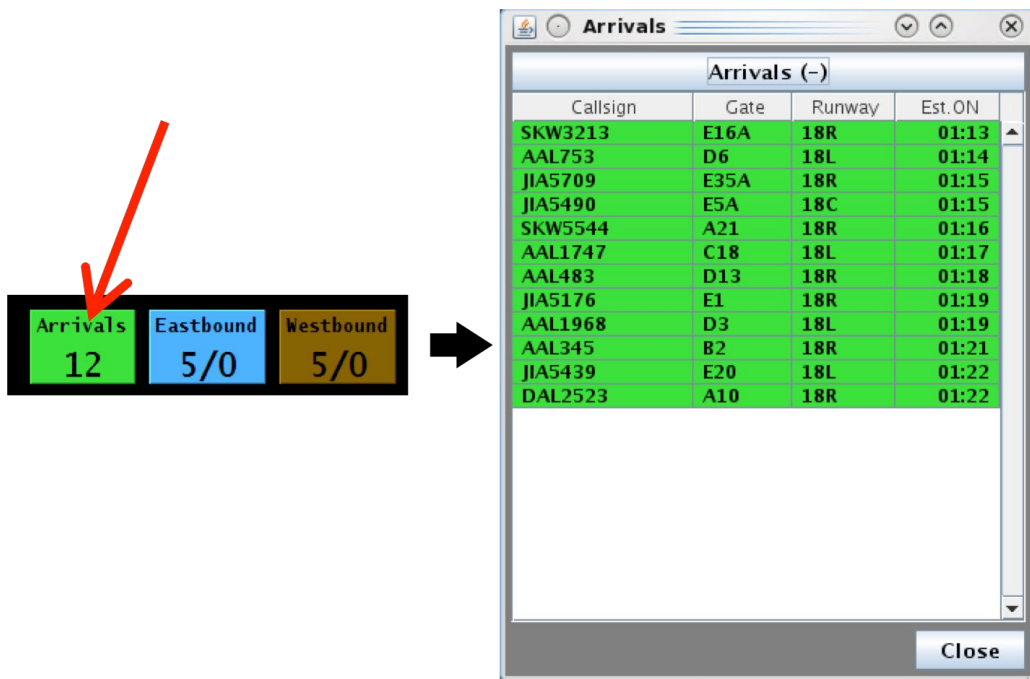


Figure 3.43. Arrival List.

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

Step 1: Click once on any flight in the Arrival List.

Note: The selected row will be highlighted in yellow and a tether will be drawn from the arrival flight to its assigned parking gate (Figure 3.44). Zoom map out if the arrival flight is not visible in the current window.

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

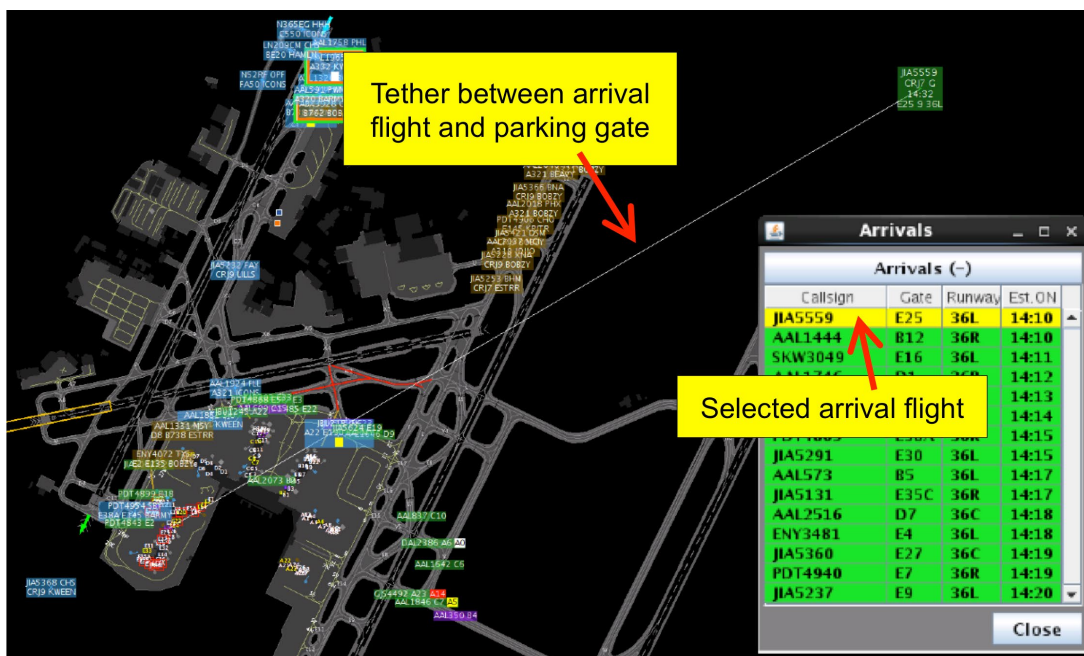


Figure 3.44. Tether between an arrival flight (e.g., JIA5550 in this example) and its parking gate.

To close the Arrival List:

Step 1: Select the “Close” button in the lower right corner.

Or: Click on the “X” in the upper right corner of the window.

Or: Click once on the green Arrival-Count Window.

3.3.1.2 Departures

The *numerator* in the departure count represents the number of departure flights that have already pushed back from their gate (e.g., “5” in Figure 3.45). The *denominator* reflects the number of departure flights that have been placed on hold at their gate (e.g., “0” in Figure 3.45). The departure count is separated into flights taking-off on the Eastbound runway(s) (blue) and those taking-off on the Westbound runway(s) (brown). Departure flights are removed from the count once they reach the runway. A list of departure flights included in these counts can be displayed (Figure 3.45). The following descriptions show Eastbound (blue) runway(s) flights, but also apply to the Westbound runway(s) (brown) flights.

To display the [blue, Eastbound runway(s)] Departure List:

Step 1: Click once on the [blue, Eastbound runway(s)] Departure-Count window (Figure 3.45).

Note: *The sequence number, call sign, current duration of taxi time (clock starts at pushback), and destination are shown in the Departure List.*

Flights that have pushed back from their gate are displayed in black text with time-since-pushback (e.g., the first five departure flights have pushed back from their gate in Figure 3.45). Flights expected to pushback soon are displayed in gray text (e.g., flights 6–15 in Figure 3.45).

[Eastbound Runway(s)] Departure List

Departure-Count Window

Numerator / Denominator

Seq. #	Callsign	Taxi Time	Dest.
1	AAL1879	14:10	MCO
2	JIA5358	9:22	MYR
3	JIA5095	9:38	IAD
4	AAL2022	10:25	TPA
5	AAL1664	12:59	BWI
6	AAL1942		LGA
7	AAL1648		PHL
8	JIA5387		MLB
9	AAL96		MIA
10	AAL1800		BWI
11	AAL2004		JAX
12	ASH6011		IAD
13	JIA5617		GSO
14	JBU1646		BOS
15	AAL1752		FLL

Numerator (5)
Flights that have pushed back from their gate.
(shown in black)

Flights expected to push back soon.
(shown in grey)

Figure 3.45. Departure List (Eastbound runway(s)).

Departure flights that have been placed on hold at their gate (see Section 4.1.1.2.7 to place a flight on hold) are shown in the bottom half of the Departure List with their associated hold time (see hold example in Figure 3.46). The denominator in the Departure-Count window represents the number of departure flights on hold (e.g., “1” in Figure 3.46).

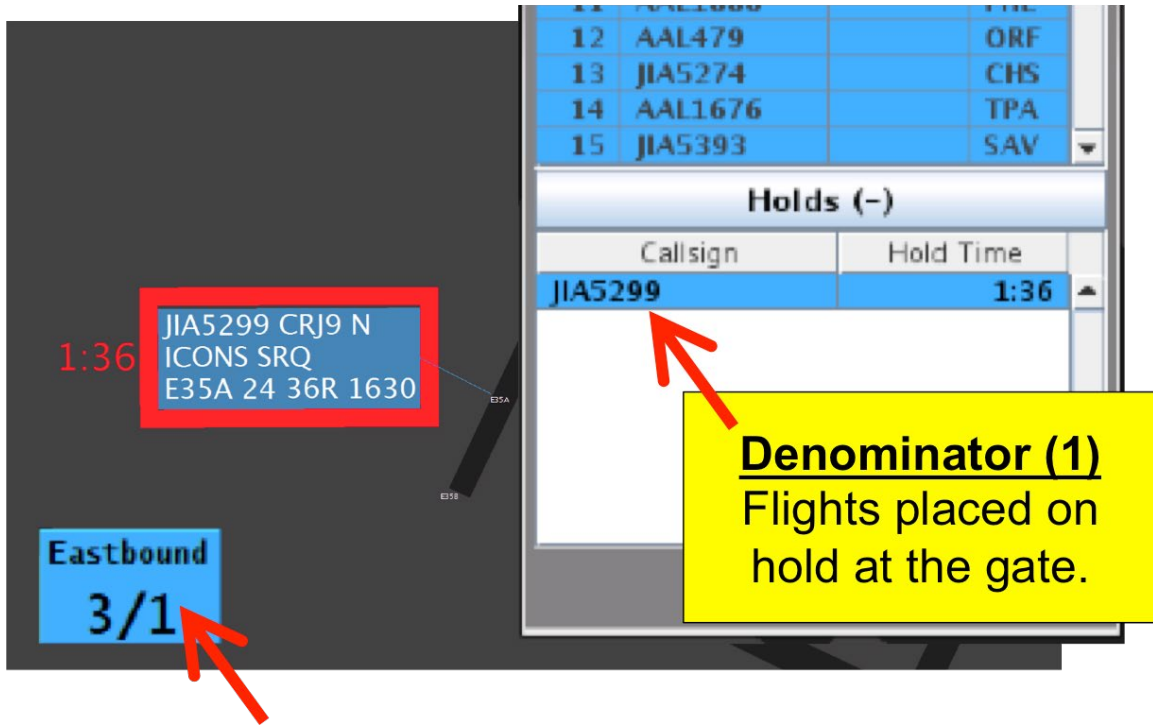


Figure 3.46. Departure List (Eastbound runway(s)): Flight placed on Hold at the gate (e.g., JIA5299) with current hold time (e.g., 1:36).

To highlight a departure flight:

Step 1: Click once on any flight in the Departure List (Figure 3.47).

Note: The selected row will be highlighted in yellow and the departure flight strip/data tag will be enlarged. Zoom map out if the departure flight is not visible in the current window.

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

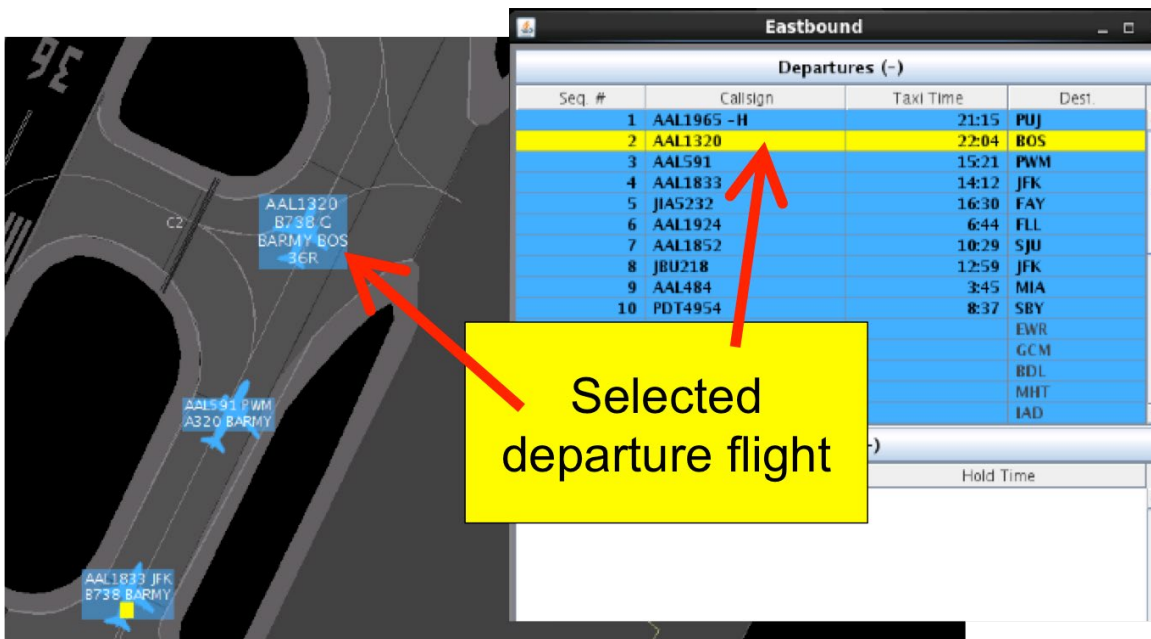


Figure 3.47. Data tag of selected departure flight highlighted (enlarged) (e.g., AAL1320 in this example).

To close the Departure List:

Step 1: Select the “Close” button in the lower right corner.

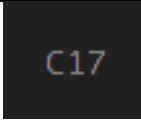
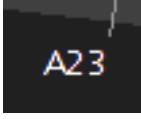




Or: Click on the “X” in the upper right corner of the window.

Or: Click once on the [blue, Eastbound runway(s)] Departure-Count window.

3.3.2 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. Gate Number Color Coding

Gate Number	Example	Description
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.
Solid white box, red text		Emergency (general or medical) has been designated for the flight tethered to that gate.
Red “X”		Gate closed (available in RMTC only).

3.3.3 Surface Metering Program (SMP) “Off” Message

When Surface Metering is turned off at a departure runway, a message (watermark) is displayed in the middle of the RTC map to alert the Ramp Controller that metering advisories will no longer be shown for a particular runway (Figure 3.48). No action is required of the user.

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

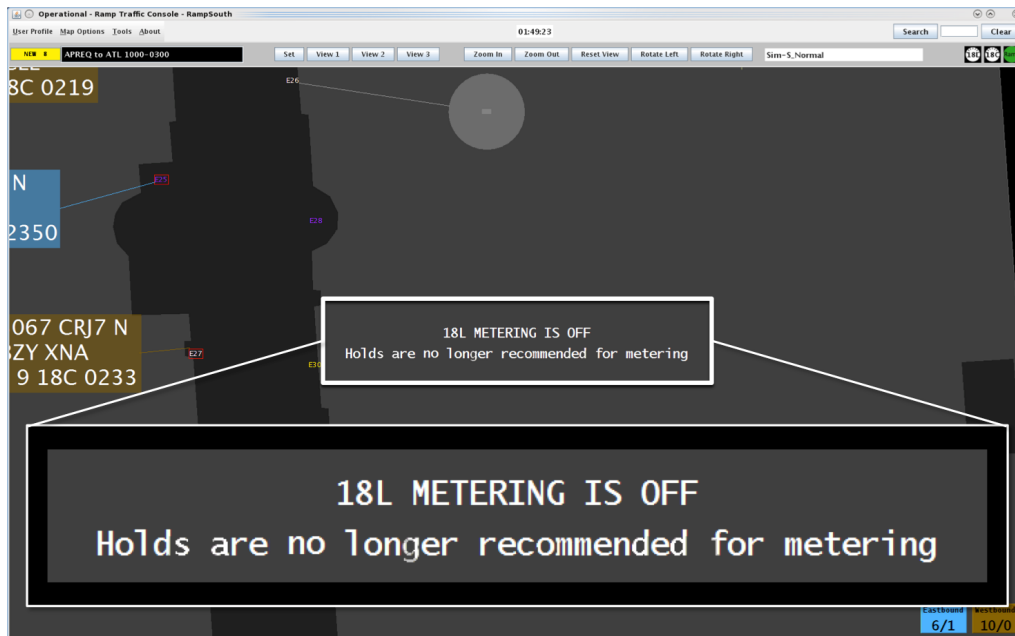


Figure 3.48. Surface Metering Program (SMP) Off Message

3.3.4 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 3.49).

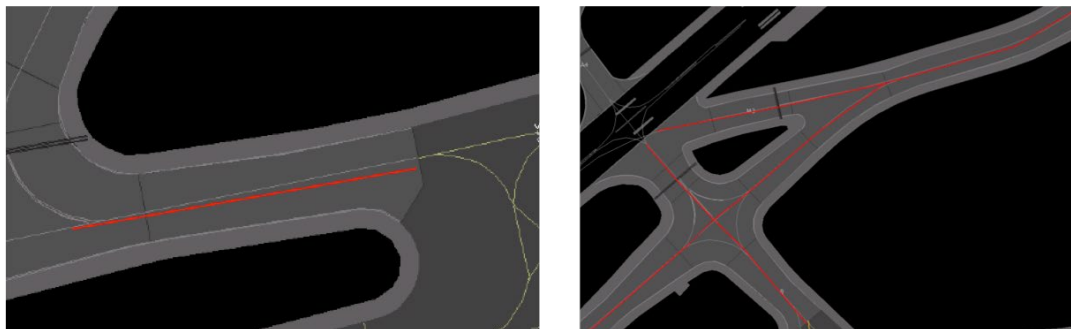


Figure 3.49. Taxiway closure: Red line denotes a closed taxiway.

3.3.5 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 3.50).



Figure 3.50. Runway closure: Closed runways are shown in red in a white “X” at each end.

3.3.6 Runway Configuration

Arrows are displayed on the map to indicate arrival and departure runways (Figure 3.50). Arrows are shown automatically based on airport configuration and runway utilization.

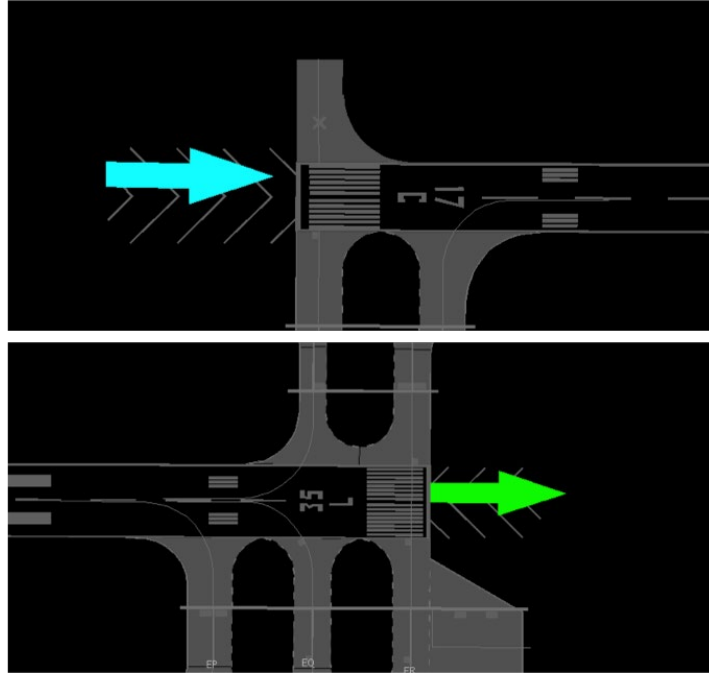


Figure 3.51. Runway configuration arrows: Arrival shown in cyan (top) and departure shown in green (bottom).

4 Flight Strips and Icons

Flights are depicted on the RTC map using digital flight strips and icons (Figure 4.1).

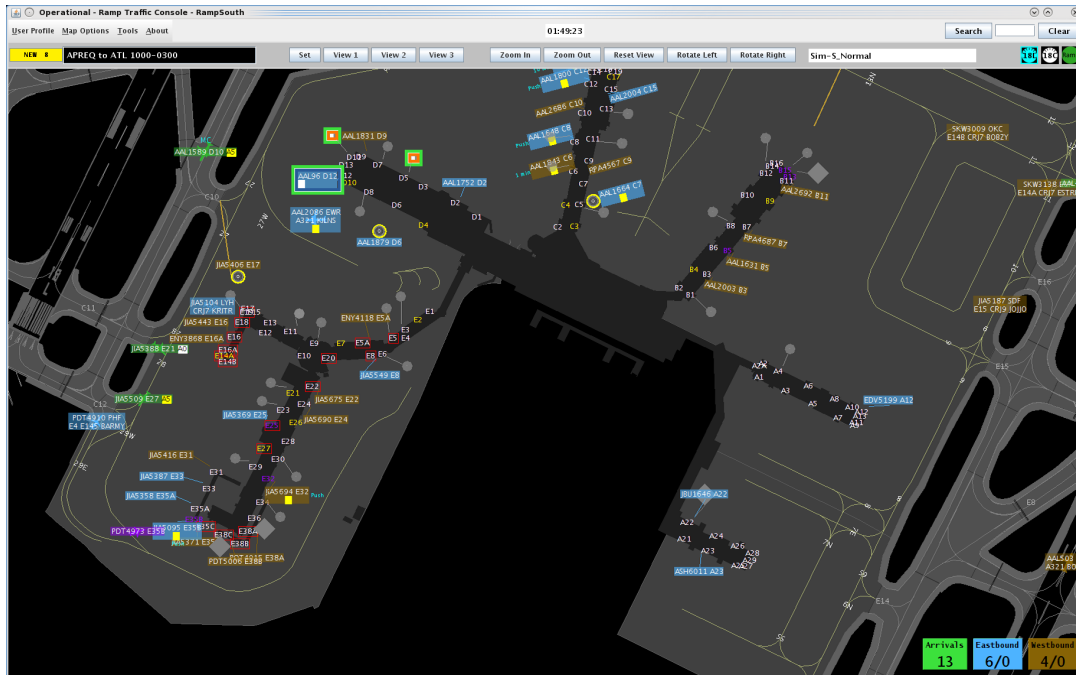




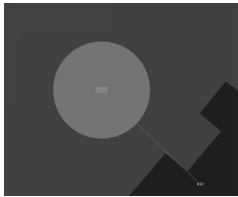

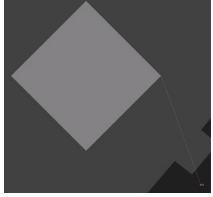



Figure 4.1. RTC map with flight strips and icons representing departure and arrival flights.

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). Hollow Icon (left): No track data. Solid

	 	Icon (right): With track data.
Arrival State	Flight Strip/Icon Display	Description
During taxi-in	 	Flight icon and data tag (green). Hollow Icon (left): No track data. Solid Icon (right): 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).

4.1 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.

4.1.1 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.

4.1.1.1 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 4.2).

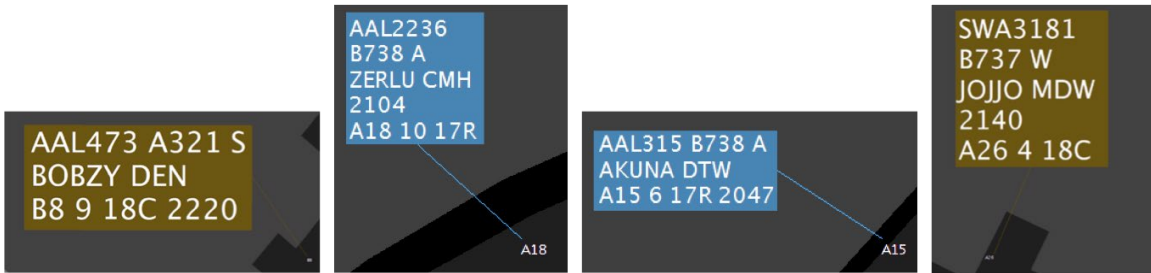


Figure 4.2. Examples of flight strips while a departure flight is parked at the gate.

As described in Figure 4.3, while a departure flight is parked at the gate, flight and schedule information are displayed on the flight strip.

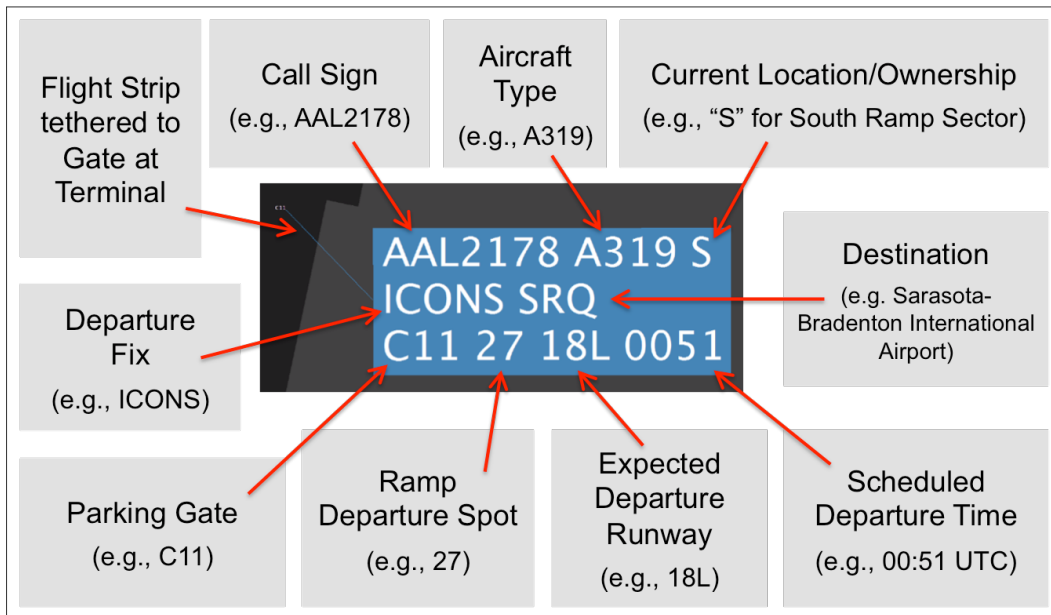


Figure 4.3. Flight and aircraft information on the digital flight strip while parked at the gate.

4.1.1.1.1 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 flight strip or click once on 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 4.4).*

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

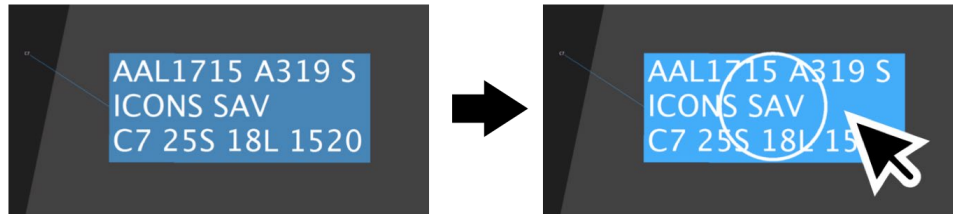


Figure 4.4. Hover over flight strip or click once to select it. Flight strip will be highlighted and a white circle will be shown in the center of the flight strip.

4.1.1.1.2 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 flight strip or click once on 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.*

4.1.1.1.3 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 flight strip or click once on 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.*

4.1.1.2 Right-Click Menu Options

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

4.1.1.2.1 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 flight strip or click once on 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 4.5). The flight strip is no longer tethered to its gate.

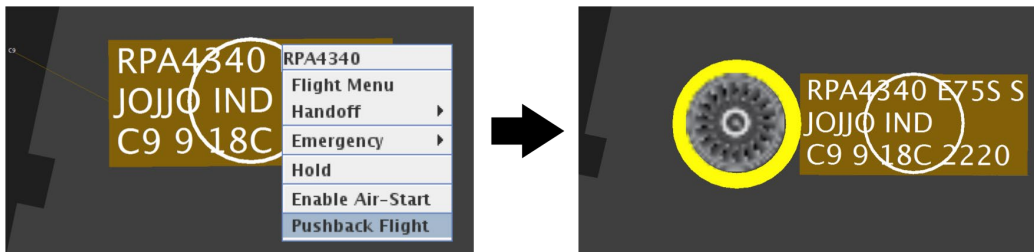


Figure 4.5. Right-click menu with "Pushback Flight" selected (left). Flight strip with attached engine icon surrounded by a yellow circle is in the pushback/spool-up state (right).

4.1.1.2.2 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 4.6). 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 flight strip or click once on 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 4.6 right).

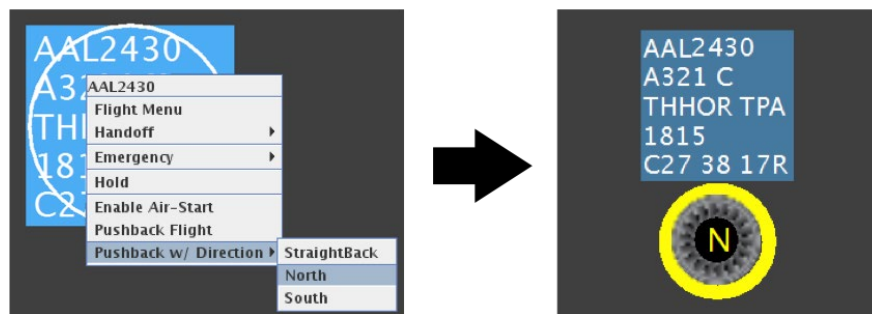


Figure 4.6. Right-click menu with “Pushback Flight w/ Direction” and “North” selected (left). In the pushback/spool-up state the attached engine icon displays an “N” to indicate push tail North (right).

4.1.1.2.2.1 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 4.7).

To undo Pushback:

Step 1: Hover mouse over flight strip or click once on 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 4.7).

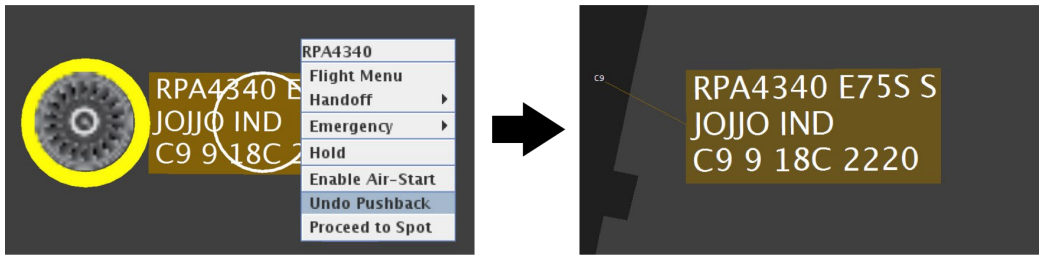


Figure 4.7. Right-click menu with “Undo Pushback” selected (left). The flight returns to a flight strip tethered to the gate (right).

4.1.1.2.3 Flight Menu

The Flight Menu can be accessed through the right-click menu (Figure 4.8). See Section 7 for a description of the Flight Menu.

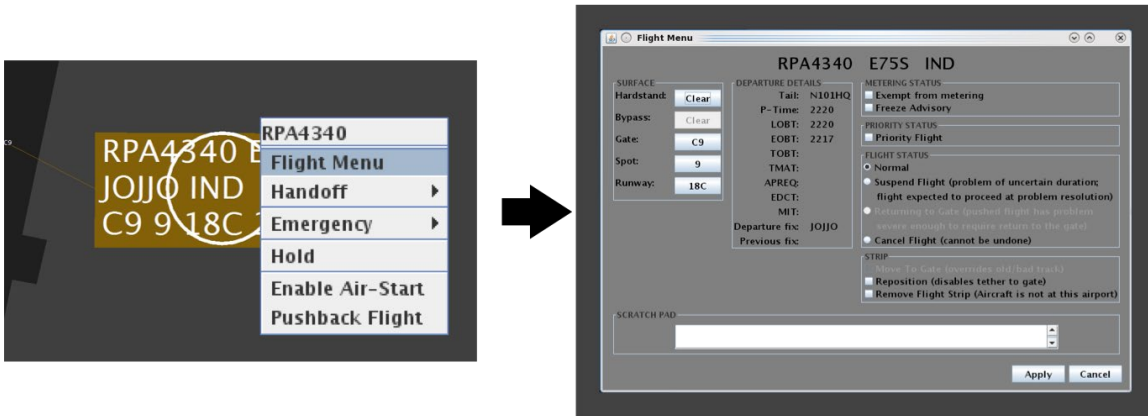


Figure 4.8. Select “Flight Menu” from the right-click menu (left) to access the Flight Menu (right).

4.1.1.2.4 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 7.1.2.)

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 flight strip or click once on 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 4.9). 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 4.8).

Step 5: Upon selecting the new spot number, a message will be displayed on the map to confirm the change (see Figure 4.10). 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.

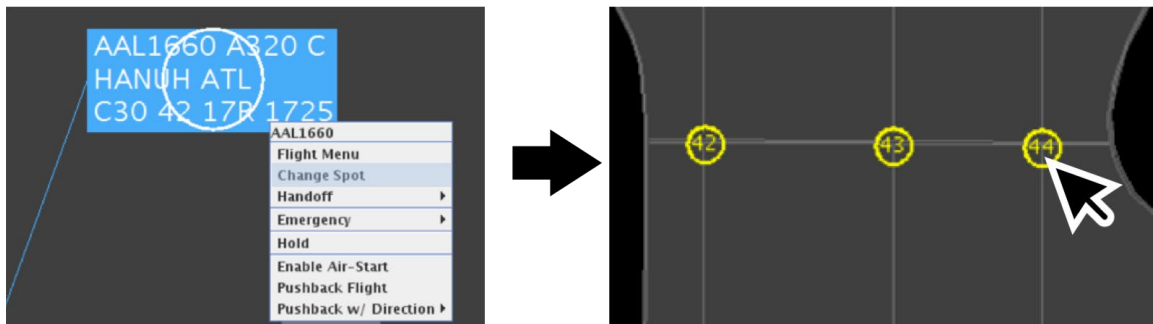


Figure 4.9. Right-click menu with “Change Spot” selected (left). A yellow circle is displayed around each spot number (right).

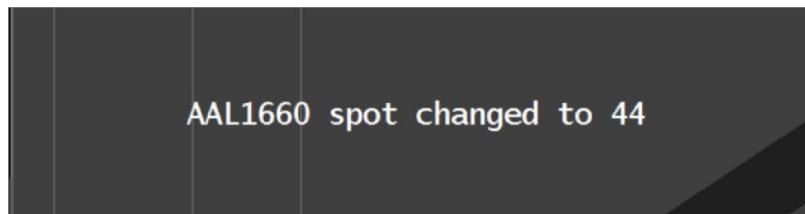


Figure 4.10. A message confirming the new spot assignment is displayed on the map for 2 seconds.

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 7.1.2) for a description.

4.1.1.2.5 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 4.11.

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

Step 1: Hover mouse over flight strip or click once on 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.

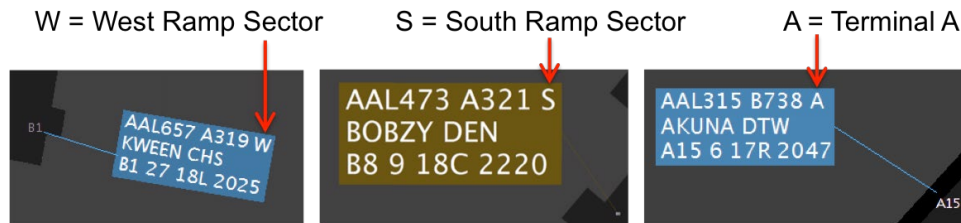


Figure 4.11. Examples of ramp sector/terminal indicators at different airports with different ramp configurations.

A handoff within the ramp area can be done manually. Available handoff options will be specific to a given airport. See Figure 4.12 for examples.



Figure 4.12. Right-click menu with “Handoff” selected. Options vary by airport.

4.1.1.2.6 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 4.13 and Figure 4.14) or as a general (non-medical) emergency (Figure 4.15 and Figure 4.16). Making this entry in RTC supports common situational 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 flight strip or click once on 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 4.13).

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 4.14).*

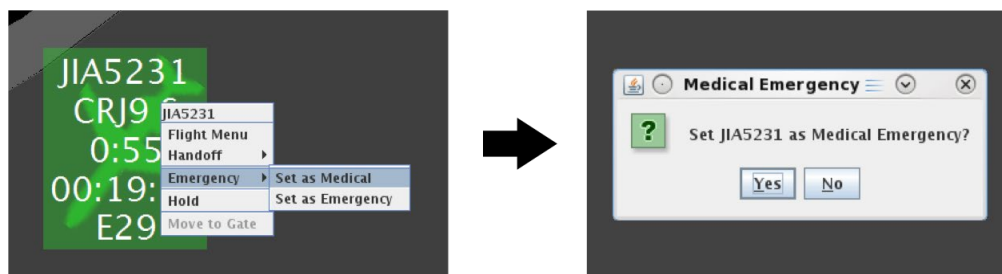


Figure 4.13. Right-click menu with “Emergency” and “Set as Medical” selected (left). Set medical emergency confirmation prompt (right).



Figure 4.14. 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 flight strip or click once on 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 4.15).

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 explanation signs (!) before and after the call sign (Figure 4.16).*

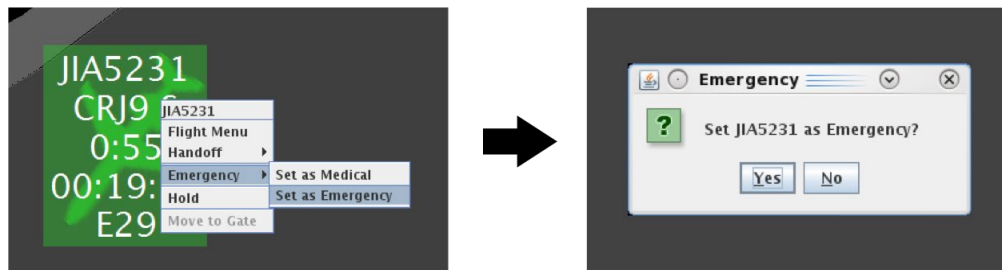


Figure 4.15. Right-click menu with “Emergency” and “Set as Emergency” selected (left). Set emergency confirmation prompt (right).



Figure 4.16. 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 flight strip or click once on 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 4.17).

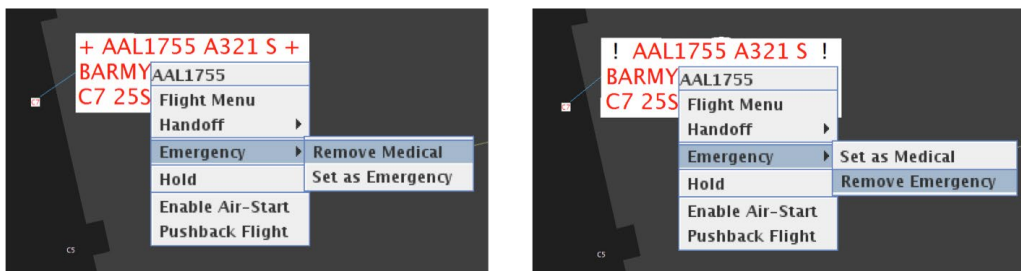


Figure 4.17. Remove emergency status: Right-click menu with “Remove Medical” selected (left) and “Remove Emergency” selected (right).

4.1.1.2.7 Hold

A flight can be placed on hold using the RTC interface. Putting a flight on hold provides a visual cue/reminder for that flight to the Ramp Controller. See Section 8.1.6.2 for using holds when Surface Metering is in effect.

To place a flight on hold:

Step 1: Hover mouse over flight strip or click once on 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 4.18).*

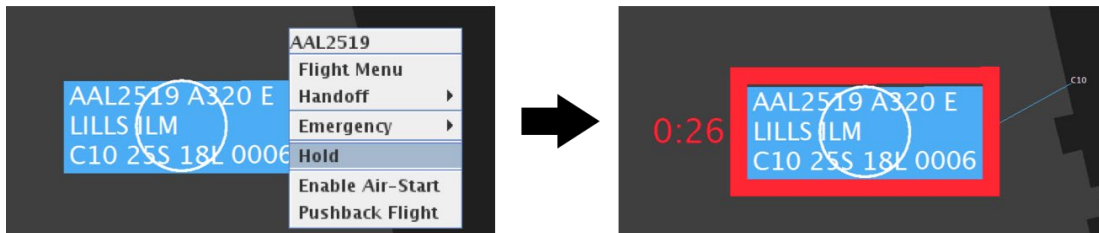


Figure 4.18. Right-click menu with “Hold” selected (left). Once the hold is applied, the flight strip is shown with a red border and a red count-up timer (right).

To remove (undo) the hold:

Step 1: Hover mouse over flight strip or click once on 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 4.19).*



Figure 4.19. Right-click menu with “Undo Hold” selected (left). Red border and accompanying timer are removed from the flight strip (right).

4.1.1.2.8 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 situational 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 flight strip or click once on 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 4.20).

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

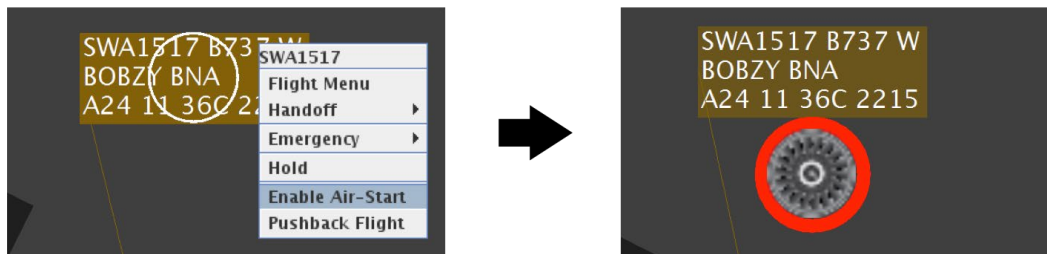


Figure 4.20. Right-click menu with “Enable Air-Start” selected (left). Flight strip, tethered to the gate, with attached engine icon surrounded by a red circle (right).

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 flight strip or click once on 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 4.21).*

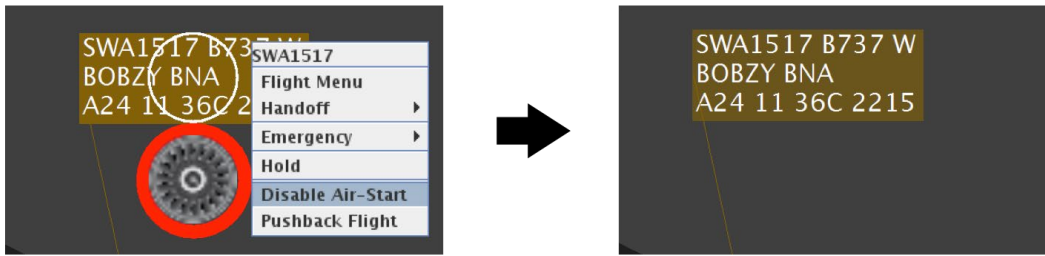


Figure 4.21. Right-click menu with “Disable Air-Start” selected (left). The attached engine icon is removed from the flight strip (right).

4.1.2 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.

4.1.2.1 Flight Strip/Engine Icon

As shown in Figure 4.22, 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 4.22. 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 4.23).

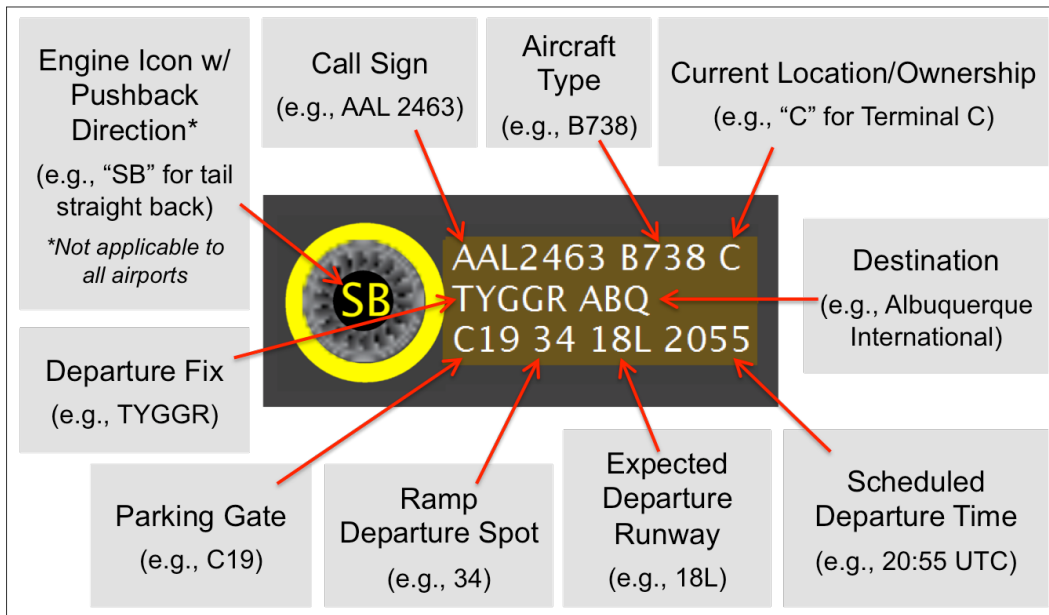


Figure 4.23. Flight and aircraft information on the digital flight strip in the pushback/spool-up state.

4.1.2.1.1 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 flight strip or click once on 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 4.24).*

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

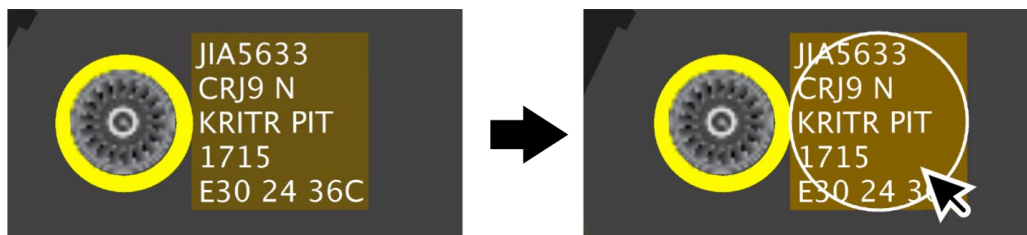


Figure 4.24. Hover over flight strip or click once to select it. Flight strip will highlight and a white circle will be shown in the center of the flight strip.

4.1.2.1.2 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 flight strip or click once on 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.

4.1.2.1.3 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 flight strip or click once on 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.

4.1.2.2 Right-Click Menu Options

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

4.1.2.2.1 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 flight strip or click once on flight strip to select it.

Step 2: Right-click on the flight strip to open the menu (Figure 4.25).

Step 3: Select “Proceed to Spot” from the menu.

Alternatively: As a shortcut, click once on the engine icon (Figure 4.26).

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 4.25 and Figure 4.26).

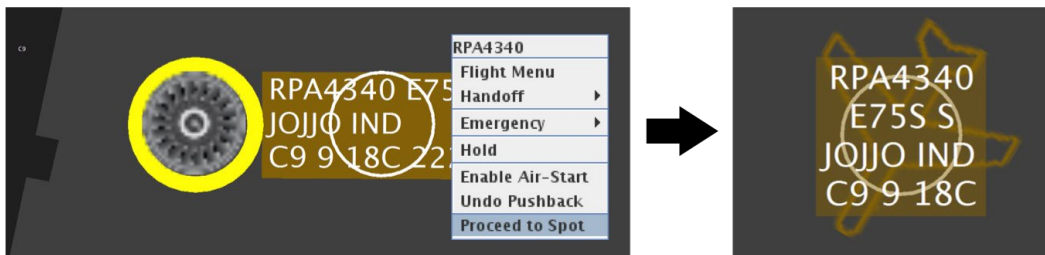


Figure 4.25. Select “Proceed to Spot” from the right-click menu (left) to advance to the proceed-to-spot/taxi-out state (right).

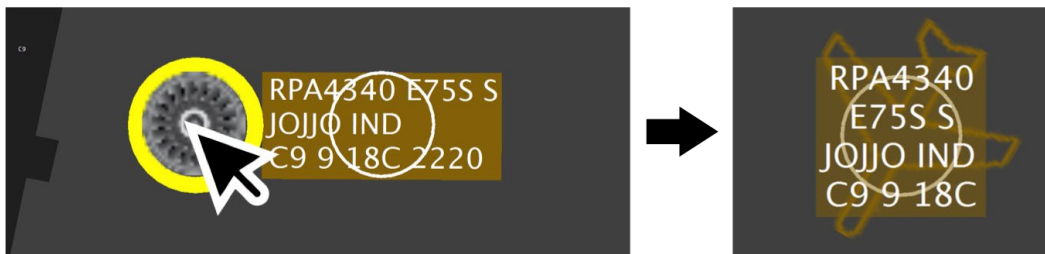


Figure 4.26. Click once on engine icon (left) to advance to the proceed-to-spot/taxi-out state (right).

4.1.2.2.1.1 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 flight strip or click once on 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 4.27).

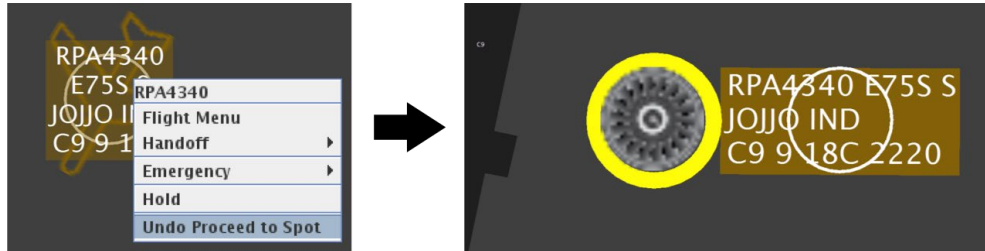


Figure 4.27. When “Undo Proceed to Spot” is selected from the right-click menu (left), the flight returns to the pushback/spool-up state.

4.1.2.2.2 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 situational 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 flight strip or click once on 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 4.28).

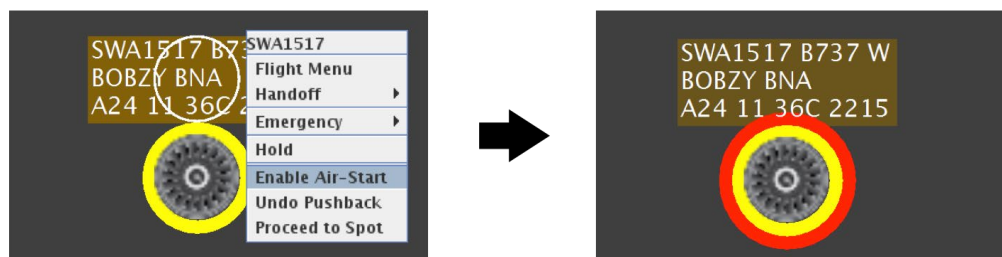


Figure 4.28. When “Enable Air-Start” is selected from the right-click menu (left), a red circle is displayed around the engine icon (right).

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 flight strip or click once on 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 4.29).

Note: *The red circle is removed from pushback/spool-up engine icon (Figure 4.29).*



Figure 4.29. When “Disable is Air-Start” is selected from the right-click menu (left), the red circle around the engine icon is removed (right).

4.1.2.2.3 Flight Menu

See Section 7 for a description of the Flight Menu.

4.1.2.2.4 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 4.1.1.2.4 for description.

4.1.2.2.5 Handoff

Ownership of a flight can be reassigned. See Section 4.1.1.2.5 for description.

4.1.2.2.6 Emergency

Emergency status can be assigned to the flight. See Section 4.1.1.2.6 for description.

4.1.2.2.7 Hold

The flight can be placed on hold. See Section 4.1.1.2.7 for description.

4.1.3 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.

4.1.3.1 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 4.30 left). A flight that is tracked by surface surveillance is displayed as a *solid* flight icon (Figure 4.30 right). When surface surveillance first begins tracking a flight, the flight may reappear or snap to its current location.



Figure 4.30. Departure flight: Not tracked by surveillance displayed as a *hollow* flight icon (left) and tracked by surveillance displayed as a *solid* flight icon (right).

4.1.3.2 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 4.31).

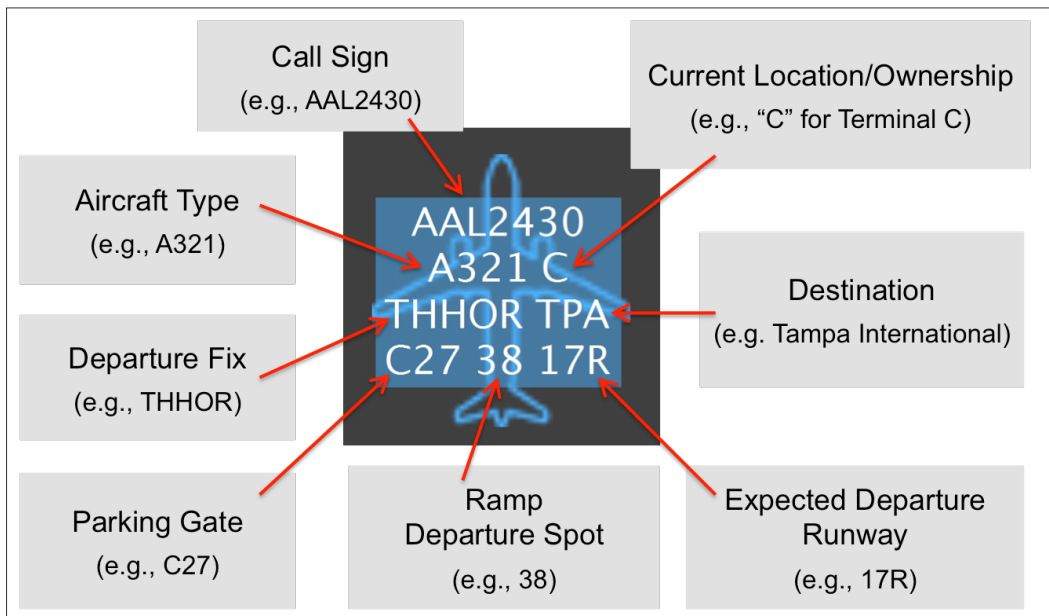


Figure 4.31. Flight and aircraft information on the data tag while the departure flight is in the ramp area.

After crossing the spot, leaving the ramp area, and entering the AMA, the gate and spot are removed from the data tag (Figure 4.32).

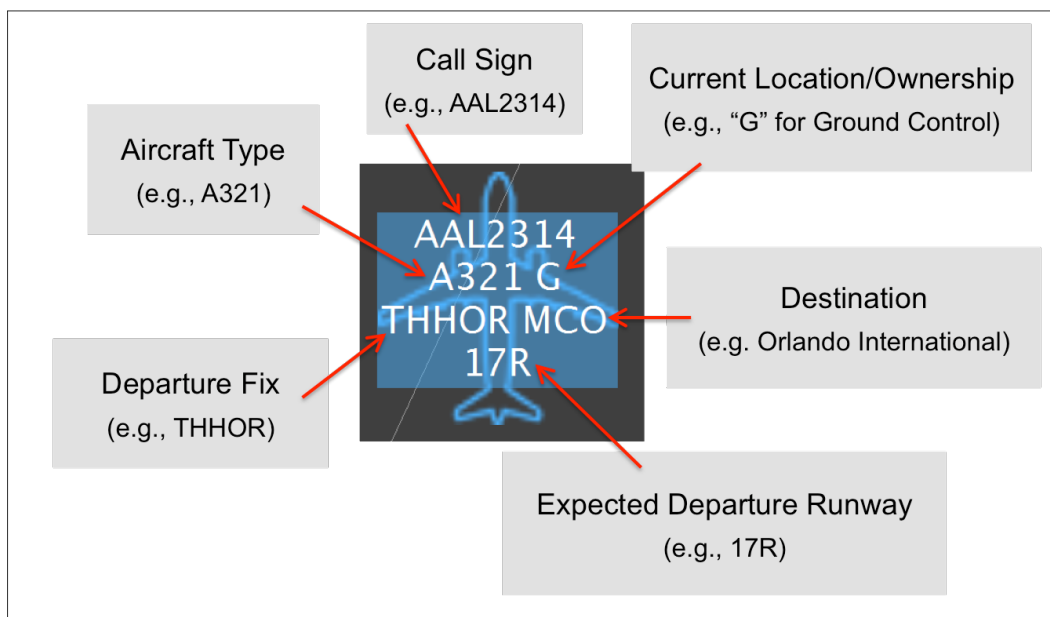


Figure 4.32. Flight and aircraft information on the data tag after the departure flight has crossed the spot, left the ramp, and entered AMA.

4.1.3.3 Untracked Departure Flights (Hollow Icon)

When an 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 situational awareness.

4.1.3.3.1 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 4.33).

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

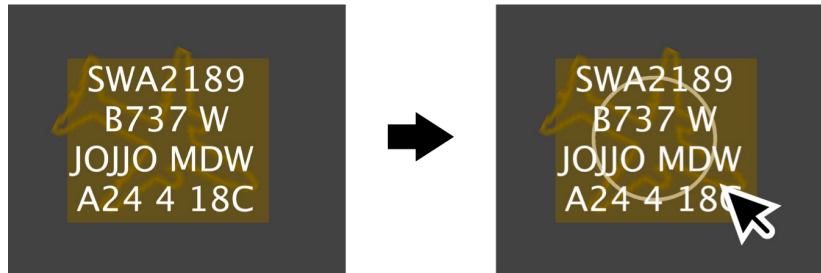


Figure 4.33. Hover over flight icon/data tag or click once to select it. Flight strip will be highlighted and a white circle will be shown in the center of the flight icon/data tag.

4.1.3.3.2 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 situational awareness until surveillance begins tracking the flight.

4.1.3.3.3 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 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 situational awareness until surveillance begins tracking the flight.

4.1.3.4 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.

4.1.3.4.1 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 4.34).

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



Figure 4.34. Click on data tag or flight icon to select flight.

4.1.3.4.2 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.

4.1.3.5 Right-Click Menu Options

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

4.1.3.5.1 Flight Menu

See Section 7 for a description of the Flight Menu.

4.1.3.5.2 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 4.1.1.2.4 for description. (An alternative method for changing spot assignment using the Flight Menu is described in Section 7.1.2.)

4.1.3.5.3 Handoff

Ownership of a flight can be reassigned. See Section 4.1.2.2.5 for description.

4.1.3.5.4 Emergency

Emergency status can be assigned to the flight. See Section 4.1.1.2.6 for description.

4.1.3.5.5 Hold

The flight can be placed on hold. See Section 4.1.1.2.7 for description.

4.1.4 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.

4.1.4.1 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 4.35, left). A flight that is tracked by surface surveillance is displayed as a *solid* flight icon (Figure 4.35 right).

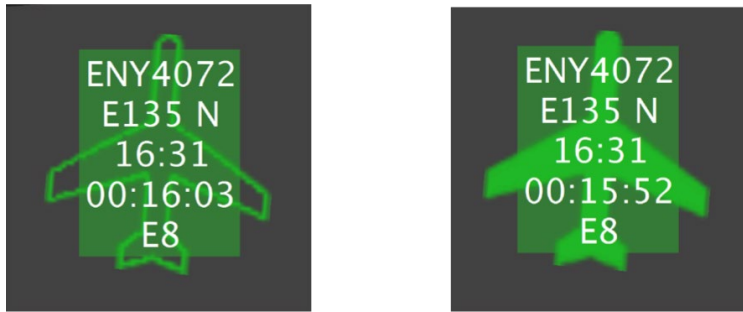


Figure 4.35. Arrival flight: Not tracked by surveillance displayed as a *hollow* flight icon (left) and tracked by surveillance displayed as a *solid* flight icon (right).

4.1.4.2 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 4.36).

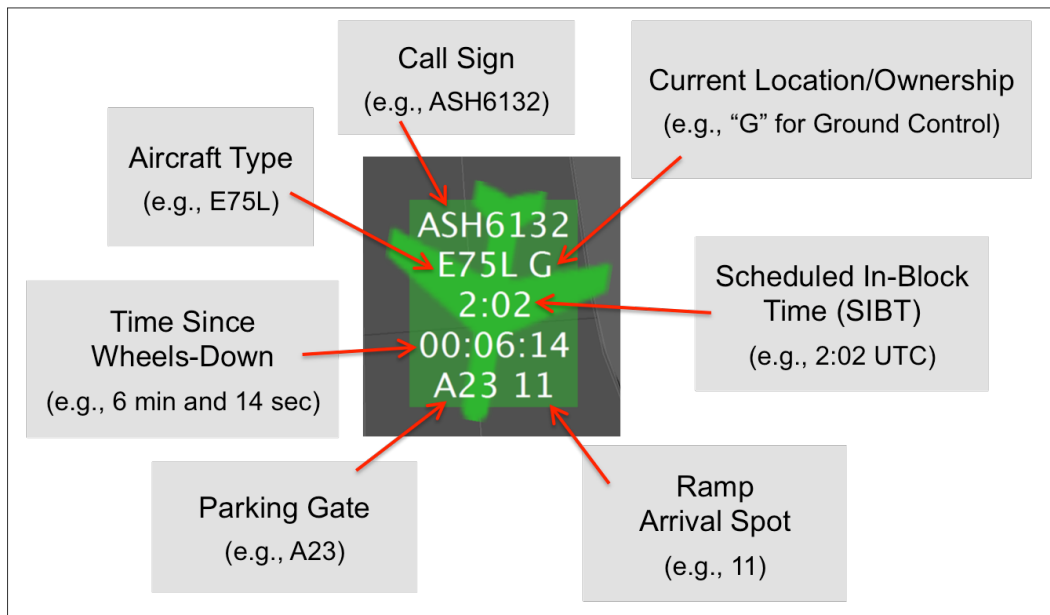


Figure 4.36. Flight and aircraft information on the data tag while the arrival flight is taxiing in the AMA.

After crossing the spot and entering the ramp area, the spot is no longer shown on the data tag (Figure 4.37).

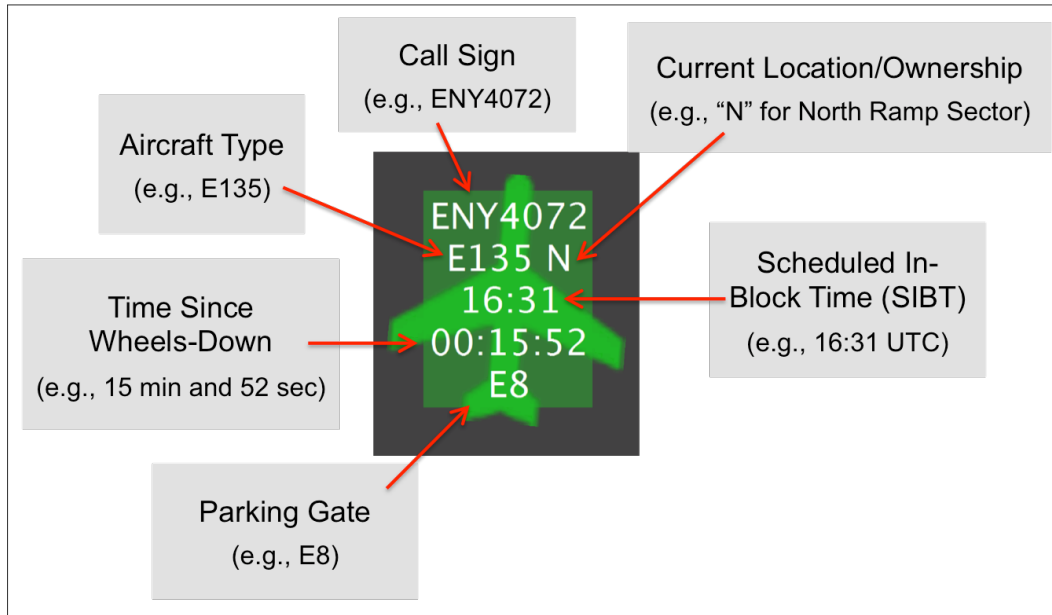


Figure 4.37. Flight and aircraft information on the data tag when the arrival flight is in the ramp area.

4.1.4.3 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 situational awareness.

4.1.4.3.1 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 will be highlighted and a white circle will be shown in the center of the flight strip (Figure 4.38).*

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

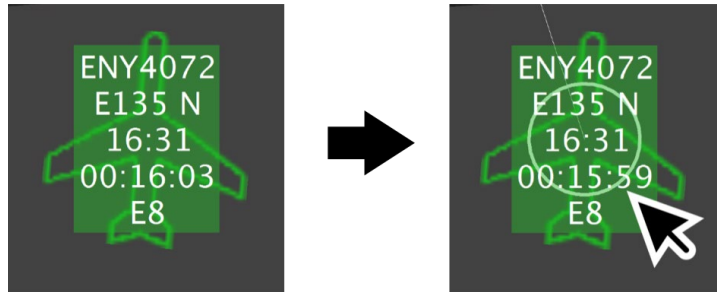


Figure 4.38. Hover over flight icon/data tag or click once to select it. Flight icon/data tag will be highlighted and a white circle will be shown in the center of the flight strip.

See Section 4.1.4.5 for a description of the tether that is drawn between the flight icon and its assigned parking gate when an arrival flight is selected.

4.1.4.3.2 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 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 situational awareness.

4.1.4.3.3 Rotate Flight Icon

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

To rotate an untracked arrival flight:

Step 1: Hover mouse over flight icon/data tag or click once on 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 situational awareness.

4.1.4.4 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.

4.1.4.4.1 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 4.39).

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



Figure 4.39. Click on flight icon or data tag to select flight.

See Section 4.1.4.5 for a description of the tether that is drawn between the flight icon and its assigned parking gate when an arrival flight is selected.

4.1.4.4.2 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 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 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.

4.1.4.5 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 4.40) or if the arrival is already on the surface (Figure 4.41), 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 7.1.1 for a description of how to change a parking gate assignment.

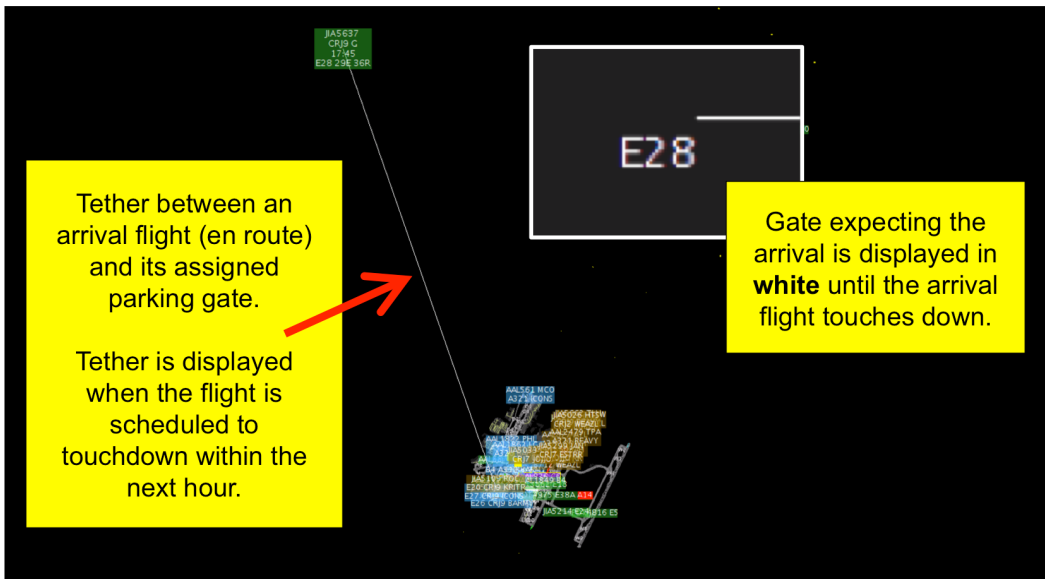


Figure 4.40. An en route arrival flight is tethered to its assigned gate (E28), shown in white.

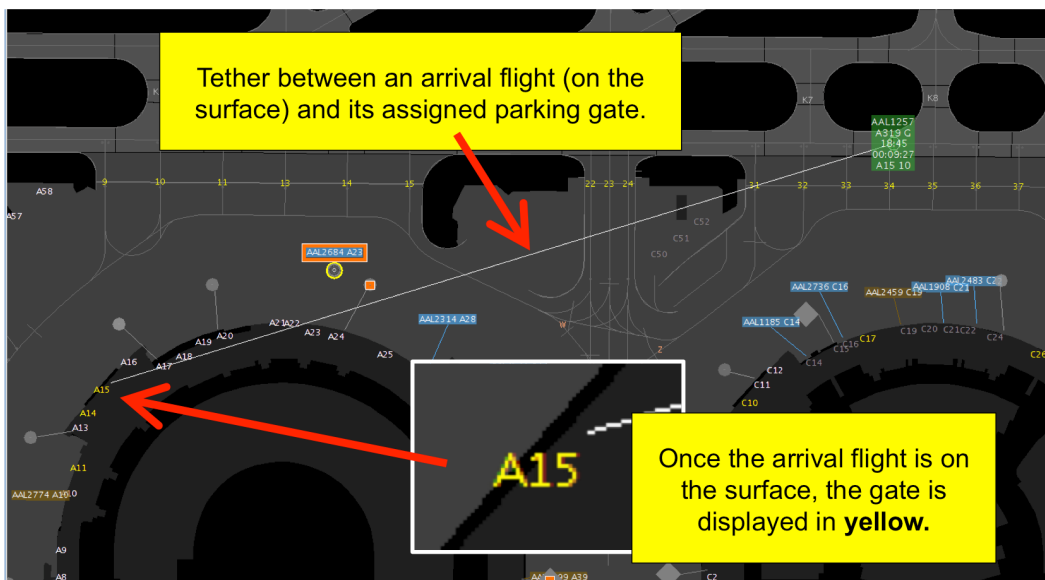


Figure 4.41. An arrival flight on the surface is tethered to its assigned gate (A15), shown in yellow.

4.1.4.6 Data Tag: Arrival Metrics

While an arrival flight is taxiing to the gate, arrival-time indicators, relative to the flight's Scheduled In-Block Time (SIBT), are also displayed on the data tag (Figure 4.42). There are three possible arrival-time indicators:

- Prior to the Scheduled In-Block Time (SIBT), no label is shown on the data tag.
- "A0" is displayed in white when a flight is less than 5 min past its SIBT.

- “A5” is displayed in yellow when a flight is between 5 min and 14 min past its SIBT.
- “A14” is displayed in red when a flight is more than 14 min past its SIBT.

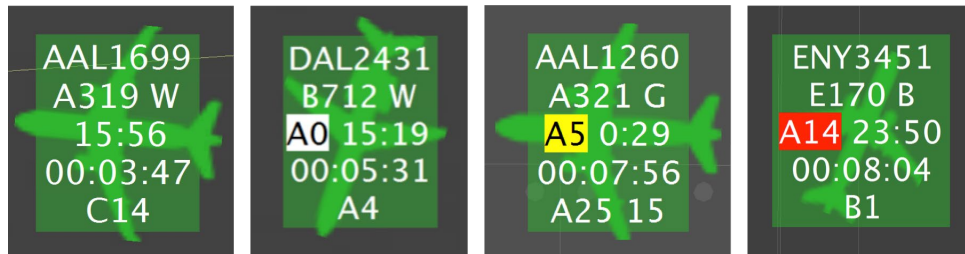


Figure 4.42. Arrival-time indicators: No label, A0 (white), A5 (yellow), and A14 (red) indicated on the data tag of an arrival flight.

4.1.4.7 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 4.43). 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 3.2.1.2.2 for gate conflict arrival-time setting.

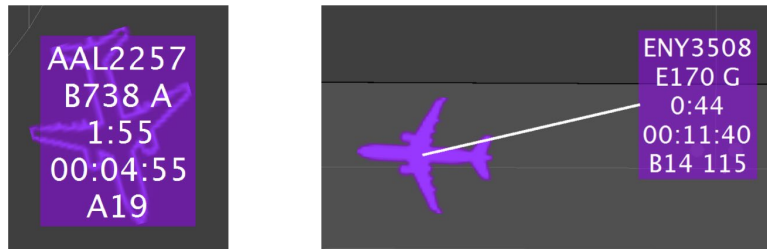


Figure 4.43. Inbound arrival flights with gate conflicts are displayed in magenta.

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 4.44).

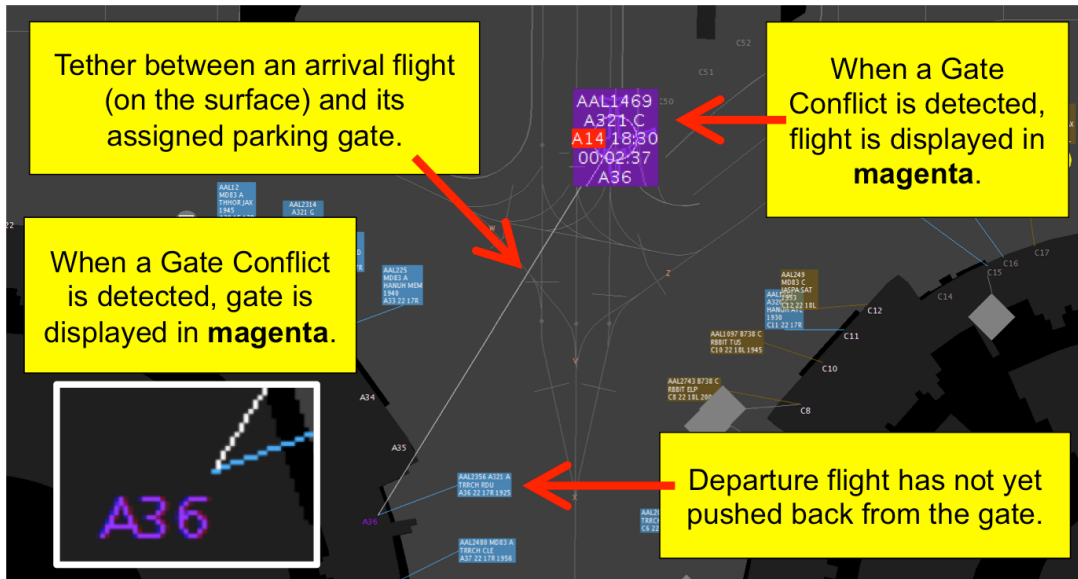


Figure 4.44. An arrival flight with a gate conflict (shown in magenta) is tethered to its assigned gate (A36 in this example, shown in magenta).

4.1.4.8 Right-Click Menu Options

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

4.1.4.8.1 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 4.45). “Move to Gate” is available only after an arrival flight enters the ramp area and once it is selected, it cannot be undone.

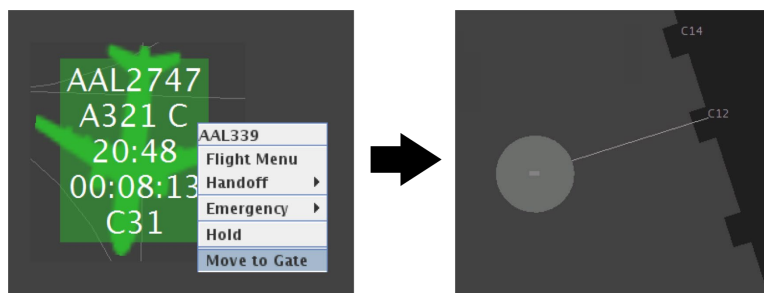


Figure 4.45. Right-click menu with “Move to Gate” selected (left). Flight parked at the gate, shown as a gray disc, tethered to the assigned arrival gate (right).

4.1.4.8.2 Flight Menu

See Section 7 for a description of the Flight Menu.

4.1.4.8.3 *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 4.1.1.2.4 for description.

4.1.4.8.4 *Handoff*

Ownership of a flight can be reassigned. See Section 4.1.1.2.5 for description.

4.1.4.8.5 *Emergency*

Emergency status can be assigned to the flight. See Section 4.1.1.2.6 for description.

4.1.4.8.6 *Hold*

The flight can be placed on hold. See Section 4.1.1.2.7 for description.

4.1.5 **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.

4.1.5.1 **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.

4.1.5.1.1 *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 4.46.*

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

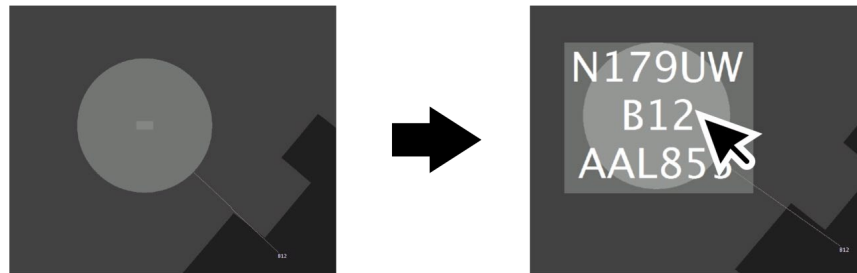


Figure 4.46. Hover over icon/data tag or click once to select it. Flight information from the previous arrival is displayed.

4.1.5.1.2 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.*

4.1.5.2 Right-Click Menu Options

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

4.1.5.2.1 Flight Menu

See Section 7 for a description of the Flight Menu.

4.1.5.2.2 Handoff

Ownership of a flight can be reassigned. See Section 4.1.1.2.5 for description.

4.1.5.2.3 Emergency

Emergency status can be assigned to the flight. See Section 4.1.1.2.6 for description.

4.1.6 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.

4.1.6.1 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.

4.1.6.1.1 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 4.47.

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

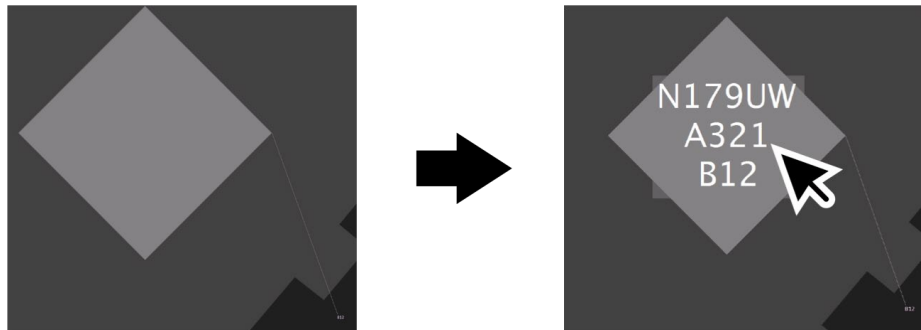


Figure 4.47. Hover over the icon/data tag or click once to select it. Aircraft information will be displayed.

4.1.6.1.2 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 will remain tethered to the gate.

4.1.6.2 Right-Click Menu Options

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

4.1.6.2.1 Aircraft Menu

See Section 7.9 for a description of the Aircraft Menu.

4.1.7 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.

4.1.7.1 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.

4.1.7.1.1 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 4.48.

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

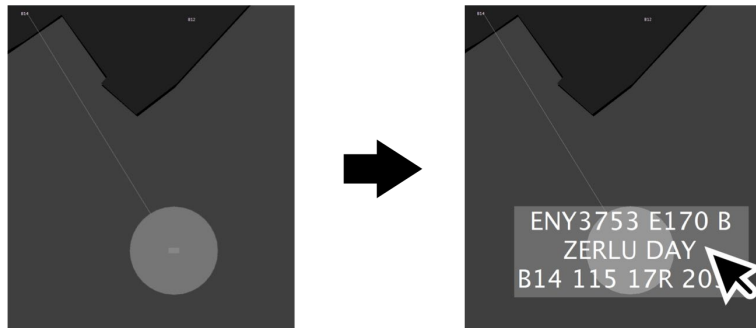


Figure 4.48. Hover over icon/data tag or click once to select it. Flight information for the upcoming departure is displayed.

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

4.1.7.1.2 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 will remain tethered to the gate.*

4.1.7.2 Right-Click Menu Options

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

4.1.7.2.1 Flight Menu

See Section 7 for a description of the Flight Menu.

4.1.7.2.2 Change Spot

At some airports, spot change can be accessed through the right-click menu. See Section 4.1.1.2.4 for description.

4.1.7.2.3 Handoff

Ownership of a flight can be reassigned. See Section 4.1.1.2.5 for description.

4.1.7.2.4 Emergency

Emergency status can be assigned to the flight. See Section 4.1.1.2.6 for description.

4.1.7.2.5 Hold

The flight can be placed on hold. See Section 4.1.1.2.7 for description.

4.1.7.2.6 Pushback Flight

The flight state can be changed to pushback/spool-up. See Section 4.1.1.2.1 for description.

4.1.7.2.7 Pushback Flight with Direction

At airports where it is applicable, pushback with direction can be selected. See Section 4.1.1.2.2 for description.

4.2 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.

4.2.1 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.

4.2.1.1 B757 Aircraft

B757-type aircraft are indicated using a blue and white border around the flight strip/data tag (Figure 4.49).

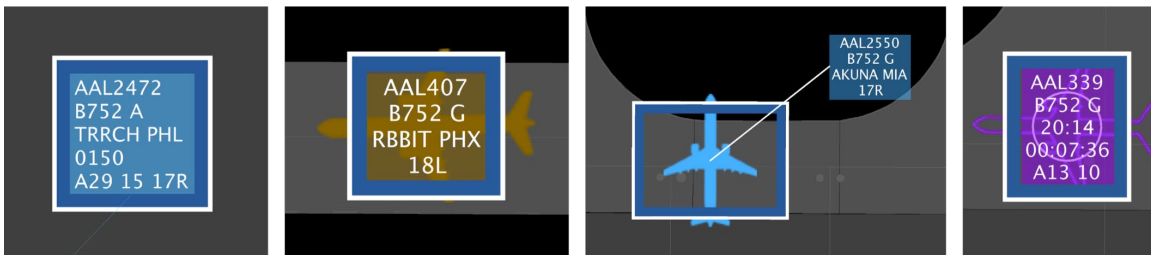


Figure 4.49. B757 aircraft are shown with a blue and white border.

4.2.1.2 ‘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 4.50).

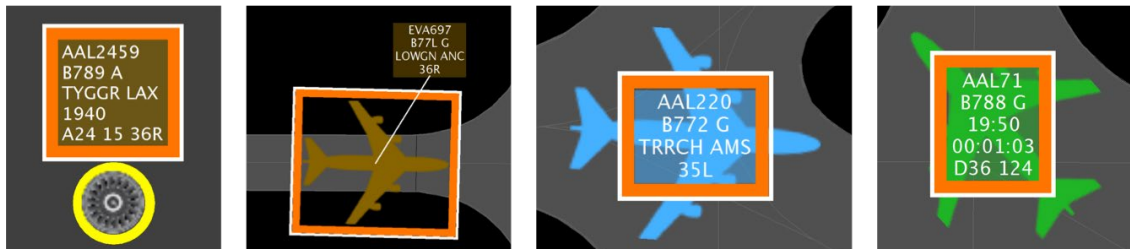


Figure 4.50. ‘Heavy’ aircraft are shown with an orange and white border.

4.2.1.3 ‘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 4.51).

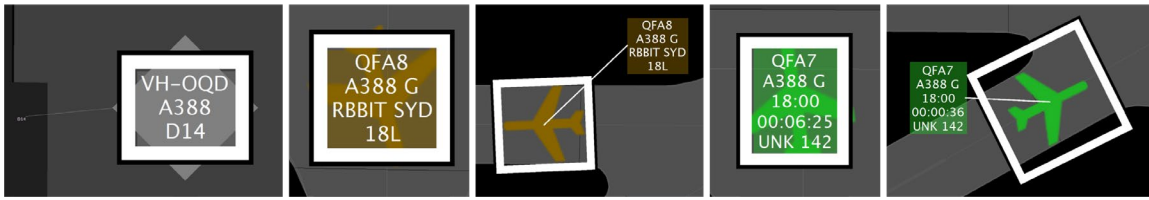


Figure 4.51. 'Super Heavy' aircraft are shown with a white and black border.

4.2.2 Hold

When a flight is placed on hold, a red border is displayed around the flight strip or flight icon (



Figure 4.52). A red count-up timer is also automatically displayed to track how long the flight has been on hold.

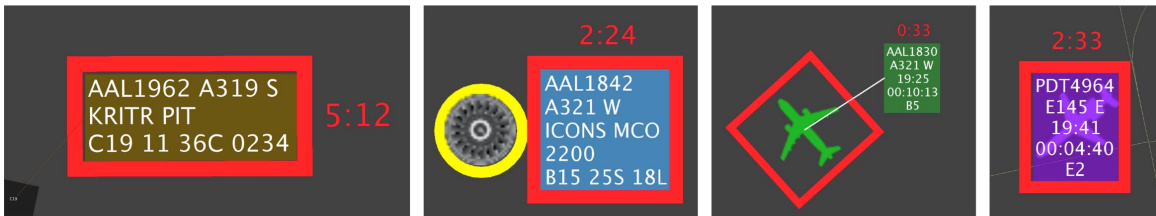


Figure 4.52. Flights on hold are shown with a red border and an automatic hold timer.

4.2.3 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 4.53). See Section 7.1.4 for assigning a flight to a hardstand.



Figure 4.53. 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 is automatically placed on the flight to track how long the flight has been in the hardstand (Figure 4.54).



Figure 4.54. Arrival flights holding in a hardstand are shown with a yellow border and an automatic hold timer (red).

4.2.4 Priority Flight

When a flight is assigned a priority status, a green border is displayed around the flight strip or flight icon (Figure 4.55). See Section 7.5 for designating priority flights.

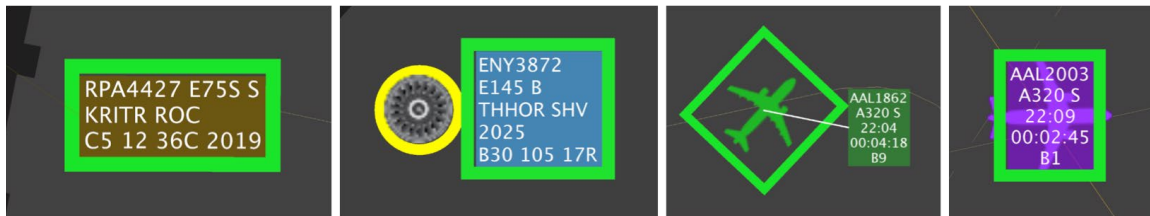


Figure 4.55. Priority flights are depicted with a green border.

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, then the priority border will flash green and red to notify the Ramp Controller that owns the flight that priority status has been assigned to the flight. The flashing will continue until the Ramp Controller clicks on the flight to acknowledge the notification.

4.2.5 Multiple Borders

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

- Figure 4.56 (left): (Brown flight strip: Departure on westbound runway)
 - **Blue/white** border indicates aircraft type B757
 - **Green** border indicates priority flight.
- Figure 4.56 (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 4.56 (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 4.56. Examples of flights with multiple borders.

4.3 Long On Board

The RTC map also displays Long On Board (LOB) information for common situational awareness. LOB is displayed on the map using a colored disc behind the flight icon (Figure 4.57).

- 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.

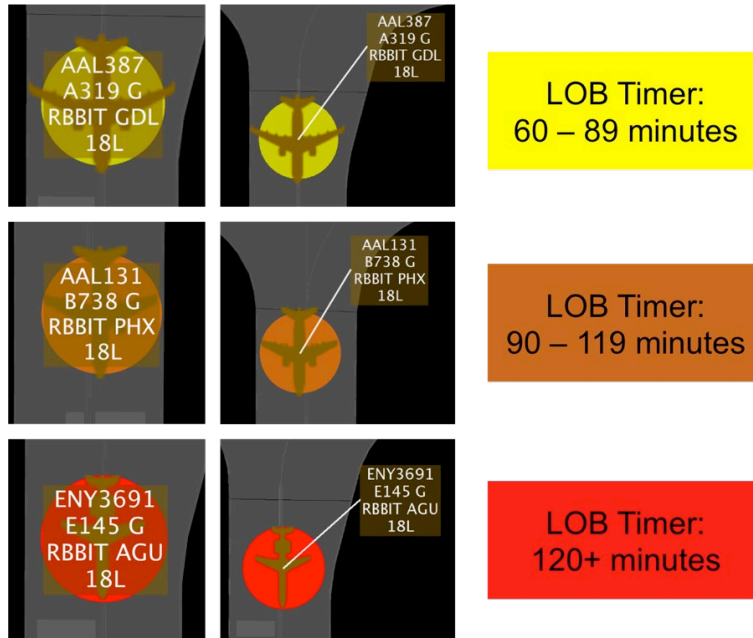


Figure 4.57. Long On Board (LOB) common situational awareness: 60+ (yellow), 90+ (orange), 120+ min (red).

LOB information is also displayed in the pushback/spool-up state (Figure 4.58).



Figure 4.58. Long On Board (LOB) indicators displayed in the pushback/spool-up state (e.g., red indicators = 120+ minutes).

4.4 Flight Menu Changes

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.

4.4.1 Runway Change for Operational Necessity

At airports that can make a request for a runway assignment change for Operational Necessity (see Section 7.1.3), once confirmed, the new runway assignment is highlighted in green on the flight strip/data tag (Figure 4.59).



Figure 4.59. Runway change from 36R to 36C for Operational Necessity.

4.4.2 (MC) Bypass

Airport-specific routing procedures (e.g., the taxiway Mike-Charlie bypass) are indicated above the data tag (Figure 4.60). 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 7.1.5). 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.

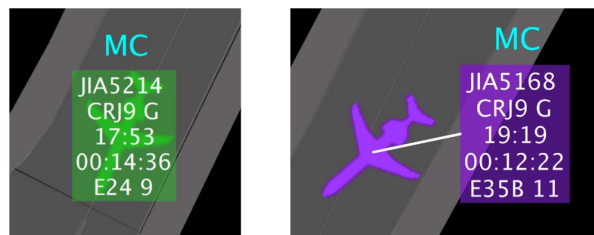


Figure 4.60. Arrival flights cleared to use the Mike-Charlie bypass have a cyan “MC” shown above data tag (airport-specific routing).

4.4.3 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 4.61).

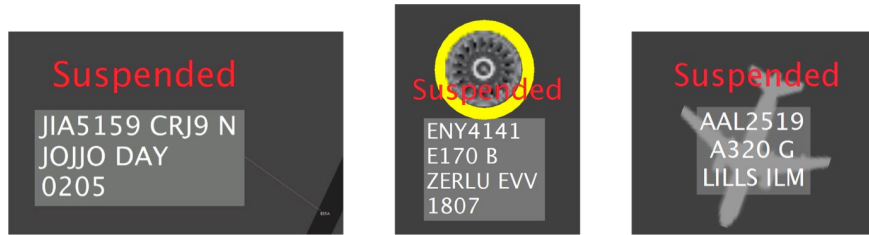


Figure 4.61. Suspended flights in various flight states.

4.4.4 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 4.62). The location and orientation of the tracked flight continue to be shown based on surveillance data.



Figure 4.62. 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 4.63 middle). The flight is then returned to the gate and its flight strip is tethered to its gate (Figure 4.63 right).



Figure 4.63. Untracked flight: Return to Gate (“RTG”) indicated on the data tag *momentarily* (middle) and then returned to gate.

4.4.5 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 4.64). After 60 seconds, the cancelled flight will display as a hollow gray icon with tail number.

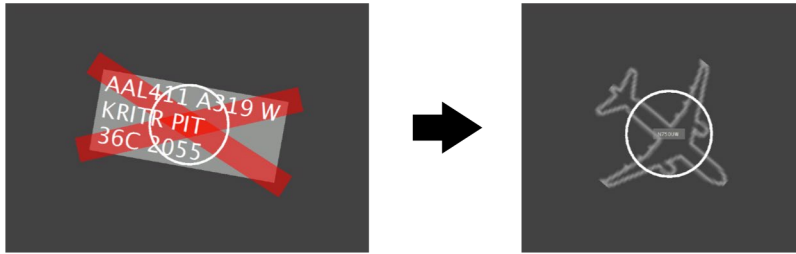


Figure 4.64. Grayed-out flight strip of cancelled flight covered by a large red “X” and then depicted as hollow gray flight icon with tail number.

4.4.6 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 4.65. 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”.

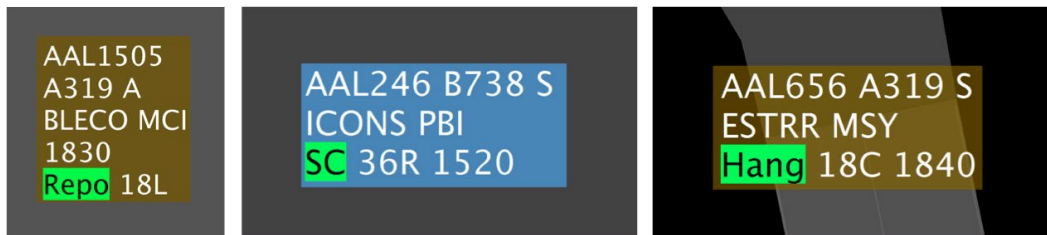


Figure 4.65. Examples of repositioned flight strips (reposition locations/labels vary by airport).

5 Display of Traffic Management Initiative Information and Advisories

5.1 General Airspace Constraint TMIs

General airspace constraint Traffic Management Initiatives (TMIs) are indicated on flight strips/data tags. All times displayed are UTC.

5.1.1 Departure Fix Closures

A departure fix closure with no alternate specified by ATC is indicated on the flight strip/data highlighted in red (Figure 5.1).



Figure 5.1. Closed departure fix (e.g., JOJJO, KRITR, AKUNA).

5.1.2 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 5.2). 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.

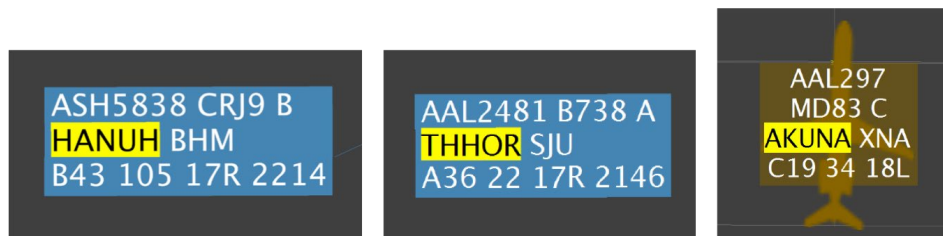


Figure 5.2. Closed departure fix (e.g., HANUH, THHOR, AKUNA). Reassigned alternate fix is displayed in the Flight Menu. Yellow highlight means pilot needs to be notified to get new route.

5.1.3 Miles-in-Trail Restrictions

Miles-in-Trail (MIT) restrictions are indicated on the flight strip/data tag highlighted in yellow (Figure 5.3). The restriction may have been applied to an airport, a departure fix, or a departure gate.



Figure 5.3. Miles-in-Trail (MIT) restrictions (e.g., 7, 15, and 35 miles).

5.1.4 Ground Stop/Closed Destination Airport

Ground stops and closed destination airports are highlighted in red on the flight strip/data tag (Figure 5.4).



Figure 5.4. Ground stop or airport closure at destination (e.g., EWR, IAH, IAD, HOU).

5.2 Flight-Specific TMIs

Flight-specific TMIs are also indicated on flight strips/data tags.

5.2.1 Expect Departure Clearance Time (EDCT)

When a flight is subject to an Expect Departure Clearance Time (EDCT), the EDCT is displayed on the flight strip (“Ehhmm”) highlighted in yellow (Figure 5.5). No action is required of the pilots when their flight is subject to an EDCT.

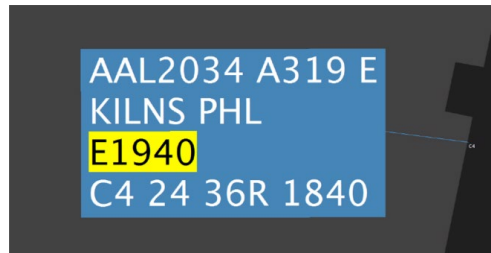


Figure 5.5. Flight subject to an EDCT (19:40 UTC, in this example).

5.2.2 Approval Request/Call for Release (APREQ/CFR)

Approval Request/Call for Release, or APREQ, information is displayed on the flight strip. Before the APREQ time is determined, the word “APREQ” is shown on the flight strip highlighted in yellow (Figure 5.6, left).

Negotiation of the APREQ is triggered when the pilots contact Clearance Delivery in the ATCT to obtain their APREQ time, just prior to pushback. Once ATC has negotiated an APREQ for that flight, the APREQ wheels-up time is displayed on the flight strip (“Ahhmm”) highlighted in yellow (Figure 5.6, right).

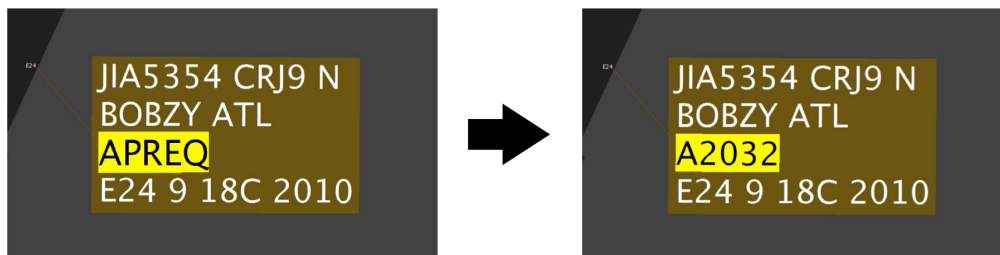


Figure 5.6. Flight subject to an APREQ, prior to the APREQ being determined (left). After pilots have contacted ATC and the APREQ time has been negotiated, time appears (20:32 UTC, in this example) (right).

Pilots are asked to contact ATC just prior to pushback to support efficient negotiation of the APREQ and assist with ATD-2 scheduling algorithms. However, if a flight pushes back from the gate *without* having contacted ATC to initiate negotiation of their APREQ, the APREQ field will change from yellow to red upon pushback (Figure 5.7).

The APREQ field will flash on the display of the sector/terminal Ramp Controller who owns the flight until the Ramp Controller clicks on the flight to acknowledge the notification. The field will remain red until an APREQ time has been negotiated for that flight.

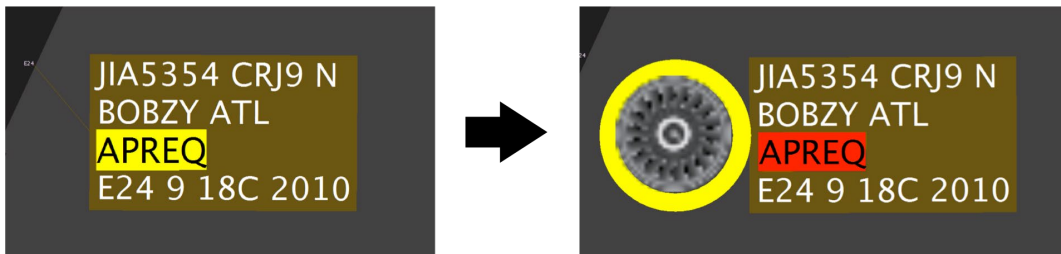


Figure 5.7. When a flight subject to an APREQ pushes back *without* having first contacted ATC to obtain its APREQ time, the APREQ field turns red.

5.2.3 Flight Subject to both an 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. A “Q” is displayed with the EDCT time to indicate that the flight is also subject to an APREQ, but that the APREQ time has not yet been negotiated (Figure 5.8, left).

Once the pilots contact ATC and the APREQ time has been negotiated, the EDCT is removed from the flight strip and only the APREQ time is displayed (“Ahhmm”). 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).



Figure 5.8. When a flight is subject to both an EDCT and an APREQ, the EDCT (22:18 UTC, in this example) is followed by a “Q” -- until the APREQ time is available. Once negotiated, only the APREQ time (22:20 UTC, in this example) is displayed on the flight strip (right).

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 will turn from yellow to red (Figure 5.9). The field will remain red and continue to display the EDCT (“EhhmmQ”) until an APREQ time has been negotiated for that flight.



Figure 5.9. When a flight subject to both an EDCT (19:49 UTC, in this example) and an APREQ pushes back without having first contacted ATC to obtain its APREQ time, the field turns red.

5.2.4 Newly Assigned EDCTs/APREQs

When an EDCT or APREQ newly populates on a flight strip, or when a revised time becomes available, the field “flashes”, or alternates between black/yellow highlight/text on the display of the Ramp Controller who owns the sector/terminal in which the flight is currently located (Figure 5.10). To acknowledge the new information, click once on the flight strip.

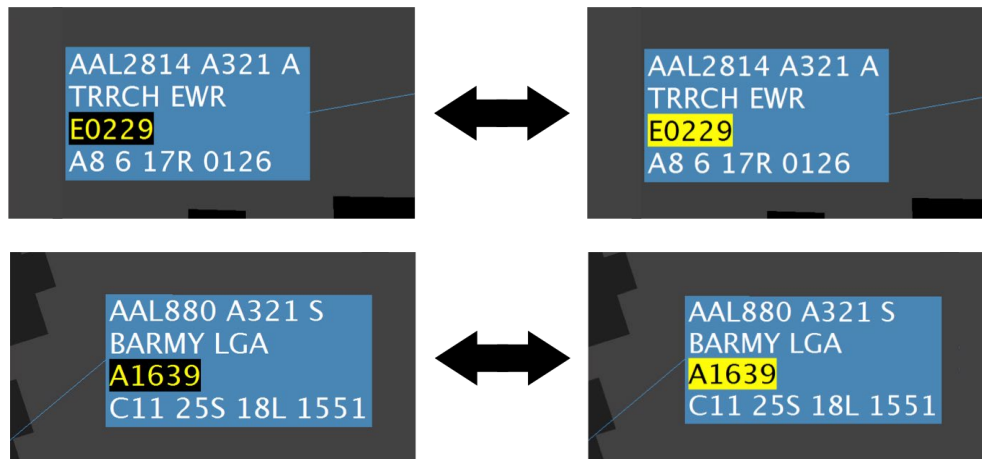


Figure 5.10. Alternating black/yellow highlight/text indicates new EDCT information (top) (02:29 UTC, in this example) and new APREQ information (bottom) (16:39 UTC, in this example) is available.

5.3 Display of Advisories to Meet EDCT/APREQ Constraints

In addition to the display of flight-specific TMIs (i.e., EDCTs and APREQs) on flight strips, scheduling advisories are also displayed in RTC. These advisories are computed by the ATD-2 scheduling algorithm as recommendations for EDCT/APREQ flights.

When a flight is subject to an EDCT or APREQ, ATD-2 scheduling systems compute a schedule based on the required wheels-up time. The scheduler calculates two target times in support of the EDCT/APREQ:

- **Target Off-Block Time (TOBT):** The time at which the flight should push back from the gate to meet its EDCT or APREQ wheels-up time on the runway, and
- **Target Movement Area entry Time (TMAT):** The time at which the flight should cross the spot and enter the AMA to meet its EDCT or APREQ wheels-up time on the runway.

This schedule enables the TMI-flight to meet its required wheels-up time, without burning excess fuel/emissions waiting at the runway, by holding at the gate until an appropriate pushback time.

5.3.1 Pushback Advisories

Pushback advisories are based on the scheduler-computed Target Off-Block Time (TOBT) and are displayed in RTC as a cyan-colored countdown timer next to the flight strip. The TOBT represents the target pushback time based on the required EDCT or APREQ wheels-up time.

The pushback advisory is presented in the form of a timer that counts down, in minute increments (e.g., 49 min, 48 min, 47 min, etc.), until it reaches 0 min at the TOBT. At the TOBT, the word “Push” is displayed (Figure 5.11).

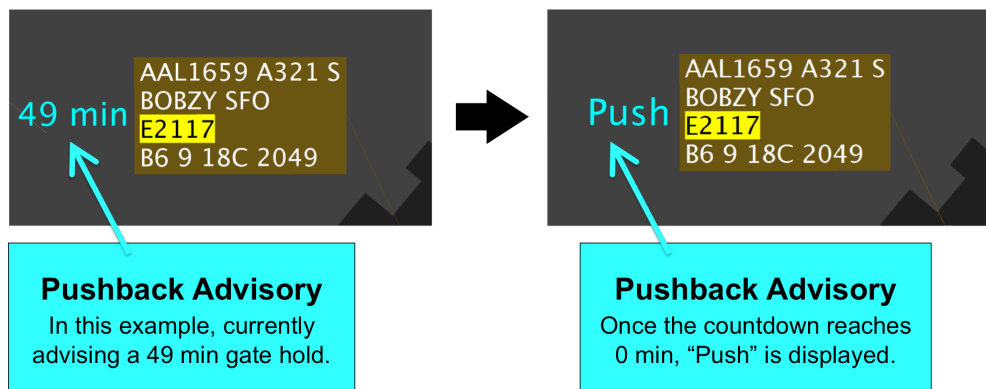


Figure 5.11. Prior to pushback, the pushback advisory (“49 min” and “Push” in these examples) is displayed, in cyan, next to the flight strip. The EDCT (or APREQ, if already negotiated) appears on the flight strip highlighted in yellow.

While the TOBT itself is not displayed directly on the RTC map, it can be viewed by accessing the Flight Menu (see Section 7.2). After the flight advances to the pushback/spool-up state, the pushback advisory is removed.

5.3.2 TMAT (Spot)

Prior to pushback, the EDCT or APREQ time is presented on the flight strip. However, upon initiation of pushback, through taxi in the ramp, and until the flight crosses the spot to enter the AMA, the Target Movement Area entry Time (TMAT) is displayed on the flight strip/data tag highlighted in yellow (Figure 5.12).

The TMAT is computed by the ATD-2 scheduling systems and represents the target spot-crossing time based on the required EDCT or APREQ wheels-up time. The TMAT is displayed in one of three formats, depending on which TMI constraint(s) applies to a particular flight:

- “*ThmmE*”: When the flight is subject to an EDCT,
- “*ThmmA*”: When the flight is subject to an APREQ that has already been negotiated by ATC, and
- “*ThmmQ*”: When the flight is subject to both an EDCT and an APREQ that has already been negotiated by ATC.

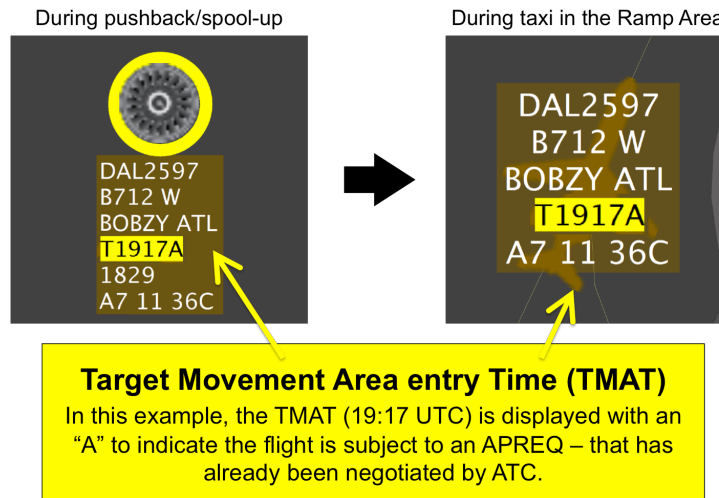


Figure 5.12. When available, the TMAT is displayed on the flight strip/data tag during pushback/spool-up, through ramp taxi, and until crossing the spot (in this example, 19:17 UTC).

However, if an APREQ flights pushes back without first contacting ATC to trigger negotiation of their APREQ time, the ATD-2 scheduling systems do not have a required wheels-up time on which to base the TMAT calculation. In this case, on initiation of pushback, the field is displayed in red rather than yellow.

An overview of the display of EDCTs/APREQs, pushback advisories, and TMATs is shown in Figure 5.13.

5.3.3 Overview of EDCTs/APREQs, Pushback Advisories, and TMTs






	At the Gate	Ramp Area	AMA
		Pushback/ Spool-up	Taxi to Spot Taxi to Runway
Flight subject to an EDCT (19:04)	<p>51 min</p> <p>AAL1709 A320 E ICONS FLL E1904 1831 D4 24 36R</p>	<p>AAL1709 A320 E ICONS FLL T1848E 1831 D4 24 36R</p> 	<p>AAL1709 A320 G ICONS FLL E1904 36R</p>
Flight subject to an APREQ (18:54)	<p>AAL2068 A321 E BARMY LGA APREQ 1830 C8 24 36R</p> <p>1 min</p> <p>AAL2068 A321 E BARMY LGA A1845 1830 C8 24 36R</p>	<p>AAL2068 A321 E BARMY LGA T1835A 1830 C8 24 36R</p> 	<p>AAL2068 A321 G BARMY LGA A1845 36R</p>
Flight subject to an APREQ* <i>*APREQ has not been negotiated by ATC</i>	<p>AAL2068 A321 E BARMY LGA APREQ 1830 C8 24 36R</p> <p><i>*If APREQ is not scheduled</i></p>	<p>AAL2068 A321 E BARMY LGA APREQ 1830 C8 24 36R</p> 	<p>AAL2068 A321 G BARMY LGA APREQ 36R</p>
Flight subject to an EDCT (19:15) and an APREQ (19:08)	<p>105 min</p> <p>AAL1891 A320 E KILNS EWR E1915Q 1840 C10 24 36R</p> <p>4 min</p> <p>AAL1891 A320 E KILNS EWR A1908 1840 C10 24 36R</p>	<p>AAL1891 A320 E KILNS EWR T1858Q 1840 C10 24 36R</p> 	<p>AAL1891 A320 G KILNS EWR A1908 36R</p>
Flight subject to an EDCT (19:15) and an APREQ* <i>*APREQ has not been negotiated by ATC</i>	<p>105 min</p> <p>AAL1891 A320 E KILNS EWR E1915Q 1840 C10 24 36R</p> <p><i>*If APREQ is not scheduled</i></p>	<p>AAL1891 A320 E KILNS EWR E1915Q 1840 C10 24 36R</p> 	<p>AAL1891 A320 G KILNS EWR E1915Q 36R</p>

Figure 5.13. Pushback advisories are presented while parked at the gate. TMTs are displayed while in the Ramp Area.

5.3.4 Frozen Pushback Advisories

Once a TOBT and TMAT are calculated for a TMI-flight, they can be adjusted based on changing traffic demand at the runway. If the TOBT changes, the corresponding pushback advisory will also be adjusted and the user may see the pushback advisory change, or “jump”.

There are several circumstances in which the ATD-2 scheduling systems “freeze” the TOBT and TMAT to prevent any more changes, or “jumps” in the advisories. The TOBT, and thus the pushback advisory, is frozen:

- At 15 minutes (default) prior to the TOBT, or
- When a Ramp Controller puts a departure flight on hold (it is suggested that controllers place a flight on hold when the pilots call ready). See Section 4.1.1.2.7 for more information about placing a flight on hold, or
- When the Ramp Manager manually freezes the advisories through the Flight Menu. This is only available in RMTC.

A frozen pushback advisory is displayed in black text and highlighted in cyan (Figure 5.14).

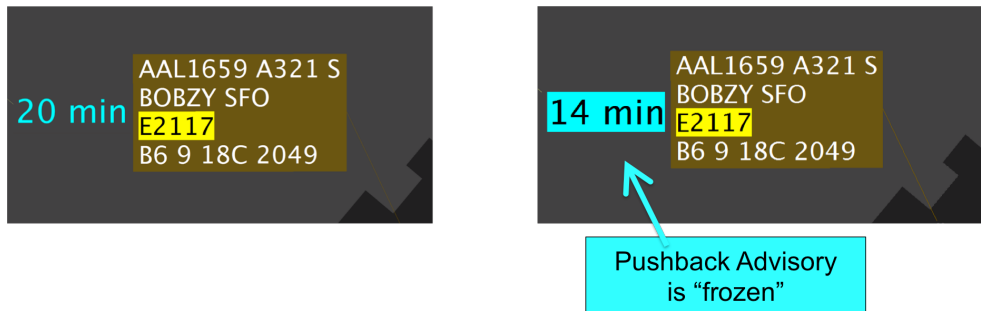


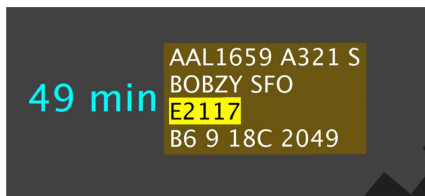
Figure 5.14. Frozen advisories are shown in black text with a cyan background.

5.3.5 TMI-Flight on Hold

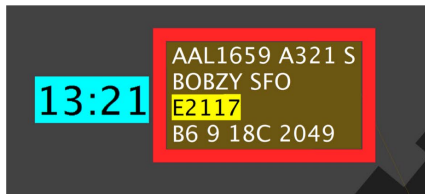
When a TMI-flight calls ready for pushback, but the pushback advisory still advises a gate hold (i.e., it has not yet finished counting down to the TOBT when the “Push” advisory is shown), it is suggested that the Ramp Controller place the flight on hold. Placing a flight on hold:

- Tells the ATD-2 scheduling systems that the flight is ready and freezes the pushback advisory to prevent it from adjusting, or “jumping”, so that a reliable gate hold time can be communicated to the pilots,
- Changes the countdown timer from minute increments to a mm:ss format, and
- Provides a visual cue/reminder that the flight is on hold to the Ramp Controller by displaying a red border around the flight strip.

Placing a flight on hold, also changes the way in which the pushback advisory is displayed (Figure 5.15).

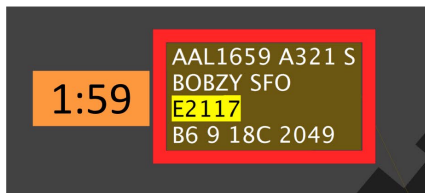


Pushback Advisory is counting down to the TOBT in one-minute increments. Because the advisory is not yet “frozen”, the time can change, or “jump”.

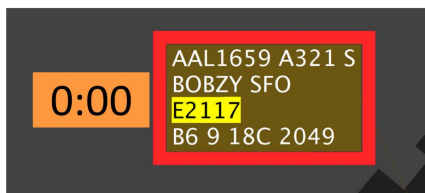


Pilot calls ready: Ramp Controller places flight on **hold** and communicates advised gate hold to pilot (i.e., 14 minutes).

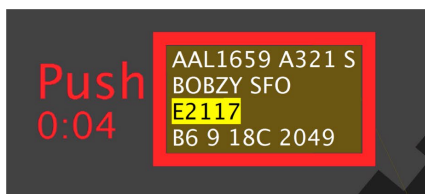
As a result of the hold, the Pushback advisory “freezes” (displayed as black text/cyan highlight), changes to the **hh:mm** format, and a red border is shown around the flight strip.



At 2:00 remaining, the countdown changes to black text on an **orange** background.



The timer continues counting down to 0:00, the TOBT.



Once the countdown reaches 0:00, the word “**Push**” is displayed along with a count-up timer.

Figure 5.15. Display of pushback advisories after flight is placed on hold.

5.3.6 Holding TMI-Aircraft in the Hardstand

When an untracked/hollow target is dragged into the hardstand, a yellow border is added, along with a TMAT countdown timer (if appropriate). It is not possible to manually reposition flights in this manner that are being tracked (solid icon) or that have flight strips still at the gate.

At airports where hardstands are used, any flight sent to the hardstand that has an EDCT or a scheduled APREQ time will also have a Release Advisory to guide this flight’s release time so as to meet the TMAT. The TMAT is computed by the ATD-2 scheduling

system and represents the target spot-crossing time based on the required EDCT or APREQ wheels-up time.

The countdown timer displayed below the data tag in light green will count down to the time the flight should be released from the hardstand (Figure 5.16). If the flight has not been released from the hardstand prior to the countdown reaching zero, a red “Release” alert will be displayed for that flight, as shown in Figure 5.16 (right).



Figure 5.16. TMI-flight holding in hardstand. The light green timer is counting down to the TMAT (left). At 3 minutes prior to the TMAT, the timer turns orange (middle). When the flight should be released from the hardstand, “Release” is shown in red.

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).

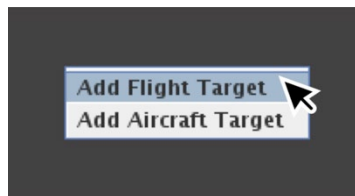


Figure 6.2. Select “Add Flight Target” from the target creation menu.

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).

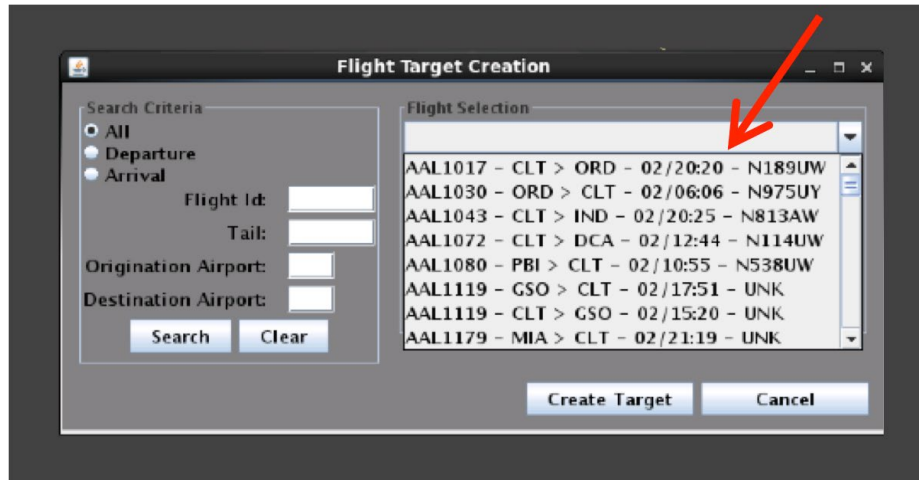


Figure 6.3. If no search criteria are entered, all flights in the system data will be included in the Flight Selection list.

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

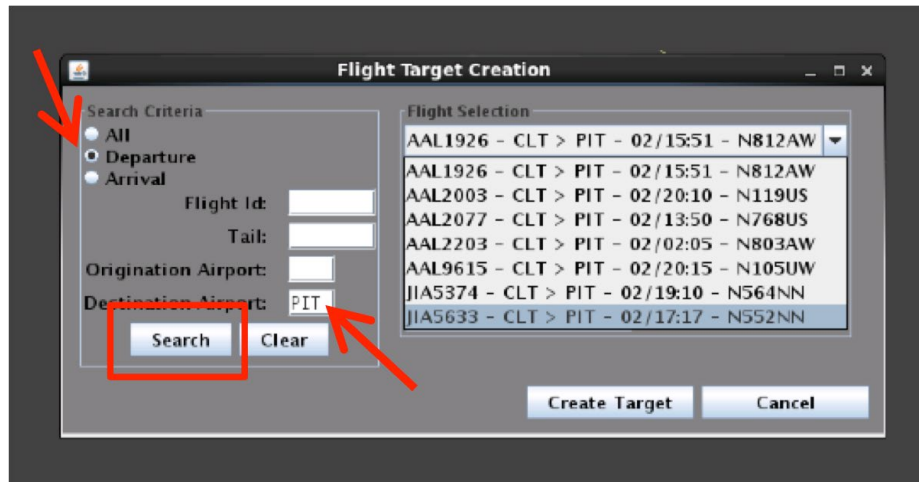


Figure 6.4. Flights matching the search criteria will be shown in the Flight Selection dropdown list.

Step 6: Select the flight in the drop down menu.

Step 7: Select a target placement location:

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

Step 8a: 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).

Step 8b: Alternatively, select “Cancel” to exit the window without creating a flight target.

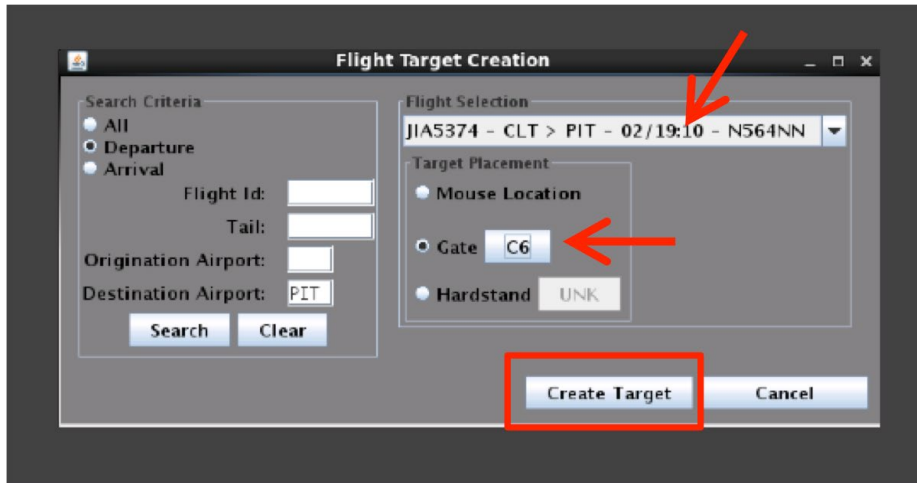


Figure 6.5. Select flight from dropdown list, select target placement, and select “Create Target”.



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.

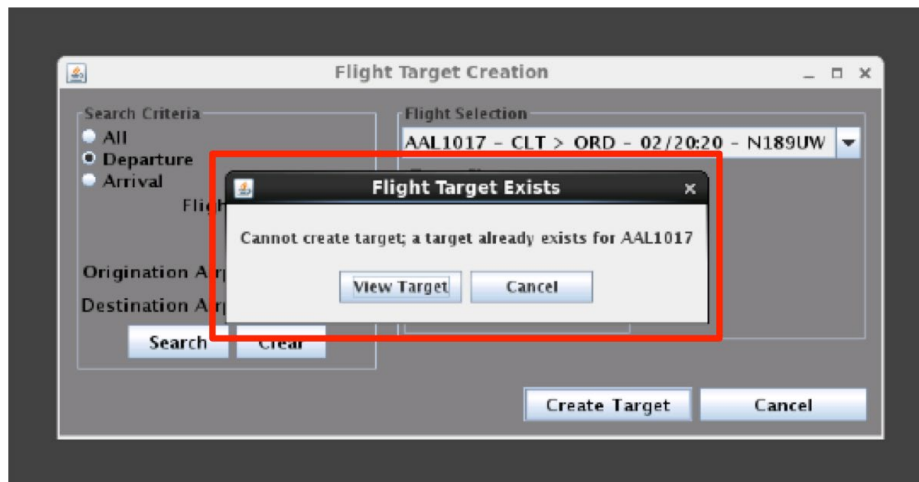


Figure 6.7. Target already exists prompt with option to view existing target.

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 2: Enter tail number (required) and aircraft type (optional) (Figure 6.8).

Step 3: Select a target placement location:

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

Step 4a: 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.

Step 4b: Alternatively, select “Cancel” to exit the window without creating an aircraft target.

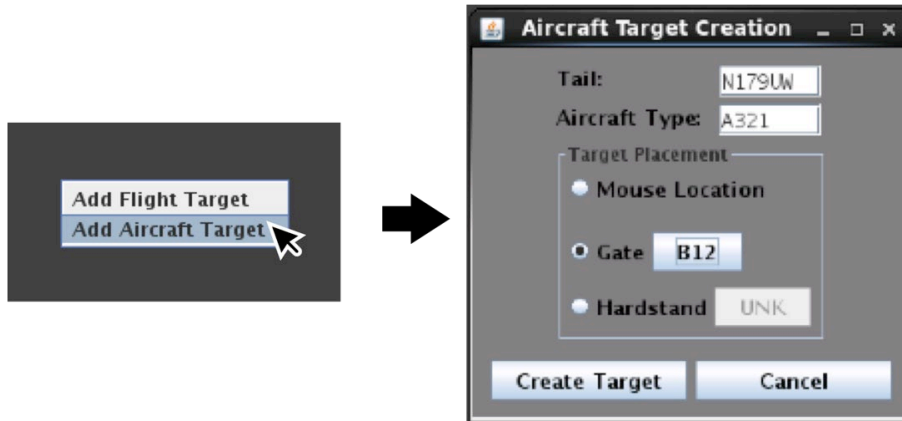


Figure 6.8. Create an aircraft target using tail number and aircraft type (optional).



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) (Figure 7.1).

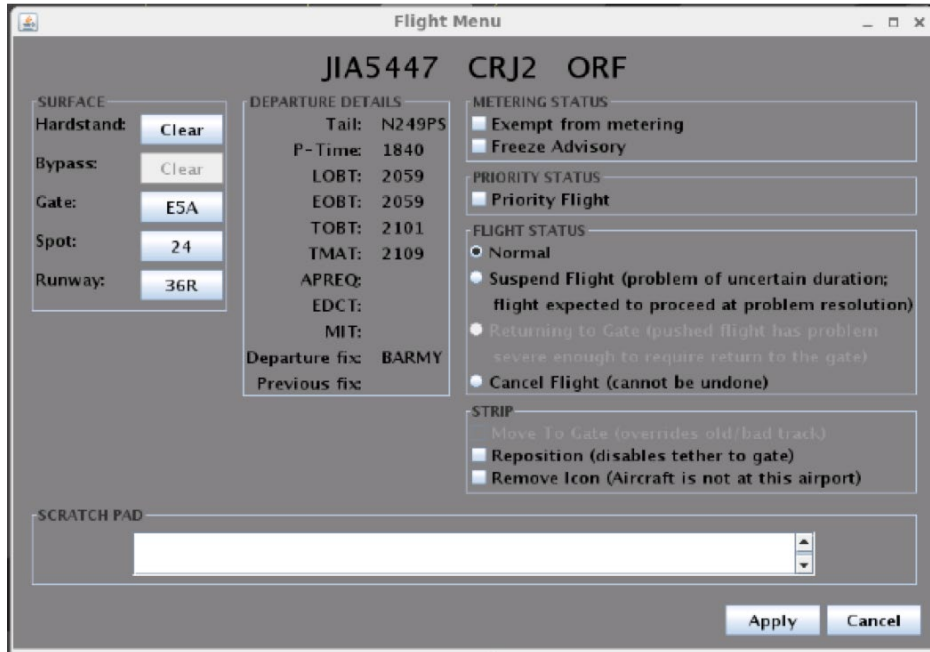


Figure 7.1. Example of a Flight Menu for a departure flight.

To open the Flight Menu:

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

Step 2: Right-click on the flight strip/data tag/icon to open the menu.

Step 3: Select "Flight Menu".

----- Or -----

Step 1: Double click on any flight strip, data tag, or icon.

7.1 Flight Menu: Surface

The Surface section of the Flight Menu includes gate, spot, and runway information (Figure 7.2).

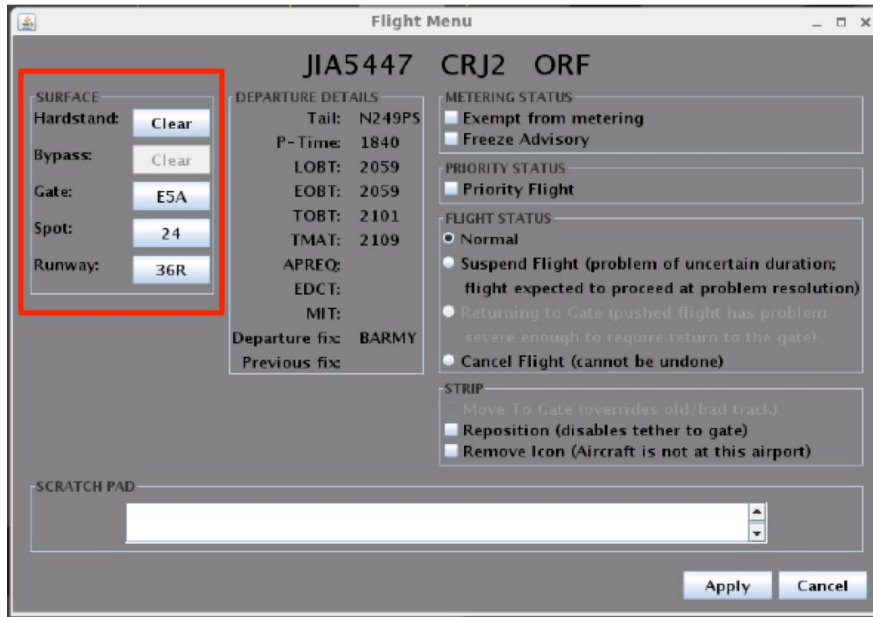


Figure 7.2. Flight Menu: Surface information (red box).

7.1.1 Gate Assignment

Gate assignment for a departure or arrival flight can be changed using the Flight Menu. Gate assignments are used to determine where a flight is displayed on the RTC and gate assignments impact the ATD-2 scheduling system (e.g., expected taxi time in the ramp and to the runway).

To change the gate assignment of a departure or arrival flight:

Step 1: Open the Flight Menu.

Step 2: Click in the “Gate” field where the current gate assignment is shown.

Note: The Gate menu shows all available gate options for a given airport (see example gate-selection menu in Figure 7.3).

Step 3: Select the new gate.

Step 4: Select “Apply” in the gate-selection window.

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

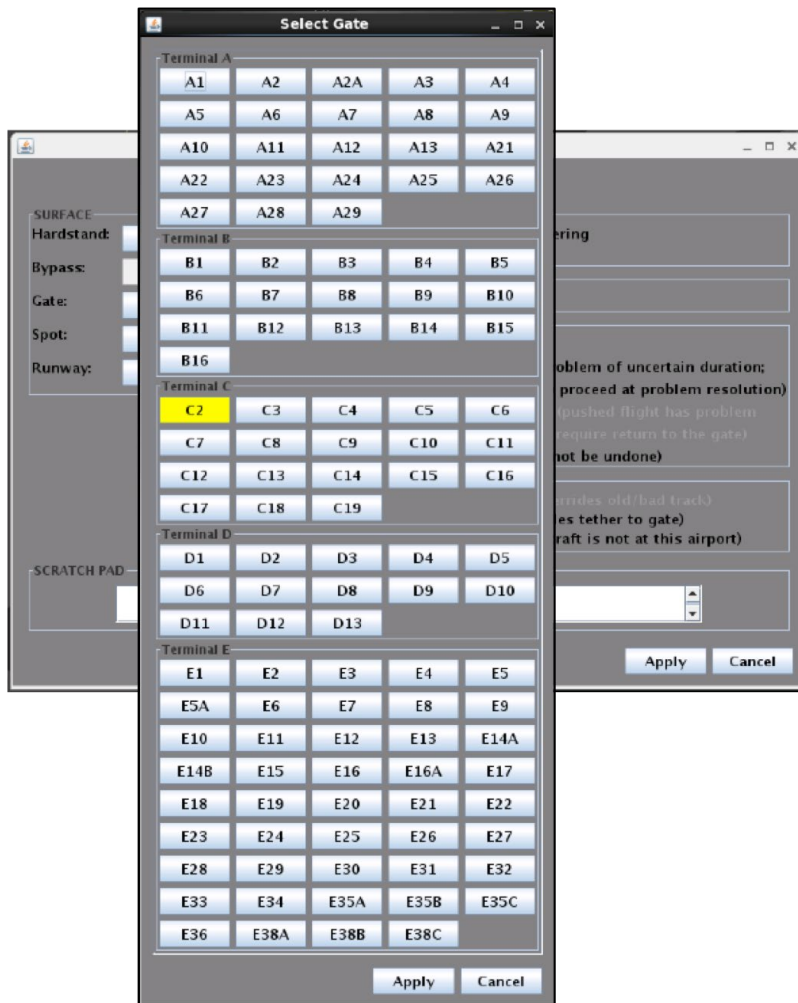


Figure 7.3. Example gate-selection menu with the current gate assignment highlighted in yellow.

If another flight is already assigned to the chosen gate, a warning will be displayed with the options to choose the gate or to cancel the gate change (Figure 7.4).

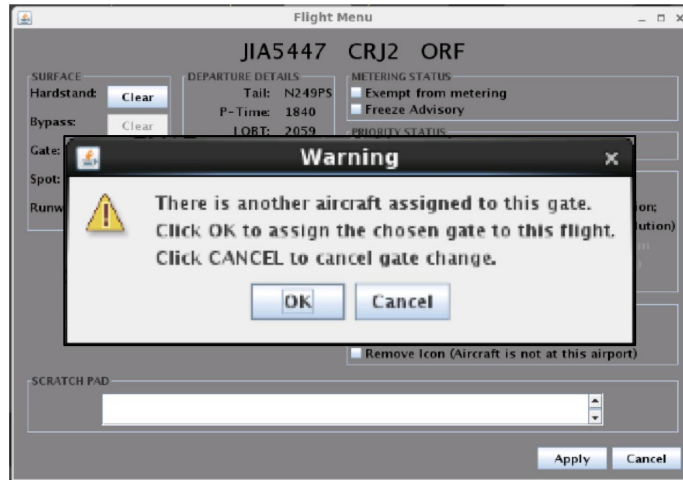


Figure 7.4. Warning displayed if chosen gate is already occupied.

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.

7.1.2 Spot Assignment

The spot assignment for a departure or arrival flight can be changed using the Flight Menu. 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 the spot assignment of flight:

- Step 1:** Open the Flight Menu.
- Step 2:** Click in the “Spot” field where the current spot assignment is shown.
- Note:** The Spot menu shows all available spot options for a given airport (see example spot-selection menu in Figure 7.5).
- Step 3:** Select the new spot.
- Step 4:** Select “Apply” in the spot-selection window.
- Step 5:** When finished making changes in the Flight Menu, select “Apply”.

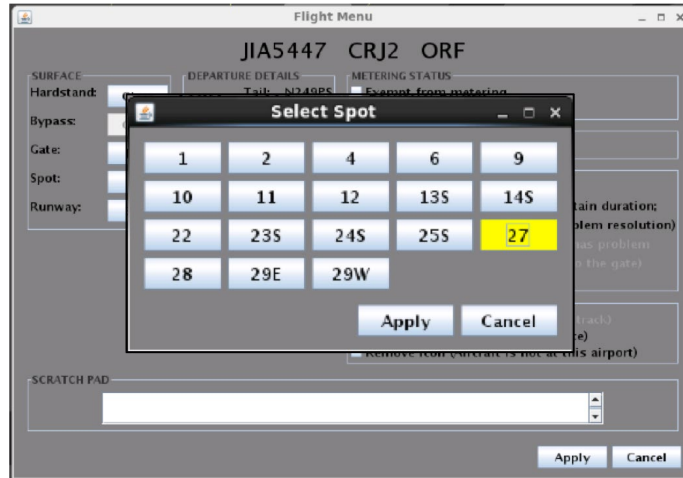


Figure 7.5. Example spot-selection menu with spot selection highlighted in yellow.

A spot assignment change is reflected on the flight strip/data tag.

7.1.3 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 the runway assignment of a departure flight for Operational Necessity (at an airport where this option is available):

Step 1: Open the Flight Menu.

Step 2: Click in the “Runway” field where the current runway assignment is shown.

Note: A message is shown explaining that a runway change for Operational Necessity can be made only once and after “Apply” is selected in this window, and in the Flight Menu window, the change cannot be undone, or changed again, within the RTC interface. Runway selection is grayed-out until this message is acknowledged (Figure 7.6).

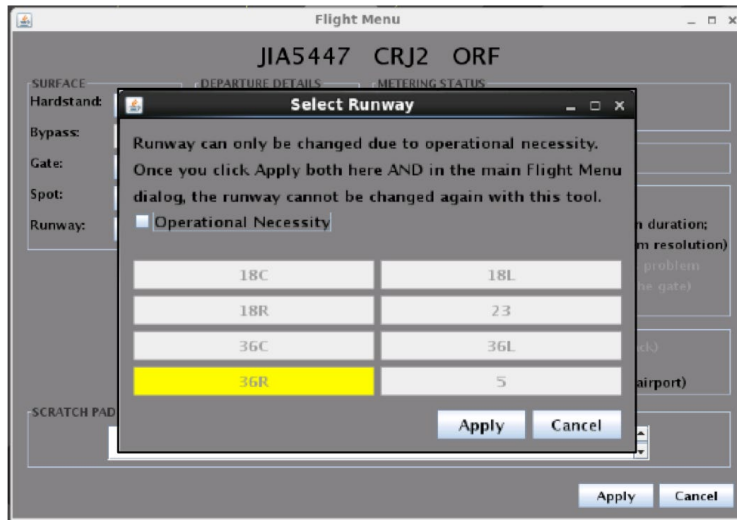


Figure 7.6. Runway change for Operational Necessity message.

Step 3: To acknowledge this message, check the “Operational Necessity” box (Figure 7.7).

Note: Once the Operational Necessity message has been acknowledged (checked), all runway options for a given airport are selectable (see example runway-selection menu in Figure 7.7).

Step 4: Select the runway that is required for Operational Necessity.

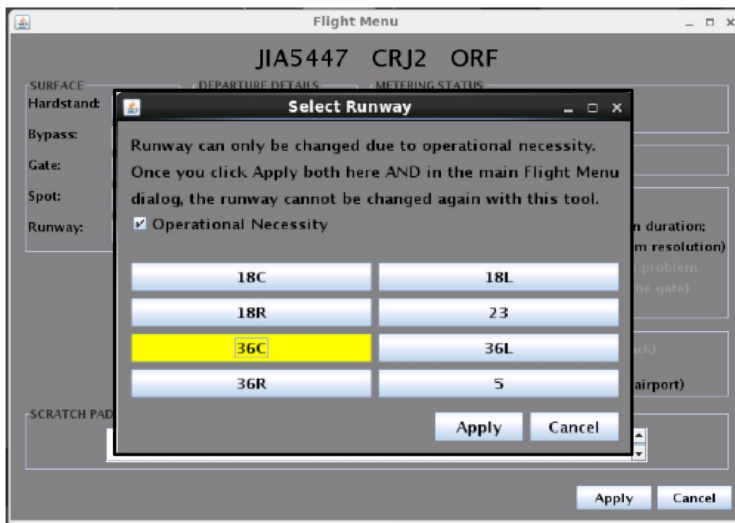


Figure 7.7. Example runway-selection menu with runway selection highlighted in yellow.

Step 5: Select “Apply” to close the runway-selection window and return to the Flight Menu.

Note: *If the runway field is selected again, while the Flight Menu is still open, a prompt is displayed, “Do you want to clear the runway assignment to 36C due to Operational Necessity?” with the options to “Clear 36C” or “Cancel” (Figure 7.8).*

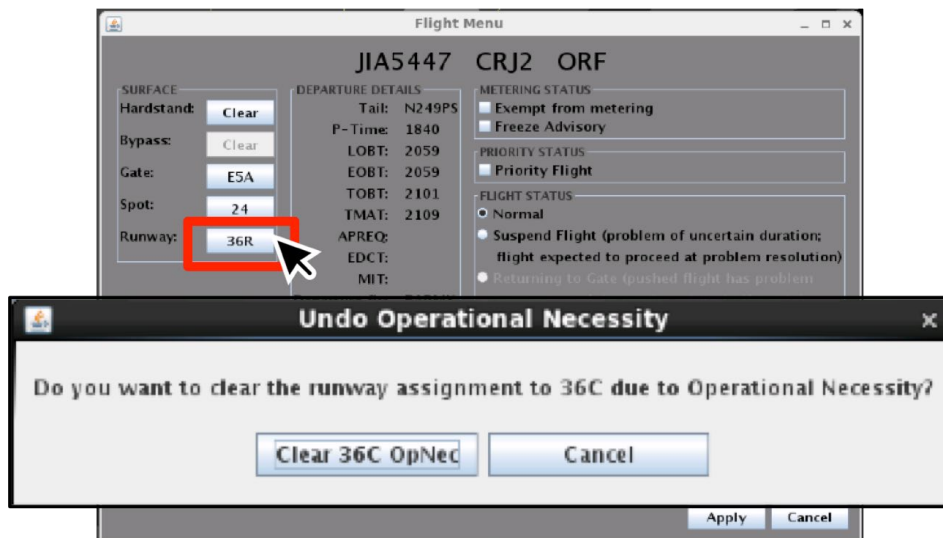


Figure 7.8. If the runway field is selected again, *prior* to closing the Flight Menu, a prompt is displayed to confirm that the previous runway selection should be cleared.

Step 6: Select “Clear” to view the list of available runways again or “Cancel” to keep the new Runway selection.

Step 7: When finished making changes in the Flight Menu, select “Apply” to close the Flight Menu (Figure 7.9).

Note: Once “Apply” is selected to close the Flight Menu, the runway change **CANNOT** be undone or cancelled.

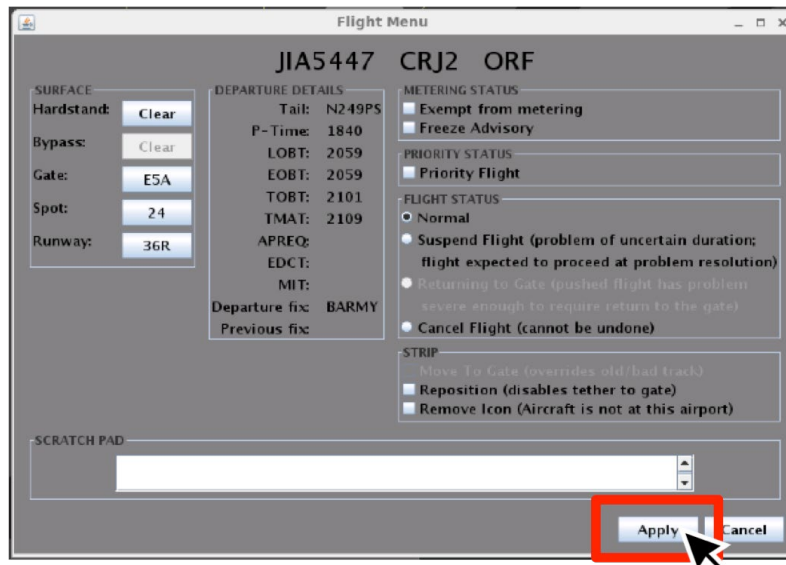


Figure 7.9. Once “Apply” is selected to close the Flight Menu, the runway change for operational necessity cannot be undone or cancelled.

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 highlighted in green (see flight strip in Section 4.4.1).

7.1.4 Hardstand Assignment

At airports which use hardstands in the ramp area to hold aircraft, the hardstand assignment can be indicated in the RTC interface.

To assign a departure or arrival flight to a hardstand (at an airport where this option is available):

Step 1: Open the Flight Menu.

Step 2: Click in the “Hardstand” field, which, by default, shows “Clear”.

Note: The hardstand menu shows the hardstand options for a given airport (see example hardstand-selection menu in Figure 7.10).

Step 3: Select the hardstand.

Step 4: Select “Apply” in the hardstand-selection window.

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

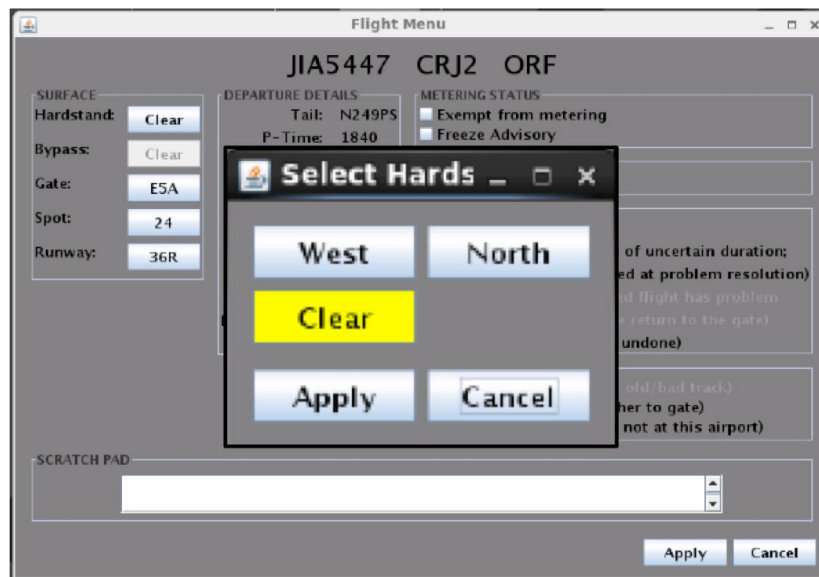


Figure 7.10. Example hardstand selection menu.

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 or Surface Metering, enters the hardstand, a light green timer is displayed and begins counting down to the target release time. See Section 5.3.6 for a description of data tags and timers (when applicable) in the hardstand.

To remove a hardstand assignment from a flight, open the Flight Menu and click in the “Hardstand” field and choose “Clear”. Select “Apply” in the hardstand-selection window and again on the Flight Menu.

7.1.5 Bypass

Because traffic flows and procedures in and around the ramp vary by airport, some versions of RTC may offer an option to designate, or 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 situational awareness about 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 such as the "Mike-Charlie" bypass (*at an airport where bypass options are available*):

Step 1: Open the Flight Menu.

Step 2: Click in the "Bypass" field, which, by default, shows "Clear".

Note: *The bypass menu shows available routing options for a given airport (see example "Select Bypass dialog" in Figure 7.11).*

Step 3: Select the appropriate bypass routing option.

Step 4: Select "Apply" in the bypass-selection window.

Step 5: When finished making changes in the Flight Menu, select "Apply".

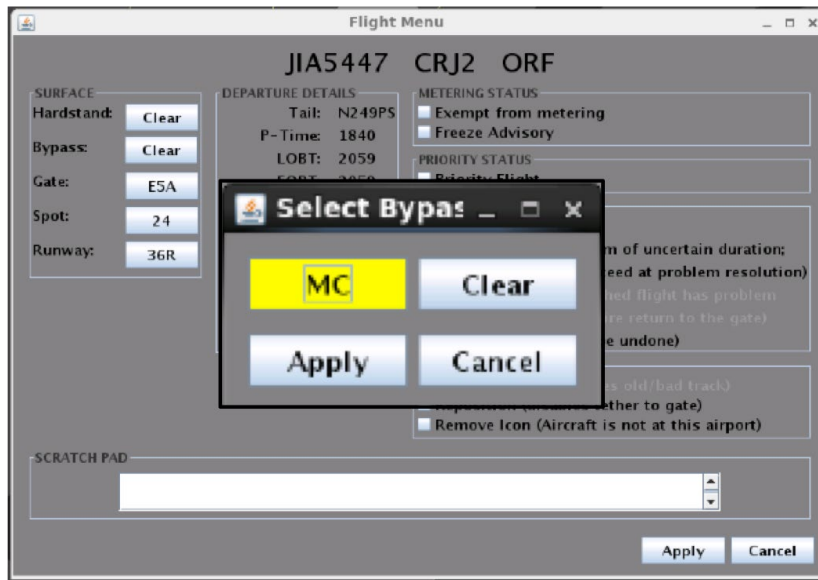


Figure 7.11. Example bypass (routing) selection menu.

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 4.4.2 for a description of the “MC” label).

To remove the bypass label, open the Flight Menu and click in the “Bypass” field and choose “Clear”. Select “Apply” in the hardstand-selection window and again on the Flight Menu.

7.2 Flight Menu: Departure Details

The Departure Details portion of the Flight Menu includes schedule, TMI, and departure fix information (Figure 7.12).

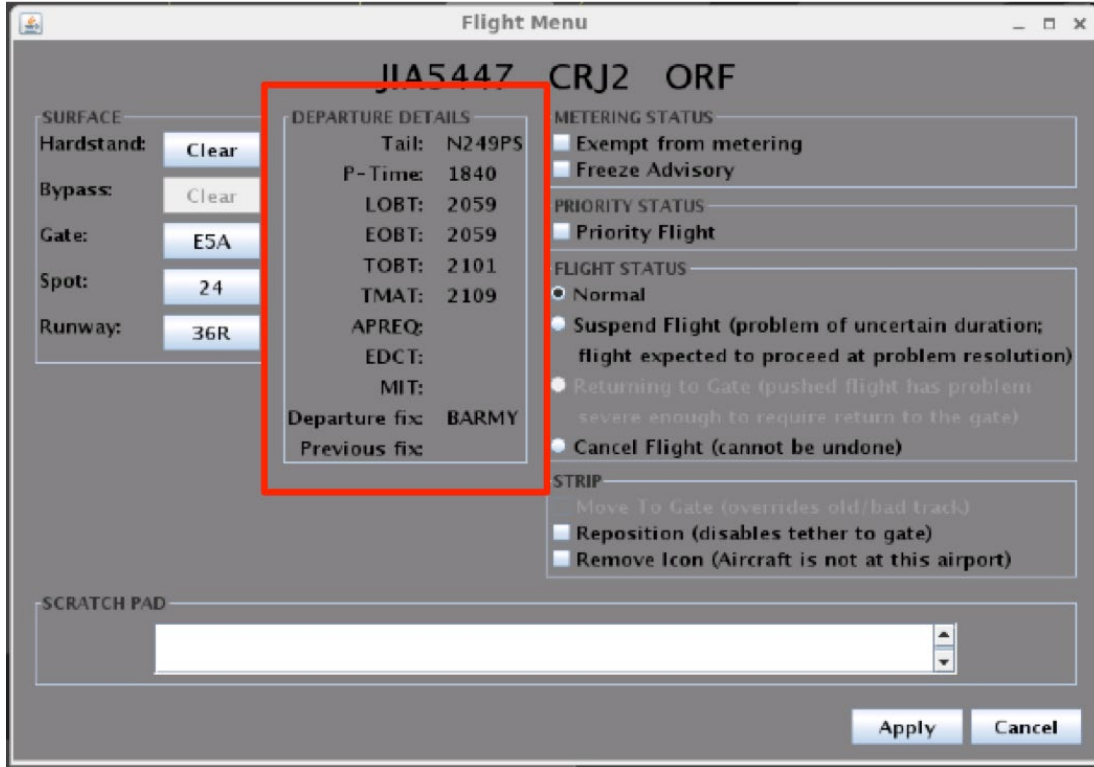


Figure 7.12. Flight Menu: Departure Details

Each field in the Departure Details portion of the Flight Menu is described below.

Aircraft Information

Tail	The tail number of the aircraft (e.g., N249PS).
-------------	-------------------------------------------------

Schedule Information

P-Time	Airline-provided published pushback time (hhmm UTC).
Latest Off-Block Time (LOBT)	The estimated pushback time received from an airline either directly or through a CDM message to TFMS (hhmm UTC).
Earliest Off-Block Time (EOBT)	Earliest expected pushback time, usually provided by the airline and based on real-time updates (e.g., tickets scanned at gate, baggage loaded) (hhmm 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 a TMI restriction (EDCT/APREQ).

Target Off-Block Time (TOBT)	The time at which the tactical scheduler plans for the flight to pushback (hhmm UTC). Applies when a flight is subject to Surface Metering or a TMI restriction (EDCT/APREQ).
Target Movement Area entry Time (TMAT)	The time at which the tactical scheduler plans for the flight to be released from the spot (hhmm UTC). Applies when a flight is subject to Surface Metering or a TMI restriction (EDCT/APREQ).

Traffic Management Initiative (TMI) Information

Approval Request (APREQ)	Once negotiated by ATC, the APREQ (wheels-up) time (hhmm UTC).
Expect Departure Clearance Time (EDCT)	The EDCT (wheels-up) time (hhmm UTC).
Miles-in-Trail (MIT)	The MIT restriction (e.g., “10 MIT”).

Departure Fix Information

Departure fix	The departure fix assigned as part of the departure route.
Previous fix	The previously assigned fix, if the departure route was changed.

7.3 Flight Menu: Arrival Details

The Arrivals Details portion of the Flight Menu includes schedule and taxi time information, as well as upcoming departure information for that aircraft (Figure 7.13).

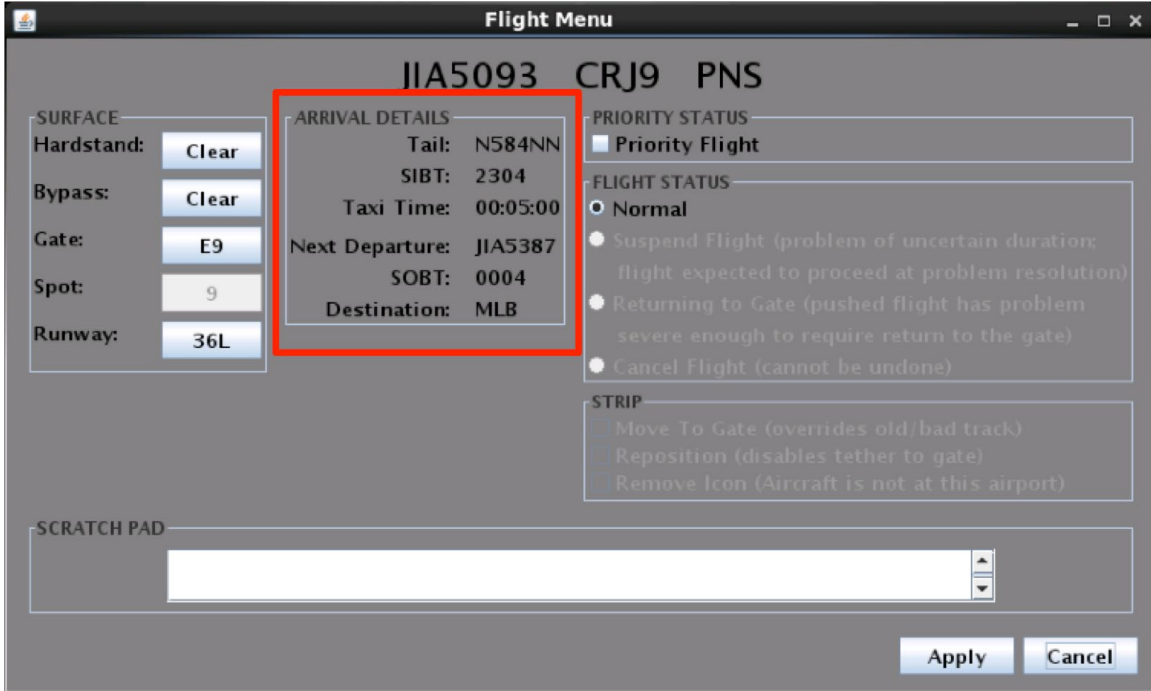


Figure 7.13. Flight Menu: Arrival Details

Aircraft Information

Tail	The tail number of the aircraft.
-------------	----------------------------------

Schedule Information

Scheduled In-Block Time (SIBT)	Airline-provided scheduled arrival time (<i>hhmm</i> UTC).
---------------------------------------	-------------------------------------------------------------

Taxi Time

Taxi Time	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)

Next Departure	Call sign of next scheduled departure flight for that aircraft.
Scheduled Off-Block Time (SOBT)	Airline-provided pushback time for next departure flight for that aircraft.
Destination	Destination of next scheduled departure flight for that aircraft.

7.4 Flight Menu: Metering Status

The Metering Status section of the Flight Menu includes two settings that apply to STBM (Section 8.1): Exempt from Metering and Freeze Advisory as shown in Figure 7.14.

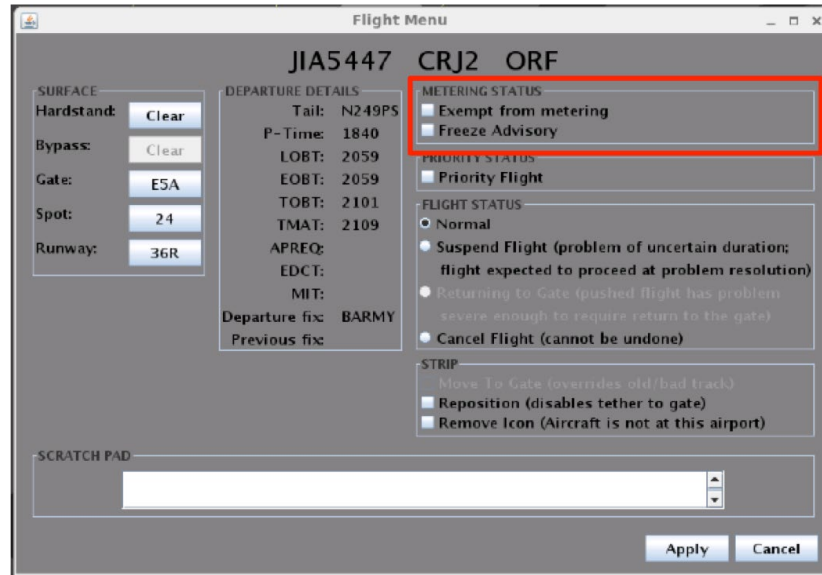


Figure 7.14. Flight Menu: Metering Status.

7.4.1 Exempt from Metering

Check the “Exempt from Metering” box to prevent a departure flight from becoming subject to Surface Metering. That is, the flight will not be assigned a TOBT or TMAT and, thus, will not be provided pushback or spot advisories.

If this is selected for a departure flight already subject to Surface Metering, the TOBT and TMAT, and associated pushback and spot advisories, will be removed. Departure flights can be exempted from metering while at the gate, during pushback/spool-up, and during taxi out.

Certain types of flights may be set at specific airports as automatically exempt from metering, such as military or cargo flights. However, other flights need to be manually marked for exemption.

Note: This applies only to Surface Metering, not TOBT and TMAT assignments for TMI-restricted flights. A TMI-flight will always have TOBT (pushback from gate) and TMAT (spot) advisories.

7.4.2 Freeze Advisory

The “Freeze Advisory” option is available to the Ramp Managers when a departure flight is subject to Surface Metering and, as a result, has been assigned a TOBT and TMAT (see Section 8.1.1 for a description of the freeze advisory). When the “Freeze Advisory” is selected, the TOBT and TMAT times are frozen in place and will remain unchanged for that flight. On the Flight Menu, the TOBT and TMAT fields are highlighted, in cyan

and light green, respectively (Figure 7.15). The option to freeze an advisory is available only for Ramp Managers in RMTC.

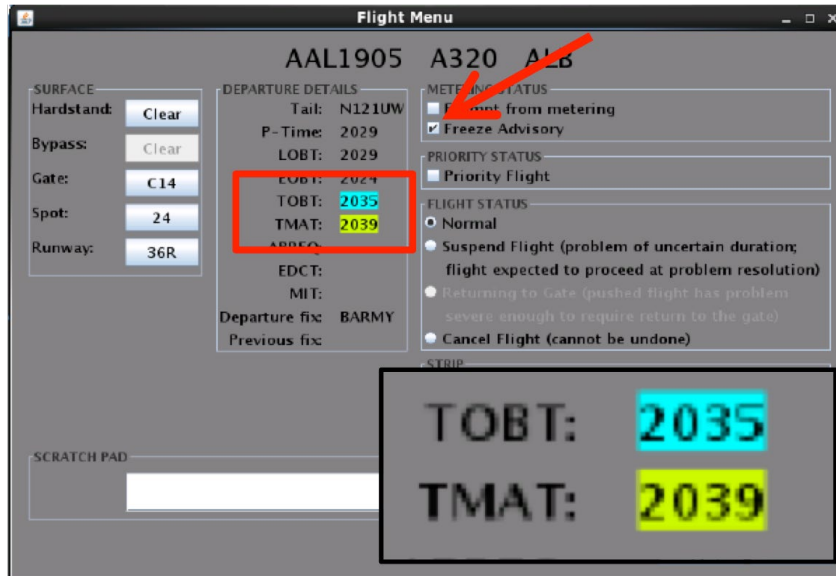


Figure 7.15. Flight Menu: Metering Status.

If “Freeze” is selected while the flight is still parked at the gate, the cyan gate hold advisory next to the flight strip changes to black text highlighted in cyan. The gate hold advisory will continue counting down to the (frozen) TOBT and will display a “Push” advisory when the (frozen) TOBT is reached.

The freeze selection can be undone by unchecking the “Freeze Advisory” box.

7.5 Flight Menu: Priority Status

To indicate that a departure or arrival flight has priority status, check the “Priority Flight” box (Figure 7.16).

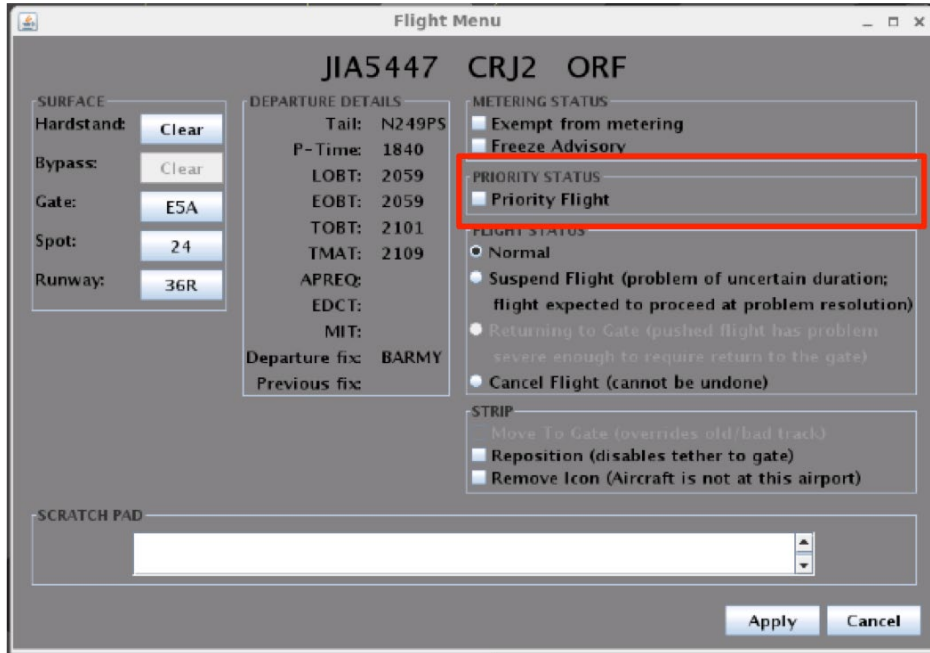


Figure 7.16. Flight Menu: Priority Status.

When a flight is designated as a priority flight, a green border is shown around the flight strip/data tag/flight icon (see Section 4.2.4). Designating a flight as priority does impact the ATD-2 scheduling system.

7.6 Flight Menu: Flight Status

The Flight Status portion 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 7.17).

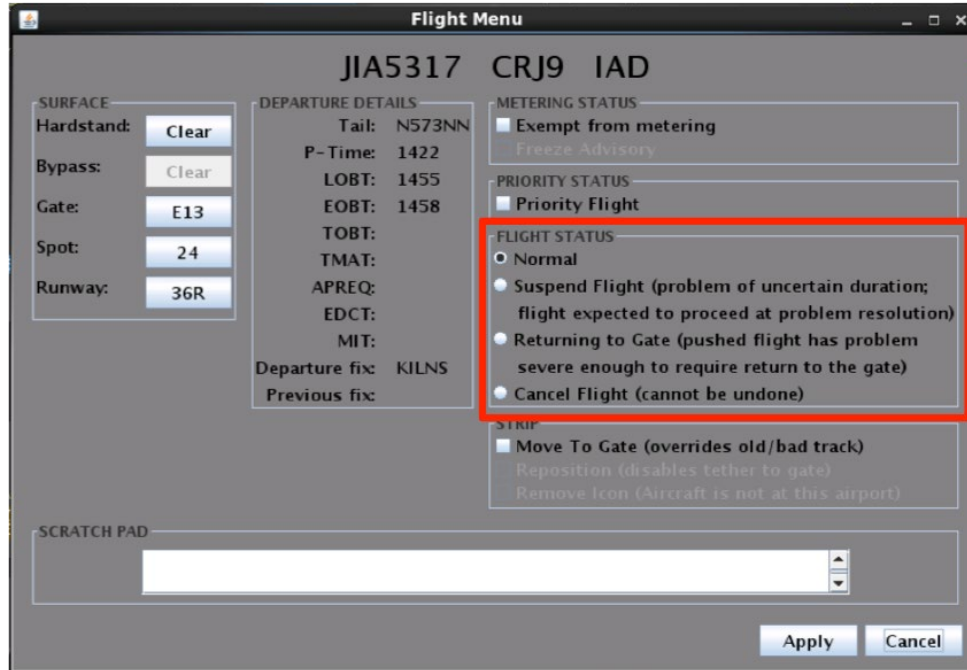


Figure 7.17. Flight Menu: Flight Status.

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 box is “Suspend Flight (problem of uncertain duration; flight expected to proceed at problem resolution)”. The “Suspend Flight” option is available for departure flights, and can be used when the flight is temporarily delayed (e.g., mechanical issue), but not permanently cancelled. Select “Apply” in the Flight Menu window to confirm the suspension. When a flight is suspended, the flight strip/data tag/flight icon is grayed-out and the word “Suspended” is displayed in red (see Section 4.4.3).

The purpose of suspending a flight is to provide a visual cue and reminder of a delay and to inform the ATD-2 scheduling system that the flight will likely not push back at the EOBT so it can be removed from the scheduling cycle.

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. Select “Apply” in the Flight Menu window to confirm (see Section 4 for a description of flight strip/data tag).

“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.

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 shown 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 7.18).

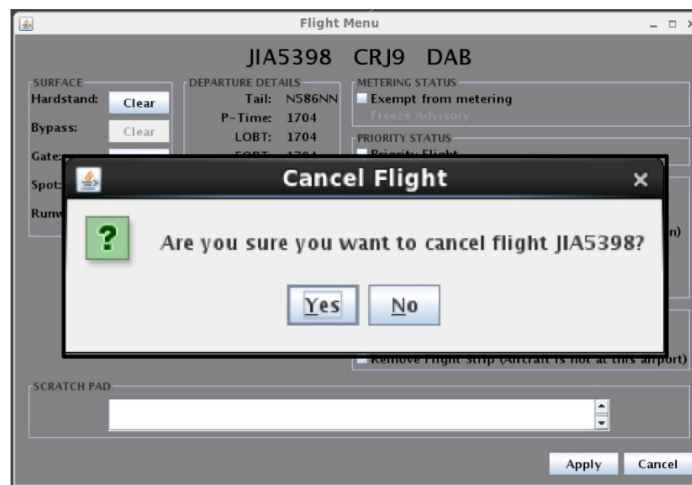


Figure 7.18. Flight Menu: Prompt to confirm cancellation of a flight. Once cancelled, the action cannot be undone.

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 Section 4.4.5). After 60 seconds, the cancelled flight will display as a hollow gray icon.

7.7 Flight Menu: Strip

The Strip portion of the Flight Menu offers three options for moving and repositioning a flight strip: Move to Gate, Reposition, and Remove Flight (Figure 7.19).

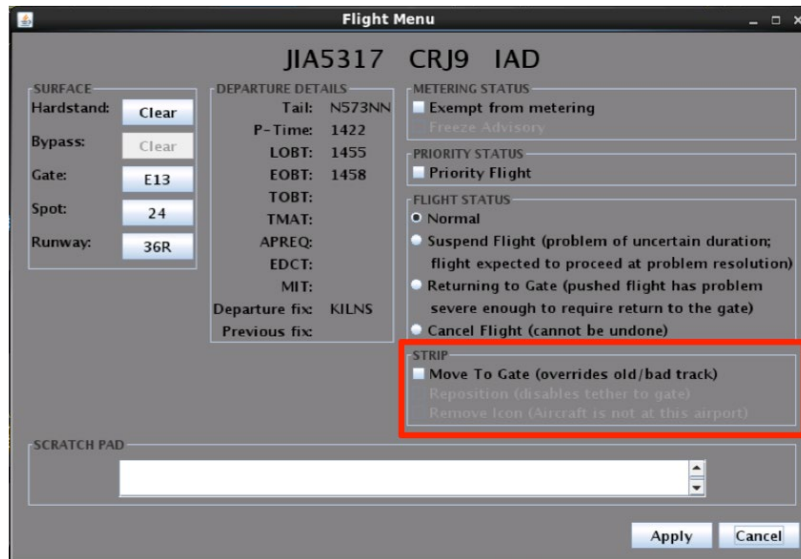


Figure 7.19. Flight Menu: “Move to Gate” option is available.

7.7.1 Move to Gate

“Move to Gate (overrides old/bad track)” allows the user 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 7.20.

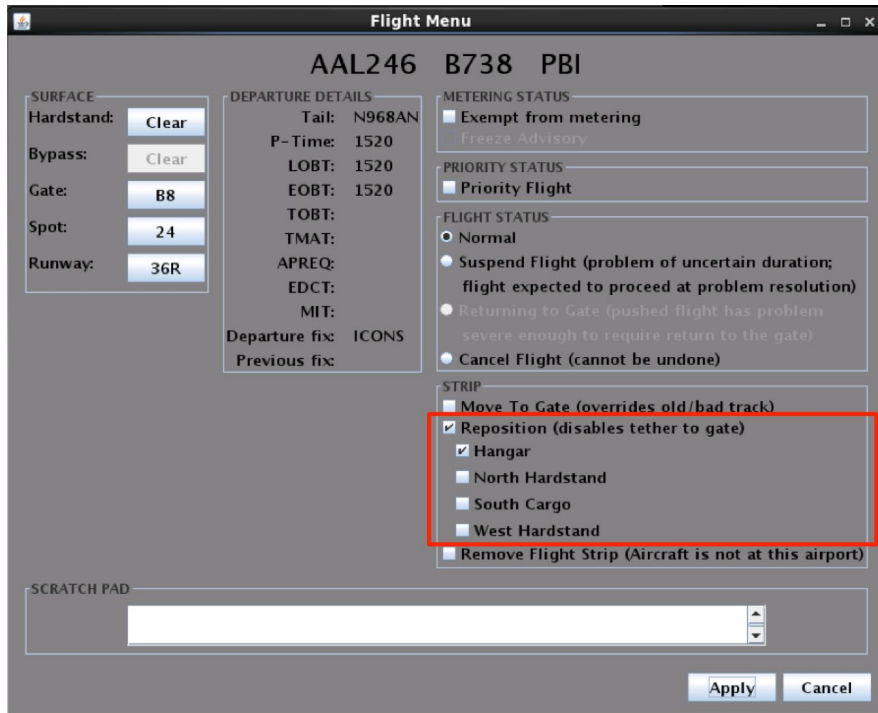


Figure 7.20. Flight Menu: Reposition. Example of locations to which the flight can be repositioned (e.g., Hangar, North Hardstand, South Cargo, West Hardstand).

If a new location is selected and “Apply” is selected, 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 (see Section 4.4.6 for description) and the user can drag the flight strip/icon to any desired location on the airport surface.

7.7.3 Remove Flight

The third option in the Strip portion of the Flight Menu is “*Remove Flight Strip (Aircraft is not at this airport)*”. 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 7.21). 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 STBO display.

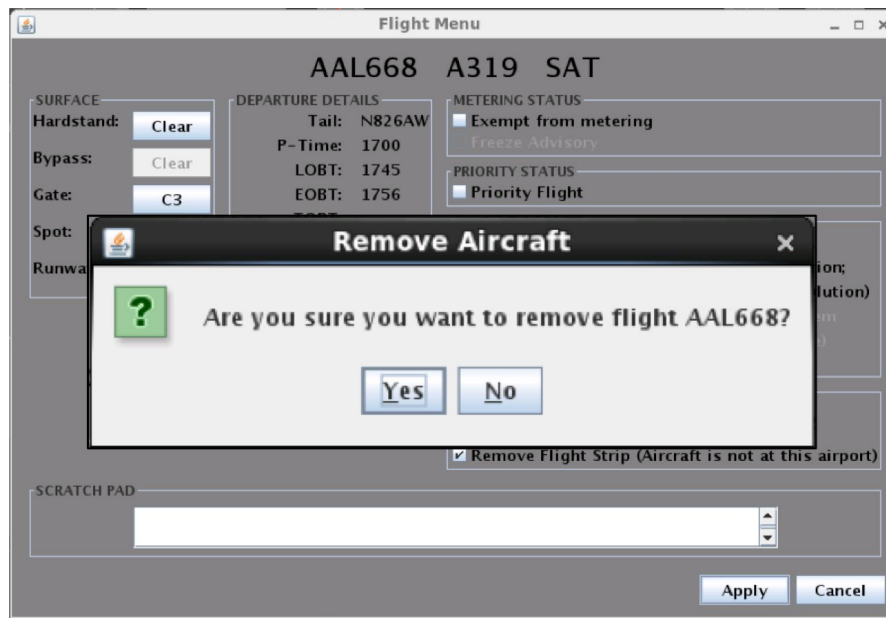


Figure 7.21. Flight Menu: Prompt to confirm removal of a flight. Once cancelled, the action cannot be undone.

7.8 Scratchpad

As shown in Figure 7.22, all flights have a scratchpad available in the Flight Menu. The scratchpad can be used for adding a text label to the flight strip/data tag.

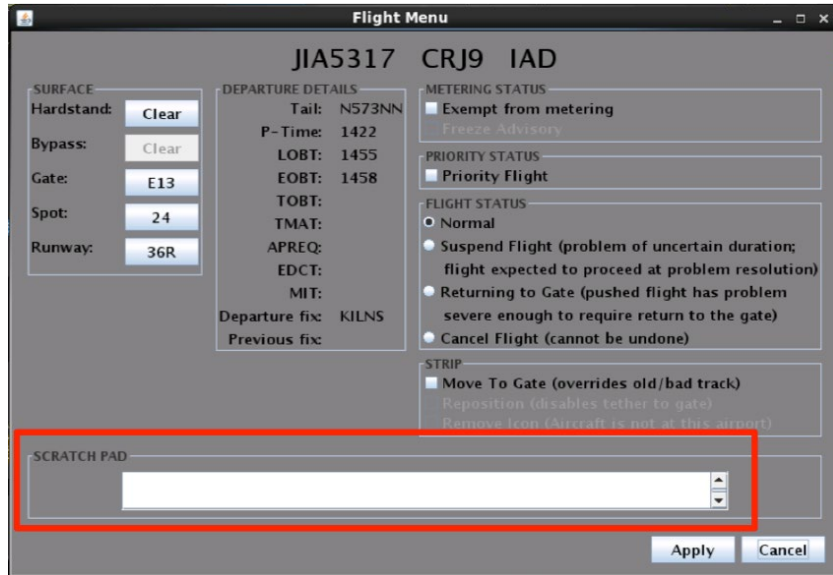


Figure 7.22. Flight Menu: Scratchpad to add text to a flight strip/data tag.

Note: 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. This default scratch pad entry may be updated or removed by the user.

In the examples in Figure 7.23, the “FLAGSHIP” notes at the bottom of the data tags were added using the scratchpad feature. Note that scratch pad entries have white text on a black background.

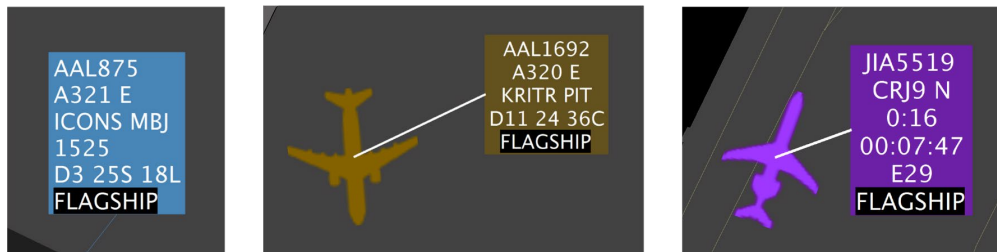


Figure 7.23. Examples of flight strip/data tags with a scratchpad entry, “FLAGSHIP”.

7.9 Aircraft Menu

Between the arrival flight and the upcoming departure flight, an aircraft may not have any information associated with it. In this state, an Aircraft Menu is available (Figure 7.24).



Figure 7.24. Aircraft Menu available for aircraft parked at the gate.

The Aircraft Menu is accessed in the same way as the departure and arrival Flight Menu.

To open the Aircraft Menu:

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

Step 2: Right-click on the gray data tag/gray icon to open the menu.

Step 3: Select "Aircraft Menu".

Alternatively: Double click on a gray data tag/diamond icon to access the Aircraft Menu.

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 scratchpad.

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 type (e.g., A319 or CRJ9) and selecting "Apply" in the Aircraft Menu window.

8 Metering

The Surface Time-Based Metering (STBM) mode provides tactical gate hold recommendations generated by the 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.

8.1 Surface Time-Based Metering (STBM)

The main purpose of STBM is to alleviate AMA surface congestion. The 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 hold times at the gate.

The STBM uses EOBTs and undelayed taxi time estimations to predict when aircraft will arrive at the runways. 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. The TOBT is used to provide gate hold recommendations.

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 - APREQs, EDCTs, 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 hold advisories.

Metering can be enabled or disabled, as described in the Surface Metering Display (SMD) User Manual, and can be triggered on and off to display gate hold time advisories. RTC displays STBM recommended gate hold times or push advisories in a cyan blue text adjacent to the flight strip (Figure 8.1). The gate hold advisory counts down to the TOBT and once the TOBT is reached, a “Push” advisory is displayed.

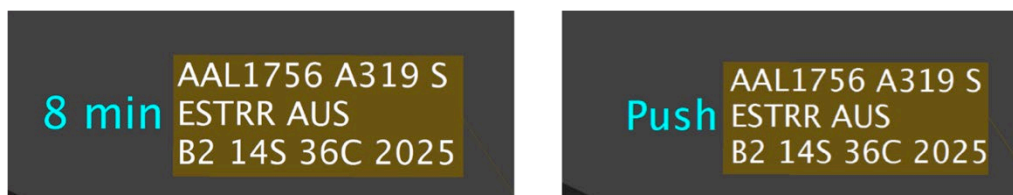


Figure 8.1. STBM gate hold advisory (left) and “Push” advisory (right).

8.1.1 Freeze Advisory

The ATD-2 scheduler continuously recalculates and optimizes the runway schedule based on traffic and updated demand predictions. When the scheduler adjusts a flight’s target time at the runway (Target Take-off Time or TTOT), the corresponding TOBT and TMAAT may also change. As a result, users may see advisories periodically change, or “jump”.

When “Freeze Advisory” is selected on the Flight Menu, the TOBT and TMAAT are “frozen”, preventing them from changing, although they may jump once within 1 second of being frozen. Gate advisories will continue counting down to the (frozen) TOBT.

Frozen advisories for TOBT and TMAAT are displayed as black text, highlighted in cyan, the inverse of unfrozen flights (Figure 8.2).



Figure 8.2. Once the TOBT and TMAAT are “frozen”, advisories are displayed as black text highlighted in cyan.

There are three ways in which a Gate Advisory can “freeze”:

1. All metered flights are automatically frozen when the Ramp Controller puts a flight on hold (i.e., when the Pilot calls ready, see Figure 8.3).



Figure 8.3. Flights are automatically frozen when Ramp Controller puts them on “Hold.”

2. In the Surface Metering Display (SMD), the Static Time Horizon (STH) can be set to freeze metered aircraft at a certain number of minutes before TOBT (the default is 15 minutes). “Uncertain” flights will not be “frozen” based on the STH, but only after being put on hold. The STH does not affect flights with an APREQ or EDCT (TMI flights).

3. A flight can be manually frozen and unfrozen by the Ramp Manager through the RMTC flight menu (Section 7.4.2).

8.1.2 Exempt Flights

Exempt flights are flights that will not be subject to recommended gate holds. For example, cargo and military flights can be automatically placed in the exempted flight category. An exempt flight will not display any guidance or gate holds from the surface metering tool, allowing the Ramp Controllers to push or hold the flight as they deem fit when the pilot calls in ready for departure. Ramp Control can also designate a specific flight as an exempt flight on either the RTC or the RMTC by using the Flight Menu (Section 7.4.1).

8.1.3 Priority Flights

Priority flights are scheduled ahead of other flights within the same airline during surface metering. 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. The Ramp Manager can create a list of priority flights on the RMTC (see Section 9.5.2), or the Ramp Controllers can designate a flight as a priority flight using the Flight Menu on the RTC (Section 7.5).

8.1.4 TMI Flights

TMI flights (e.g., EDCT, APREQ/CFR 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. However, recommended gate hold or push advisories for TMI flights will *always* be displayed on the RTC (once the wheels-up time has been negotiated) regardless of whether surface metering is turned on or off, in order to assist the Ramp Controller to release flights so that the flights comply with their wheels-up time (see Section 5). Once the flight pushes back, instead of the APREQ or EDCT times, a TMAT will be shown with a yellow background on the flight strip until the flight crosses the spot and enters the AMA. Note that a large number of TMI flights in the system will impact the overall demand and may increase gate hold times for non-TMI flights that are subject to metering.

8.1.5 Suspend a Flight

If there is a problem of uncertain duration with a flight, but the flight is expected to proceed after resolution of that problem (i.e., a mechanical issue), the flight should be suspended to remove it from the scheduling consideration temporarily. After resolution of the issue, the flight status should be reset to normal for the flight to proceed as usual. Temporarily suspending the flight prevents the scheduler from holding a place for the flight before it is more certain and predictable when that flight will be ready. Ramp Control can suspend a specific flight on either the RTC or the RMTC by using the Flight Menu described in Section 7.6.2.

8.1.6 EOBTs and Gate Advisories

STBM takes EOBTs (which can also be described as a flight's estimated earliest possible ready time) and uses these times to help compute the runway schedule and target times at

the gate and spot (i.e., TOBT and TMAT). EOBT is calculated by the airline based on various factors (e.g., percentage of passengers boarded, baggage loaded, etc.).

When a flight is subject to surface metering, a gate advisory, based on the TOBT, is displayed in cyan next to the flight strip. Gate advisories count down to the TOBT and display the word “Push” once TOBT is reached.

8.1.6.1 Push Advisory

Once TOBT has been reached, “Push” is displayed next to the flight strip (Figure 8.4).

To act on a “Push” advisory (i.e., change the flight state to pushback/spool-up):

Step 1: Hover mouse over flight strip or click once on 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.

Note: An engine icon is shown attached to the flight strip to indicate the flight is now in the pushback/spool-up state.

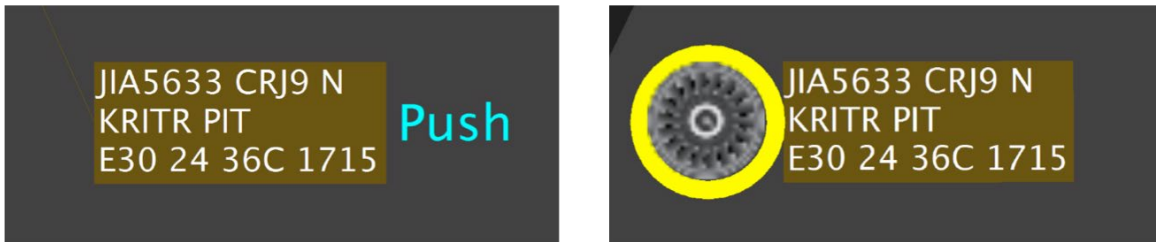


Figure 8.4. The Push advisory for flight prior to pushback (left). During pushback/spool-up, the engine icon appears next to the flight strip (right).

8.1.6.2 Gate Hold Advisories

Alternatively, if a flight is subject to surface metering, but the TOBT has not yet been reached, STBM recommends a gate hold. Gate hold advisories are displayed in cyan next to the flight strip and are initially displayed in minute increments (“<mm> min”) (Figure 8.5).

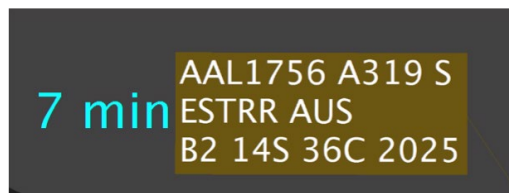


Figure 8.5. Gate hold advisory (7 min).

When a flight that is subject to a gate hold advisory calls for pushback, Ramp Control can put the flight on “hold” using the right-click menu. The purpose of putting a flight on

hold is to inform the ATD-2 scheduling algorithms that the flight is ready. When a flight is put on hold, three things happen:

1. The TOBT is frozen to prevent the gate hold advisory from changing, or “jumping” (Figure 8.6).
2. The gate hold advisory changes from minute increments to min:sec (Figure 8.6).
3. A red border is displayed around the flight strip as a reminder that the flight is on hold.

Ramp Control can also communicate the hold advisory to the flight deck (e.g., “AAL1756, hold for metering, expect <7> minutes”).

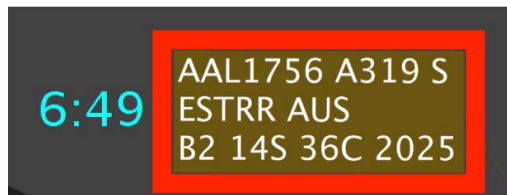


Figure 8.6. Recommended Hold Time after a hold has been placed on the flight.

When the timer is within two minutes of the recommended pushback time, the color will change from cyan to orange to alert Ramp Control that the time to issue pushback approval is nearing.

When the timer expires, pushback is recommended (Figure 8.7). See Step 1 above under Section 8.1.6.2 to act on that Push advisory.

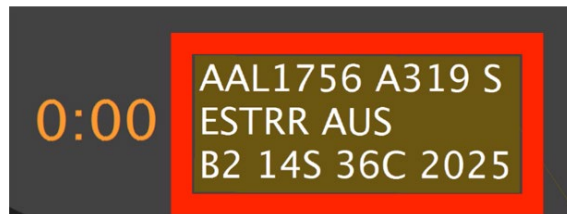


Figure 8.7. Pushback is recommended when timer reaches zero

If the flight is not pushed back, a red Push alert is displayed and a red timer begins counting up (Figure 8.8).

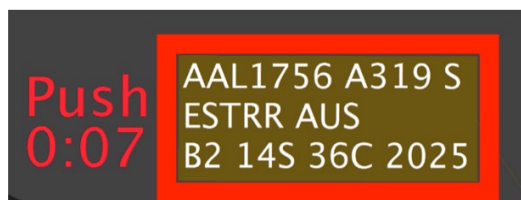


Figure 8.8. A red push alert and count up time.

In some cases, the EOBT of a flight may be “Uncertain.” This may be because the EOBT is not available from the airline, or the pilot has not called in within 13 minutes of the EOBT. In these cases, a hashtag will appear to the left of the flight strip instead of a recommended gate hold or “Push” advisory (Figure 8.9). When the pilot calls in to push, the Ramp Controller should click on the hashtag to indicate to the ATD-2 scheduling system that the pilot is ready. An advisory will appear shortly. The display of a hashtag for an uncertain flight is a Map option described in Section 3.2.1.2.10.



Figure 8.9. “Uncertain” or “Hashtag” flight (left). When pilot calls, click hashtag to see advisory (e.g., 29 min) (right).

9 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.

9.1 Freeze Advisory

The "Freeze Advisory" option is available when a departure flight is subject to Surface Metering and, as a result, has been assigned a TOBT and TMAT. When "Freeze Advisory" is selected, the TOBT and TMAT times are frozen in place and will remain unchanged for that flight. On the Flight Menu, the TOBT and TMAT fields are highlighted, in cyan and light green, respectively (Figure 9.1). The option to freeze an advisory is only available in RMTC.

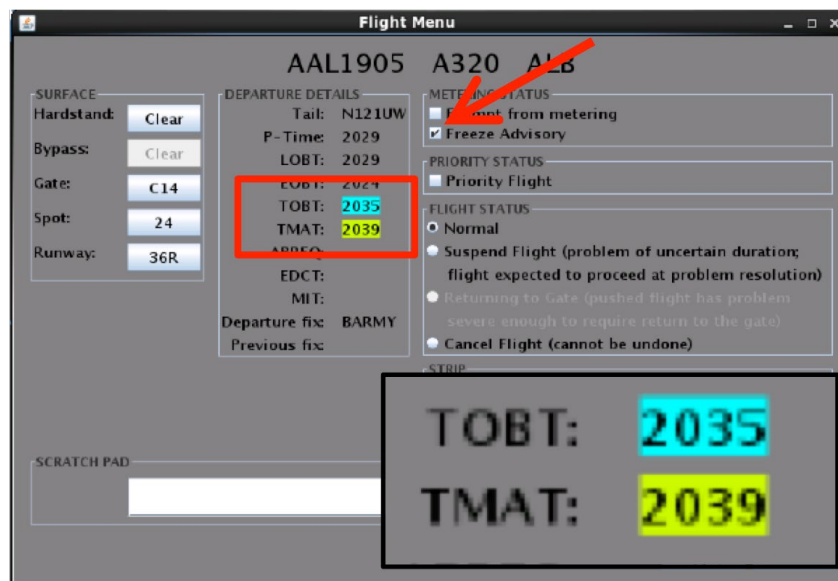


Figure 9.1. Flight Menu: Metering Status.

If "Freeze" is selected while the flight is still parked at the gate, the cyan gate hold advisory next to the flight strip changes to black text highlighted in cyan. The gate hold advisory will continue counting down to the (now frozen) TOBT and display a "Push" advisory when the (frozen) TOBT is reached. (See section 8.1.1 for a description of the frozen gate hold and push advisories.)

This applies only to Surface Metering, not TOBT and TMAT assignments for TMI-restricted flights. TOBT and TMAT assignments for TMI-flights cannot be frozen.

The freeze selection can be undone by unchecking the "Freeze Advisory" box.

9.2 RMTC Data Tags

The arrival data tags on the RMTC not only show the colored alerts for flights that are delayed beyond their Scheduled In-Block Time (SIBT; “IN”), but also display the length of time they are delayed. The RTC shows only the colored alerts (Section 4.1.4.6).

In Figure 9.2 below, the RMTC data tags indicate that:

- JIA5572’s scheduled IN time is 19:35. It is early, and so no alert is displayed. It has been 11 minutes and 38 seconds since the flight landed.
- JIA5320’s scheduled IN time is 19:25. It is 2 minutes and 34 seconds late and the white “A0” is displayed. It has been 6 minutes 32 seconds since it landed.
- AAL2608’s scheduled IN time is 16:30. It is ten minutes late, and so the yellow “A5” is displayed. It has been 4 minutes and 25 seconds since the flight landed.
- SKW3261’s scheduled IN time is 15:56. It is late by 2:11:38 and the red “A14” alert is displayed. However, this flight landed only 7 minutes 20 seconds earlier, so the length of time delayed indicates that the aircraft did not incur the delay on this airport’s surface. Knowledge of the total length of time delayed from SIBT enables the Ramp Manager to intercede more proactively in cases such as this.



Figure 9.2. Arrival data tags showing length of delay from Scheduled In-Block Time (SIBT; “IN”) in RMTC.

9.3 Flashing EDCT/APREQ

The Ramp Manager does not receive flashing notifications for priority flights or for EDCT/APREQ time changes on the RMTC as the Ramp Controllers do on the RTC.

9.4 RMTC Tool Bar

On the right side of the tool bar, the RMTC has a black circular icon to the left of the runway metering icons (Figure 9.3), which will indicate whether there is a proposed Surface Metering Program (SMP).

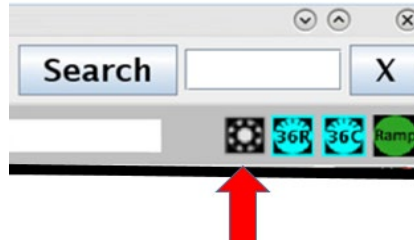


Figure 9.3. Proposed Surface Metering Program (SMP) indicator.

This black gear icon turns yellow (Figure 9.4) when there is a newly proposed SMP available to view on the Surface Metering Display (see SMD User Manual).

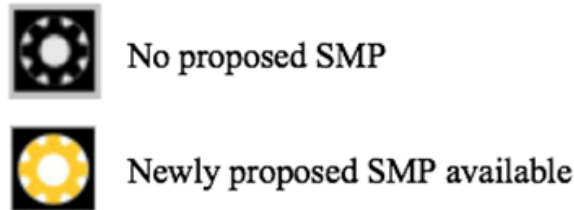


Figure 9.4. Proposed Surface Metering Program (SMP) indicator.

Other visuals may also appear on the right side of the tool bar, depending on the airport and settings. For example, the following icon labeled “TOS” indicates whether Trajectory Option Sets (TOS) are active (Figure 9.5). This can be switched on in the Metroplex Planner (see Metroplex Planner User Manual).

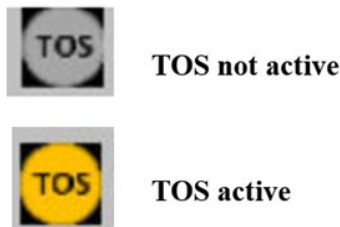


Figure 9.5. Trajectory Option Sets (TOS) Active indicator.

9.5 RMTC Tool Options

As shown in Figure 9.6, the options under the “Tools” menu are 1) Ramp Status, 2) Priority Flights, and 3) Refresh. This last option allows the user to start the system from “scratch,” clearing any targets from the display that may need to be removed. This is different from the automatic 1-second update of the system that is constantly taking place.

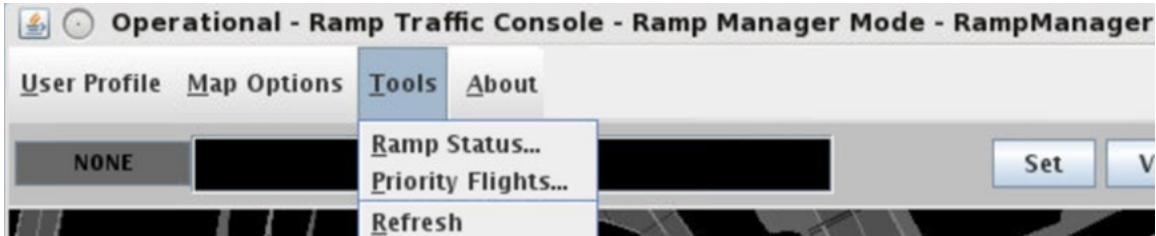


Figure 9.6. Functions under the “Tools” menu.

9.5.1 Ramp Status

The ramp status will be the same as the last time ATD-2 was shut down. As part of the data exchange between the Ramp and the ATCT, the Ramp Manager can use the RMTC to indicate any change in operational status of the ramp. The change in status is then reflected on both the RTC and the STBO Client. One of three ramp status options may be selected: Open, Pending Closure, and Closed, as shown in Figure 9.7. Once one of these is selected, the icon showing ramp status is updated and a notification is issued.

Note that the STBM scheduler will *not* know the impact of the ramp closure, and thus gate hold times may no longer make sense. These gate hold times can be removed by turning off metering in the Surface Metering Display (see SMD User Manual).

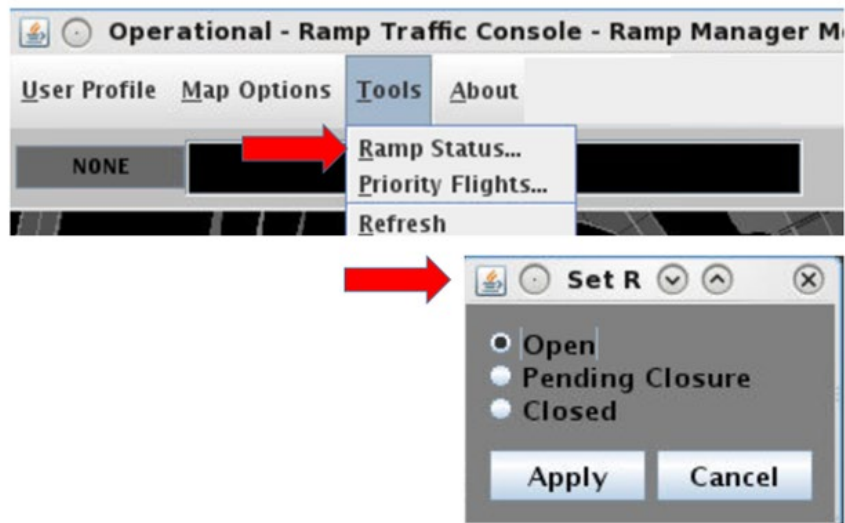


Figure 9.7. Set Ramp Status window.

To change the Ramp Status:

Step 1: Click on “Tools”. A drop down menu will open (Figure 9.8).

Step 2: Click on the “Ramp Status” option. The Set Ramp Status window will populate on the display.

Step 3: Select radio button for the desired option:

- If the ramp is expected to close, click on “Pending Closure”.
- If the ramp is effectively closed, click on “Closed”.
- If the ramp is open, click on “Open”.

Step 4: Click on “Apply”. The Ramp Status Icon will update to reflect the new ramp status (Figure 9.8). The new ramp status will be displayed in the Notification banner (Figure 9.9) and the Notification Panel (Figure 9.10) on the upper right side of the RTC and RMTC and on the STBO Client.

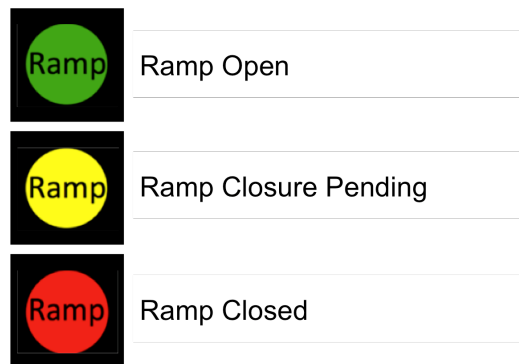


Figure 9.8. Icons indicating the ramp status.

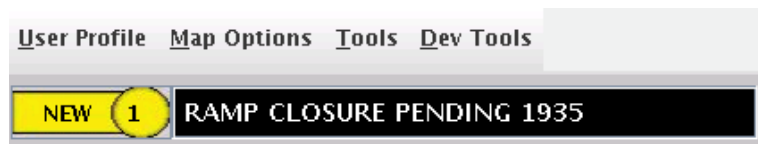


Figure 9.9. Notifications Icon and Banner.

Reported	Event Type	Description	Event Start	Event End
6/9/17 1935	Ramp	RAMP CLOSURE PENDING	6/9/17 1935	
6/9/17 1918	TMI	APREQ to IAH	6/9/17 1910	6/9/17 2015
6/9/17 1838	Airport	VMC	6/9/17 1838	
6/9/17 1838	Airport	S_Normal	6/9/17 1838	
6/9/17 1838	Airport	South_Conv	6/9/17 1838	
6/9/17 1806	Airport	VMC	6/9/17 1010	

Figure 9.10. Notification Panel.

9.5.2 Priority Flights List

The RMTC provides the ability to manage a list of priority flights. Departure flights added to the priority list are given higher priority by the scheduler, compared to other flights from the same airline. For instance, when metering is turned on, the scheduler will give the priority flights the first available slots in the schedule within their airline and thus reduce their recommended gate hold times to the minimum values. A note can be added in this window when flagging a priority flight. This note will show up in the scratch pad of the flight's data tag and in its Flight Menu.

To set a flight as a priority flight, access the Priority Flight List window as described below. This window provides a drop-down list of all available flights in the system which are expected to arrive or depart within the next 24 hours from which you can set a flight as a priority flight (first image, Figure 9.11), as well as a list of flights that have already been added to the priority list (second image, Figure 9.11). Flights are listed by alpha-numerical order, and the list contains both departures and arrivals. Note that even though arrivals are listed here, arrivals are not scheduled by the STBM scheduler. (Marking an arrival as a priority will cause the arrival to be displayed with the priority green border, alerting Ramp Control that the flight should be expedited to its gate.)

To add a flight to the Priority Flight List:

Step 1: Click on “Tools” (Figure 9.11). A drop down menu will open.

Step 2: Click on “Priority Flights”. The Priority Flight List window will populate on the display.

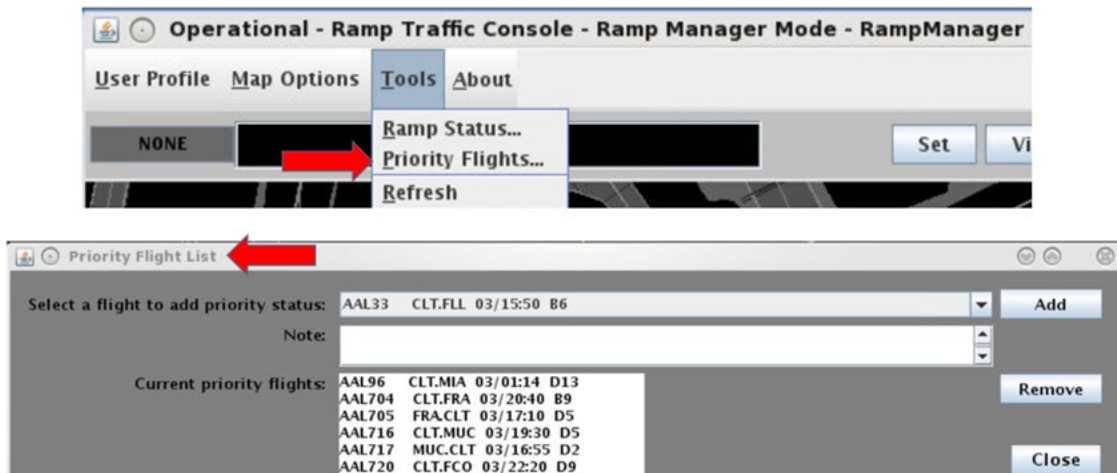


Figure 9.11. Priority Flights list window.

Step 3: Open the list of all flights by clicking on the downward arrow after “Select a flight to add priority status:” (Figure 9.11).

Step 4: Select the desired flight from the list of all flights. For example, Figure 9.12 shows AAL1752 in the list of flights being added to the priority list. Tip: To jump to a call sign for another airline (e.g., Delta Airlines “DAL”), type the first letter of the call sign in the window (e.g., “d”). This will bring the list to the Delta Air Lines flights.

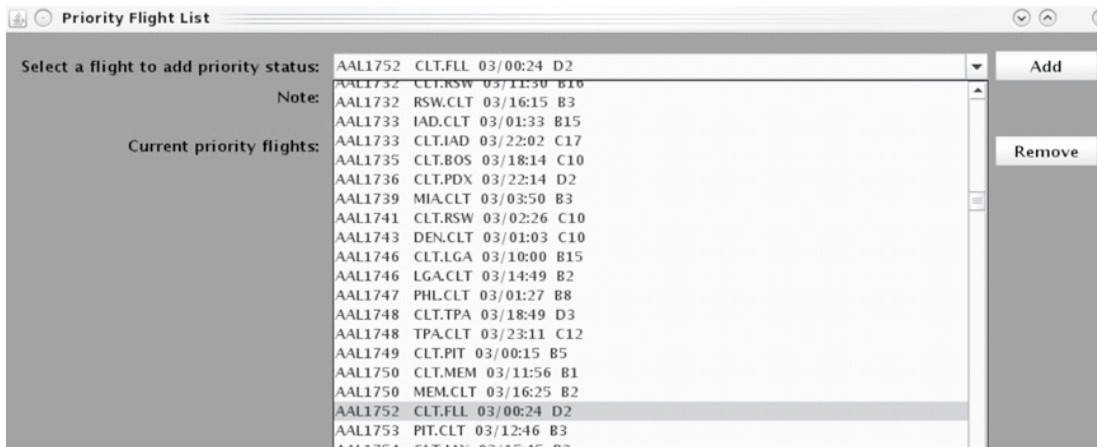


Figure 9.12. List of all flights in the Priority Flight List with AAL1752 being selected as a Priority Flight.

Step 5: You may type a note that will show up in the scratch pad in the flight’s data tag and in the Flight Menu. The space to write a similar “note” can also be found in the Flight Menu (see Section 7.8). Figure 9.13 below shows that “Flagship” has been typed.

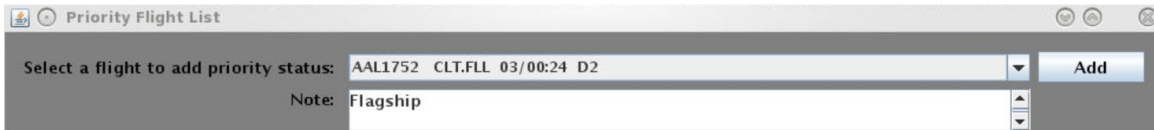


Figure 9.13. “Flagship” has been typed as a note to appear in the flight’s data tag and Flight Menu.

Step 6: Click on the “Add” button to add the flight to the Priority Flight List. Figure 9.14 shows the resulting data tag of AAL1752 with a green border indicating a priority flight with “Flagship” in the scratch pad.

Step 7: Repeat steps 3 through 6 to add additional flights to the priority list.



Figure 9.14. Priority flight strips with green border and “Flagship” text appearing.

To remove a Flight from the Priority list:

Step 1: Click on “Tools”. A drop down menu will open.

Step 2: Click on “Priority Flights”. The Priority Flight List window will populate on the display.

Step 3: Select the desired flight on the list of current priority flights.

Step 4: Click on the ‘Remove’ button to remove it from the priority list. The flight’s call sign will no longer appear in the priority list and its green border will disappear. The scratch pad entry will need to be removed in the Flight Menu.

Step 5: Repeat steps to remove any other priority flights from the list.

Step 6: Click ‘Close’ to close the “Priority Flight List” window.

9.5.3 Gate Closed

The Ramp Manager can mark a terminal gate as closed. This is done by right clicking on the gate's label and then selecting "Close Gate," as shown in Figure 9.15.

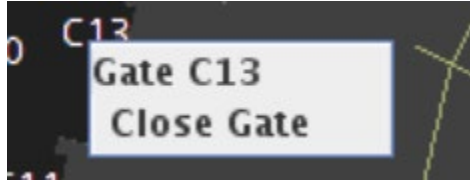


Figure 9.15. "Close Gate" appears when the gate label is right-clicked.

When a gate is closed, a semi-transparent red "X" is drawn over the gate label, as shown in Figure 9.16.



Figure 9.16. Red "X" indicates closed gate.

To open the closed gate, right click on the gate's label again, and select "Open Gate," as shown in Figure 9.17.

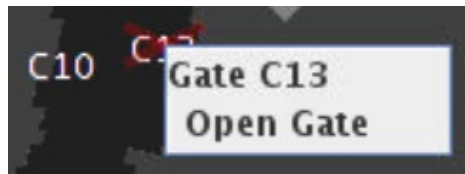


Figure 9.17. "Open Gate" appears when label is right-clicked again.

When "Open gate" is selected, the red "X" disappears, and that gate reverts to its open state, as shown in Figure 9.18.



Figure 9.18. Red "X" is removed after selecting "Gate Open."

The actions of both closing and opening the gate are shown in "Notifications" (Figure 9.19).

Notifications		
Reported	Event Type	Description
4/19/19 0529	Parking Gate	C13 OPENED
4/19/19 0529	Parking Gate	C13 CLOSED

Figure 9.19. Opening and closing of the parking gates are shown in Notifications.

If an aircraft is parked at the gate when the gate is closed, a red highlight will appear on the flight strip, as shown in Figure 9.20.

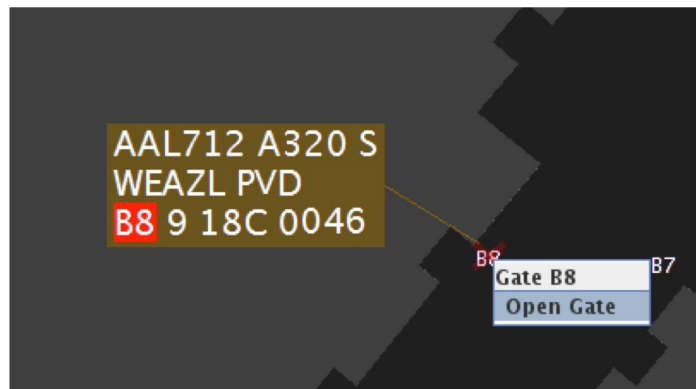


Figure 9.20. A red highlight appears on flight strip if gate is closed when an aircraft is parked there.

Appendix A: Acronyms

This appendix defines acronyms and terms that are used throughout the ATD-2 RTC RMTC User Manual.

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