
National Aeronautics and Space Administration
NASA
Airspace Technology Demonstration II (ATD-2)
American Airlines CLT Ramp Training
RTC/RMTC
NEXTGEN
September 8, 2017
Vicki Dulchinos & Savvy Verma

Agenda

Training Topic	Duration
A. Overview of ATD-2 & RTC/RMTC	30 Min
B. Interface Details: Upper Status Bar: (Map Features, Notifications)	30 Min
C. Interface Details: Flight Strip and Flight Menu	30 Min
D. Data Exchange and Integration	30 Min
E. Metering Modes, and Tactical Scheduler Advisories	1 Hour
F. Interactive Exercises on all the above	1 Hour
	Total 4 Hours

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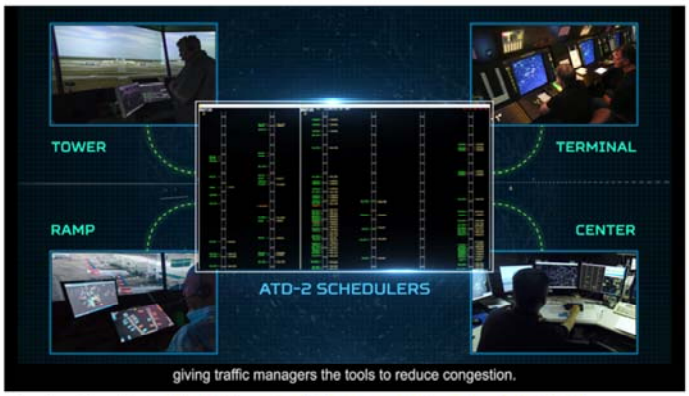
Field Demo Partners

NASA gets the privileged of leading this research, but this is the very definition of a team effort. ATD-2 is not possible without the strong and frequent collaboration and contributions by the organizations you see on this slide.

Concept Overview – Users



Overview video online at: http://aviationsystemsdivision.arc.nasa.gov/research/tactical/atd2.shtml

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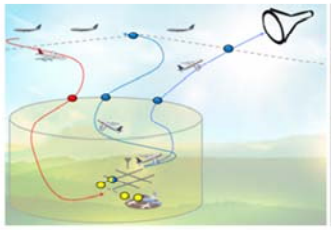
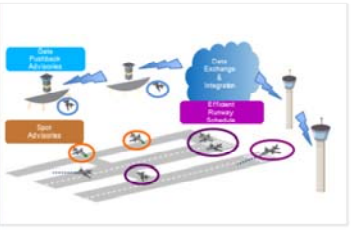
Nutshell of ATD-2 (Phase 1 of 3)



3T Data Exchange & Integration

- Integrated Arrival/Departure/Surface (IADS)
- Onramp to the overhead stream (TFDM with IDAC)
- New data elements shared between FAA & Industry
- Real-time dashboard for planning and awareness



Surface modeling, scheduling & metering

- Surface modeling uses nodes and heuristics to model surface operations
- Trajectory based model of airport operations that allows predictive capacity estimation and creating a schedule
- Metering is required when there is a demand and capacity imbalance

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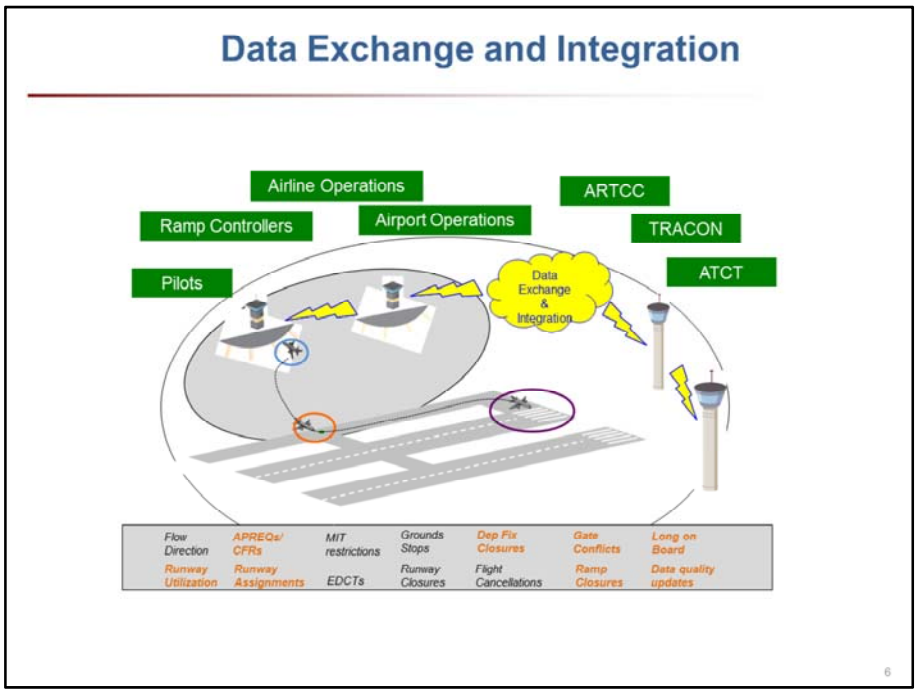
Only briefly described in SCT brief. Slides provided for your analysis. Key here is that there are many views of IADS capabiltiy. The 3T data exchange and integration on the left feeds the advanced surface capability on the right. If you have questions on this we can come back at the end. If you are only looking for the thing on the left, or the right, this is to let you know of the other capability.



Items in orange may benefit from further discussion with SCT on the potential benefit at other airport in the NAS, as well as TFDM PO to determine coverage in the TFDM system requirements.

What does ATD-2 bring to AA Ramp Control?

- ATD-2 as a system connects AA Ramp tower with CLT ATC-T, TRACON and ZDC
- Information exchange between AA CLT Ramp and Tower (STBO) in real time will improve shared situational awareness among all users.
- ATD-2 fuses data from 12-13 feeds including TBFM, Flight Stats, Flight Hub, ASDE-X, and different SWIM feeds that has improved the quality of data used to drive the systems
- ATD-2 improves transparency of information
  - e.g. Wheels-up time provided to pilot are now visible to ramp controllers.
  - AA Ramp can see ATC-T displays in observer mode and vice versa
- ATD-2 tools allow automation to suggest gate hold times based on demand and capacity imbalance for the purpose of metering

How to Access ATD-2 system?

Switch to ATD-2 Display

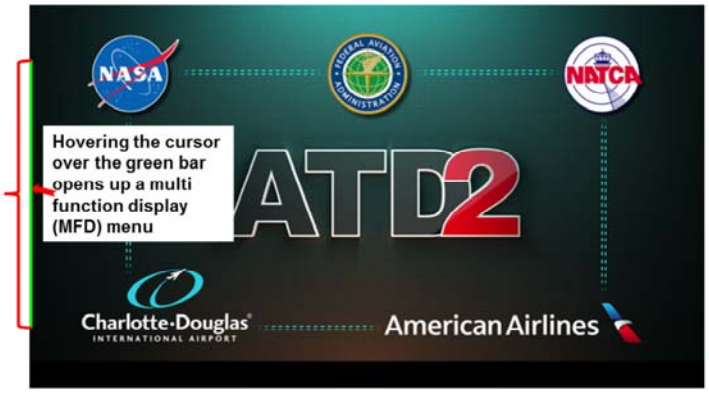
- Pushing the source button will bring up the menu

- Clicking on the second button from right on the menu shown on the screen switches between Aerobahn and ATD2

ATD-2 Desktop

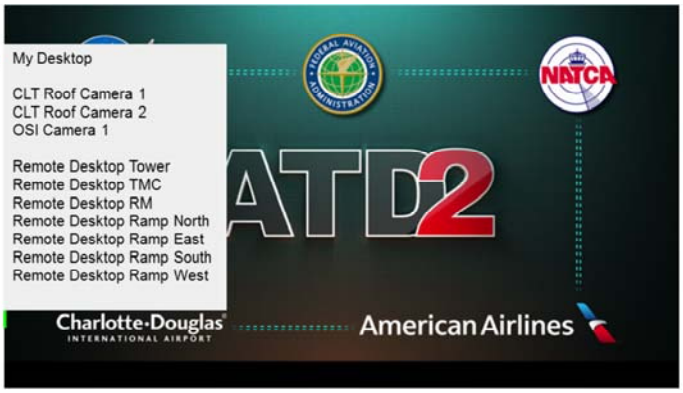
(From this Desktop: Use MFD menu to access My Desktop)

ATD-2 Desktop
(Use MFD menu to access My Desktop)



ATD-2 Desktop
(Select My Desktop from MFD Menu)

Select "My Desktop"



My Desktop

(Click on NASA Icon to open My Desktop Menu)

Click NASA Icon

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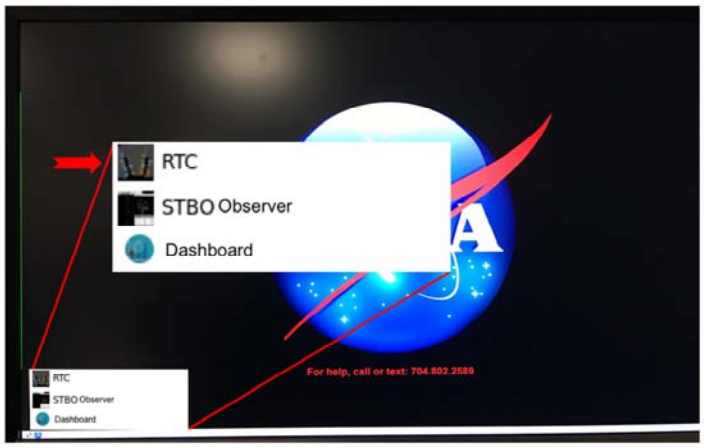
My Desktop
(Select RTC)



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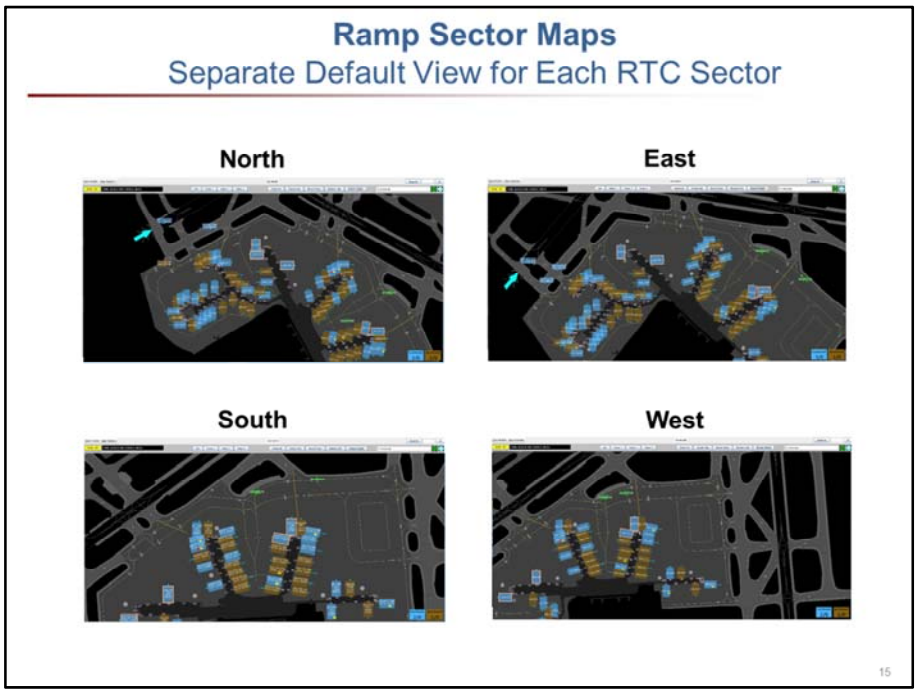

The RTC can be opened in one of the four ramp sectors or the ramp manager view.

Notice, that depending on the zoom level, more or less detail will be displayed in the “data block”

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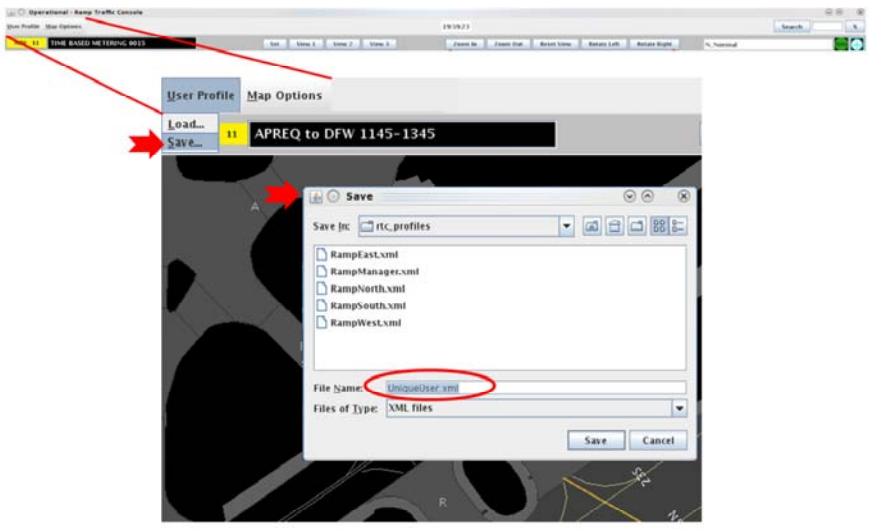
User Profile

Save as a Unique Username



RTC Upper Status Bar

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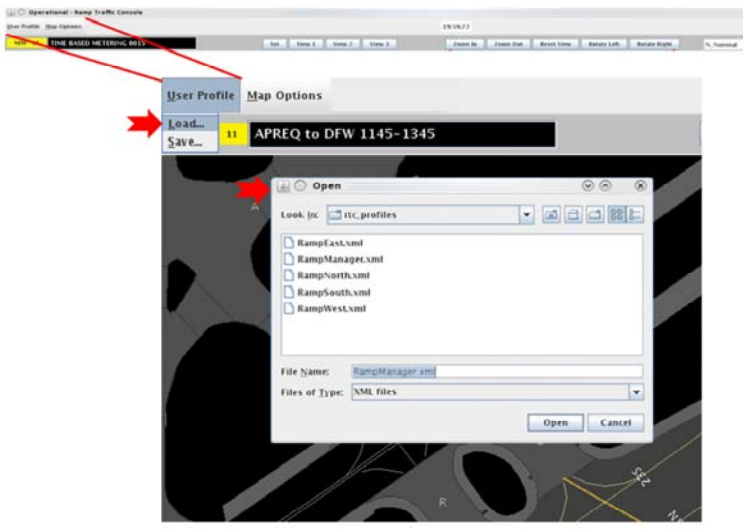
User Profile

Load an Existing Profile



RTC Upper Status Bar

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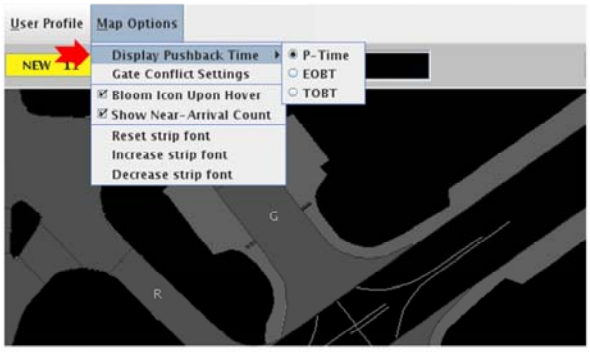
Map Options

Choose Time to Display on Strip



- P-Time: Airline scheduled departure time (default setting)
- EOBT (Earliest Off Block Time): updated departure time provided by the airline
- TOBT (Target Off Block Time): generated by the Metering Tool

RTC Upper Status Bar

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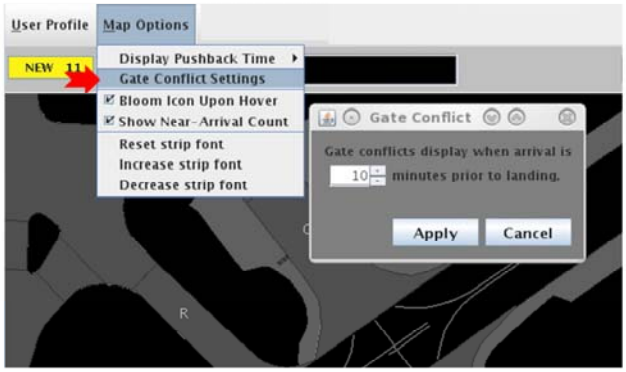
Map Options

Gate Conflict Settings



Open the Gate Conflict Settings Menu to configure when to display gate conflicts on RTC

RTC Upper Status Bar

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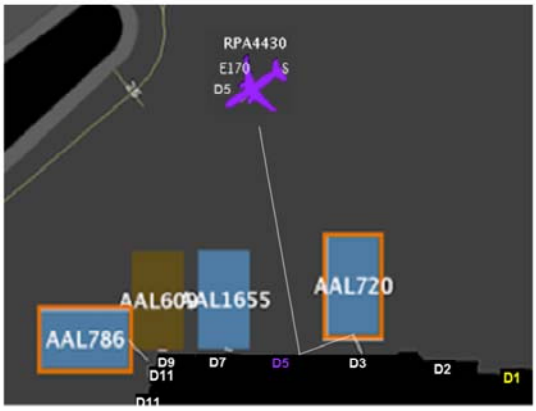
Gate Conflict Alerting

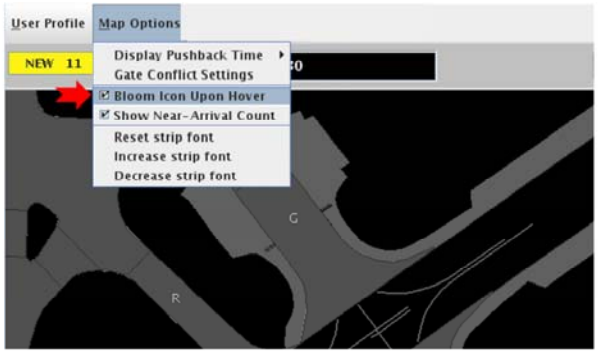
- Gate conflict Alerting: The arrival icon as well as gate number are displayed in magenta
- Click on icon or gate number to draw "tether" line between them
- Gate conflict alerting logic: gates blocked by a heavy type aircraft are also shown as gate conflict
- Yellow gate number indicates arrival is On



RTC Upper Status Bar

Map Options

Bloom Icon Upon Hover



Bloom Icon Upon Hover: select this option to enable "bloom" of icon or strip when hovering with mouse cursor

RTC Upper Status Bar

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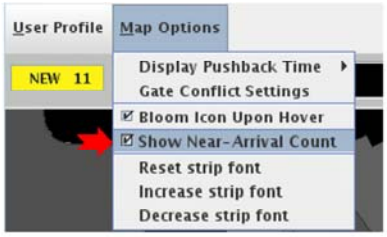
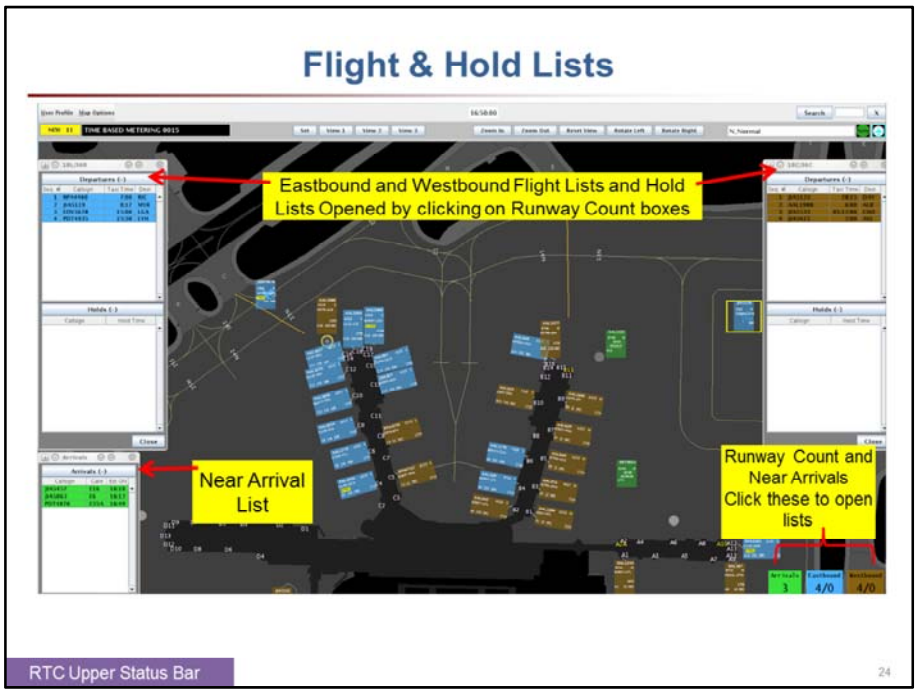
Map Options

Show Near Arrival Count



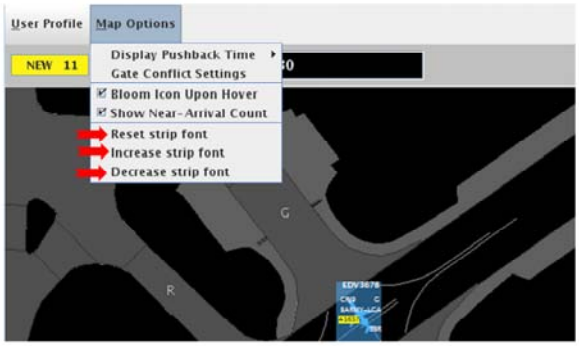
Select Show Near Arrival Count to display the Near Arrival Count Box next to the departure count boxes on bottom right side of the RTC display.



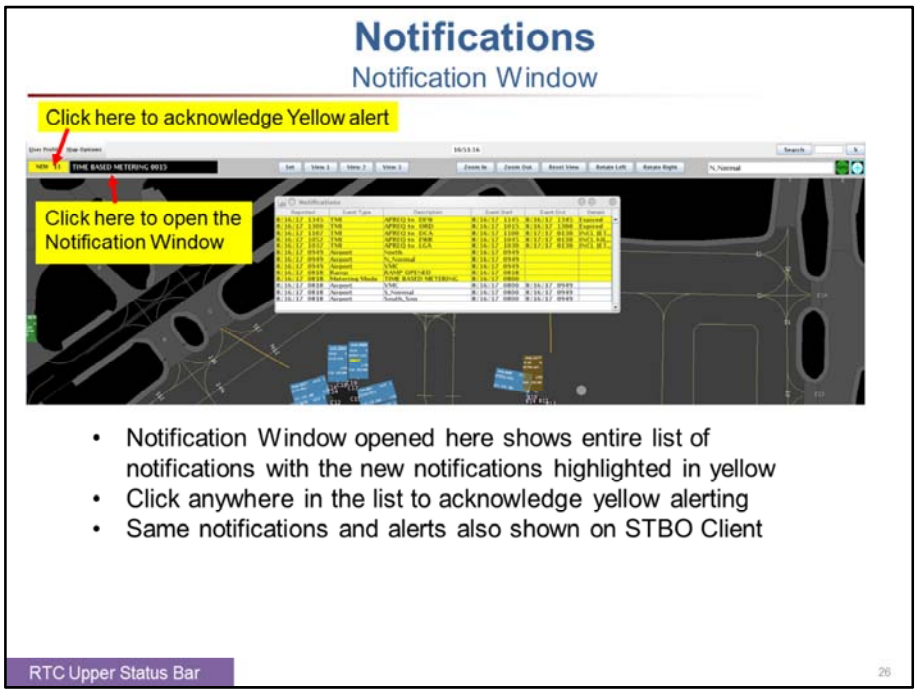
Departure lists include flights that have called ready for pushback and are in the spoolup state

Map Options

Reset-Increase-Decrease Strip Font



- Reset strip font (to default font size)
- Increase strip font size
- Decrease strip font size



As new notifications come in, the New Notifications alert is highlighted in yellow and the number of new notifications is displayed here.
Click on the notification display field to open the Notification Panel to view all notifications (highlighted in yellow until acknowledged). Notifications remain in the opened panel, even after they are acknowledged. Notifications displayed here are more broad in nature, with flight specific notifications on the individual flights on the RTC.

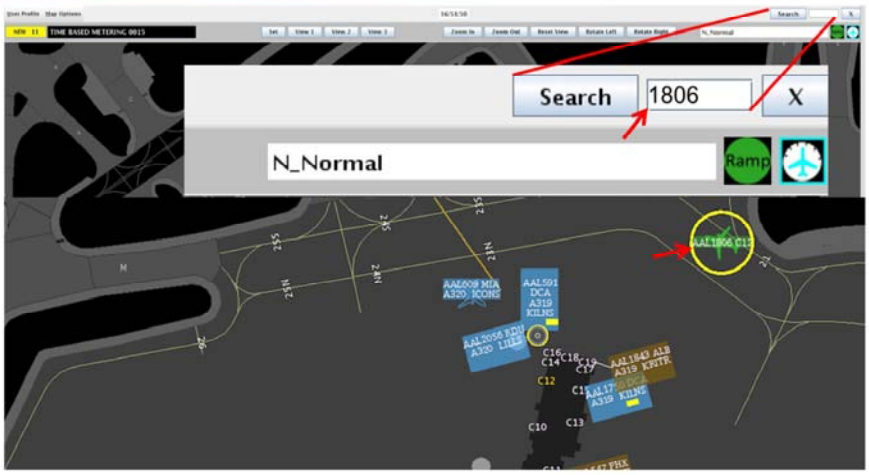
RTC Upper Status Bar

Set Views- Zoom/Rotate/Reset View

- Set the zoom level by using the mouse scroll wheel on the map or use the zoom in and zoom out buttons shown above to incrementally zoom
- Use the rotate Left and Right buttons to rotate the map
- Once the view is configured, use the set view buttons to save up to three different views and then toggle between those set views

RTC Upper Status Bar

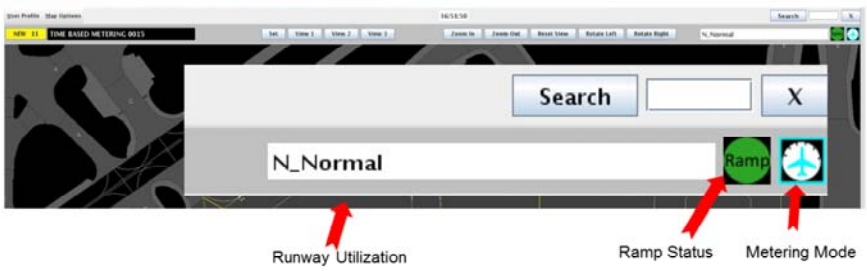
Search



Search for call sign, flight number, destination airport, or departure fix. Search result marked with yellow circle.

RTC Upper Status Bar

Runway Utilization-Ramp Status-Metering Mode



RTC Upper Status Bar

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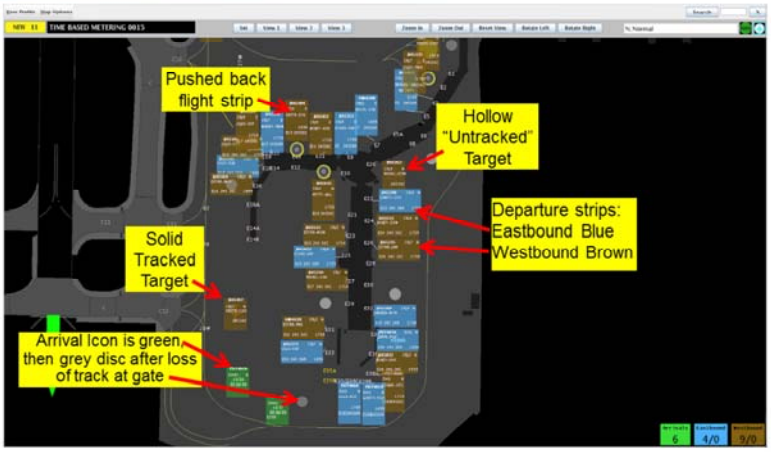
30

RTC
Flight Strips



Flight Strip & Flight Menu

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RTC

Solid if Tracked, Hollow if no Track

Flight Strip & Flight Menu

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Flight Strips and Persisted Targets

Select to Drag & Drop and Spin

- Flight strips and persisted targets may be relocated and reoriented on the display, deselect strip to remove any tether lines
- Flight strips or icons, once selected, have a white circle drawn to indicated selectable area.

Click inside circle to drag/drop

Click outside circle to "spin"

Click here to drag/drop

Click here to "spin"

Flight Strip & Flight Menu

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Right Click Mouse Menu

Next Logical Action

Flight Strip at Gate	Pushback State Engine icon indicates spool up	Hollow icon if no track solid if track

Use right click mouse menu to Open Flight Menu, Handoff, or Hold.
Also use right click menu to select "next logical action":

- Hold
- Pushback
  - Undo pushback
  - Undo Proceed to Spot
    - Proceed to Spot
    - Return to gate

Right click Menu: Pushback-Proceed or Hold:

After Pilot Calls Ready

After Pilot Calls Ready to Push:

Pushback: A

-Right Click Menu, select Pushback

After Spool Up, Proceed: B

-Click engine icon

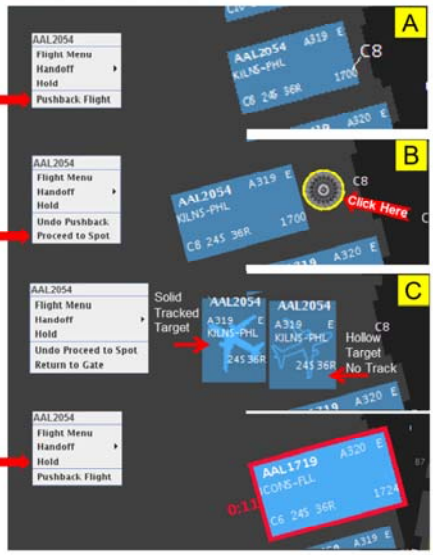
-Or Right click menu, select proceed

Aircraft icon displayed: C

-Solid icon if track, hollow if track is not available

OR

Hold at gate: Use right click menu to hold, count up timer appears

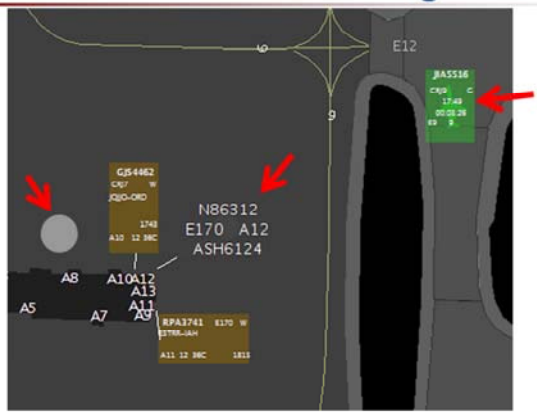


Flight Strip & Flight Menu

Departure Flight Data

- Current sector ownership is automatically transferred.
- Use Handoff feature on right click menu to deliberately handoff sector ownership.
- For example, in the case of handing off (taking back) control of a flight from ground back to ramp sector

Arrival Flight Data



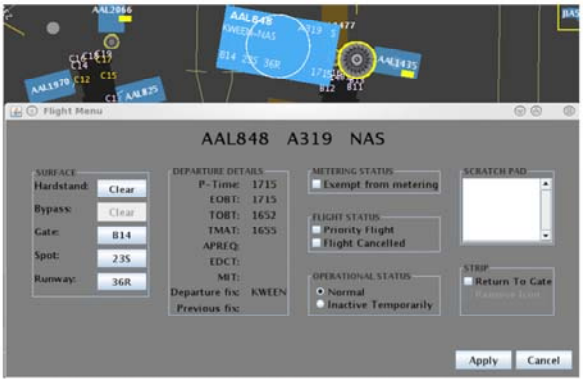
Mouse over or select target to view arrival time and time since On

- Arrivals are green
- Arrivals become grey discs after they become inactive at the gate, click on the grey disc to view flight data.
- Once there is an In time, the arrival may be relocated on the map

Flight Menu

Make Updates to Flight Data

Open the Flight Menu using double click on flight or from right click menu to make updates to flight information.



Flight Menu

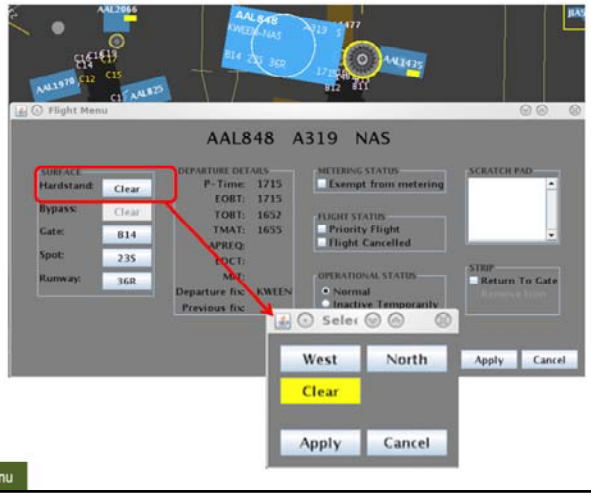
Surface Data Updates

Click here to open each option menu to make changes to hardstand, spot, gate or runway, then apply

Flight Menu

Hardstand

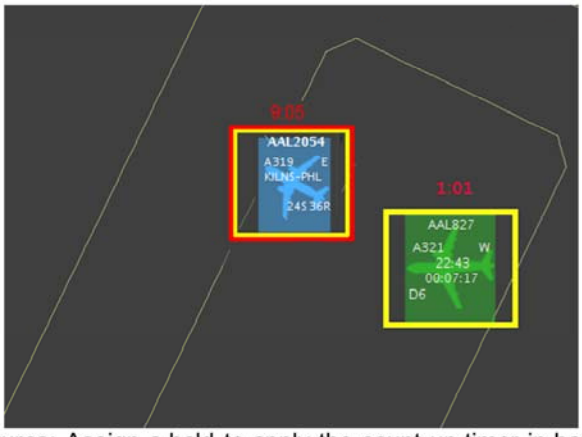
Choose West or North hardstand or Clear to remove hardstand assignment, then apply.



Hardstand Assignment

From Flight Menu

Hardstand assignment places yellow box around the flight

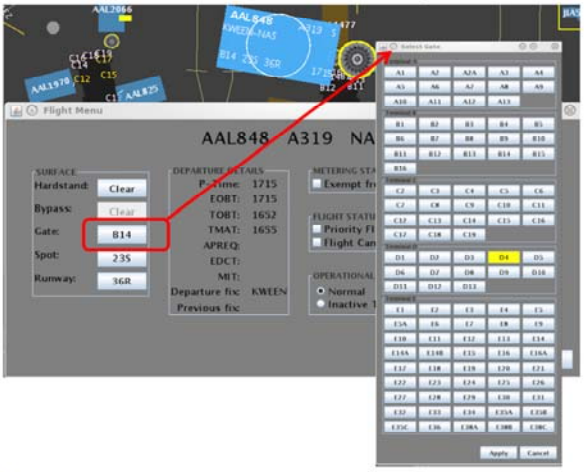


Departures: Assign a hold to apply the count up timer in hardstand
Arrivals: A red count up timer automatically provided in hardstand

Flight Menu

Gate Assignment on RTC

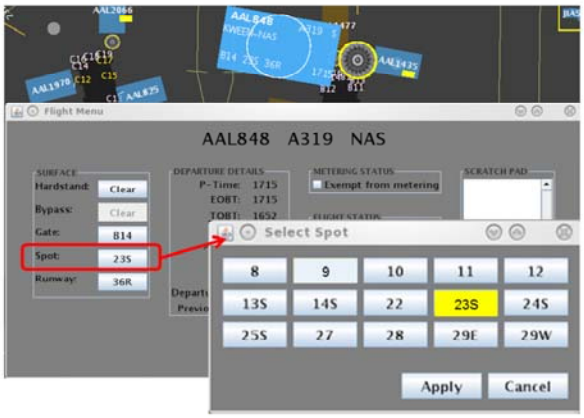
- Recommend use for A Concourse Only
- This change is local to RTC/RMTC, the update is not made on ASCENT/ Gate Manager



Flight Menu

Spot Assignment

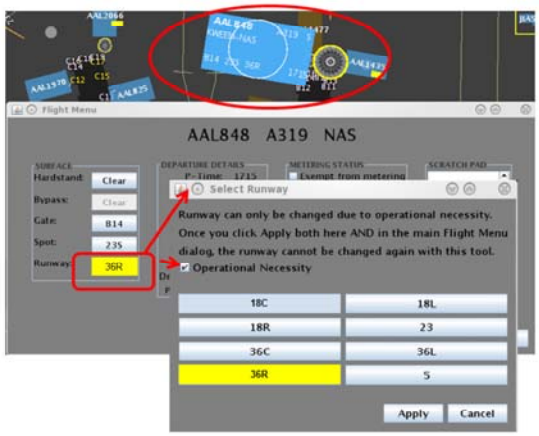
- Click on spot to open the Select Spot menu
- Select new spot, then apply



Flight Menu

Update Runway Assignment

- Click on runway to open Select Runway menu
- Select Operational Necessity checkbox
- Select new runway, then apply



Flight Strip & Flight Menu

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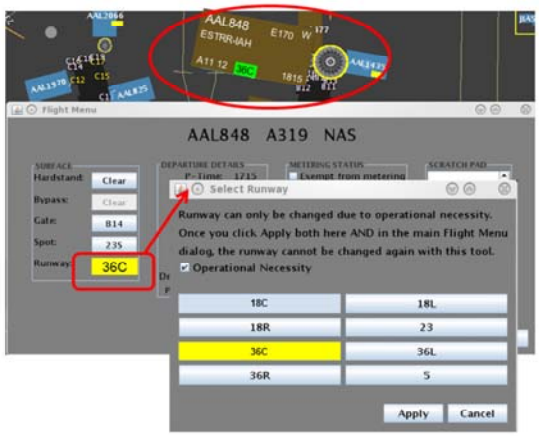
Flight Menu

Update Runway Assignment

- Flight strip updates to new color, with green highlight to indicate the change was made



Flight Strip & Flight Menu

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Flight Menu

Departure Details

- View details for the flight here: EOBT,TOBT, and TMAT
- If applicable then Traffic Management Initiatives (TMI) times will also be shown here: APREQ/CFR, EDCT, and MIT
- The current departure fix is shown here, as well as the previous fix if there was an update to the departure fix

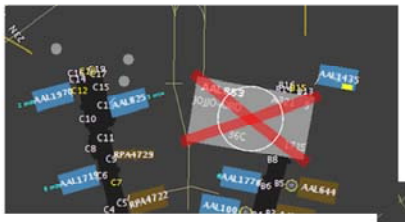
Flight Menu

Status Details

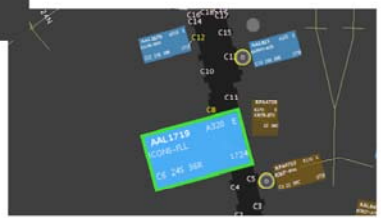
- Select Exempt from Metering to remove this flight from metering
  - GA and Military are exempted automatically
  - Internationals will have to be manually exempted
- Flight Status: Select Priority Flight or Flight Cancelled to update the flight status
- Operational Status: Normal is the default, but Inactive Temporarily may be chosen to temporarily remove flight from metering

Priority and Canceled Flight

Assigned from Flight Menu



Canceled flight
Red X Watermark



Priority flight
Green Border

Flight Strip & Flight Menu

Flight Menu

Scratch Pad Entry-Return to Gate-Remove Icon

- Type text into the scratchpad field, then apply
- Return to Gate and Remove Icon are greyed out until necessary
  - Return to Gate: will be available if departure flight is already off the gate, select here and apply to move flight back to gate
  - Remove Icon (greyed out), only available if the departure flight has been cancelled or arrival is in inactive state, select here then apply to permanently remove the icon

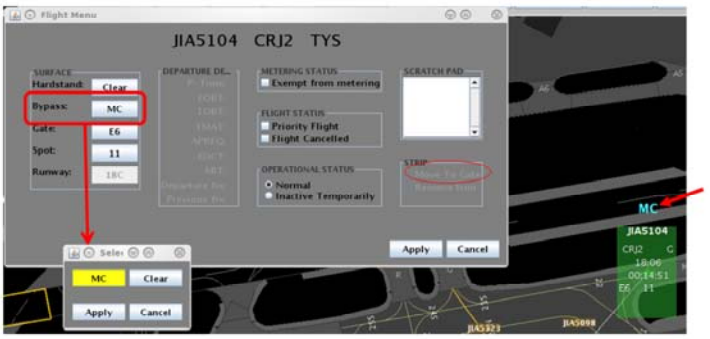
Arrival Flight Menu

- Move To Gate option is not available (grey) until IN message
- May assign Mike Charlie Bypass (see next slide)

Arrival Flight Menu

Mike Charlie Bypass

- Assign Mike Charlie Bypass on arrival flights
  - Places MC designation on flight to show intent to use Mike Charlie Bypass



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Data Exchange

- Data Exchange and sharing between CLT Tower and AA Ramp is foundational to Scheduling and Metering
- Improves Situational Awareness among decision makers
- Allows automated exchange of information and less reliance on phone calls
- Allows for collaboration between different kind of users
- Twelve ATD2 Shadow sessions at CLT lab have captured more than dozen data exchange items between tower and ramp
- Data exchange generates a notification for the users in their respective system

Data Exchange/Integration

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Data Exchange and Integration

ATC-T to Ramp

- Airport Config & Runway Utilization
- MIT
- EDCTs
- APREQ/Call For Release (CFR)
- Departure Fix Closures
- Ground Stop
- Runway Closures

Ramp to ATC-T

- Taxi for Operational Necessity
- Cancellations
- Ramp Closure
- Metering Information
- Pushback & Surveillance

Gate Conflicts & LOB/ LTD

Data Exchange/Integration

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Data Exchange and Integration

Runway Utilization

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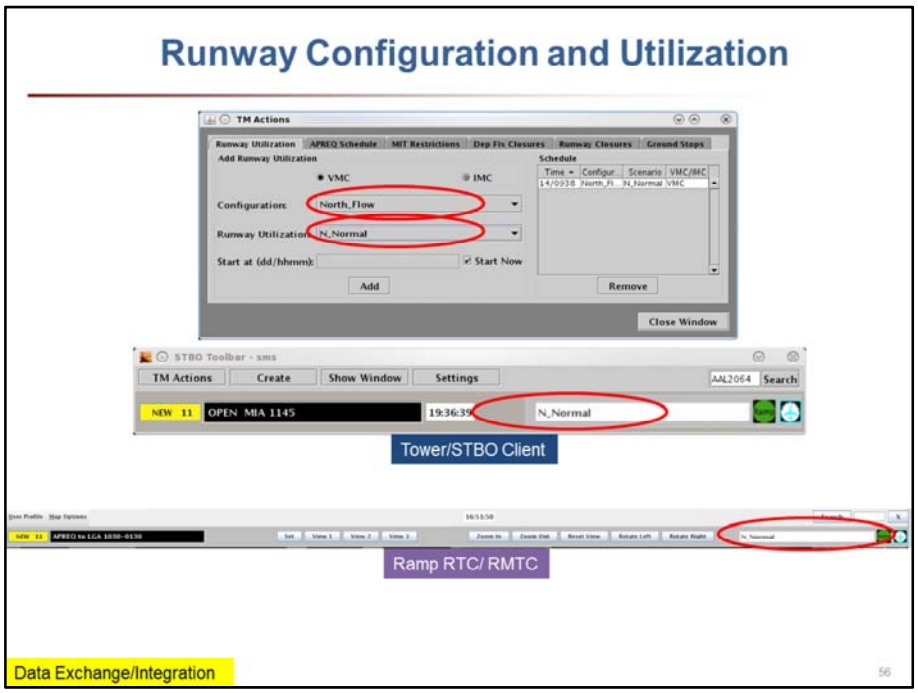

This feature will certainly eliminate the need for phone calls between the Ramp and ATC-T. The ATC-T has agreed to input the airport configuration and any changes to runway utilization. This will be displayed to the Ramp as well as the ATC-T as a notification.

Data Exchange and Integration

MIT

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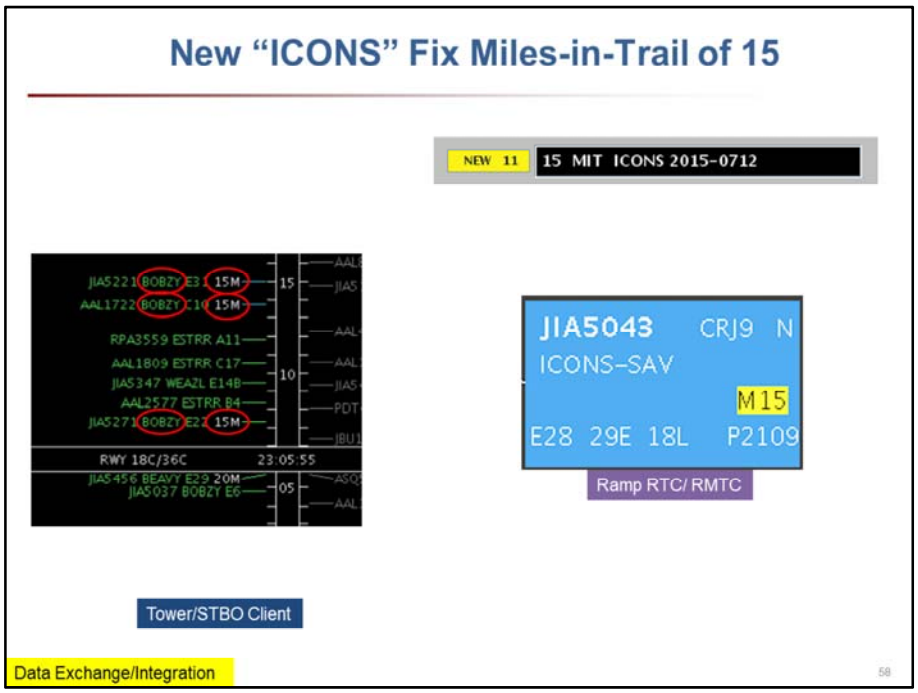
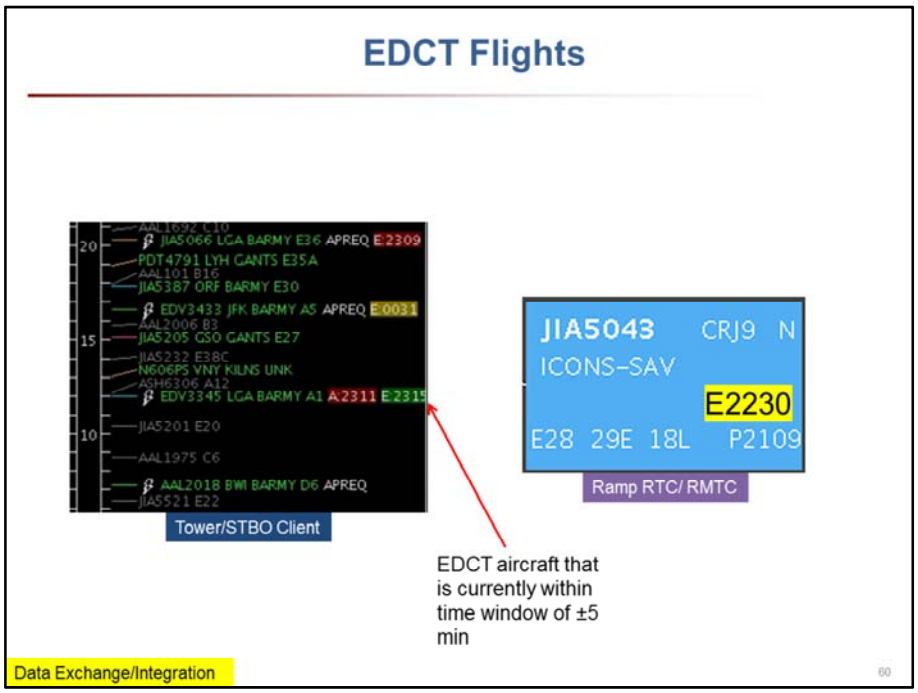


Added restrictions show up as “M15” on Timeline.

Data Exchange and Integration

EDCT Flights



Expected Departure Clearance Times (EDCT) are “Wheels Up” times that are assigned to aircraft due to Traffic Management Initiatives (TMIs) that require holding aircraft on the ground at the departure airport. They have a - 5 minute / + 5 minute conformance window.

EDCTs are read through our system and show up on the STBO Client timeline as “E:hhmm.” If the flight is subject to EDCT agreen compliance indicator show if the flight is inside the +/- 5 window, it’s red when it is outside the window and late, and it’s yellow when it’s outside the window and early.

Data Exchange and Integration

APREQ/Call For Release (CFR)Scheduling

61

APREQ on RTC

- Notification on RTC for the APREQ/CFR

Reported	Event Type	Description	Event Start	Event End
2/8/17 1808	AIRPORT	JFK APREQ	2/8/17 1800	2/9/17 ...
2/8/17 1701	FIX	LGA 15 MIT	2/8/17 1650	2/9/17 ...
2/8/17 1630	FIX	DCA OPEN	2/8/17 1515	2/8/17 ...
2/8/17 1624	AIRPORT	EWR APREQ	2/8/17 1615	2/9/17 ...
2/8/17 1600	FIX	ORD OPEN	2/8/17 1515	2/8/17 ...
2/8/17 1100	FIX	LGA APREQ	2/8/17 1115	2/8/17 ...

- APREQ showing on the strip

Prior to scheduling of CFR

After scheduling of CFR

Data Exchange/Integration

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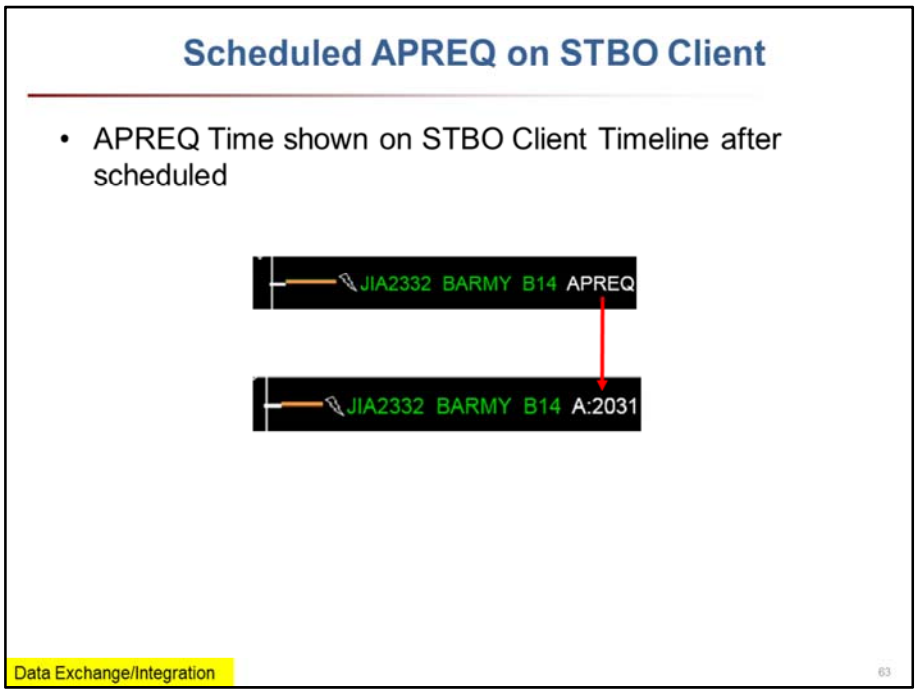
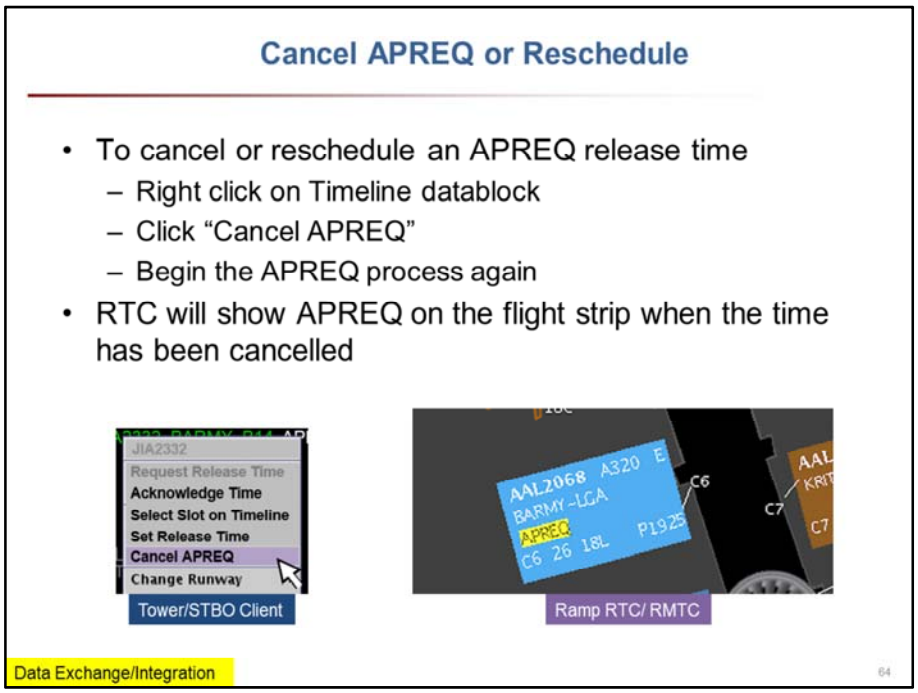
Adding an APREQ restriction will generate a notification on RTC and add the word “APREQ” to the Flight Strips of the affected flights.



Initially the word “APREQ” is shown on Timeline data block when it’s known that the flight needs to request Wheels-up time. After the negotiated time is received from the Center, the word “APREQ” changes to the scheduled time shown as ”A:hhmm” on the Timeline datablock.

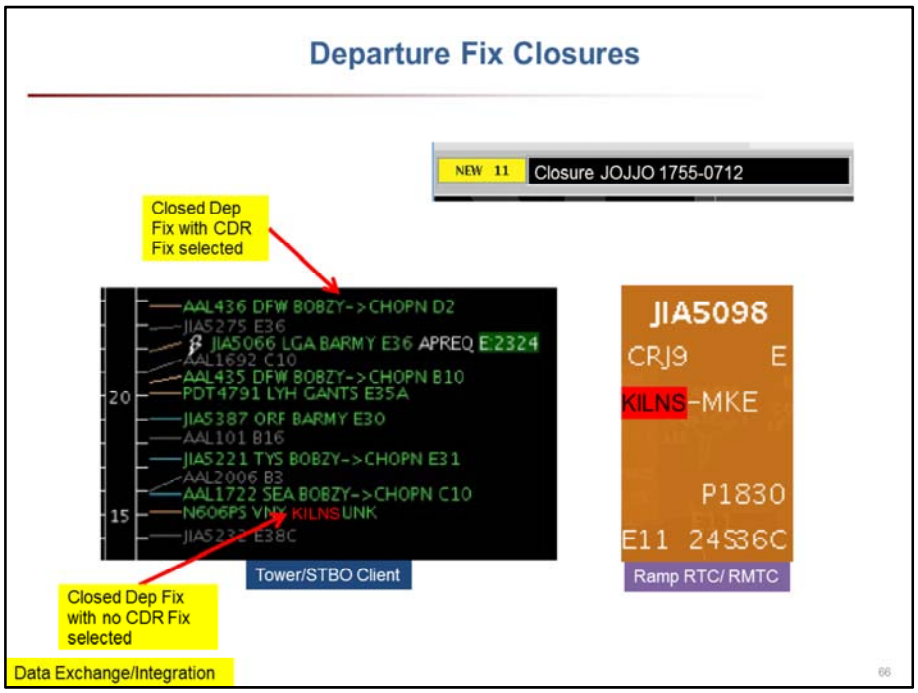


If the APREQ release time needs to be rescheduled then it has to be cancelled using the right click menu. After it has been cancelled, the APREQ process has to start all over again with the Center.

Data Exchange and Integration

Departure Fix Closures

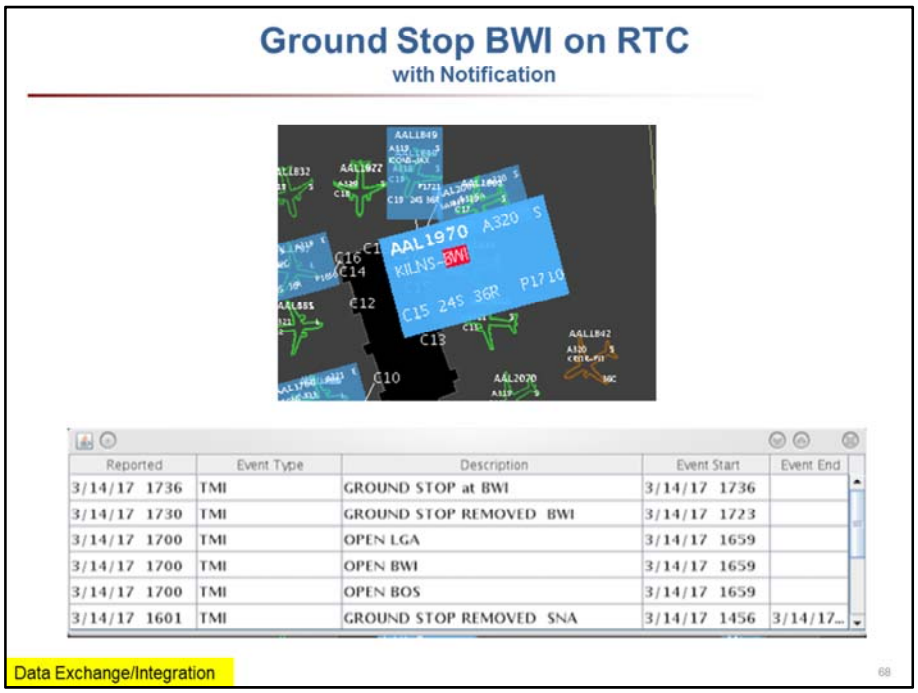
65



If no “CDR Flights To” fix was selected in STBO Client, the fix will turn red and the datablock will move to the end of the closure after a few seconds (or 2 hours into the future if “No End Time” was selected). If a CDR fix was selected, the red will update to show the CDR as “[original fix]→[CDR fix]”. On the RTC/RMTC, regardless of whether a CDR fix was selected or not, the original fix will be displayed in red.

Data Exchange and Integration

Ground Stops

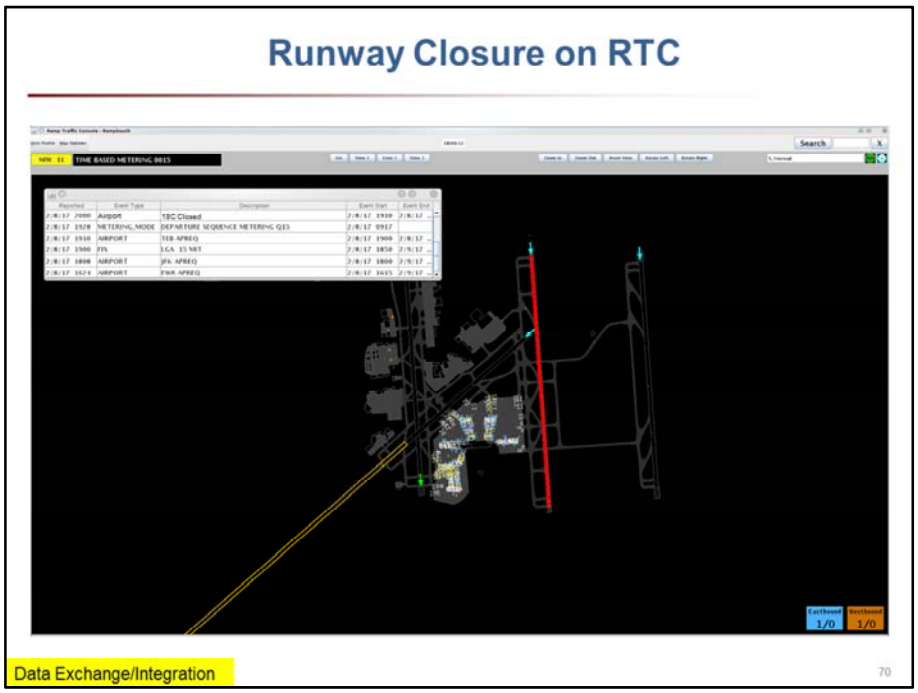


On RTC, Notification window shows the “Ground Stop at BWI,” and the flight strip highlights the individual flights with destination to BWI in blinking red for that sector until it is acknowledged.

Data Exchange and Integration

Runway Closures

69



The closed runway is marked red with white “X”s at either end on STBO Client and RTC/RMTC.

Data Exchange and Integration

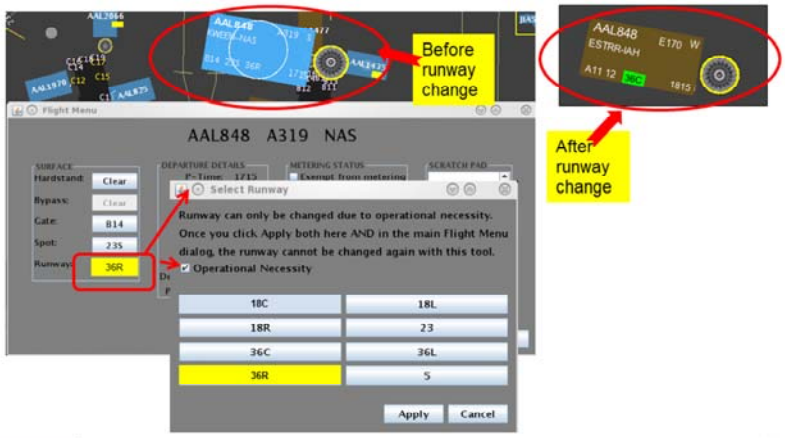
Runway Change for Operational Necessity

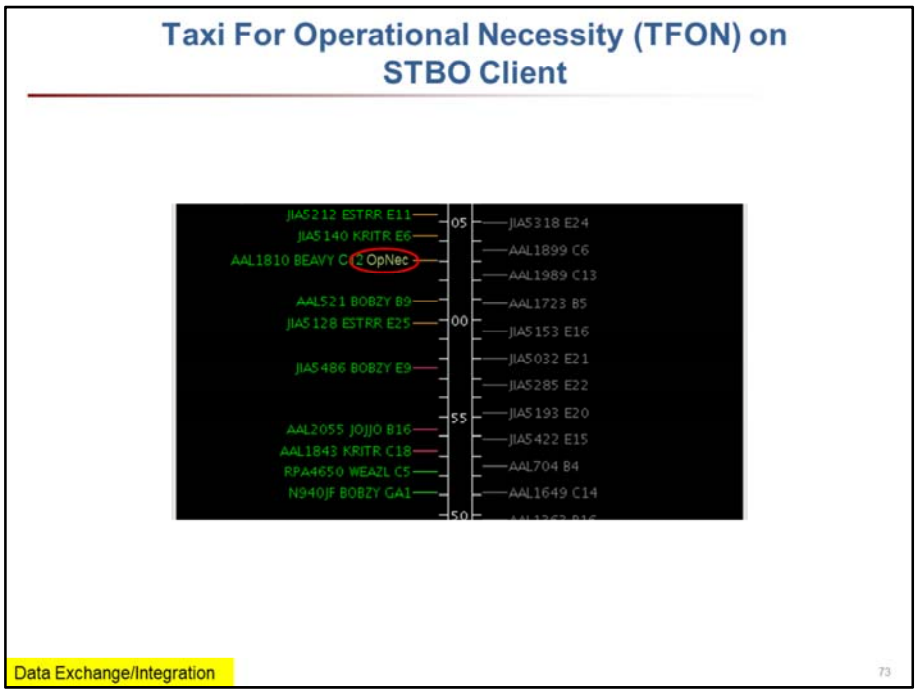
71

Flight Menu

Update Runway Assignment

- Click on runway to open Select Runway menu
- Select Operational Necessity checkbox
- Select new runway, then apply





ATC-T knows that a flight has changed runway due to Operational Necessity. The word “OpNec” will show on the STBO Timeline datablock.

Data Exchange and Integration

Cancellations

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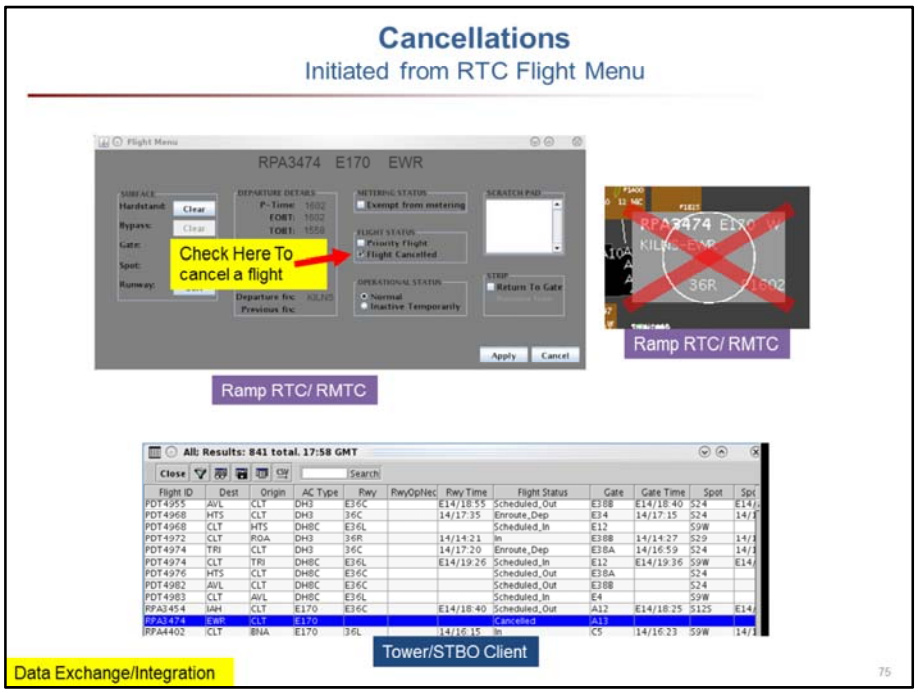


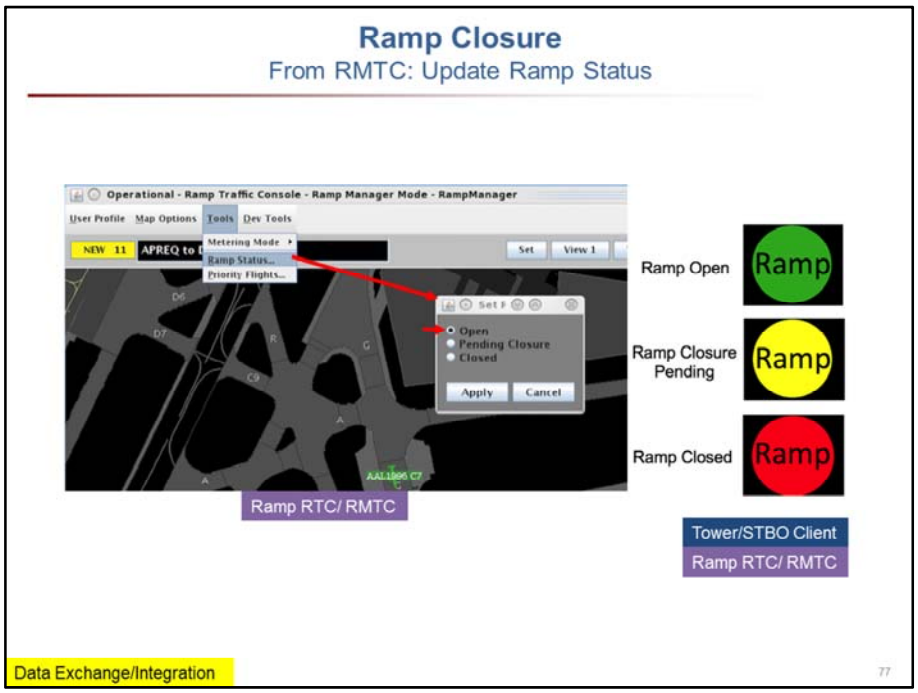
Cancellations come into the system quite late, sometimes the ramp is aware of these and will be able to enter them into RTC. But cancellation provided by the AA data will also be read into the system.

To cancel a flight from RTC, open the flight menu for the flight, select “Flight Cancelled.”

Data Exchange and Integration

Ramp Closure

76

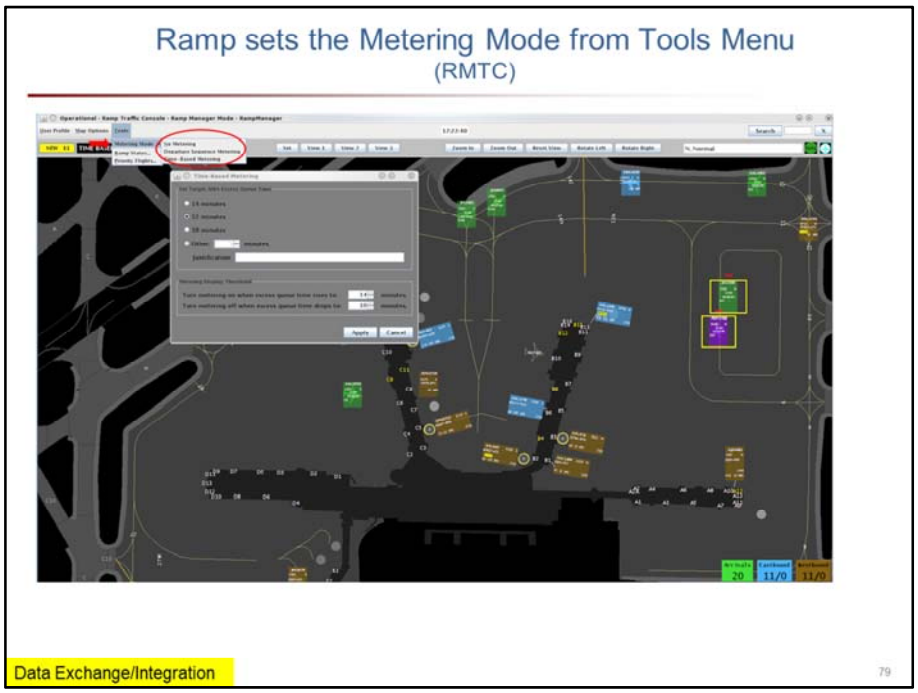


Ramp Closures often occur due to inclement weather especially lightning. This information will be entered by the Ramp and shared with the ATC-T.

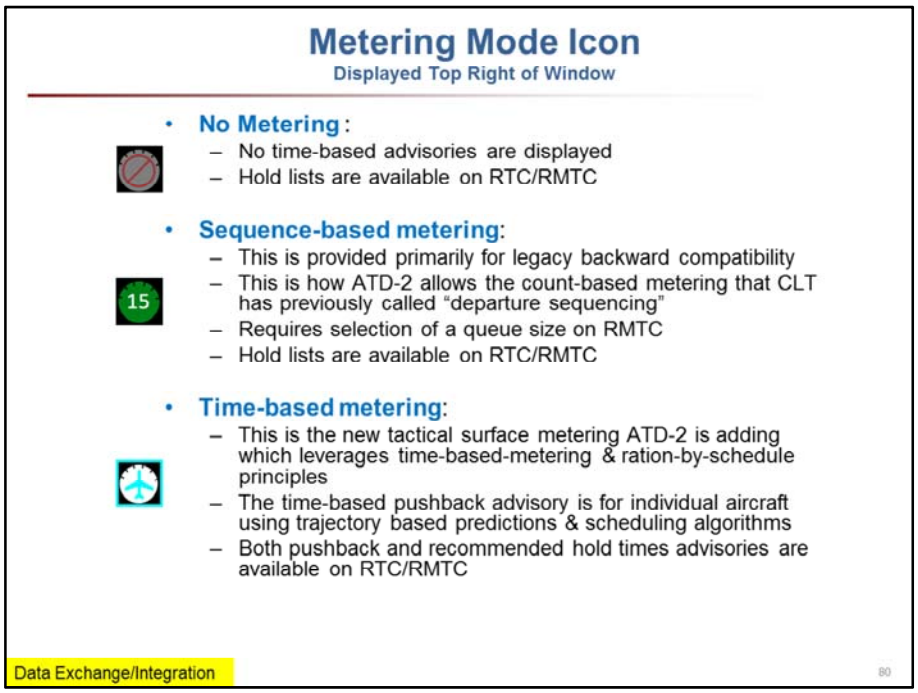
Data Exchange and Integration

Metering

78



The Ramp Manager will have the option to set the metering mode from the tools menu. The option to set it as “no metering” or “departure sequence metering” is meant to collect data, it does not change any algorithms. Ramp Manager is expected to make this input into the system and it will be sent to the users as a new notification. The notification icon shown in the top right hand side will be also get updated for both STBO Client and RTC. A close up of the notification icons can be seen in the next few slides

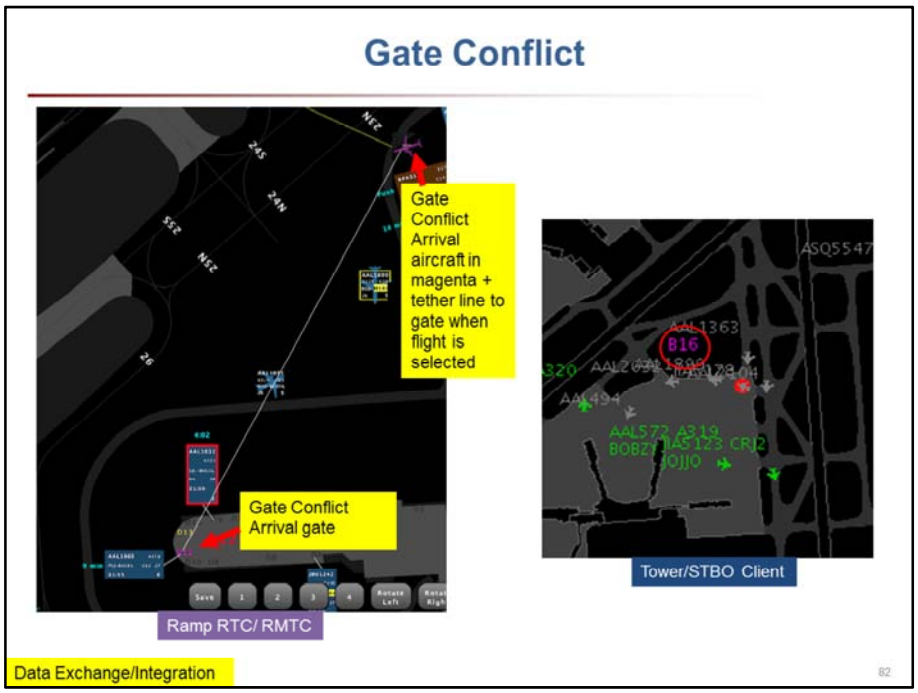


The metering modes are described above. These will be updated depending on Mode set by the Ramp Manager, STBO Client will also display the Metering Mode Icon on the right hand corner of the Toolbar.

Data Exchange and Integration

Gate Conflicts

81

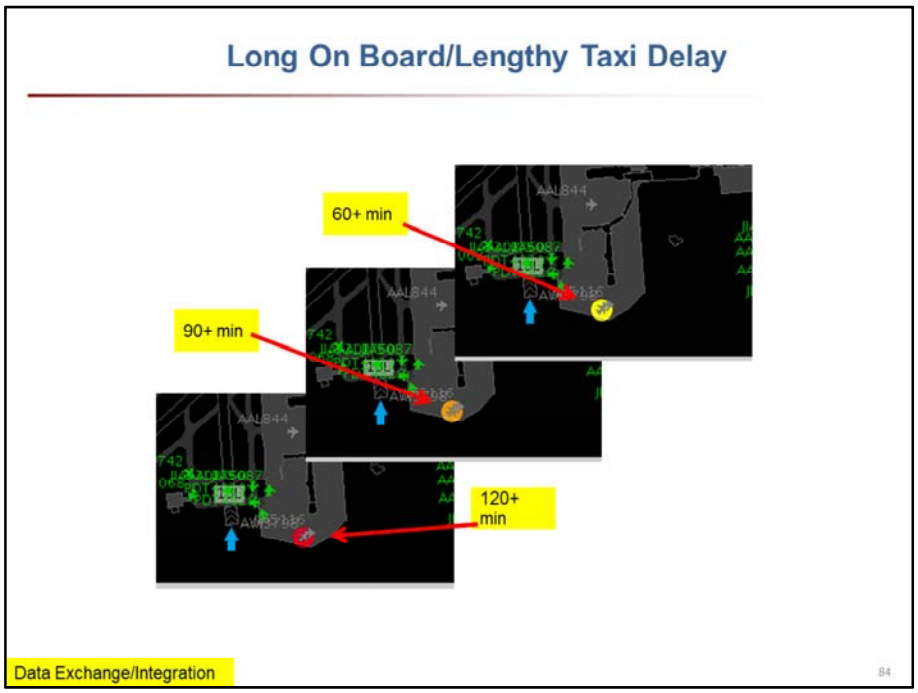


In RTC, the gate conflicts are shown as magenta for the arrival icon and the affected gate also shows as magenta. In future the users will be able to configure gate conflicts and see gate conflicts/ gate occupied in the next “n” minutes and “n” min could be specified by the users as per their needs. Also gates blocked due to heavies parked next to the gate will be marked as magenta.

Data Exchange and Integration

Long On Board /Lengthy Taxi Delay

83



Long On Board is especially important to the Airlines to avoid heavy penalties. ATC-T also expressed a desire to see the LOB information so that they could assist the Ramp with getting the flights to their gates as soon as possible. The timer for LOB starts as soon as the arrival touches ground and gets its ON, and for departures it starts when it gets its OUT or pushes back. The LOB indicator is a colored disc drawn on the flight icon. On STBO Client Map and RTC/RMTC it is a yellow disc when the flight has been on the tarmac for 60 min, it's orange when it has been there for 90 min and its red when the flight has been on tarmac for over 120 minutes or 2 hours.

Data Exchange and Integration

Review of Data Exchange on Flight Strips

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Review of TMI Flight Notification

APREQ

APREQ with Scheduled Time

- When a flight has a TMI, the TMI detail will be displayed on the flight strip with a blinking yellow text box. ***Click on flight to acknowledge this alert**
- APREQ on strip: this flight is waiting to be scheduled. *try not to release a flight until it has a scheduled time
- Required to acknowledge again after scheduled APREQ
- **APREQ flights will always get a gate hold recommendation, meant to guide the pushback of the flight to meet FAA controlled time (TMI)**

As an alert, these will all blink when they first appear.

*It is important to acknowledge any alerting (blinking yellow or red) alerts so that if the TMI is updated, new alerts can be easily noticed.

Data Exchange/Integration

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EDCT Flight Notification

EDCT

- EDCT flights will always get a gate hold recommendation, meant to guide the pushback of the flight to meet FAA controlled time (TMI)

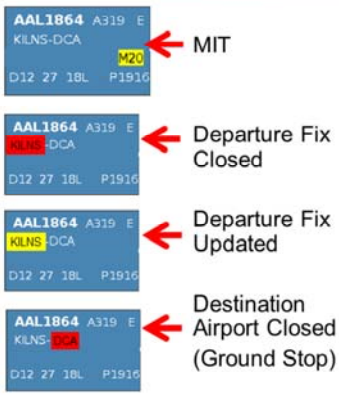
EDCT & APREQ

- EDCT & APREQ shown together APREQ will trump EDCT once negotiated

As an alert, these will all blink when they first appear.

*It is important to acknowledge any alerting (blinking yellow or red) alerts so that if the TMI is updated, new alerts can be easily noticed.

MIT, Departure Fix Closure, CDRs and Airport Closures



As an alert, these will all blink when they first appear.

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Data Exchange/Integration

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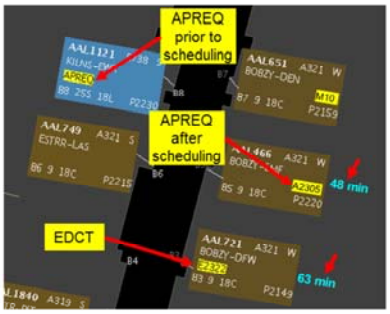
APREQ and EDCT

Hold Recommendation

APREQ flights with a scheduled Call For Release (CFR) and EDCT flights will always have a recommended gate hold time



Data Exchange/Integration

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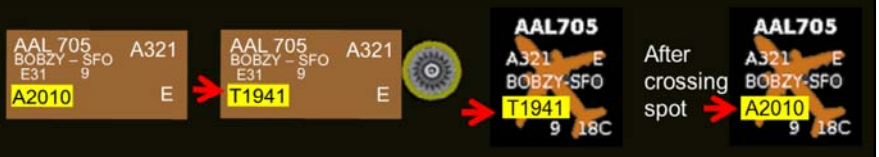
TMAT or Spot Time on APREQ and EDCT

If a flight has an APREQ or EDCT, then after pushback the TMAT or Spot Time is displayed in yellow highlighting as an alert that this TMAT is a function of the scheduled APREQ or EDCT. Beyond spot, APREQ displayed



APREQ and EDCT flights

Hardstand Release Advisory

Departures with Metering, APREQ and EDCTs get a TMAT/Spot Time

They have a release timers in the hardstand

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Hardstand Assignment

From Flight Menu - Departures

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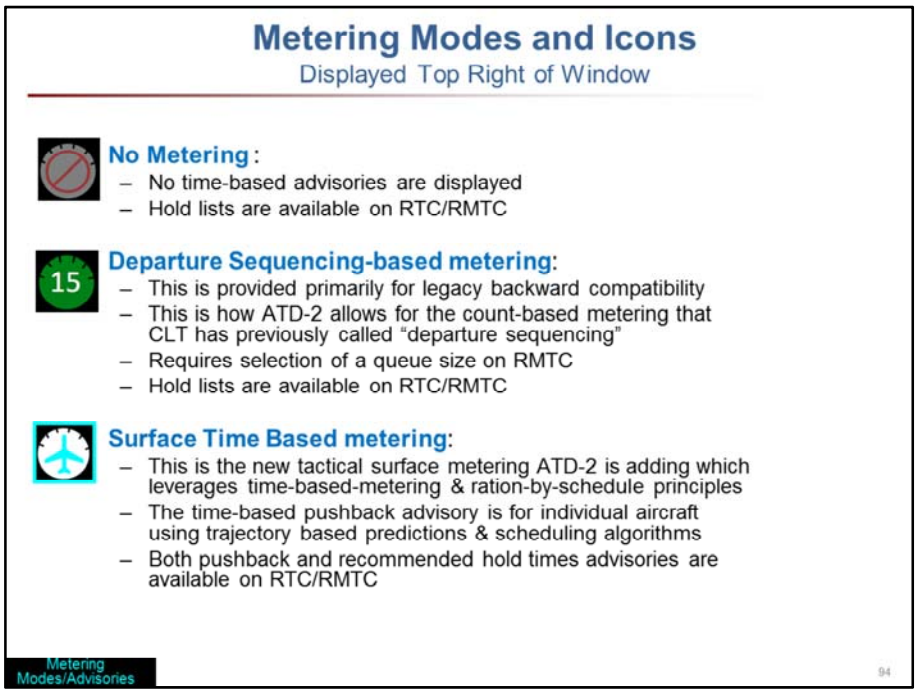
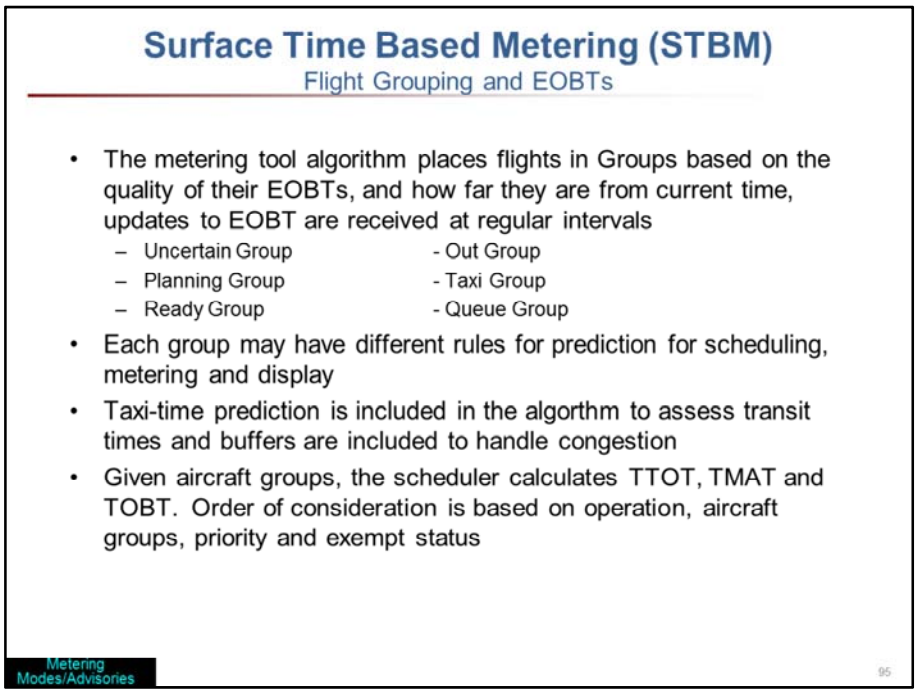
Agenda

Training Topic	Duration
A. Overview of ATD-2 & RTC/RMTC	30 Min
B. Interface Details: Upper Status Bar: (Map Features, Notifications)	30 Min
C. Interface Details: Flight Strip and Flight Menu	30 Min
D. Data Exchange and Integration	30 Min
E. Metering Modes, and Tactical Scheduler Advisories	1 Hour
F. Interactive Exercises on all the above	1 Hour
	Total 4 Hours

93



These will be updated depending on the mode as it is set by the Ramp Manager, STBO will also display the Metering Mode Icon. The first modes mentioned here are for data collection only, so that we are aware of what mode is in effect. Time based metering is meant for surface metering only and provides pushback or gate hold advisories.

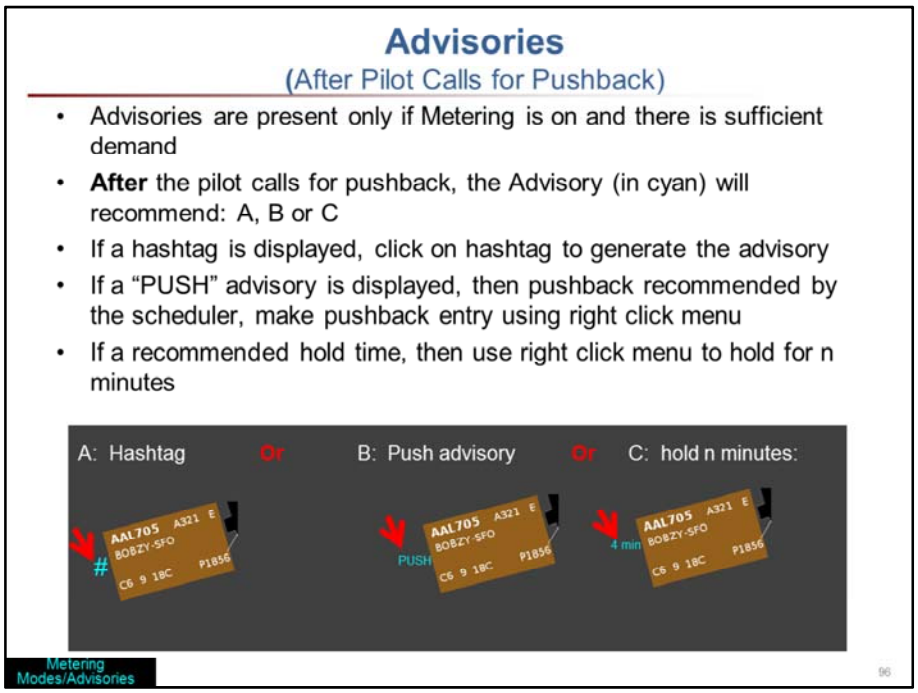


EOBTs provide confidence level for when a flight is going to depart.

Different flight groups are based on EOBTs as they are provided by their airline, however not all airlines are providing same level of confidence EOBT.

As the departure time for a flight draws near, based on EOBT, there is more confidence in the expected departure time for that flight.

Based on Group and these other criteria, all flights are scheduled and the advisory for each flight is based on this schedule.



When Time Based Metering is enabled, there may not be advisories generated right away. The metering may be enabled sooner than the tool turns on these advisories. The tool turns on the advisories when it sees a demand capacity imbalance that propagates delays to some flights. The advisories should be used when the pilot calls in.

Tactical Scheduler advisories provide a recommended hold time for the controller to advise a flight to either pushback or hold at the moment they call for pushback approval.

These advisories are updated every 10 seconds based on real time movements on the surface including queue length, number of pushbacks at the gate.

Gate conflicts are not resolved by scheduler, RC may decide to push a flight at a gate with a conflict, or to hold the arrival in HS.

When Tactical Scheduler Advisories are in use, we ask the ramp controllers to follow these recommendations while controlling traffic

Uncertain Group

Is Flight Ready?

Click Hashtag

Group	Definition	RTC display
Uncertain	Flights with poor quality EOBT or (EOBT – current time) > 10 min	Click on hashtag to put flight in ready group and reveal advisory 
Planning	Flights within 10 min of EOBT (i.e., EOBT – current time <= 10 min)	
Ready	Flights that have called in ready for pushback	
Out	Flights that are in pushback state	
Taxi	Flights that are cleared for taxi	
Queue	Flights waiting in the runway queue	

Note: Flights with hashtag can not be put on hold. Must click hashtag to get advisory

Metering Modes/Advisories

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Planning Group

Group	Definition	RTC display
Uncertain	Flights with poor quality EOBT or (EOBT – current time) > 10 min	
Planning	Flights with good quality EOBT (and within 10 minutes of EOBT)	
Ready	Flights that have called in ready for pushback	
Out	Flights that are in pushback state	
Taxi	Flights that are cleared for taxi	
Queue	Flights waiting in the runway queue	

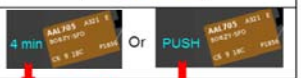
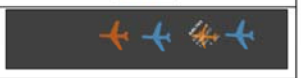
Ready Group

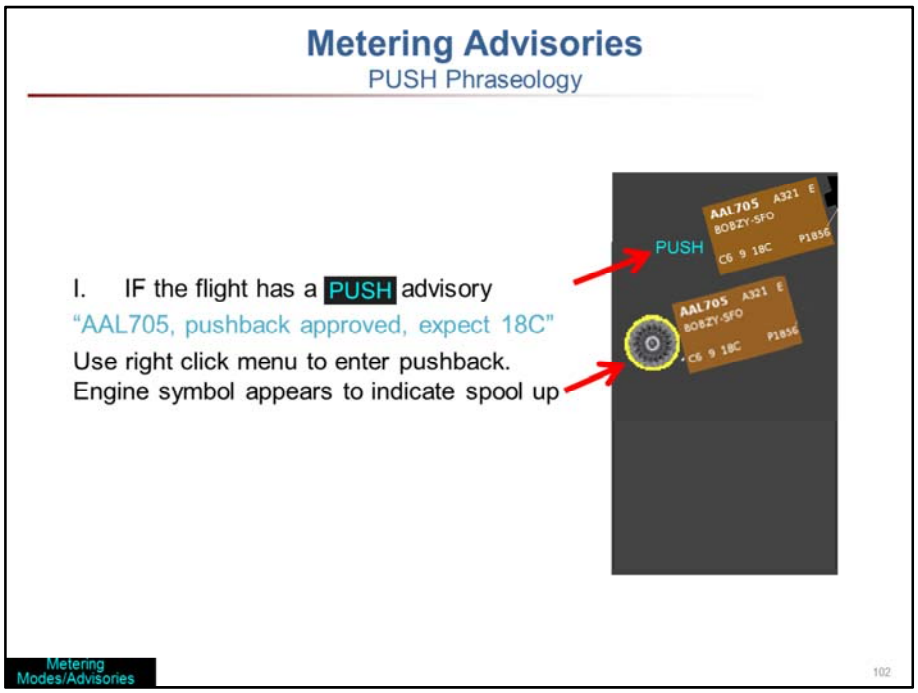
Group	Definition	RTC display
Uncertain	Flights with poor quality EOBT or (EOBT – current time) > 10 min	
Planning	Flights with good quality EOBT (and within 10 minutes of EOBT)	
Ready	Flights that have called in ready for pushback	
Out	Flights that are in pushback state	
Taxi	Flights that are cleared for taxi	
Queue	Flights waiting in the runway queue	

Out-Taxi-Queue

Group	Definition	RTC display
Uncertain	Flights with poor quality EOBT or (EOBT – current time) > 10 min	
Planning	Flights within 10 min of EOBT (i.e., EOBT – current time <= 10 min)	
Ready	Flights that have called in ready for pushback	
Out	Flights that are in pushback state	
Taxi	Flights that are cleared for taxi	
Queue	Flights waiting in the runway queue	

Metering Groups

Group	Definition	RTC display
Uncertain	Flights with poor quality EOBT or (EOBT – current time) > 10 min	
Planning	Flights within 10 min of EOBT (i.e., EOBT – current time <= 10 min)	
Ready	Flights that have called in ready for pushback	
Out	Flights that are in pushback state	
Taxi	Flights that are cleared for taxi	
Queue	Flights waiting in the runway queue	



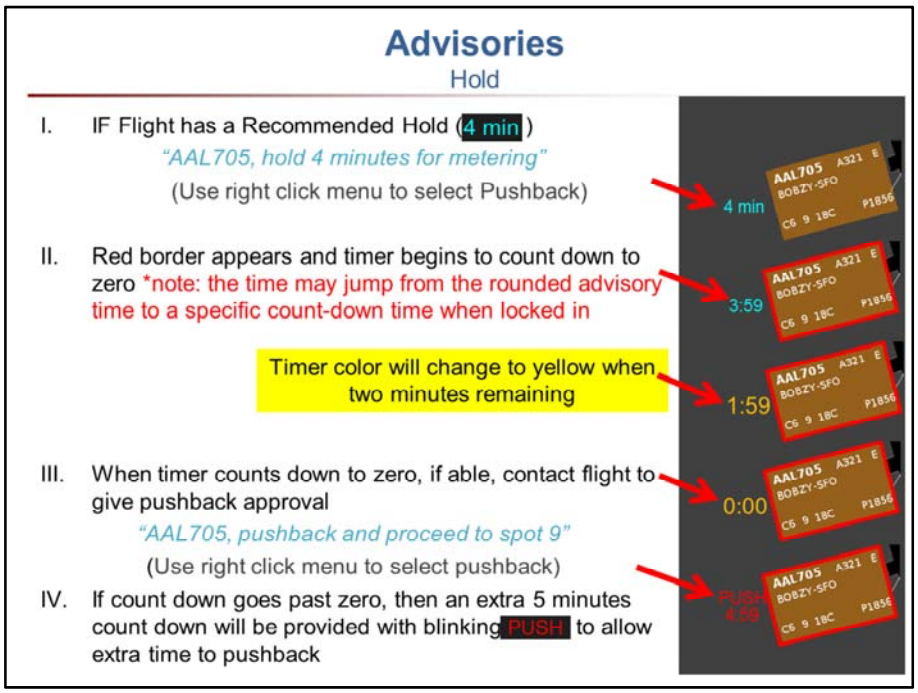
Advisories are shown in cyan blue next to strip. If a PUSH advisory is displayed, then the recommendation is to give pushback approval at the time that the flight has called in. If the advisory is a Hold Time, then the recommendation is to hold the flight at the gate for the specified amount of time. Advised hold times always round up, therefore an N min hold advisory, might actually be a 4 minute, 59 second hold time once the hold is locked in.

When pilot calls, controller looks at flight on map to see a recommended hold time: Advise N minute hold", sliding flight strip toward gate. This informs the scheduler at that moment that that flight is ready but holding, and the countdown timer begins to count down.

Then after counting down to zero, the count up timer will be displayed to remind controller that that flight is ready and waiting to pushback.

If the advisories are turned off while a pushback hold is in place, the timer will simply show the total time the flight has been on hold and keep counting up

The ramp controller is asked to follow advisories, allowing for operational and safety concerns**. However, If a flight is pushed before the advised time then it can affect the schedule of the other flights and may change their advisories.**



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Advisories

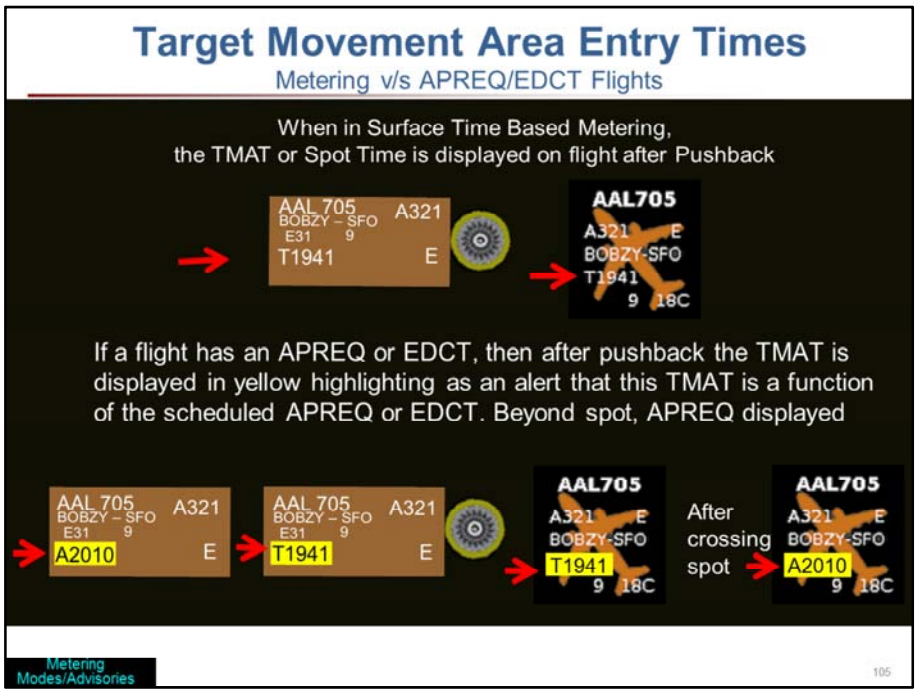
Add Extra Hold

- If count down goes past zero, then an extra 5 minutes count down will be provided to give additional time

*If needed, to prevent flight from being placed into the uncertain group (hashtag), time may be added to the hold

- Use the right click mouse menu to add 2, 5, or 10 minutes to the hold time

» Five minutes added to hold countdown timer



Target Movement Area Time (TMAT) is the time the flight should arrive at the spot. TMAT times are displayed after pushback, only when in Time Based Metering. If not in metering and if no TMI, then TMATs are not displayed after pushback

We expect the ramp controller will manage the flow of traffic to honor the TMAT times for a flight.

Expected Pilot Procedures

- Metering
  - "AAL705, hold 4 minutes for metering"
- APREQ Flights with wheels-up time
  - "AA 235 you have a wheels-up time of 1230 to LGA, hold for 10 min"
  - OR check if the flight got it's wheels-up time before proceeding to spot
- EDCT Flights
  - "AA 795 you have an EDCT or wheels up time of 1330 to EWR, hold for 40 min" or send to hard stand
- In Hardstand
  - Advisory available
    - "AA 898, you will be released from hardstand in 7 minutes"
  - Advisory not available : use current day procedures
- Dep Fix Closure (at gate when possible)
  - "AA 267, Contact Clearance delivery for new route, call when ready for push"

Agenda

Training Topic	Duration
A. Overview of ATD-2 & RTC/RMTC	30 Min
B. Interface Details: Upper Status Bar: (Map Features, Notifications)	30 Min
C. Interface Details: Flight Strip and Flight Menu	30 Min
D. Data Exchange and Integration	30 Min
E. Metering Modes, and Tactical Scheduler Advisories	1 Hour
F. Interactive Exercises on all the above	1 Hour
	Total 4 Hours

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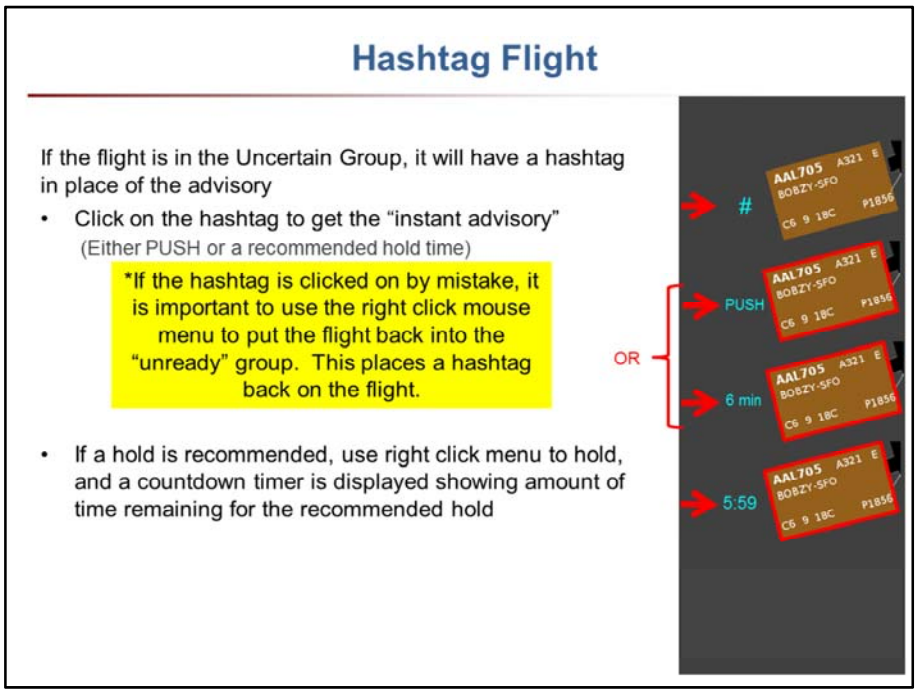
Exercises

- How to access RTC
- Pushback, taxi
- Undo pushback, undo taxi
- Flight Menu
  - Surface updates (gate, spot, runway update)
  - Status updates (Exempt, Priority, Cancel, inactive temp)
  - Scratchpad, return to gate (move to gate for arrival)
- Notifications, open panel and acknowledge
- Advisories
  - Push, hold, undo hold
  - add time to hold

Extra Slides



Advisories are shown in cyan blue next to strip. If a PUSH advisory is displayed, then the recommendation is to give pushback approval at the time that the flight has called in. If the advisory is a Hold Time, then the recommendation is to hold the flight at the gate for the specified amount of time. Advised hold times always round up, therefore an N min hold advisory, might actually be a 4 minute, 59 second hold time once the hold is locked in.

When pilot calls, controller looks at flight on map to see a recommended hold time: Advise N minute hold", sliding flight strip toward gate. This informs the scheduler at that moment that that flight is ready but holding, and the countdown timer begins to count down.

Then after counting down to zero, the count up timer will be displayed to remind controller that that flight is ready and waiting to pushback.

If the advisories are turned off while a pushback hold is in place, the timer will simply show the total time the flight has been on hold and keep counting up

The ramp controller is asked to follow advisories, allowing for operational and safety concerns**. However, If a flight is pushed before the advised time then it can affect the schedule of the other flights and may change their advisories.**