

RNP-AR: New Arrival Procedures at Toronto

OPSGROUP Team

19 January, 2023



Everyone loves an aviation acronym, don't they? So this post is about an acronym that causes a lot of confusion. **Is an RNP-AR the same as an RNAV, and what if you add GNSS on the end?**

It is also about **CYYZ/Toronto Pearson** airport because they have just implemented the **'biggest' deployment of ICAO E0R standard** at any major international airport in the world.

OK, so what *exactly* have they done?

If you haven't heard the term EoR before, then it just means **"Established on RNP-AR"** and means they can use reduced separation standards.

So in simple terms, they've started using RNP-AR approaches. Which is great because **reduced separation standards** means reduced track miles for you, which means reduced fuel costs and time and all that joylessness at the end of a long and tiring flight.

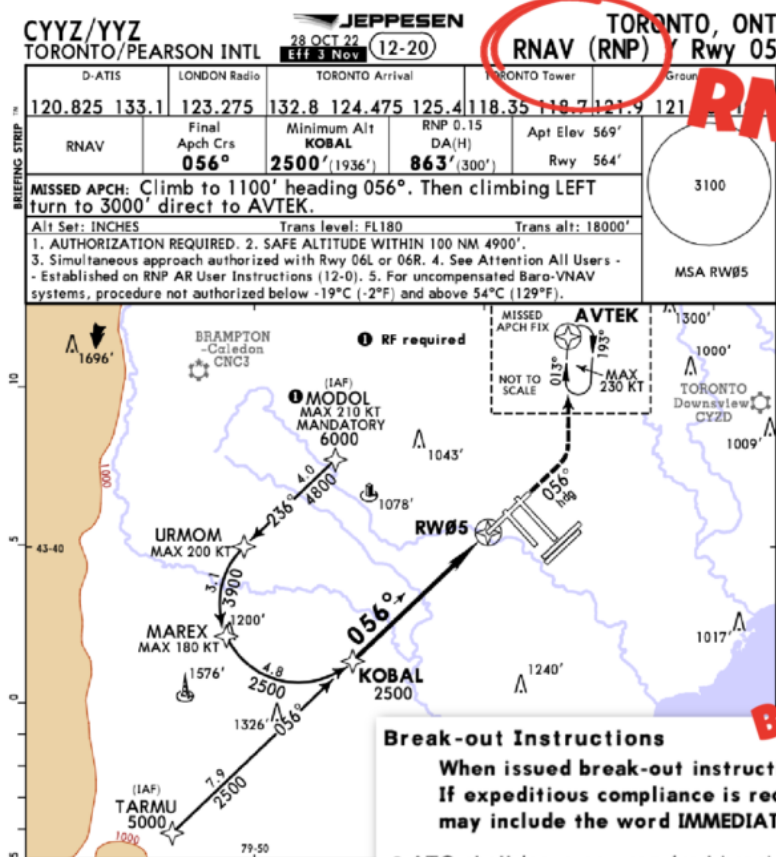
So, RNP-AR approaches are way better.

Nav Canada says this - *"The EoR separation standard allows aircraft to be considered established on final as soon as they're on the RNP-AR procedure, which is now in use for both ends of Toronto Pearson's north runway (05-23). As a result, some aircraft approaching from the south will have the opportunity to fly up to 1,000 feet higher when aircraft to the north are established on an RNP-AR procedure, thereby providing aircraft with the opportunity to reduce their noise over communities located south and downwind of the airport."*

And here's a little video to learn even more about the project.

But before you disappear, here are some of Toronto's charts and a little discussion on these approaches in case you're seeing them for the first time ever.

The Charts.



RNAV(RNP)
RNP(AR) approaches
need approval

because you have
special procedures
BREAKOUT INSTRUCTIONS

RNP(AR) and the ones to watch for if you don't have approval

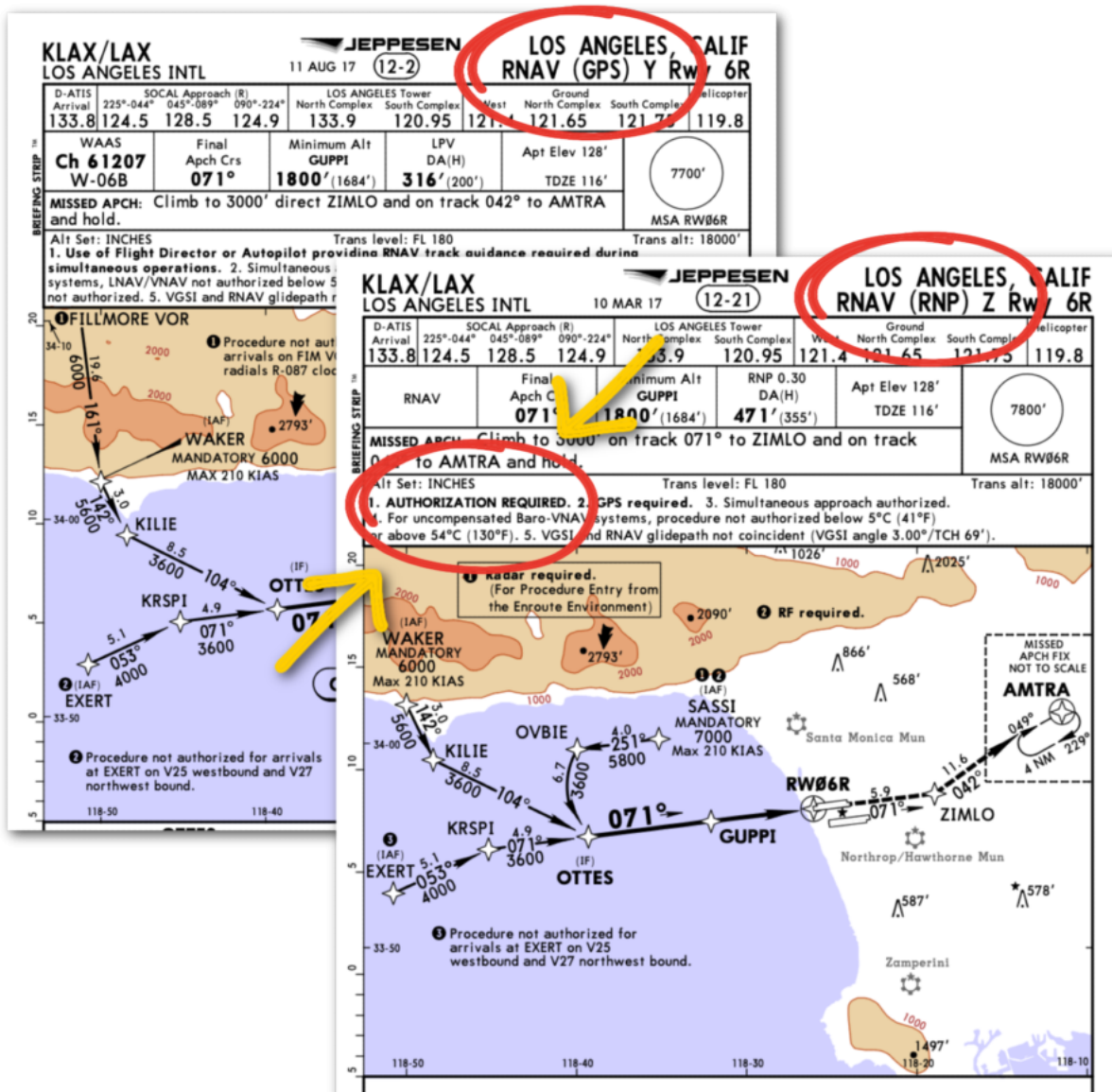
General RNP-AR Info.

Because a lot of folk find the RNP, RNAV, RNAV RNP, RNAV GNSS, RNP AR terminology just a little confusing (it is!), here is a link to a post talking all about it.

A mini summary:

- **RNAV is the original name.** The system doesn't require alerting (when you go outside the required tolerance)
- **RNP is the new name**, and the system requires alerting
- In the US they call RNAV approaches **GPS approaches**, and RNAV (RNP) when they need authorisation
- **RNAV/RNP (GNSS) requires GPS.** If it doesn't, it might use something like DME/DME to back-up accuracy

- **AR means authorisation required**, which means you need training and approval to fly them
- They all come under **PBN** which stands for Performance Based Navigation



The difference (in the US)

CYYC/Calgary

Calgary is next in line to get them (probably).

There is a 'period of public comment' open now until Feb 3rd 2023, so get your voice heard if you have comments on these plans.

The Toronto Slot Machine

OPSGROUP Team
19 January, 2023



CYYZ/Toronto Pearson has construction works planned this Fall (*that's autumn for European folk*), which is going to mean some slot restrictions. Here's the info on it.

What are they doing?

They have been **rehabilitating one of the runways - 06L/24R** - since April 2022. The overhaul will give it another 30 or so years of life.

So far they've sort of done one third of it, and are finishing up the mid section, so just have the end bit to go - but this is **the longest section to complete**.

After this they'll be whacking in a lot of LED lights and also working on new bay areas.

You can read all about it [here](#).

What does it mean for traffic?

This is actually their second busiest runway which means fairly big disruption. Normally Toronto runs a **dual or triple runway configuration** when it gets busy, but since they can't do that, they've been maximising the efficiency of the other two where they can.

With the biggest bit of the construction coming up, they have put some **slot restrictions** in place to manage the traffic, **effective Aug 2**.

This will mainly impact Business and General Aviation flights.

- First up, there are **limited slots between 15:00 and 19:59** local time, each day
- This applies to **arriving and departing** aircraft
- BizAv/GenAv flights looking to operate between **06:30 to 12:29 must file a reservation** with

the Airport Reservation Office Online Coordination System (ARO OCS)

Good news though – any **unallocated capacity** (with an hour to go) will be available for BizAv/GenAv flights. So you might be able to sneak in last minute (although we wouldn't recommend depending on it).

ARO OCS?

Find all the info on that here, and if you're not already registered then do it because it **takes 7 days**.

Actually that link takes you directly to Toronto's site on it and there is a bunch of handy info there like who is exempted, how to do it, forms etc.

The Directive.

The official stuff on it can be read here. It says what we said, but you can also find some handy contact info in there too, in case you have any questions on it all.

Toronto RNP-AR Plan

OPSGROUP Team
19 January, 2023



What does Toronto Pearson International airport and a Canadian Goose have in common?

They are both very noisy!

Which is why NavCanada are looking to change the airspace at the airport. More specifically, they are planning on implementing **RNP-AR approaches** in an attempt to make it *cleaner, greener, quieter*. Just like Canada itself. ☐

Anyway, here's a quick look at the proposed routes and how they will help with noise and efficiency.

Runway 05/23

They are planning to introduce RNP AR approaches. The big benefit of these is they line you up with the runway sooner which means you **fly less and so burn less fuel**. They also help with continuous descent ops (see the traffic management bit below for how that works).

Here is a picture of how it will shorten the distances for you. The RWY23 plans can be checked out [here](#), and the ones for RWY05 [here](#).

Traffic Management

In standard simultaneous parallel operations, ATC apply a **1000' or 3nm lateral separation** between aircraft which usually means folk on one runway head in at 4000' for final approach while those going to the other runway head in at 3000'. Those dropped down to 3000' often don't fly a CDA and it is less efficient, but also **more noisy for those on the ground** with aircraft flying for longer periods at lower levels.

An RNP-AR means aircraft do not have to drop down to a lower altitude because those on the RNP-AR are already 'established' on the procedure during the downwind curved bit that bring you onto finals.

One of the current issues with Toronto is the approaches don't tend to link with the arrivals so there is often a messy, inefficient in-between bit where you are just sort of flying along waiting for a vector.

So why do we care about proposals?

Mainly because it's good to know what's changing so you can get ready for it. But also because most of the feedback received during these stages of discussion tends to be from disgruntled folk who live near the flight paths and don't always want to see changes brought in.

Visit the NavCanada site [here](#) for the full info.

New procedures at Toronto

David Mumford
19 January, 2023



The airport launched an Airport Collaborative Decision Making (A-CDM) trial on Sep 16 which will continue until Spring 2020. In theory you should see faster turnaround and taxi times, but there are **two key requirements** to be aware of:

1. Make sure you've got **slots** approved in advance for arrival and departure.
2. For departure, you'll get a **Target off Block Time (TOBT)**, which you'll need to update with ATC if you think you're going to exceed it by 5 minutes or more.

The airport started requiring GA/BA flights to obtain slots back in February 2019. After a few teething problems, they decided to start allowing local handlers to arrange these on behalf of operators. If you get a local handler to do this for you, you can book slots up to 30 days in advance – Skycharter & Signature provide this service.

If you do want to arrange slots yourself, that's still an option, but you will only be able to request these 3 days in advance. Various flight planning providers have said they can arrange slots for operators too, but they all seem to be restricted to 3 days as well. Toronto is a busy airport, and this restriction may mean that you won't be able to get the arrival/departure times that you want.

Once you have your slots, your aircraft then gets automatically entered into the A-CDM system. For departure, you will get a **Target off Block Time (TOBT)**, and pilots will need to update this with ATC if they think they are going to exceed it by 5 minutes or more – getting your handler to update your slot reservation at this stage won't work! Once you get within 10 minutes of the TOBT, you can only update it 2 more times. If a third TOBT update is required, you'll need to contact the Airport Flow Manager for instructions (+1-416-776-2236).

The airport has published this A-CDM quick reference guide for operators:

Introduction

What is A-CDM?

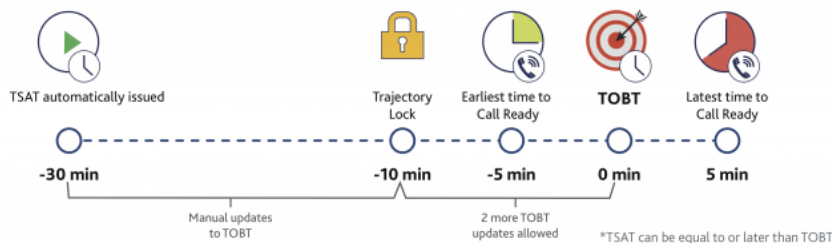
The Airport Collaborative Decision Making (A-CDM) is a predictive model for airspace and airport operations in Toronto. The objective of this model is to optimize the Aircraft Turnaround procedures at Toronto Pearson airport by ensuring the best possible co-ordination of resources and increasing common situational awareness for all operational departments and airport partners.

Procedures for Flight Crew

Every flight has a TOBT and a TSAT. The TOBT is a reference time that reflects the targeted completion of ground handling activities. The aircraft must be ready to depart +/- 5 minutes of TOBT.

At +/- 5 minutes of TOBT, the flight crew must contact the Apron Coordinator to confirm that the aircraft is ready for pushback (Call Ready). After this, the Apron Coordinator instructs the flight crew to monitor the appropriate frequency for pushback instructions and taxi clearance.

If the TOBT time cannot be met, or if the aircraft cannot pushback at TSAT, the flight crew must contact the aircraft operator to update a new TOBT and an assigned TSAT.



It is vital that the Pilot still calls Apron Coordinator at TOBT +/- 5 minutes, even if TSAT is outside this window



Deicing

Deicing for an aircraft is available from OCT 1 to APR 30. The aircraft operator or flight crew must request deicing at Clearance Delivery. In situations where a deicing request must be made after Clearance Delivery, the flight crew must contact the Apron Coordinator with the request.

Target Off-Block Time (TOBT)

TOBT is a reference time which indicates when an aircraft is expected to be ready to leave its stand. It is kept up-to-date by the aircraft operator or ground handler to an accuracy of +/- 5 minutes to provide a reliable estimate of when the aircraft is ready to be off-blocks, and must be updated if it is different from the previous TOBT by 5 minutes or more. The TOBT is displayed on an Advanced Visual Display Guidance System (AVDGS) at the stand, or communicated by the airline or ground handler where an AVDGS is not present.

Target Start-Up Approval Time (TSAT)

TSAT represents the time an aircraft can expect to receive start-up and pushback approval. The TSAT takes into account the actual TOBT, variable taxi times to the runway, expected deicing time, applicable CTOT, and other real-time capacity and demand constraints at the airport. The TSAT is displayed on an AVDGS at the stand, or communicated by the airline or ground handler where an AVDGS is not present.

Target Take Off Time (TTOT)

TTOT is the time at which an aircraft is expected to be on the runway. It is based on the TOBT plus the estimated taxi time to the assigned runway.

Calculated Take Off Time (CTOT)

CTOT is a planned departure time assigned to a trajectory by the ATC (NAV CANADA) when certain restrictions exist. The aircraft must depart from the runway at this time, or the flight crew must contact the airline if this time cannot be met.

Call Ready

Call Ready is an indication from the flight crew to the Apron Coordinator to signify that the aircraft is ready for pushback. All doors must be closed with boarding bridges removed and the aircraft ready to depart from the stand.

Call Ready must be made within +/- 5 minutes of TOBT. If the aircraft is not ready at this time, the flight crew must contact the airline to update TOBT.

Pushback / Start-up approval

The Pre-departure sequence for aircraft is determined by the TSAT. Start-up approval will only be issued if the TSAT is valid. Pushback/taxi instructions are transmitted to the flight crew from North or South Apron. The flight crew must ensure that the flight is ready to pushback within +/- 5 minutes of TSAT.

Acronyms

A-CDM	Airport Collaborative Decision Making
ARDT	Actual Ready Time
AVDGS	Advanced Visual Docking Guidance System
CTOT	Calculated Take Off Time
EOBT	Estimated Off-Block Time
EXOT	Estimated Taxi-Out Time
SOBT	Scheduled Off-Block Time
TOBT	Target Off-Block Time
TSAT	Target Start-Up Approval Time
TTOT	Target Take Off Time
VTT	Variable Taxi Time

Contact Us

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Frequencies:
 Apron Coordinator 122.875
 South Apron 122.075
 North Apron 122.275

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 Toronto AMF, Ontario, Canada
 L5P 1B2



Other useful stuff to know about CYYZ/Toronto:

- Toronto still has a **night curfew** between the hours of 0030-0630L. If you need to arrive between those hours, you need to contact the after-hours slot team (+1-416-776-3480), who will consider your request. But watch out! For ops approved during the curfew hours they usually charge you around 20 times the landing fee!
- All the approach charts now make reference to a new procedure, implemented in Feb 2019, called **Continuous Descent Operations** (Jepp chart 10-2). This is designed to help reduce airport noise levels, and involves aircraft flying a continuous descent in the lowest power and drag configuration possible. ATC may instruct pilots to do this during daytime and evening periods when traffic is relatively light. More info
- Updated advice has been issued about the **runway selection criteria** at Pearson. When the north-south runways are in use (RWY 15/33) the airport sees an arrival capacity reduction of around 40%. So crosswind component guidelines have been included in AIC 12/19 for dry, wet and contaminated runways.

If you have further info to report, please do! Email us at news@ops.group

No more slots misery at Toronto

David Mumford
19 January, 2023



The ongoing slots-related misery at CYYZ/Toronto airport looks like it may be coming to an end.

The airport has always required GA/BA flights to obtain slots for flights operating overnight (0030-0630 local time), but in mid-Feb 2019 they made this a requirement for flights H24.

This was a new system, and there were a few teething problems, the main one being that operators had to do everything themselves, as local handlers were not allowed to arrange slots on their behalf. Added to that, unless you were a Toronto-based operator, you could only request slots 3 days in advance!

Add GA/BA Flights

Mandatory fields (indicated by red arrows and boxes):

- Season (dropdown)
- Operator (dropdown)
- Date (calendar)
- Arr (dropdown)
- Dep (dropdown)
- CHARTR (dropdown)

Arrival information (indicated by a blue arrow):

- Time O (dropdown)
- Dest (dropdown)
- ST (dropdown)
- ParkLoc (dropdown)

Departure information (indicated by a green arrow):

- Time D (dropdown)

Offer Time Range (indicated by a red arrow):

- Offer Time Range (dropdown)

Buttons: Submit, Erase, More >, Submit All

But the system has now changed, with the airport authority saying that **local handlers are now allowed to arrange slots on behalf of all operators**. Of those local handlers, Skyservice has decided not to provide this service, but Skycharter & Signature say they can arrange slots for operators **up to 30 days in advance**.

If you do want to arrange slots yourself instead of getting a local handler to do it for you, that's still an option, but you will only be able to request these 3 days in advance. Various flight planning providers have said they can arrange these slots for operators too, but they all seem to be restricted to 3 days too. Toronto is a busy airport, and this restriction may mean that you won't be able to get the arrival/departure times that you want.

If you want to try doing it yourself, the official guidance is here. If you want an FBO to do it for you, get in touch with Skycharter or Signature, and spare yourself some misery.

One last thing to note: Toronto still has a curfew between the hours of 0030-0630L. If you need to arrive between those hours, you need to contact the after-hours slot team (+1-416-776-3480), who will consider your request. But watch out! For ops approved during the curfew hours they usually charge you around 20 times the landing fee!

If you have further info to report, please do! Email us at blog@ops.group, or comment below.

Other interesting stuff at CYYZ/Toronto:

- All the approach charts now make reference to a new procedure, implemented in Feb 2019, called **Continuous Descent Operations** (Jepp chart 10-2). This is designed to help reduce airport noise levels, and involves aircraft flying a continuous descent in the lowest power and drag configuration possible. ATC may instruct pilots to do this during daytime and evening periods when traffic is relatively light. More info
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Canadian Ops Update

OPSGROUP Team
19 January, 2023



Just a short update on a few things happening in Canada that you might have missed...

Nationwide

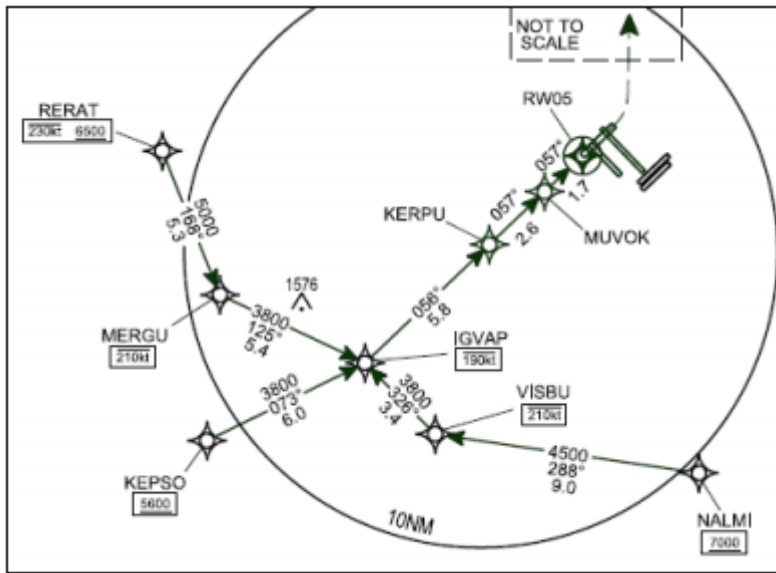
- There has been a change in the **Maximum Indicated Airspeeds for holding patterns** to bring them more in line with the rest of the world. This came into effect on 11OCT18 and will be reflected in the 08NOV18 AIP update. Refer AIC 25/18.

Altitude (ASL)	Maximum Holding Airspeed (KIAS)
At or below 6 000 ft	200
Above 6 000 ft up to and including 14 000 ft	230
Above 14 000 ft	265
Shuttle climbs (all altitudes)	310 (subject to CAR 602.32)

- It's been over a year and a half since NavCanada suspended it's **Climb/Descend via SID** phraseology, adding a complication for pilots that regularly cross the border from USA to Canada and v.v. It initially trialed then quickly suspended them *"out of concern over altitude deviations we were seeing in the system and the unforeseen large increase in workload as a result. We are continuing to communicate with airlines, aircraft operators and our employees as we revert to the phraseology rules that were in place prior to this change."* We understand this phraseology has now been officially put in the trash and wont be returning.

CYYZ/Toronto Pearson Airport

- There are new **nighttime RNAV approaches** starting in **CYYZ/Toronto Pearson** from 08NOV18. These RNAV (GNSS) X instrument approach procedures are for night-time ops between 0030L-0630L on runways 5/6L/6R/23/24L/24R. The procedures are designed to minimize the noise footprint. The ATIS will advertise these as the primary approach type when they are active. Pilots can expect to be cleared directly to the initial approach waypoint, then subsequently cleared for the approach including the appropriate transition. Refer AIC 28/18.



- Slots are currently required for all flights between 0030-0630 local time. The airport authority was planning to make slots mandatory for all GA/BA flights H24 from Nov 17 onwards, but this will now be delayed to some time in early 2019. For more info, contact the Airport Reservation Office at aro@gtaa.com

Do you know more? Drop us a line!