Toronto Pearson

Noise operating restrictions

We serve different types of aircraft from around the world: large jumbo jets en-route to London, England, propeller planes arriving from London, Ontario and everything in between. This mix of small and large aircraft types challenges us to be more innovative with our operational solutions for capacity management.

Part of the Noise Management Program is to:

- Restrict the amount of noise produced on the airfield where sound is closest to the communities that surround the airport
- Restrict the amount of noise created at night when it's most disruptive

Engine run-up restrictions

An engine run-up is a procedure conducted by airline maintenance staff to check an aircraft's engines for performance. They are an integral part of the safety check, but they do cause a significant amount of noise.

That's why the Noise Management Program has placed restrictions on when and where engine run-ups can take place:

- All engine run-ups must be pre-approved by us.
- All engine run-ups must take place at designated locations, strategically chosen to be as far away as possible from neighbouring residential communities.
- Engine run-ups may not take place between midnight and 7:00 am unless the aircraft is scheduled to depart that morning.
- No overnight engine run-up can exceed 15 minutes.
- Engine run-ups are prohibited for all noisier Chapter 2 aircraft between 2:00 am and 5:00 am.

Operating restrictions by aircraft category

The best way to mitigate noise exposure from aircraft operations is to reduce the amount of noise that aircraft produce. Aircraft noise categories are referred to as Chapters because they correspond to the Chapters in ICAO's Annex 16 – Environmental Protection document, which addresses aircraft noise reduction at the source.

Aircraft are categorized to their Chapter depending on the degree to which their measured noise levels differ from pre-determined noise limits. The formula for the noise limits was established by ICAO and the unit of measurement is Effective Perceived Noise Level (EPNdB).

Larger Chapter numbers signify the newest Chapter, which means newer technology.

ICAO Chapter timeline

- 1971 – Chapter 2 is defined and applied to old and new aircraft. Chapter 2 certification covers the initial standards for jet-powered aircraft.
- 1978 – Chapter 3 is adopted for new aircraft. This aircraft noise certification covers newer and stricter certifications as technology improved.
- 1990 – ICAO approves the phase out of Chapter 2 (not completed in Canada until 2002)
- 2001 – Chapter 4 is defined.

- 2006 – Chapter 4 is applied to any new aircraft as well as any Chapter 3 that requested re-certification. However, Chapter 3 aircraft sometimes meet the requirements of a Chapter 4 but have not applied for re-certification; in this case, the aircraft are called Chapter 4 equivalent.
- 2013 – ICAO recommended the latest and most stringent category of noise standards to date, known as Chapter 14 for implementation in 2017 and 2020. All new aircraft types certified after those dates will have to be an additional 7 EPNdB quieter (cumulative) than current Chapter 4 standards.

Our Noise Management Program has always supported using quieter aircraft as the technology became available. Currently, the fleet operating in and out of Toronto Pearson is 95% Chapter 4 or Chapter 4 equivalent.

Since Chapter 2 aircraft are significantly louder than Chapter 3 and 4 aircraft, they're only permitted to operate from 7:00 am until midnight.

Why do some aircraft sound different from others?

Night Flight Restriction Program

Toronto Pearson operates 24 hours a day, seven days a week. There are a few reasons for this, including:

- Greater connections with emerging markets
- Evolving travel choices for our ethnically diverse population
- Technological advancements that have turned one-stop flights into direct flights
- Ever-increasing trade cargo

Night flights in and out of Toronto Pearson are needed to accommodate travel distance, scheduling requirements and product delivery timelines.

To limit nighttime noise and balance growing regional demand, Transport Canada created a night flight restriction program, which limits the number of movements during the restricted hours (12:30 am to 6:29 am). This is referred to as the "night flight budget." Toronto Pearson is the only airport in Canada to have a budget system.

The night flight budget is a function of how many passengers fly through Toronto Pearson during the year. As the number of total passengers grows, so does the night flight budget. For example, if this year's budget was 10,000 night flights and the number of passengers is increased by 6% in the previous year, next year's night flight budget would be 10,600.

The night flight budget schedule is from November 1 to October 31 and accounts for approximately 4% of total annual air traffic movements at Toronto Pearson.

We manage this night flight budget by pre-scheduling 80% of the budgeted restricted hour slots. The remaining 20% are allocated to accommodate flights that were delayed due to the weather, mechanical, security or other operationally necessary flights. Medevac flights and military and police operations are also counted towards the night flight budget. In 2016, approximately 13% of night flights were cargo aircraft.

If we use 95% of the annual night flight budget, we'll qualify for an additional "bump up" of 10% on the budget for the next year. To date, we have not used 95% of the budget and so have not used the bump up. To learn more about the Night Flight Budget Amendment (bump up), please visit the Night Flight Outreach webpages.

Preferential runways

Flying on preferential runways at night

We know aircraft noise can be more bothersome to our neighbours during the night. That's why we have defined overnight hours where the airport is configured to arrive and depart aircraft on "Preferential Runways."

The goal of the Preferential Runway system is to impact the fewest residential neighbourhoods. The defined Preferential Runway hours are midnight to 6:30 am every day. It's important to note that these are just preferential – not mandatory. In 2023, Transport Canada approved an updated preferential runway system for Toronto Pearson. Click here for more details.

The five operational runways at Toronto Pearson

The one-year trial of an updated Preferential Runway System is currently in effect as of February 27, 2020 as part of the Six Ideas. Click here for more details.

The Preferential Runways are used whenever possible; however other runways may be used when the weather conditions or other factors do not support a preferred runway.

Learn why some flights operate at night or check out how many aircraft fly over your neighbourhood at night.

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Accessibility
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