



**PORTSTORONTO**

**BILLY BISHOP TORONTO CITY AIRPORT**

**NOISE MANAGEMENT SUB-COMMITTEE  
MEETING #18**

**MEETING MINUTES**

October 25, 2023  
7:00 PM to 8:30 PM  
Zoom Online Meeting  
Toronto, Ontario

Minutes prepared by:





These meeting minutes were prepared by LURA Consulting. LURA provides neutral third-party consultation services for the Ports Toronto Noise Management Sub-Committee. These minutes are not intended to provide verbatim accounts of committee discussions. Rather, they summarize and document the key points made during the discussions, as well as the outcomes and actions arising from the committee meetings. If you have any questions or comments regarding the Meeting Minutes, please contact either:

**Angela Homewood**

Environmental Project Manager  
Billy Bishop Airport

**PortsToronto**

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OR

**Alexander Furneaux**

Meeting Facilitator

**LURA Consulting**

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[afurneaux@lura.ca](mailto:afurneaux@lura.ca)



**Summary of Action Items from Meeting #18**

| <b>Action Item</b> | <b>Action Item Task</b>   | <b>Who is Responsible for Action Item</b> |
|--------------------|---|---|
| <b>M#18-A1</b>     | PortsToronto and Mr. Watson to include Ms. Monette's scenario of the planes revving their engines in the model.   | <b>PortsToronto</b>                       |
| <b>M#18-A2</b>     | PortsToronto will provide Mr. Watson with the list of types and locations of run-ups presented in a previous CLC. | <b>PortsToronto</b>                       |
| <b>M#18-A3</b>     | PortsToronto to report back on alternate permanent noise monitor locations  | <b>PortsToronto</b>                       |
| <b>M#18-A4</b>     | Dr. Colin Novak to report back on measurement adjustments to noise monitors.                                      | <b>Akoustic</b>                           |
| <b>M#18-A5</b>     | PortsToronto will confirm with Mr. Watson how the noise reports are being integrated in the study.                | <b>PortsToronto</b>                       |

**List of Attendees**

| <b>Name</b>                           | <b>Organization (if any)</b>             | <b>Attendance</b> |
|---------------------------------------|--|-------------------|
| <b>COMMITTEE MEMBERS</b>              |  |                   |
| Hal Beck – Co-Chair                   | York Quay Neighbourhood Association      | Present           |
| <i>Vacant position</i>                | York Quay Neighbourhood Association      | N/A               |
| Max Moore                             | Bathurst Quay Neighbourhood Association  | Present           |
| Lesley Monette                        | Bathurst Quay Neighbourhood Association  | Present           |
| Jay Paleja                            | City of Toronto – Waterfront Secretariat | Present           |
| <b>PORTS TORONTO REPRESENTATIVES</b>  |  |                   |
| Angela Homewood                       | PortsToronto                             | Present           |
| Michael MacWilliam                    | PortsToronto                             | Present           |
| Michael Antle – Co-Chair              | PortsToronto                             | Present           |
| Noah Meneses                          | PortsToronto                             | Present           |
| <b>FACILITATION</b>                   |  |                   |
| Alexander Furneaux – Lead Facilitator | LURA Consulting                          | Present           |
| Geoffrey Mosher – Notetaker           | LURA Consulting                          | Present           |
| <b>GUESTS</b>                         |  |                   |
| Harvey Watson                         | R.J. Burnside & Associates Limited       | Present           |

|           |  |          |
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**Appendices:**Appendix A: Meeting AgendaAppendix B: Ground Noise Study Presentation – October 25, 2023Appendix C: Billy Bishop Toronto City Airport Aircraft Maintenance Run ProceduresVersion 5, 2022

## 1. Agenda Review and General Updates

Alexander Furneaux (LURA Consulting) welcomed the members of the Noise Management Subcommittee (NMSC) to their 18<sup>th</sup> meeting held virtually via Zoom.

Mr. Furneaux provided an overview of the agenda and asked if the committee had additional items to add. The meeting agenda is included in **Appendix A**.

Mr. Furneaux welcomed Mr. Watson returning to provide an updated presentation on the Ground Noise Study. Mr. Watson presented to the NMSC back in 2021 after being selected as the successful consultant in early 2020. This is Mr. Harvey's third meeting after the study was put on hold because of the global pandemic and the suspension of commercial operations.

## 2. Ground Noise Assessment Study

Harvey Watson provided a presentation (included in **Appendix B**) on the Ground Noise Study. The presentation provided an overview of the team background, the goals of the study and the scope of the data, the methodology and progress, the input from NMSC and how it was used, the assessment formulas and methodology, and some operational scenarios.

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Key points from Mr. Watson's presentation were:

*Comments, questions, and responses are listed as sub-bullets.*

- The purpose of the study is to understand potential mitigation measures (either infrastructure or changes to operations) PortsToronto may implement to lower its noise impacts on surrounding communities. They will do that by modelling all the predictable ground noise sources of disturbance to create noise scenarios. These scenarios will inform mitigation measures.
- Through review of the NMSC's feedback and conducting a review of the goals of the study the team decided not to use NPC-300's methodology for a 1-hour LEQ. This decision was made because a 1-hour LEQ does not account for disturbance as it averages noise measurements over an hour, concealing disruptive noises.
- The NMSC concern that A-weighting decibels would distort or reduce the values presented has been addressed in this study. Both A-weighting and Z-weighting decibels are being provided for the sources and the backgrounds. All data will be included for committee members to review.
- Progress on the Ground Noise Study has nearly completed recording source noises. Additional data is still required from a few noise sources and the background (ambient) noise monitoring.
- Noise sources have an impact duration associated with them which is related to how long and how often a source occurs for. The study has gone through all the noise sources and has selected impact durations that are representative and can be modelled and investigated for mitigation.
  - Hal Beck (YQNA) asked about the definition of the impact duration and if it incorporates the intensity of impacts and the length of impacts.
  - Mr. Watson responded that if something lasts 20 minutes you look at the impact of that over a 20-minute period, if it lasts 10 seconds you compare it to the time period, so you don't wash it out by adding more zeros to the

averaging. This would look at disturbance in a different way than how NPC-300 looks at it, which is total sound level.

- The assessment formula derives a number signifying impact based on the noise level and frequency of occurrence for each Point of Reception (POR). This is repeated using unmitigated and mitigated scenarios. This methodology was developed prior to the analysis to ensure that no conclusions are baked into the methodology.
  - Hal Beck (YQNA) requested definitions of the formula items.
  - Mr. Watson explains that “POR” is the point of reception, “I” is the location, it was noted that the model only allows for six elevations at any given location, even though some locations have higher elevations such as different floors of a building. “U” is the number of people at a location – this is important to ensure results are equitable. A noise that disturbs the Kings Landing residential building impacts more people than a noise impacting Ontario Place. “O” is the frequency (time) related to the operational scenario if the numbers of the two operations are different, it will prioritize the more frequent operation over lesser examples.
- Thirty (30) operational scenarios including six unique Q400 operational scenarios are included. It was noted that there are more appropriate models for maximum thrust that will be modelled.
  - Mr. Beck (YQNA) asked if there’s a difference between idling and taxiing.
  - Mr. Watson responded that idling is quieter.
  - Lesley Monette (BQNA) raised a concern about the noise and pollution impacts of the planes which is particularly bad when planes on the eastern gates pushed back and angled towards buildings. When the planes are idling, engine checks are performed which is particularly disruptive when planes rev their engines. It was noted that BQNA residents aren’t simply concerned with the movement or the idling of planes but also when the engines rev and take off.

**M#18-A1** PortsToronto and Mr. Watson to include Ms. Monette’s scenario of the planes revving their engines in the model.

- Max Moore (BQNA) asked about the consideration for and inclusion of engine run-ups in the list of operational scenarios.
- Mr. Watson responded that this particular scenario is not included because that mitigation has already been included in the Ground Run-Up Enclosure (GRE) and its impact may not be as useful.
- Mr. Beck (YQNA) noted that PortsToronto proposed three or four different types of run-ups during one of the previous CLCs.
- Angela Homewood responded that she was involved in that project and can provide the list of types and location of run ups for the Sunday morning run up where the GRE was constructed.
  - During the meeting Angela Homewood provided PortsToronto’s [Aircraft Maintenance Run Procedures](#) from November 24, 2019. The 2022 Maintenance Run Procedures are included in **Appendix C**.

- Mr. Beck (YQNA) asked if Mr. Watson could include the aircraft maintenance run-up procedures into the next presentation and include the magnitude of each location.

**M#18-A2** PortsToronto will provide Mr. Watson with the list of types and locations of run-ups.

- Data used in the assessment for the Q400 taxiing example model includes event frequency, duration of an event, time of day restrictions, and possible alterations and how this compared to the Lawn Mowing model.
  - Measurements from the airport were taken for all sources except for Heating Ventilating and Air Conditioning (HVAC) equipment and Ornge Helicopter.
  - Next steps include completing the modeling process, ranking the results, and providing them to PortsToronto for recommendations on mitigation options and concepts. These could include both significant and minor recommendations and will be modeled to demonstrate their impact change and ranked by potential benefits and costs. PortsToronto will consider implementing effective measures based on the study's findings and recommendations.
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- Jay Paleja (City of Toronto) asked how the potential benefit will be defined and whether it will be calculated using the same assessment formulas and methodology as impact.
- Mr. Watson responded that it will be calculated in a similar way.
- Mr. Beck (YQNA) asked what units are being used in the assessment formulas.
- Mr. Watson responded that the resulting number is a method of ranking the impact that includes decibels, population, and the amount of time it occurs. The weighted analysis allows for adjustments in locations that have more or fewer people.
- Ms. Monette (BQNA) noted that there have been circumstances where planes are lining up, idling, or waiting to take off and asked if there is a way to account for this accumulation of noise.
- Mr. Watson responded that decibels is a logarithmic unit so if a person hears a noise from a truck and someone drives alongside it, they will experience double the noise. The threshold of hearing lies at  $10^{-12}$  watts per square metre, which is 11 zeroes before you get to one, while a plane taking off would be 1,000 watts per square metre. This scale is 15 orders of magnitude, so a person could hear all of that, but the brain cannot handle this huge scale of numbers well.
- Ms. Monette (BQNA) asked how the loudness and duration of noise are being factored in.
- Mr. Watson confirmed that this is part of the equation.

### 3. Permanent Noise Management Terminal

- Michael MacWilliam (PortsToronto) provided a brief update on the Permanent Noise Monitor Terminal. He noted that the lease has been renewed for Ontario Place. Additionally, the area where the noise monitors are located will not be impacted by redevelopment plans for the area and there is no intention to move any other monitors at this time.
- Mr. Beck (YQNA) asked for updates regarding the Windward Co-Op monitor.

- Mr. MacWilliam responded that the installation will either be on the roof or not at all. Approval from Brüel & Kjær (noise monitor manufacturer) is needed for installation on the side of the building as this is not the intended use of the equipment to be wall mounted.
- Mr. Beck (YQNA) asked how the Ontario government will monitor this standard.
- Mr. MacWilliam responded that it is not a provincial standard and it is simply about monitoring noise.
- Angela Homewood added that NPC-300 is for stationary noise sources (e.g., operating diesel generators) and does not include noise monitors for moving objects like cars, trains, or airplanes. Subcommittee Meeting #7 (July 2019) included a presentation outlining what a stationary noise source is and what is not.
- Mr. MacWilliam added that the monitors currently available are aircraft noise monitors and there are no other types of monitors that can be connected to the system. The monitors used are part of an aircraft noise monitoring system that is used around the world and is approved for monitoring aircraft noise. From his experience at Pearson, they have noise monitors located on poles and in the middle of soccer fields and will not approve the monitor for their system to be installed on the wall.
- Mr. Beck (YQNA) highlighted that the noise that is shielded needs to be measured to assess noise. He suggested that if a noise monitor is placed on the rooftop, any decibel measured should be discounted (e.g., 5%) to approximate the background sound and the total sound that is received at the plane of a bedroom window. It would be an arbitrary reduction in the noise instead of one that has been adjusted on account of it being exposed to the urban hum from the city side.
- Mr. Moore asked if a noise monitor could be placed on the roof of the city maintenance building in front of the playground with the washrooms and close to the ferry and Windward Co-op?
- Mr. MacWilliam responded that they will take this suggestion into consideration.

**M#18-A3** PortsToronto to report back on alternate permanent noise monitor locations.

- Mr. Beck (YQNA) added that if the goal is to measure the noise in the predictable worst case impact locations, which is the plane of the bedroom window, a shielded location would be needed and not one that is exposed. Placing a noise monitor at that location would not make a difference in noise in comparison to the one that is already on top of the Ferry Terminal Building.
- Mr. Moore suggested bringing in more noise metres and putting them inside or by an open window. This will get the noise readings, but it does not plug into the system.
- Mr. Beck (YQNA) suggested that alternative meters be investigated and identify what can be recorded and can be adjusted. Mr. Beck suggested to adjust the measurements by deduction by 5 decibels to the background sound as needed.
- Mr. MacWilliam responded that what could be adjusted needs to be identified and Dr. Colin Novak can look into this as he knows the system best.



**M#18-A4** Dr. Colin Novak to report back on measurement adjustments to noise monitors.

- Mr. Paleja (City of Toronto) suggested that it could be helpful to look at the long-term trajectory of noise monitoring at airports and how other airports are measuring noise.

#### **4. Noise Complaints**

- Mr. Moore noted that there has been an improvement in the noise from the banging of the ramps.
- Mr. MacWilliam responded that the rubber has been replaced.
- Ms. Monette (BQNA) recommended reevaluating the effectiveness of completing the noise reports and their relation to noise complaints. She noted that this process can be time-consuming and many people feel there is a disconnect between documenting noise complaints and action by PortsToronto to address the issues.
- Mr. Furneaux asked whether the noise reports are being considered or integrated into the background information and formulas in the Ground Noise Assessment Study.
- Mr. MacWilliam responded that this can be confirmed by Mr. Watson but thinks that wouldn't be something he could integrate or have any value for the study.

**M#18-A4** PortsToronto will confirm with Mr. Watson how the noise reports are being integrated in the study.

- Mr. MacWilliam added that registering noise concerns allows staff to look at certain time periods and use cameras to take a deeper dive to ensure nothing unusual is going on. If planes are going into the no-fly zone, this will be addressed with the carrier.
- Ms. Monette (BQNA) suggested that communicating the volume of complaints can be helpful in the presentations.
- Noah Meneses (PortsToronto) clarified that despite it being a tedious process, the noise reports do serve a purpose. PortsToronto investigates each report checking flight records and cameras to determine the source of the disturbance. Comments about making the forms easily fillable have been received and removing items that are not needed is being taken into consideration.
- Mr. Paleja (City of Toronto) suggested improving the way data is communicated and presenting it in a way that tells a story and makes sense.
- Mr. Beck (YQNA) has observed that when a number of events related to one complaint are reported, respondents may be economizing the number of entries on the website and simply putting all their complaints in one form.
- Mr. Meneses noted that noise reports that are specific and have as many details as possible significantly help when investigating to find the issue. He noted that he is looking into adding more detailed blurbs and having an example within the description blurb.

- Mr. Beck (YQNA) noted that tracking addresses have come up as a potential privacy issue in the past and asked whether the website can be updated to better track the location of the complaint while protecting data and privacy.
- Mr. Meneses clarified that respondents are voluntarily providing information and the majority provide all their information. Currently, the “Area” drop-down is separated by community into the Islands, BQNA, and YQNA and there is a possibility to pinpoint exactly where the complaint is coming from.
- Mr. Beck (YQNA) added that there might be a case where certain buildings are complaining more than others or even certain floors in the building.
- Mr. Meneses added that some may experience noise and not report it knowing that other individuals in the building could provide reports.
- Ms. Monette (BQNA) noted that she has previously included photos and suggested that individuals do that same as these pictures can help visualize the angle of the plane in reference to the building and this can be significant in terms of an increase of noise.
- Mr. Meneses confirmed that any photos and videos received are closely reviewed.

## **5. Business Arising**

Alexander Furneaux (LURA) began the discussion of Business Arising topics.

- Mr. Furneaux noted that the next noise management sub-committee meeting has been set for November 29, 2023 to provide an update on the Ground Noise Study.
- Mr. Antle asked if there are locations that have volunteered already or if letters need to be reissued to ensure that there are locations for seven days for noise monitoring for a balcony.
- Lesley Monette (BQNA) responded that they can find some for Kings Landing and can distribute letters to the BQ directors.
- Mr. Moore (BQNA) responded that they can find some for 830 Queens Quay.
- Mr. Beck (YQNA) noted that the letters that were issued was a bit confusing and suggested that the letters sent in the future include a link, overview with study details, details on the monitor, and other information including how many days will this be on their balcony.

The meeting adjourned at 9:00 PM.

**Appendix A**  
**Meeting Agenda**  
**Billy Bishop Toronto City Airport**  
**Noise Sub Committee Meeting 18**

Wednesday October 25, 2023  
7:00 PM to 8:30 PM  
Zoom Virtual Meeting

**AGENDA ITEMS**

- 7:00 Welcome
- 7:05 Agenda and Action Item Review
- 7:10 Ground Noise Study Update (Angela Homewood, Harvey Watson, and Colin Novak)
- Update on Study progress, timeline, and deliverables
  - Feedback on locations to consider for “evocative vignettes” for later reporting
- 8:10 Permanent Noise Management Terminal update (Michael MacWilliam)
- Progress on installation(s)
  - Update on monitoring software upgrade/quote for simultaneous DBA/DBZ measuring
- 8:25 Business Arising
- Next meeting November 29<sup>th</sup>, 2023 7-8:30 PM (Zoom)
- 8:30 Adjourn

## **Appendix B**

### **Ground Noise Study Presentation – October 25, 2023**



BURNSIDE

# Ground Noise Assessment

Billy Bishop Toronto City Airport

**Prepared by:** Harvey Watson, R.J. Burnside & Associates Limited  
Brent Miller, R.J. Burnside & Associates Limited  
Colin Novak, Akoustik Engineering Limited

**Presented to:** Billy Bishop Airport Noise Management Subcommittee

**Delivered on:** Wednesday October 25, 2023

# Agenda

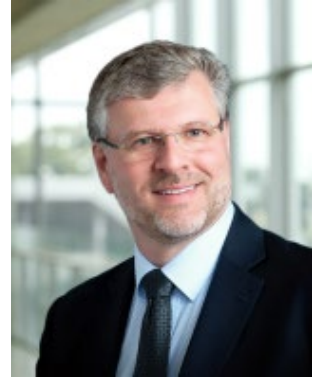
- Team Background
- Ground Noise Assessment Mission
- NMSC Input and How Used
- Methodology and Progress
- Scope of the Data
- Assessment Formulas / Methodology
- Operational Scenarios

# Agenda - continued

- Q400 Taxiing Example Model
- Lawn Mowing Example Model
- Measurements
- Next Steps
- Discussion
- Thank You
- Questions (please hold until this time)

# Team Background

- Dr. Colin Novak, Ph.D. – Akoustik
  - Ph.D. in Mechanical Engineering
  - Extensive experience in Airport noise
- Harvey Watson, P.Eng. – RJ Burnside
  - Manager of Air & Noise at Burnside
  - 14 years acoustics experience
- Brent Miller, P.Eng. – RJ Burnside
  - B.Eng. in Aerospace Engineering
  - 7 years acoustics experience



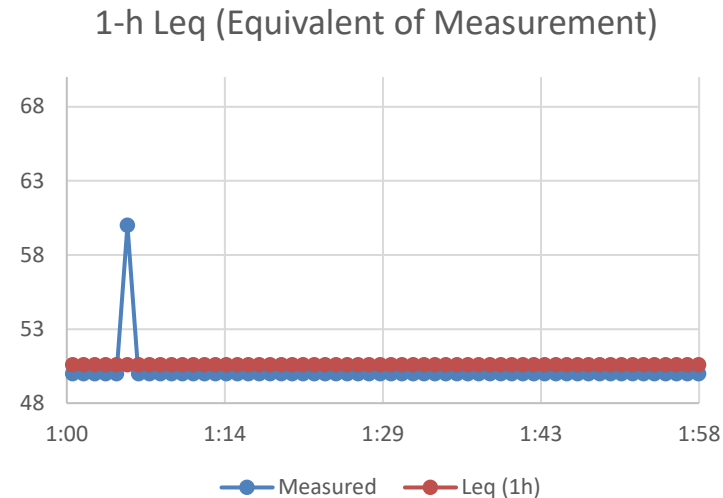


# Ground Noise Assessment Mission

- Find the most effective way for PortsToronto to invest in lowering noise impacts for the community.
- How?
  - modeling all predictable ground noise sources of disturbance from the airport.
  - Propose reduction mitigation and rank each by cost and potential to reduce disturbances.

# What input was received from NMSC and how was it used?

- Disturbance is primary concern
  - 1-h basis doesn't address disturbance
- A-weighting distorts (reduces) the values presented
  - Report will provide measurements in both Z-weighted (unweighted) and A-weighted
  - Impacts (source – background) will be provided in both Z and A weighted
  - Results not expected to change depending on weighting because of how assessment will be done



# What input was received from NMSC and how was it used? Cont.

- Background different depending on where it is taken
  - Background measurements will be taken on airport facing side of the building
  - Background will have all possible airport noise removed (airplanes taking off, clearly identifiable events)

# What input was received from NMSC and how was it used? Cont.

- A major impact comes from planes taking off
  - Q400 was among the first sources measured
  - Measured taxiing and full throttle
  - Q400 model was first one built
  - Model uses short sections to allow us to identify the part of the path that has the biggest impact

# What input was received from NMSC and how was it used? Cont.

- NPC-300 has issues for this application
  - 1-h basis doesn't address disturbance
  - Not appropriate for this site – only considers whether entire area shows compliance – single yes/no
  - Doesn't consider number of people at each location
  - Doesn't provide any mechanism for prioritizing

# Ground Noise Study Methodology and Progress

|  | <u>Approximate Progress</u> |
|--|-----------------------------|
| • Step 1: Identify Noise Sources         | • 100%                      |
| • Step 2: Measure Noise Sources          | • 97%                       |
| • Step 3: Group Sources                  | • 100%                      |
| • Step 4: Pick Impact duration           | • 100%                      |
| • Step 5: Gather Valid Model Assumptions | • 25%                       |
| • Step 6: Model Current Noise            | • 10%                       |
| • Step 7: Measure Background             | • 0%                        |
| • Step 8: Rank Impacts                   | • 0%                        |
| • Step 9: Identity Mitigation Options    | • 0%                        |
| • Step 10: Model with Mitigation         | • 0%                        |
| • Step 11: Rank Mitigated Impacts        | • 0%                        |
| • Step 12: Recommendations               | • 0%                        |

# Scope of the Data

- 1-5 measurements per OS
- 3 background measurements covering a week (est)
- 5-10 questions used to prepare each OS
- Impacts
  - 30 Operational Scenarios (OS), 21 Modelled receptor addresses, 6 elevations per address = 3,780 impacts
  - potentially 20 mitigation solutions = 75,600 comparisons

# Assessment Formulas / Methodology

- **Impact = Noise Level \* frequency of occurrence**
  - Impact of all sources added together at each POR
- Repeat for Mitigated version and consider the change

- (A) 
$$I_{OS} = \sum_{POR01 \rightarrow POR21}^i (NL_{unmit} - Bk) * U_{PORi} * O_{OS}$$

- (B) 
$$I_{OS\_mit} = \sum_{POR1 \rightarrow POR21}^i ((NL_{unmit} - NL_{mit}) - Bk) * U_{PORi} * O_{OS}$$

- Result is a ranked list of which noise is most disturbing and which solutions reduce disturbance the most



# Operational Scenarios (O.S.)

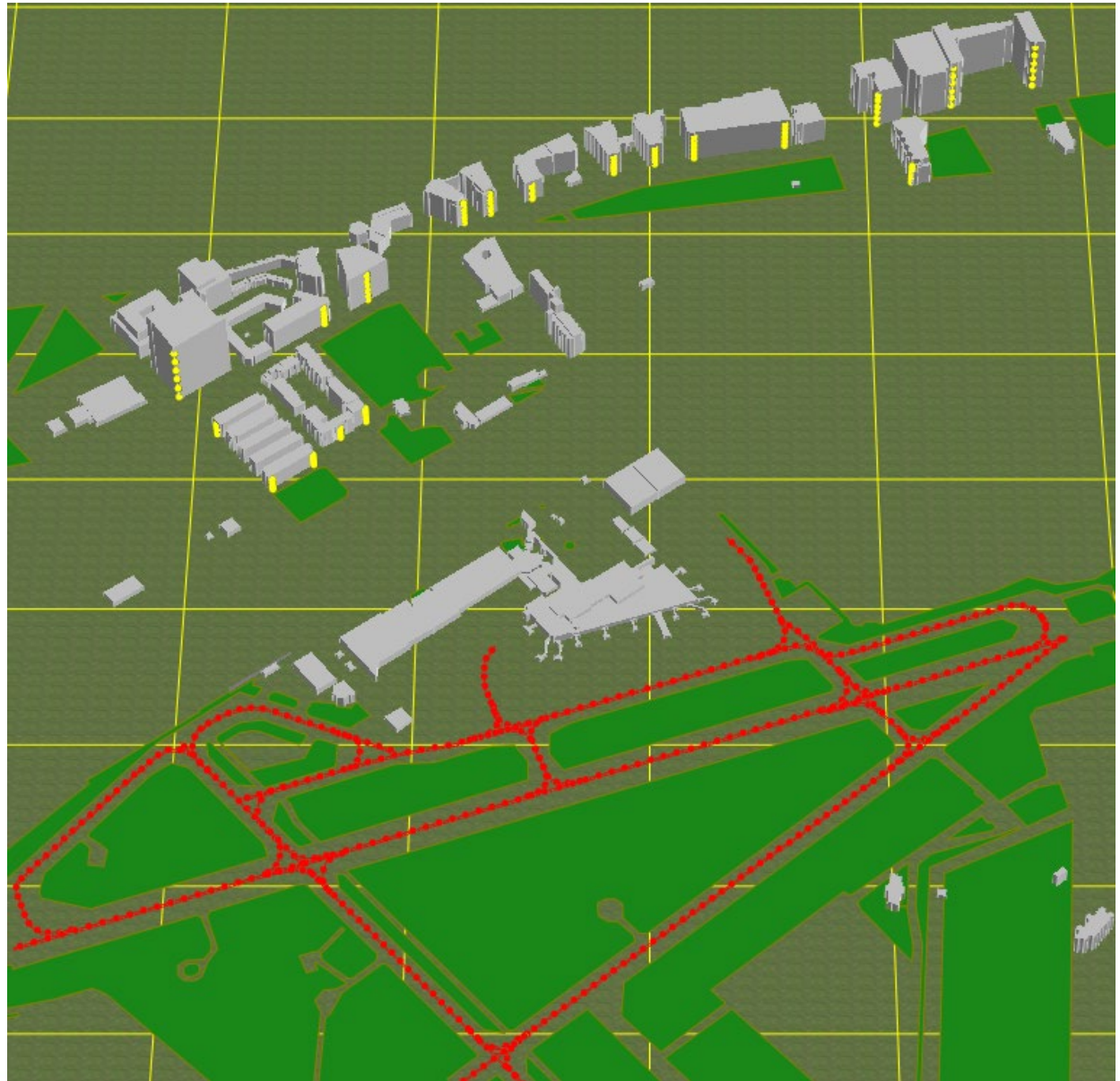
- 1. Q400 Taxi – 1 Engine
- 2. Q400 Taxi – 2 Engines
- 3. Q400 Takeoff
- 4. Q400 Landing
- 5. Q400 Reverse Thrust
- 6. Q400 Max Thrust
- 7. Small Aircraft Taxi
- 8. Small Aircraft Ramp Up
- 9. Small Aircraft Takeoff
- 10. Small Engine Landing
- 11. Aircraft Support Activities
- 12. AW139 Heli Ramp up
- 13. AW139 Heli Taxi
- 14. R44 Heli Ramp up
- 15. Ferry Loading – Impulse
- 16. Ferry Travel
- 17. Ice Breaking Ferry
- 18. Anti Bird Measures
- 19. Lawncare
- 20. Snow Removal
- 21. Runway/taxiway Snow Removal
- 22. Mainland vehicle idling
- 23. Shuttle bus idling
- 24. HVAC
- 25. Emergency Generator Testing
- 26. Fire Safety Training
- 27. Air cart location and orientation
- 28. GPU location and orientation
- 29. Garbage Pickup
- 30. Ferry Horn

# Q400 Taxiing Example Model





# 3-D Model Example for Q400



# Operational Scenarios - Example

- Q400 Taxiing:
  - Data used in assessment:
    - Event frequency (Per hour, per day, per year)
    - Duration of an event
    - Time of day restrictions
    - Possible alterations: Location, speed, quieter setting, time of day, less events, etc.

# Operational Scenarios – Example 2

- Differences shown in Red
- Lawn Mowing Model:
  - Data used in assessment:
    - Event frequency (per year, average time between)
    - Duration of an event: Average Speed
    - Time of day restrictions Typical time of day
    - Possible alterations: Location, speed, quieter setting, quieter new equipment, etc.
- Each O.S. has unique questions and answers.

# Measurements

- Measurements taken for all sources except Heating Ventilating and Air Conditioning (HVAC) equipment and Ornge Helicopter.
  - HVAC sound being estimated from literature
  - Ornge being estimated from Burnside library
  - Ice Breaker pending



Measurement of Q400

# Next Steps

- Finish modelling, rank results, provide to PortsToronto for recommendations on mitigation options and concepts
- Mitigation concepts could include realistic recommendations large and small
- Mitigation concepts are modeled to show impact change.
- Mitigation concepts ranked by potential benefit and costs estimated
- PortsToronto to consider implementing effective measures based on the study findings and recommendations

# Thank You!

- Thank you for your attention
- Questions?



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**Appendix C**  
**Billy Bishop Toronto City Airport Aircraft Maintenance**  
**Run Procedures Version 5, 2022**

# Aircraft Maintenance Run Procedures

Date: May 16, 2022

Version: 5.0

# 1 Document Control

| Version | Date          | Changes  | Prepared By   | Approved By |
|---------|---------------|--|---------------|-------------|
| 1.0     | Jan 2012      | Initial  | P. Fagnano    | G. Cabral   |
| 2.0     | Dec 2013      | Permitted & Restricted hours   | P. Fagnano    | G. Cabral   |
| 3.0     | Jun 2015      | Format, Permitted, Restricted & Prohibited Hours, Compass Swings, Taxi Tests           | M. Karsseboom | G. Cabral   |
| 4.0     | March 2017    | Inclusion of GRE and new alternate location.   | M. Antle      | G. Cabral   |
| 4.1     | April 2017    | Amendment to alternate location.   | M. Antle      | G. Cabral   |
| 4.2     | October 2017  | Compass swing location updated.  | M. Antle      | G. Cabral   |
| 4.3     | November 2019 | Added appendix B   | M. Antle      | G. Cabral   |
| 5.0     | May 2022      | Format, clarified approval vs. notification, expanded procedures & rearranged sections | C. Pearce     | M. Antle    |
|         |               |  |               |             |
|         |               |  |               |             |
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**Note:** this document is on a two year review cycle.

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## 2 Purpose

The purpose of this procedure is to ensure that maintenance runs are conducted not only in a safe manner but also to minimize noise impacts on the surrounding community. This procedure applies to all operators conducting maintenance runs on all airport property at Billy Bishop Toronto City Airport (BBTCA), including leased lands.

The aircraft crew and ultimately the owner / operator are responsible and liable for any and all injury to persons or damage to property resulting from their maintenance run activity.

## 3 Definitions

**Maintenance Run:** For the purpose of this procedure a maintenance run is the operation of the engine(s) of a fixed or rotary wing aircraft to conduct maintenance or correct faults.

These maintenance runs can be further categorized under the following five (5) types:

1. **Power Run:** Running an engine with the engine power setting advanced above idle power.
2. **Idle Run:** Running of an engine at idle power.
3. **Propeller Governor Overspeed Check:** A post landing check completed from time to time by some aircraft to verify propeller safety system functionality. This run is usually under 1 minute.
4. **Compass Swing:** A test to align and ensure aircraft navigational equipment is functioning properly.
5. **Taxi Tests:** Taxiing an aircraft around the airfield to ensure certain systems are functioning properly.



## 4 Locations

A map of the Maintenance run locations can be found in Appendix A.

**Power Maintenance Runs** – Currently there are 2 areas for Maintenance Runs (Power) at BBTCA.

1. **Primary area** - will be the Ground Run Enclosure (GRE) off Taxiway Echo just south of Runway 06/24.
2. **Alternate area** - will be the intersection of Runway 06/24 and Taxiway Echo.

**Idle Maintenance Runs** – These engine runs may be done at the gate when it is safe to do so. If activity around the aircraft does not permit a run at the gate the power run areas will be utilized.

**Propeller Governor Overspeed Checks** - are of brief duration and intensity, BBTCA requires that these checks be performed in specific areas when operationally feasible to mitigate noise impacts to the surrounding communities.

- a. Taxiway Alpha, just north of the main apron
- b. Taxiway Bravo
- c. Taxilane on the main apron, just north of Taxiway Charlie
- d. Taxiway Delta

**Compass Swings** – These activities will be completed at the alternate power run area (intersection of Runway 06/24 and Taxiway Echo).

**Taxi tests** – as directed by NAVCANADA ground control

**Note:** Helicopter hovering exercises may be conducted in the primary and alternate locations as operationally feasible.

## 5 Hours of Operation

The hours of operation for Maintenance runs are as follows:

|                         |                     |                                 |
|-------------------------|---------------------|---------------------------------|
| <b>Normal Hours</b>     | Monday to Friday    | 08:00 to 22:00                  |
|                         | Weekends & Holidays | 09:00 to 21:00                  |
| <b>Restricted Hours</b> | Monday to Friday    | 06:45 to 07:59 & 22:01 to 23:00 |
|                         | Weekends & Holidays | 06:45 to 08:59 & 21:01 to 23:00 |
| <b>Prohibited Hours</b> | Monday to Sunday    | 23:01 to 06:44                  |

Note: All times noted above are in local time

## 6 Maintenance Run Protocols

### Normal Hours

**Approval:** Operators must receive prior approval from the Airport Duty Manager before conducting all Maintenance runs in the normal hours. Excluding idle runs (see notification requirement below)

**Notification:** Operators only require prior notification to the Airport Duty Manager before conducting any **Idle Run** in the normal hours.

### Restricted Hours

Maintenance Runs are only completed in the restricted hours in situations involving unforeseen and unavoidable circumstances, and BBTCA will explore all other options before allowing an engine run to occur during these times.

**Approval:** Operators must receive prior approval from the Airport Duty Manager if the Maintenance run is required in the restricted hours. Excluding idle runs (see notification requirement below)

In addition to the information above, the air carrier must provide a reason why the run cannot be completed in the normal hours.

**Notification:** Operators only require prior notification to the Airport Duty Manager before conducting any **Idle Run** in the normal hours.

### Prohibited Hours

Maintenance runs are not permitted during prohibited hours.

## 7 Maintenance Run Procedures

### Procedure for Operators:

1. For ALL maintenance runs, the operator must provide BBTCA the following information:
  - Aircraft Type and Registration
  - Engine Run Type (Power, Idle, etc.)
  - Location of the engine run (GRE, Gate#, etc.)
  - Approximate start time and duration of run
  - Departure time for the Aircraft
  - *If during the restricted hours, provide a reason (except for idle runs)*
2. Operators must receive an approval from the Airport Duty Manager for all maintenance runs except for idle runs in normal/restricted hours

For use of the GRE, operators must receive information that the GRE has been inspected.

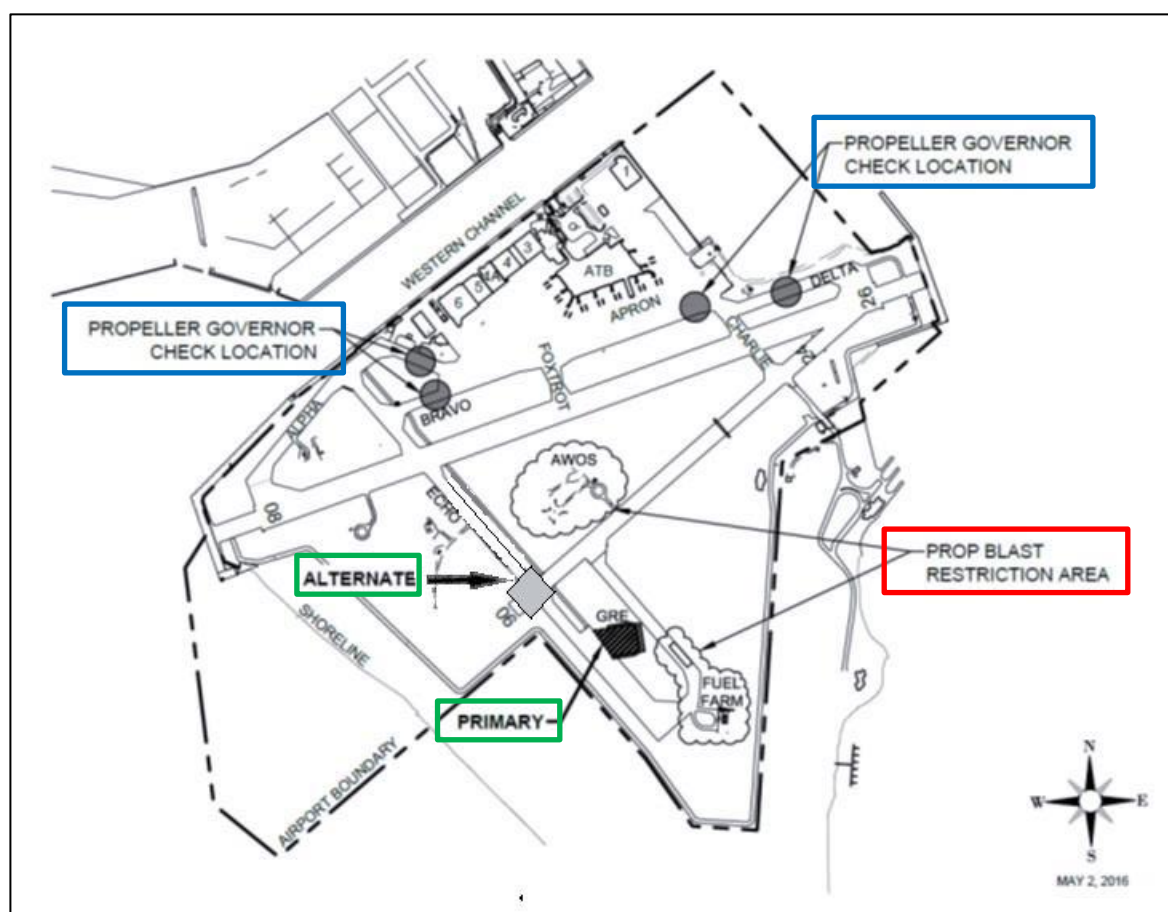
See Appendix B for use of lead lines in the GRE for the DH-7, Q400 and GA aircraft.

### Procedure for BBTCA:

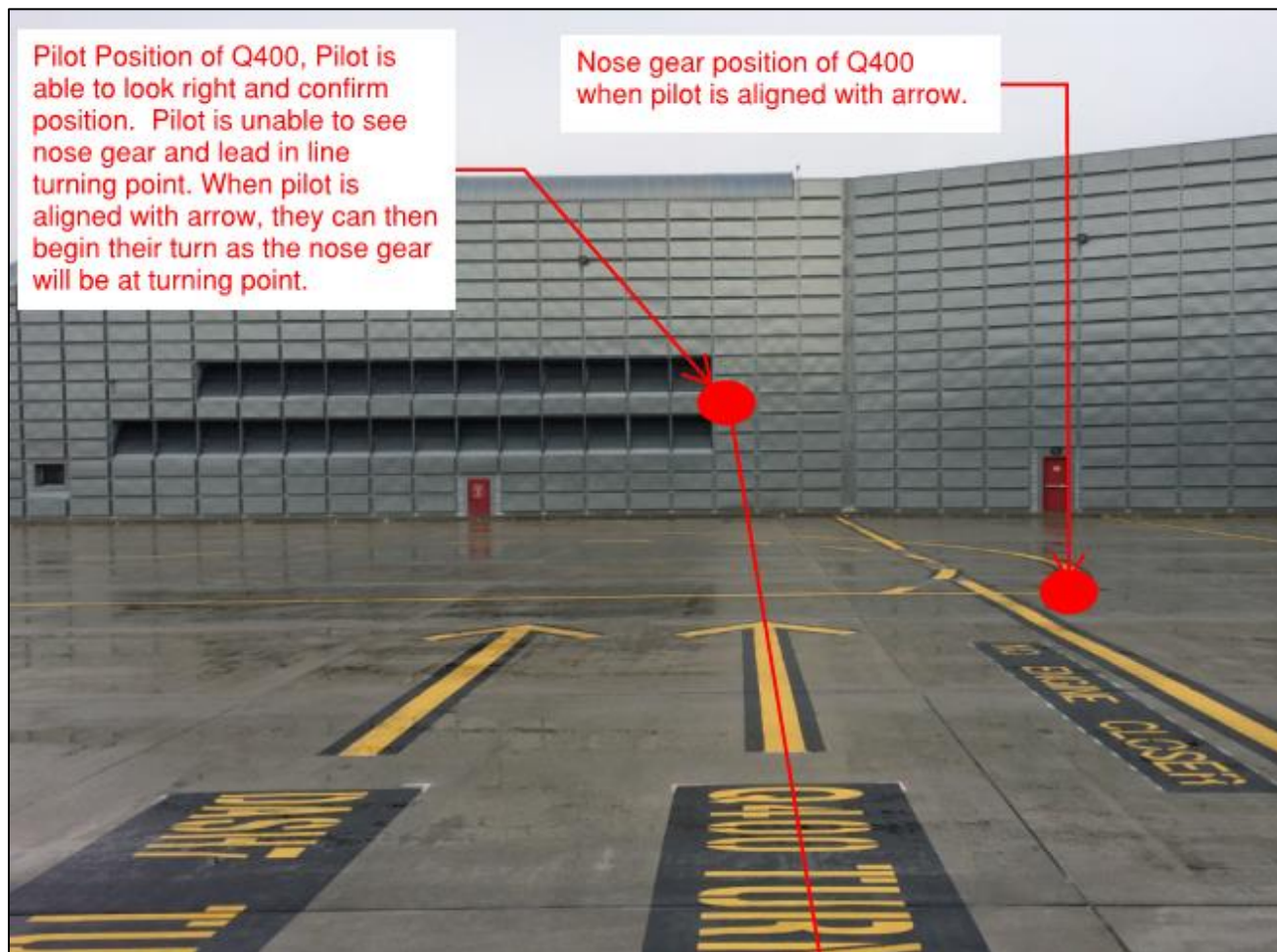
1. Receive maintenance run information from operator
  - a. Requests for the Ground Run-Up Enclosure (GRE), the Airport Duty Manager or designate will ensure the GRE has been inspected
  - b. Requests to use the alternate maintenance run area, the Airport Duty Manager must to notify the Tower.
2. Approve, decline or acknowledge maintenance run request
3. Document the details provided above in the Vortex Operations Log

# Appendix A – Maintenance Run Locations Map

**Note:** If the primary area (GRE) as denoted is not available due to facility closure or other operational considerations, an alternate location will be coordinated between the operators, Airport Duty Manager and Nav Canada.



## Appendix B – DH-7 and Q400 lead lines



**Note:** Pilot/AME is to begin the turn once the cockpit is abeam the arrow identifying their aircraft type. The arrow should be visible out the starboard side. DH-7 will follow the newly painted dashed line. G.A. aircraft may follow either line at their own discretion.