



VANCOUVER AIRPORT AUTHORITY

Mail: PO Box 23750, Airport Postal Outlet
Richmond, BC V7B 1Y7 CANADA

MINUTES OF REGULAR MEETING

Aeronautical Noise Management Committee
Wednesday 24 April 2013 - 1:00 p.m. Vancouver International Airport, Link Boardroom 1

Those in attendance were:

Chairperson:	Anne Murray	VP Community & Environmental Affairs, YVRAA
Secretariat:	Jody Armstrong	Administrative Assistant, YVRAA
Participants:	Margot Spronk	Citizen Representative, Richmond
	Don Flintoff	Citizen Representative, Richmond
	Victor Wei	City of Richmond (staff)
	Meg Brown	Citizen Representative, Vancouver
	Jonathan Parker	Citizen Representative, Vancouver
	Lil Ronalds	City of Vancouver (staff)
	Rick Hedley	Citizen Representative, Corporation of Delta
	Paula Kolisnek	Corporation of Delta (Staff)
	Ron Sorensen	Citizen Representative, Surrey
	Philip Huynh	City of Surrey (staff)
	Don McLeay	National Airlines Council of Canada
	Terry Hiebert	Floatplane Operators Association
	Scott MacPherson	Canadian Business Aviation Association
	John Nehera	Transport Canada
	Brett Patterson	Director Airside Operations, YVRAA
	Kirthi Roberts	Director Environment, YVRAA
	Shaye Folk-Blagbrough	Environmental Analyst, YVRAA
	Mark Cheng	Supervisor Noise Abatement & Air Quality, YVRAA
Guests:	Karl McGrath	AirBIZ
	Martin Leprohon	AirBIZ
	Tien Dang	Vision Critical
	Jamie Molloy	True Course Solutions

Date/Time/Place of next Committee meeting (tour): Wednesday 12 June 2013	
Jody Armstrong	15 May 2013
_____ Secretariat's Signature	_____ Date

1.0 INTRODUCTIONS AND ADOPTION OF AGENDA

Anne Murray called the meeting to order at 1:05 pm. New Committee member, Don Flintoff (City of Richmond citizen representative), was introduced.

2.0 REVIEW OF PREVIOUS MEETING'S MINUTES

Mark Cheng advised that the minutes from the 12 December 2012 meeting were finalized and posted on the airport website.

To ensure more timely delivery of minutes, Airport Authority staff will endeavour to provide the draft minutes to the Committee members within two to three weeks after meetings. Committee members will be asked to review and provide comment. If no comments are received, the minutes are finalized and posted on the web.

3.0 YVR FLOAT PLANE OPERATIONS – PROJECT WORK

Mark Cheng introduced Jamie Molloy from True Course Solutions. Jamie has extensive work experience in the float plane industry, and was retained by the Airport Authority to assist with a project to increase awareness of community noise issues among the YVR float plane operators. This project is a follow up on previous work started in 2008.

Jamie provided a summary of work completed in 2011 and 2012 with the YVR float plane operators to identify best operational practices for noise abatement. This work resulted in a number of voluntary procedures published in the March 2013 edition of the *Water Aerodrome Supplement (WAS)*. The procedures and wording in the WAS is as follows:

Consistent with safe aircraft operations, the following are recommended operational procedures:

1. Take-offs Westbound and landings Eastbound are preferred when wind and water conditions permit.
2. Use low RPM reduced noise take-off when able.
3. Avoid departure routes that fly over the City of Richmond, whenever possible.
4. Avoid using "reverse thrust" after landing to slow the aircraft.
5. Maintain 500 feet ASL when flying the Westminster Hwy downwind route.
6. Join the downwind circuit for the Westbound landing after passing the TERRA NOVA waypoint unless directed by ATC.

Jamie's current scope of work is to create content for an informational brochure to promote the new procedures and highlight key issues with operating in the busy area of the Middle Arm of the Fraser River. Jamie will meet with operators and other stakeholders, develop content, and provide a proposed layout for the brochure. The goal is to have the brochure ready for early Summer 2013.

Victor Wei thanked the Airport Authority for working on this issue, and thanked Margot Spronk and Haydn Acheson (former City of Richmond citizen representative) for championing this work.

Anne extended her appreciation to the YVR float plane operators for all their efforts to help manage community noise issues, including participating on the YVR Noise Management Committee.

4.0 2014-2018 YVR NOISE MANAGEMENT PLAN

4.1 Summary of YVR Environment Community Survey – (Tien Dang, Vision Critical)

Mark advised that Vision Critical was retained to conduct an online community survey, covering a wide range of environmental topics, with the goal of identifying current issues, and soliciting ideas on how the Airport Authority could enhance its environmental performance and programs.

Information gathered from the survey will help in the development of the YVR Noise Management Plan as well as the YVR Environmental Management Plan.

Mark introduced Tien Dang from Vision Critical, who provided the following summary of the survey results:

- The survey was administered between 8 March and 9 April 2013.
- Responses were received from 393 individuals:
 - 305 responses were from Lower Mainland residents sourced from Vision Critical's forum panel. This panel is made up of individuals who have registered with Vision Critical to volunteer their participation in surveys, and do not have an inherent bias on the survey topic. This sample is representative of the general population, and results from this group are referred to as "**General Public**". Based on sample size, responses from this group have a confidence level of $\pm 5.55\%$.
 - 88 responses were received via the open survey link, which was accessible from the YVR website. Unfortunately, this number is very low despite efforts to promote the survey through key stakeholder groups, various social media (twitter, blog), and the YVR website. This sample group is referred to as the "**Targeted Stakeholders**", and responses from this group have a confidence level of $\pm 10.34\%$ given the sample size.
- Some general observations of the responses included:
 - Managing spills of hazardous materials is the most important environmental topic.
 - The General Public group noted less concern with minimizing aircraft noise than the Targeted Stakeholder group.
 - The General Public group placed a higher importance on reducing air emissions, effects of climate change and waste including recycling than the Targeted Stakeholder group.
 - The General Public group thinks more highly of the Airport Authority's environmental programs than the Targeted Stakeholder group.
 - 36% of the Target Stakeholder group rates the Airport Authority's performance in minimizing aircraft noise in the community as "Poor".
- When asked what should be done to address concerns about aircraft noise, comments received fall into the following general categories:
 - reduce the number of flights using the airport
 - have aircraft fly at higher altitudes
 - change the take-off and landing patterns
 - stop early morning flights
 - use alternate flight paths or re-route the flights
 - have aircraft take-off and fly over water
 - have aircraft adhere to strict flight paths
 - design quieter engines
 - control and reduce the number of flights over residential areas
 - create stricter regulations or bylaws for managing noise.

4.2 2008-2012 Noise Complaint Analysis – (Shaye Folk-Blagbrough, Airport Authority)

Shaye presented the results of an analysis of noise complaints received by the Airport Authority between the years 2008-2012. The objective of the analysis was to help Committee members understand the current community related to aircraft noise.

In total, approximately 6,000 complaints were analysed as part of this exercise. As a high level summary, the most common issues and major themes cited by complainants include:

- Night operations
- Run-up operations
- Aircraft on approach
- Departing Aircraft
- Float plane operations
- Marginally compliant Chapter 3 aircraft
- Non-YVR aircraft
- North Runway use at night
- Frequency of flights
- Low flying aircraft
- Aircraft routings
- ILS Checks

Shaye mentioned that not all communities share the same level of concern over particular issues. For example, run-up concerns are associated with City of Richmond and Vancouver residents, and are not identified as a concern for communities located farther away from the airport.

4.3 Best Management Practices review – (Martin Leprohon and Karl McGrath, AirBIZ)

As discussed at the Committee meeting in December 2012, the Airport Authority commissioned a study to review noise management programs at other international airports to identify unique program elements for possible consideration at YVR. Mark thanked all Committee members who provided comments on the scope of work. A number of leading aviation noise companies submitted proposals for the work, and AirBIZ was selected due to their international experience and strength of their project team.

Mark explained that the objective of this study was to help Committee members understand unique practices at other airports, and to help identify initiatives for consideration in the 2014-2018 YVR Noise Management Plan. A draft copy of the AirBIZ report was distributed to Committee members in advance of the meeting, and Mark introduced Martin Leprohon and Karl McGrath from AirBIZ who reviewed the highlights of the report.

Martin reviewed the scope and methodology of their work, which included: identifying industry best practices related to aircraft noise management; reviewing policy and technology enhancements; and, reviewing trade-offs between emission reductions and noise abatement. The methodology to help source and identify industry best practices included reviewing materials available in the public domain, and conducting interviews with airports in Australia and New Zealand.

Martin highlighted and summarized the following practices:

Restrictions on marginally compliant Chapter 3 aircraft

This practice is airport specific (generally not state sponsored) and involves restricting marginally compliant Chapter 3 aircraft from operating at the airport. In many cases, these restrictions apply only to new services and existing operations are permitted. If considered for YVR, this practice would require completion of the Transport Canada process for adding a new noise control procedure and would likely face significant opposition from industry due to the resulting cost and operational constraints. These restrictions would also likely lead airlines to consider alternative airport, resulting in loss of economic benefit to the local community.

Advertisement of fleet upgrades

This practice involves communicating the ongoing airline fleet replacement of older aircraft with more modern and typically quieter aircraft. This is a proactive way to communicate actual noise reductions, and advertising through existing communication methods should incur little cost. Explaining nature and benefits of noisier operations may also provide better community understanding of the operations.

Balanced approach to Required Navigation Performance (RNP) Operations

RNP procedures can reduce track miles, fuel consumption and emission through more efficient use of airspace. These procedures could lead to noise reductions through the use of continuous descent approaches or by concentrating aircraft over-flights over areas located under existing or new flight paths. These procedures could also be used to define “low noise impact” corridors over communities; however, this would often lead to increased track miles and fuel burn and would need to be assessed against goals for emission reductions.

As the development and implementation of these procedures in Canada is discussed, Transport Canada should be encouraged to set national policy on how RNP procedures are evaluated, including noise impacts, during development and implementation.

At an airport like YVR, RNP procedures are challenging to implement because of the diverse fleet mix. Not all aircraft are equipped with RNP equipment as this technology is expensive and requires specialized training for use by pilots.

Experience/Information centre

This involves having a permanent exhibit or mobile display to showcase the airport and help residents learn about airport operations and to enquire about noise impacts. This would be a component of a much broader community outreach strategy, and has limited effectiveness on its own. Depending on the exhibit, the capital and operating costs will vary.

Multilingual communication strategy

This involves ensuring communication materials are available for all native languages of communities affected by noise to provide an opportunity for enhanced dialogue. This communication strategy is more effective in communities where English is not broadly spoken, and an assessment of the predominant ethnic communities affected by aircraft noise would be required. Costs include translation of materials and translator support for meetings.

Alternative noise metrics

This practice involves using non-traditional aircraft noise metrics, other than the Noise Exposure Forecast (NEF) contours, to communicate noise impact to the community. The NEF contours are meant to assist with land use planning, and they are a poor tool to use for communicating noise exposure and impact. The airport should identify non-traditional metrics that best respond with the community, such as “Events Above” charts from actual or modeled data, or average number of over-flights. Cost to create charts and maps will vary depending on the quality of the desired output sought and information available.

Noise mitigation design competition

This involves the airport hosting an open design competition to help identify a solution to a particular problem by seeking input from community and specialists. The success of the design competition involves the selection of a suitable issue, and the success will vary depending on the complexity of the issue. Costs to administer the competition would vary based on extent and scope.

Existing home noise proofing brochure

While the City of Richmond has policies and bylaws in place to ensure new residential housing are properly sound insulated and buyers are informed of aircraft activity, creating a noise information brochure to target residents in older dwellings not covered by the bylaws or policies would be of benefit. The goal of the brochure is to provide educational information about aircraft noise and operations, and provide advice on options to sound insulate the dwelling.

Noise-based landing charges

Many airports have incorporated a noise surcharge into their landing fees. The intent would be to charge a higher fee for noisier aircraft, or provide a rebate for the operation of a quieter aircraft. The International Civil Aviation Organization (ICAO) permits the use of such charges if it is applied fairly, does not increase revenues for the airport, and part of the cost recovery exercise involves mitigating impacts associated with aircraft noise (such as an acoustic treatment program or Community Trust Fund – both explained further below).

Acoustic treatment program

This program would target existing buildings, residential or sensitive applications for treatment beyond building code requirements. The effectiveness would vary based on baseline condition of buildings and on scope and scale of program. Funding an acoustic treatment program would be a challenge by using landing fees alone, and other funding sources would be required. Significant Airport Authority and City resources would be required to administer and coordinate the program.

Community trust fund

This program would serve to enhance the airport's presence in the community, notably through sponsorships. A Trust Fund could provide transparent management of funds associated with mitigating impact of noise, and would need a Terms of Reference and Board of Trustees to provide oversight.

Real estate disclosure

The objective of this program is to provide transparent information on noise and flight paths to real estate buyers. The airport could seek partnership with real estate associations to ensure access to key tools. Disclosure of information would create an awareness of noise impacts and help the buyer make an informed decision.

Total Noise Load

This program is often used in Europe as a compliance measure; however, it could be adopted at YVR as a means of reporting. The program requires development of a transparent total noise load metric and can be used to provide a single number to assess how the noise environment is changing over time.

Mark offered to meet and discuss contents of the AirBIZ report with any Committee member who had questions. Mark also explained that the draft report would be finalized shortly, and a final copy would be distributed to Committee members. The final version of the report will not look much different from the version that was distributed to Committee members in advance of the meeting.

4.3 NACC Aircraft Noise and Emissions (Don McLeay, NACC)

Mark introduced Don McLeay, who provided a presentation on the challenges facing the airline industry to reduce emissions and noise.

As background, Don stated that the National Airlines Council of Canada (NACC) was founded in 2008, and includes the following member airlines: Air Canada, Jazz, Air Transat, and WestJet. These four carriers constitute approximately 92% of Canadian passenger and cargo traffic.

Emissions

In Canada, the first aviation emission reduction objectives were set in 2005 through a Voluntary Memorandum of Understanding (MOU) Fuel Efficiency Goal signed between the aviation (airline) industry association and Transport Canada. This MOU sought a 24% cumulative improvement in 2012 from 1990 baseline, with an average improvement of 1.1% per year.

Between 2005 and 2011, achieved emission reductions were 1.34 billion litres of fuel or 3.42 mega tonnes of CO₂-e reductions, and achieved efficiency exceeded the 2012 target set in the MOU by 9.7%.

In 2012, the Government of Canada and the Canadian aviation industry developed Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation. This Action Plan supersedes the 2005 voluntary agreement and forms the basis for Canada's response to ICAO's resolution encouraging Member States to submit national aviation emission reduction plans. The signatories of the Action Plan includes: NACC; NAV CANADA; Transport Canada, ATAC; Canadian Airports Council; Canadian Business Aviation Association; and, Aerospace Industries Association of Canada.

The Action Plan sets an ambitious goal to improve fuel efficiency from 2005 baseline by an average of 2% per year until 2020. The key measures expected to have the greatest impact in reaching this goal are: fleet renewals and upgrades; more efficient air operations; and improved capabilities in air traffic management. Meeting this goal will be a challenge, and NACC carriers are expecting a cumulative efficiency improvement of approximately 0.7% per year for the period 2011 to 2020.

Noise

- Aircraft operating today are 30 dB quieter or a 90% reduction in noise footprint area as compared to original commercial jets (source Boeing).
- Aircraft are 50% quieter than they were 10 years ago (source ATAG).
- Aircraft are 6 times quieter than they were 40 years ago (source ATA).
- The US FAA noted that, since 1975, there has been a 94% reduction in the number of people exposed to significant aircraft noise in the US while the number of passengers our airlines have transported has tripled (source ATA).

While aircraft fleet renewal driven by fuel efficiency helps with noise reduction, there is often a trade-off between aircraft noise abatement procedures and aircraft efficiency (emissions reductions). In general, noise abatement procedures results in aircraft being flown in a less-than-optimum manner thus burning additional fuel and generating more emissions.

4.4 Next Steps

With the information provided, Committee members should now have a sense of the current community issues, unique management practices at other airports, and challenges facing the airline industry with regards to minimize noise and reduce emissions.

With this baseline of information, Mark asked Committee members to begin thinking of new initiatives to propose for consideration in the 2014-2018 YVR Noise Management Plan. Mark explained that a customized questionnaire is being created and distributed shortly to Committee members to help formulate their thoughts and ideas for new initiatives. Responses to the questionnaire with the proposed new initiatives is requested by the end of 31 May 2013.

The Airport Authority is ultimately responsible for managing noise within the context of operating safe and efficient 24-hour airport and services the demands of the region. While the Airport Authority may not agree with proposed initiatives that are contrary to supporting the business objectives for YVR, the ultimate goal and objective of each proposal will be assessed to see if there are others means to achieve a similar desired outcome. Responses to each of the proposed initiatives, outlining how they have been considered, will be provided to the Committee and may form an appendix of the Plan.

The Airport Authority will then begin drafting the Plan and it will undergo internal review and approval throughout the summer. A draft Plan will be distributed to the Committee in mid-September 2013 for review and comment. A final draft will be prepared in November 2013, with the intent to submit to Transport Canada in early December 2013.

5.0 NOISE ABATEMENT PROCEDURE – PROPOSED AMENDMENTS

Mark provide a summary of discussions at the December 2012 meeting during which he presented the results of a detailed analysis of night-time operations at YVR.

As follow-up to this work, the night restrictions section of the published Noise Abatement Procedures (NAP) was reviewed with the goals of ensuring wording and intent of the procedures were clear and concise, and to ensure consistency between the NAP and the guidelines used by the Airport Authority in granting request to operate at night.

As background information, Part II of the Night Restrictions section of the NAP states:

***Between Midnight – 7:00AM
Departure/Arrival of JET AIRCRAFT cargo, air carrier scheduled and
charter flights require the prior approval of YVRAA OPERATIONS.***

When evaluating a request for a night-time jet operation, the Airport Authority uses guidelines that consider the broader community benefit of the requested operation. The approval guidelines can be summarized as:

- Live operations (carrying cargo or passengers) are approved, as these have economic value to the community.
- Departure operations associated with either ferry (repositioning) or technical stops (refuelling) are denied, as these have limited economic value to the community.
- All arrival operations are approved, as an arrival is quieter than departure operation in general for the same aircraft type.
- All flights between 6:00AM-7:00AM are approved, as this is the time period when the first bank of departures to the US occurs.
- All business jet aircraft operations are approved, as there is very little of this traffic that occurs at night and these are generally not of concern to the community.

The following proposed amendments and their rationale were discussed with the Committee:

1. Have prior approval requirement only applicable to jet aircraft over 34,000kg (MTOW).

Rationale:

- *This amendment will ensure applicability of the approval requirement in the NAP is clear, and will eliminate ambiguity on whether an operator is required to request approval or not.*
- *The weight of 34,000 kg was selected to exclude the vast majority of business jets from the approval process as these operations are currently approved under the Airport Authority approval guidelines.*

2. Eliminate approval requirement for arrival operations.

- *This amendment will provide consistency between the NAP and the Airport Authority approval guidelines, as all night arrival requests are approved under the guidelines.*

3. Reduce night-time period for approvals from Midnight to 7:00Am to Midnight to 6:00AM.

- *This amendment will provide consistency between the NAP and the Airport Authority approval guidelines, as all operations between 6:00Am and 7:00AM are currently approved under the guidelines.*

Mark stated that the amendments would not change the number of aircraft operating at night, as the operations covered by the amendments would be approved under the Airport Authority's approval guidelines.

The Committee did not express opposition to the proposed amendments, and Mark added that the next steps will include completing the Transport Canada 'checklist' process (Advisory Circular No. 201-002). This process is required for any new or amended noise control measures at an airport, and requires the proponent to undertake extensive consultations, economic analysis, costs benefit, evaluation of alternatives, etc.

Further consultations will occur at the YVR Chief Pilot's Meeting and with the main operators at YVR. The goal is to submit proposed wording amendments to Transport Canada towards the end of August 2013. This submission will accompany other editorial changes to the NAP, including amendments or restructuring of the preferential runway section.

6.0 RUNWAY OPERATIONS – SUMMER 2013

Runway Maintenance and Capital Projects

Brett Patterson provided the following updates on planned airfield maintenance and capital projects that will impact runway operations:

South Runway Closure for Maintenance

The south runway would be closed nightly from 7 July to 30 August. Work undertaken during the closure includes rubber removal, pavement line marking, storm water drainage system improvements, inset lighting installation, Taxiway 'D' shoulder construction, and runway lighting maintenance.

The south runway will be closed each night starting from 9:00PM to 7:00AM; however, the Airport Authority will work to make the south runway available for some operations depending on the wind conditions and the work activities on any given night. In addition, there will be no work on Saturdays if the schedule permits.

A/B Pier Construction - Cranes

As part of the A/B Pier construction project, two tower cranes will be used for the project and will be onsite for approximately 14 – 18 months. These cranes will block the line of sight to portions of the south runway and airfield for air traffic controllers in the Tower. A risk assessment was conducted and a number of procedures have been put into place to manage the risk of obscured sight lines.

One mitigation measure includes exempting the requirement for two-way flow at night, to prevent possible conflict with aircraft on the ground. This exemption is subject to 90-day assessment period, after which NAV CANADA and the Airport Authority will re-examine the risks and evaluate the mitigation measures.

YVR Demand Profiles

Mark presented the demand profiles for Summer 2013. These profiles are created in advance of the summer season and provide a forecast of anticipated runway demand to compare against the guidelines for using the north runway for departures to reduce delay.

As background information, the guidelines were determined through an Airside Capacity Study completed in 2000. This study concluded that YVR is at capacity when either the number of arrivals or departures reach 35-40 movements per any given 60-minute period, or when the total movements (arrivals and departures) reach 60-70 movements per any given 60-minute period.

Given the forecasted demand for Summer 2013, the Airport Authority anticipates traffic levels to exceed the guidelines during certain periods of the day. Peak periods in the day are anticipated to be between the hours of 7:00AM and 9:00AM, and between 11:00AM and 1:00PM. As a result, the Airport Authority will authorize NAV CANADA to use the north runway for departures to reduce delay.

The plan is for NAV CANADA to utilize the north runway strategically and they will attempt to reduce its use through the utilization of existing procedures (e.g. visual departure separation during good visibility conditions) to enhance capacity on the south runway.

Anticipated start is 1 June 2013, and information about runway operations this summer will be provided to the community.

7.0 ANNUAL NOISE REPORT – SUMMARY

Shaye advised that the 2012 annual noise report is completed and will be posted on the YVR website by the end of April.

8.0 Q1 NOISE REPORT - SUMMARY

Shaye distributed the first quarter noise report for review by Committee members.

9.0 OTHER BUSINESS

ICAO/CAEP Meeting – Chapter 14 Noise Standard

Information on the new ICAO Chapter 14 noise standard will be provided at a future Committee meeting.

June Committee Meeting

Shaye advised that a tour is being organized for the Committee meeting in June. Information on the tour will be provided once details are finalized.

YVR Chief Pilots Meeting

Mark advised that the 2013 YVR Chief Pilot's Meeting will be held on 1 May 2012. Mark and Shaye will attend to provide an update on noise management activities, and the winners of the 8th annual YVR Fly Quiet Awards will be announced at the meeting. Winners will be profiled on our website and SkyTalk.

2013 Meeting Schedule

- Wednesday, 12 June 2013 (TOUR)
- Wednesday, 4 September 2013
- Wednesday, 4 December 2013

MEETING ADJOURNMENT

Anne thanked Committee members for attending and adjourned the meeting at 4:20 PM.