



To: General Purposes Committee

Date: June 3, 2010

From: Victor Wei, P. Eng.
Director, Transportation

File: 01-0100-20-RANC1-
01/2010-Vol 01

Re: **FINAL REPORT OF THE RICHMOND AIRPORT NOISE CITIZENS ADVISORY
TASK FORCE - REPORT BACK ON REFERRAL**

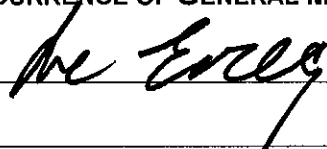

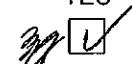
Staff Recommendation

1. That the final report of the Richmond Airport Noise Citizens Advisory Task Force, as presented in Attachment 1 of the attached report dated June 3, 2010, be endorsed with the following amendments:
 - (a) That Recommendation 10 of the final report of the Richmond Airport Noise Citizens Advisory Task Force (Attachment 1) be revised as described in Option 3 of Section 1.3.3 of the attached report such that the Vancouver Airport Authority (VAA) may continue to grant exemptions for night-time arrivals and departures in order to avoid providing a competitive advantage to other international airports on the west coast of North America, but subject to a defined transition period to allow for the eventual phasing out of night-time movements of Chapter 3 aircraft.
 - (b) That Recommendation 21 of the Task Force report be deferred at this time and the role of the City's representatives to the YVR Aeronautical Noise Management Committee (ANMC) be strengthened as described in Option 1 of Section 2 of the attached report such that:
 - i. staff be directed to bring forward as soon as possible revised Terms of Reference for the Advisory Committee on the Environment to establish the reporting to General Purposes Committee of the City's representatives to the YVR ANMC at least twice per year;
 - ii. VAA be requested to modify the YVR ANMC meeting procedures and regularly report back to the YVR ANMC regarding how the deliberations of the Committee are considered by the VAA Board and/or senior VAA management as described in Sections 2.3.3 and 2.3.4 of Attachment 1; and
 - iii. the Task Force be retained through to Fall 2010 to allow for the opportunity to provide comment on discussions of the Task Force report with the relevant federal agencies as per Recommendation 2 below.
2. That the final report of the Task Force, as amended per Recommendation 1 above, be endorsed for purposes of further consultation and forwarded to the relevant federal agencies including VAA, Transport Canada and NAV CANADA with a request to meet to discuss its implementation or the development of mutually acceptable alternative solutions that meet the intended objectives of each of the report recommendations.

3. That Council reiterate its request to the VAA to incorporate the comments previously submitted by the City on the YVR 2009-2013 *Noise Management Plan*, along with the above Task Force recommendations, as amended, or alternatives to achieve their intended objectives, into its aeronautical noise management action plan to be developed later this year.
4. Per Recommendation 2, that the relevant federal agencies be requested to provide formal responses by September 30, 2010 as to how each of the Task Force recommendations, as amended, was or will be addressed and that staff be directed to report back in Fall 2010 on the status of the implementation of the recommendations of the Task Force.

Victor Wei, P. Eng.
 Director, Transportation
 (604-276-4131)

Att. 3

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Staff Report

Origin

At the January 18, 2010 meeting of the General Purposes Committee, the final report of the Richmond Airport Noise Citizens Advisory Task Force (the Task Force) and an accompanying staff report was presented for the Committee's consideration (see **Attachment 1**). Following discussion of the reports, the following referral was carried:

That the Richmond Airport Noise Citizens Advisory Task Force final report be referred back to staff to investigate and report back on:

- (a) more information on restrictions or bans on night flights and whether further restrictions should be recommended;*
- (b) the viability and possibility for extra fees for night flights; and*
- (c) alternative structures for a permanent City of Richmond Airport Noise Advisory Committee.*

This report presents staff's findings regarding night-time flight curfews at airports and the efficacy of extra fees for night-time flights as well as staff's recommendation regarding whether or not the City should establish a permanent airport noise advisory committee.

Analysis

1. Further Information on Restrictions, Bans, and Extra Fees on Night Flights

To address parts (a) and (b) of the Committee referral, staff undertook research regarding noise levels of aircraft and the number of night-time flights at YVR as well as current practices of international airports comparable to Vancouver International Airport (YVR) with respect to night-time flight curfews and the charging of higher fees for night-time flights.

1.1 Noise Levels of Chapter 3 versus Chapter 4 Aircraft

The most widely used unit for measuring noise levels is dBA – the A-weighted scale in decibels, which attempts to reflect human reaction to “loudness.” The human ear's response to sound relates to sound pressure in a way that is approximately logarithmic such that a significant reduction in noise activity results in a comparatively small reduction in the noise heard by the human ear. A difference of 3 dBA is barely perceptible, a difference of 6 dBA is clearly perceptible and a difference of 10 dBA is considered twice as loud. Doubling the distance between yourself and the source of a noise effectively cuts the intensity of the sound by 6 dBA.

Noise levels of civilian aircraft are classified based on the certification standards adopted by International Civil Aviation Organisation (ICAO) and are applied when an aircraft design is first approved for operational use.¹ Noise certification of aircraft requires three measurements: one taken at approach, one on take-off and one at a sideline.

In 1990, ICAO passed a resolution recommending that all member countries establish aircraft noise guidelines requiring noisier Chapter 2 jet aircraft be replaced or upgraded to meet new Chapter 3 standards, which are quieter by at least 10 dBA (or one-third quieter). Transport

¹ Chapter 2 targets aircraft certified prior to October 6, 1977, Chapter 3 applies to aircraft certified after October 6, 1977 and Chapter 4 applies to aircraft certified from January 1, 2006.

Canada subsequently adopted regulations requiring air carriers to upgrade their fleets to meet the international standard and as of April 1, 2002, all jet aircraft over 34,000 kg must meet or exceed Chapter 3 standards in order to operate at Canadian airports. Upgrading the Chapter 2 aircraft involved installing hush kits or replacing the engine with a quieter model.

Figure 1: A Guide to Noise Levels

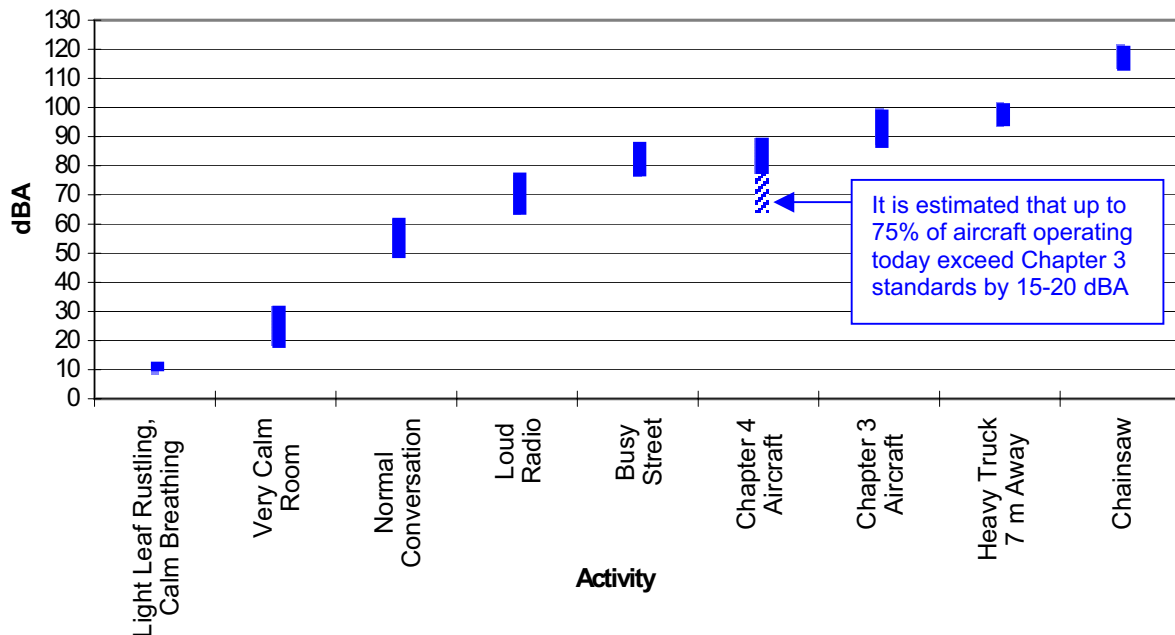
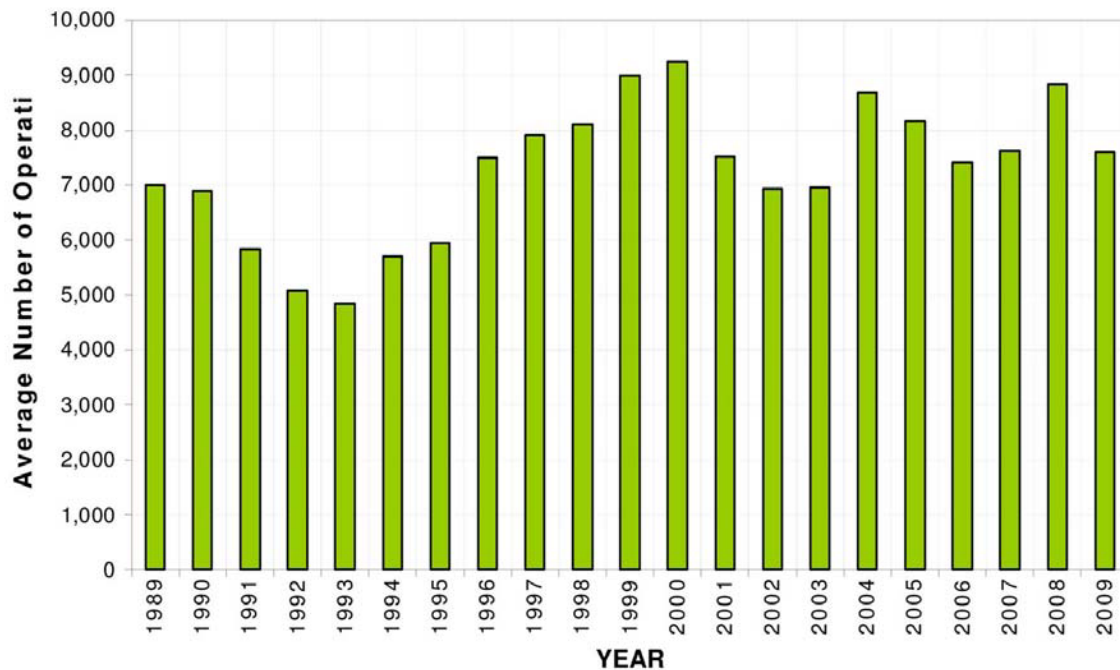


Figure 1 illustrates the decibel range of typical activities, including that for representative Chapter 3 and 4 aircraft using an aircraft with a maximum take-off weight of 100,000 lbs (as noise varies by the weight of the aircraft). The new Chapter 4 standard is at least 10 dBA quieter relative to Chapter 3. As noted above, a change greater than 6 dBA is quite noticeable. If the 10 dBA reduction is achieved via an average reduction of 3.3 dBA at each of the three measurement points, then changes of this magnitude may be difficult to perceive for the average person against average background noise levels.

However, it is estimated that many aircraft in service today already improve upon Chapter 3 standards by cumulative margins in excess of 20 dBA, while over 95% of the current in-production aircraft are already capable of meeting the new standard and around 75% are capable of meeting an improvement of at least 14 dBA. Typical commercial aircraft such as the 757, 767, 777, and the 747-400 all improve upon the Chapter 3 standard by 15-20 dBA. A criticism of the Chapter 4 standard levied by some community groups is that it should have been accompanied by a decision to phase out the worst performing Chapter 3 aircraft, as happened when the Chapter 3 standard was adopted and Chapter 2 aircraft were required to be phased out.

1.2 Aircraft Movements at YVR between Midnight and 6:00 AM

Over the past 20 years, the number of annual aircraft movements at Vancouver International Airport (YVR) between midnight and 6:00 am has ranged between approximately 5,000 and 9,000 with an annual average of about 7,300 as shown in Figure 2, which equates to an average 20-year growth rate of 0.4%. Within the past five to ten years, annual night-time movements have been fairly steady at around an average of 7,900.

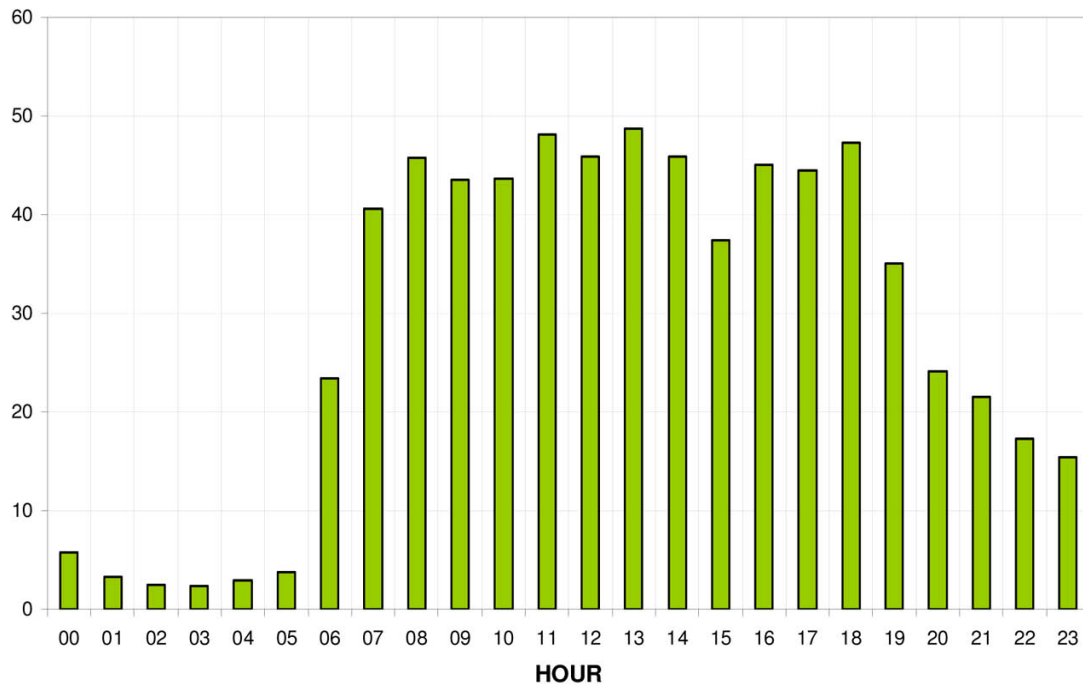
Figure 2: Midnight - 6AM Operations at YVR (1989 to 2009)

Based on 2008 data supplied by the Vancouver Airport Authority (VAA), the number and proportion of night-time movements at YVR is comparable to those at Montreal (Pierre Elliott Trudeau International Airport) and Toronto (Lester B. Pearson International Airport) as shown in Table 2.

Table 2: 2008 Annual & Night-Time Movements

Airport	# Movements (0000-0600 hrs)	Annual # Movements	% Night-Time Movements
Vancouver (YVR)	8,811	278,796	3.2%
Montreal (YUL)	7,003	220,618	3.2%
Toronto (YYZ)	13,383	431,217	3.1%

As shown in Figure 3, the 7,595 movements that occurred between midnight and 6:00 am in 2009 accounted for 3% of the total of 253,380 aircraft landings and takeoffs that year for an average of 21 per night with the majority (63%) being arrivals. In terms of flight purpose, VAA estimates that cargo operations constitute approximately 44% of the 7,595 movements, with the other categories being scheduled operations (~39%), charter operations (~14%), and business/corporate (~3%).

Figure 3: Average Hourly Operations at YVR - 2009

Of the 7,595 movements, the majority (77%) were jet aircraft (49% narrow body jets, 22% wide body jets and 5% business jets) with the remaining (23%) propeller aircraft. VAA advises that the majority of propeller aircraft operations are related to cargo movements as well as some of the jet aircraft movements (e.g., jets arrive at YVR with cargo that is then sorted and loaded onto propeller aircraft for further distribution within BC).

Of the jet aircraft movements, VAA staff estimate that 81% of the aircraft (4,423 movements) would either meet or likely meet Chapter 4 noise standards with the remaining 19% (1,035 movements) being Chapter 3 aircraft that would not meet Chapter 4 standards. The majority of these latter movements are associated with cargo operations and approximately 99% of these movements were arrivals.

1.3 Night-Time Flight Curfews at Airports & Extra Fees for Night-Time Flights

Staff met with VAA staff in March 2010 to discuss the potential impacts of restricting or banning night-time flights as well as the viability of imposing additional fees for night-time flights. VAA subsequently provided the City with written comments on these two issues (see **Attachment 2**).

Staff also independently obtained information regarding the practices of a representative sample of airports² comparable to YVR³ that have night-time flight restrictions and/or higher fees for night-time flights (see **Attachment 3**). In general, the information requested was not readily available or in some cases not available at all. Typically, the airports are governed by a Board of

² Information was obtained from airports in the following cities in Canada, the U.S. and Europe: Toronto, Montreal, San Jose (CA), Amsterdam, Frankfurt, and Geneva.

³ Although the airports at San Jose and Geneva are not strictly comparable to YVR due to their relative lack of intercontinental flights, these airports were included as San Jose is one of the few airports in the US that has night-time restrictions and Geneva has a total ban on night-time flights.

Directors and managed by a local airport authority that essentially operates as a business providing a service to its customers (i.e., the airlines). As these customers expect confidentiality, the airport authorities are reluctant to provide information on their operations.

1.3.1 Night-Time Flight Curfews at Airports

VAA Comments: VAA advises that most of the night-time movements are cargo operations and an inability to fly at night would likely result in these companies (e.g., Federal Express, Purolator Express and United Parcel Service) relocating elsewhere with resulting higher costs and loss of access to markets for customers as well employment losses at YVR. YVR supports approximately 27,000 direct jobs and over 6,000 Richmond residents work at the airport. Night-time flights from YVR also allow airlines to serve the Asia-Pacific passenger market and support recent initiatives such as China granting Canada "Approved Destination Status" and Open Skies agreements.

Research Findings: airports with publicized night-time flight restrictions were contacted to determine the hours of the night time restriction and its efficacy. The research could not confirm any comparable airports to YVR that have a total night-time restriction on aircraft movements. As noted above, airports are in the business of providing services to their customers and stakeholders and, accordingly, paying their operating costs and therefore benefiting the airport.

Similar to YVR, the airports generally have night-time restrictions in effect between 2300-0000 hrs and 0630-0700 hrs. Airlines are required to obtain exemptions to operate during these hours and all airports have an established procedures for requesting exemptions. Two of the airports, Toronto and Amsterdam, have a maximum cap on the number of annual movements allowed at night and the airport operators allocate these slots amongst the airlines.

Within Canada, suspected noise infractions are reported to Transport Canada by airport authorities or NAV CANADA. Following investigation, Transport Canada may impose regulatory fines. Airport authorities may also investigate violations and levy penalties that vary considerably across the airports. For example, San Jose imposes a fine of \$2,500 per occurrence. Toronto starts off with written warnings and repeated offences are subject to monetary fines equivalent to 16 times the landing fee. Montreal conducted 48 investigations and levied 19 fines in 2008 with an average fine of \$3,600.

1.3.2 Extra Fees for Night-Time Flights

VAA Comments: per VAA, the largest components of an airline's operating costs are fuel and labour with airport fees estimated to account for only 3-5% of total operating costs. Thus, an additional fee for night-time flights would need to be significant in order to act as a deterrent and likely would simply be passed on to passengers. The VAA does not believe that the imposition of extra fees for night-time flights is an effective way to manage night-time operations and that these fees would negatively impact the community as noted in Section 3.1. Moreover, in VAA's opinion, charging new fees may worsen the aviation industry's already fragile financial state.

Research Findings: little information is publicly available or was made available regarding airports with differential fees for night-time flights. Schiphol Airport in Amsterdam appears to be the only airport contacted that uses differential fees based on noise categories as a measure to mitigate aeronautical noise whereby "very quiet" aircraft receive a discount on airport charges

and “relatively noisy” aircraft pay a surcharge with an extra surcharge for flights at night. No information was available regarding the amount and/or range of the charges.

1.3.3 Conclusions re Night-Time Operations

The research did not identify any airport comparable to YVR with a total night-time ban on flights to or from the airport. Instead, the airports have night-time restrictions and published processes in place to evaluate requests from their customers to operate during the restricted or curfew hours, both of which are consistent with VAA’s current noise abatement procedures for night-time flights. Of the airports that specify night-time restrictions by the noise level certification of the aircraft, all airports reference Chapter 2, Chapter 3 or non noise certified aircraft but do not identify Chapter 4 aircraft, which therefore suggests that Chapter 4 aircraft are not subject to any night-time restrictions. In addition, the use of differential fees does not appear to be widespread, at least for international airports comparable to YVR.

International airports compete for business and must respond to the operational requirements of their customers, which are primarily defined by airlines’ schedules that are in turn driven by passenger demand and international travel time differences. As a result, it is not surprising that airport operators are reluctant to impose complete night-time bans on flights. Airports in the western US that are comparable to and may be in competition with YVR, such as those in Seattle, Portland, Phoenix, and Dallas, have no night-time curfews. Therefore, imposing an all-night ban of flight operations on YVR would likely result in a significant disadvantage for it to compete with other international airports.

Based on the research findings and the information provided by VAA, strict implementation (i.e., no exemptions allowed) of Recommendation 9 of the Task Force, particularly 9(c) that would restrict Chapter 3 aircraft from operating between midnight and 6:30 am, as well as Recommendation 10 that would eliminate the granting of curfew exemptions over the next three years, would negatively impact cargo operations at YVR plus some passenger flights and would appear to be inconsistent with general practices at comparable airports with intercontinental flights.

Given the above, there are several options to address the community’s concerns regarding night-time aeronautical noise that differ based on the degree to which YVR would still have flights operating between midnight and 7:00 am now and into the future.

Option 1: Endorse Task Force Recommendations

As noted above, strict implementation of this option would improve the quality of life for some Richmond residents living near the airport and/or under flight paths but would negatively affect YVR operations and could lead to business and employment losses at the airport, which in turn could negatively impact the community given the number of Richmond residents who work at the airport. The impacts would be most apparent after three years when, per Recommendation 10 of the Task Force, the VAA would no longer be able to grant any curfew exemptions.

Option 2: Endorse Task Force Recommendations except Recommendation 10

This option would essentially preserve the status quo by permitting VAA to continue to grant exemptions to its existing night-time restrictions. Under this scenario, relatively noisier Chapter

3 aircraft would be permitted to operate at night and there is a risk that as air traffic increases at YVR, proportionally more flights may be exempted to operate during the night as capacity is reached during the daytime without a fourth runway.

Option 3: Endorse Task Force Recommendations with Revised Recommendation 10
(Recommended)

Under this option, VAA would be allowed to operate flights at night subject to a defined transition period during which night-time movements of Chapter 3 aircraft would be eventually phased out as older airplanes are replaced with newer and quieter aircraft. This option recognizes the ultimate goal of Recommendation 10 of the Task Force (i.e., eliminate night-time flights by noisier Chapter 3 aircraft) but would allow VAA a transition period longer than three years for the granting of exemptions to permit night-time flights of Chapter 3 aircraft, with the length of this period to be determined and guided by evidence of best practices at comparable airports and general trends in the aviation industry regarding the replacement of older aircraft.

2. Potential Permanent City of Richmond Airport Noise Advisory Committee

With respect to current City governance and liaison with VAA regarding aeronautical noise, the City currently appoints members to the following VAA-managed entities:

- VAA Board: one Council appointee who, with VAA staff, makes an annual presentation to Committee/Council; and
- YVR Aeronautical Noise Management Committee (ANMC): two Council appointees and two Council alternative appointees, all of whom are also members of the City's Advisory Committee on the Environment (ACE), which reports annually to Committee/Council. In addition, one City staff member is a formal representative and two City staff members are informal members who attend meetings as needed and present reports to Committee/Council as needed.

The YVR ANMC provides a quarterly forum for community and industry stakeholders to discuss noise management at YVR. Objectives of the Committee include minimizing the noise disturbance to those living in the vicinity of YVR, assisting in the development of a Noise Management Plan and providing input on the implementation of Plan initiatives. A key role of the YVR ANMC is provide a forum for VAA and its stakeholders for the discussion, analyses and advice on noise management issues, including input on changes to airport noise control regulations.

Community feedback received at the two public hearings held by the Task Force indicated that residents perceived a lack of transparency, accountability and communication by the YVR ANMC with respect to managing aeronautical noise. Options to address this concern are described below.

Option 1: Strengthen Role of City Representatives to YVR ANMC (Recommended)

Given that the ANMC already exists and has broad representation from all relevant agencies, including those that have the authority to make meaningful changes to operating procedures to minimize aeronautical noise, staff do not recommend establishing a separate City airport noise advisory committee that would operate in relative isolation. In lieu of establishing a separate

City advisory committee on aeronautical noise, staff recommend instead that the role of the City's representatives to the YVR ANMC be strengthened to provide improved City governance and liaison with the VAA regarding aeronautical noise management. Specifically, City staff recommend that:

- the City's YVR ANMC representatives no longer report back through ACE and instead report directly to Council through General Purposes Committee at least twice a year;
- the VAA be encouraged to hold an annual public meeting, to be attended by the City's representatives to the YVR ANMC, to present the progress on initiatives over the past year and identify the planned actions for the upcoming year as well as hear feedback from the community on concerns related to aeronautical noise;
- the VAA be encouraged to modify YVR ANMC meeting procedures (e.g., distribute background material on agenda items prior to each meeting) and regularly report back to the YVR ANMC regarding how the deliberations of the Committee are considered by the VAA Board and/or senior VAA management; and
- should the Task Force recommendations be approved, that the City's YVR ANMC representatives become the guardians of the Task Force recommendations and provide on-going monitoring and advancement of the recommendations.

Should the Task Force recommendations be approved, staff recommend that the Task Force continue (and meet as needed) until all comments and suggested alternative solutions have been received from VAA, NAV CANADA and Transport Canada on the Council-endorsed recommendations, at which time the Task Force would comment on them through a City staff report to Council. Following this report, the Task Force would be disbanded.

Option 2: Establish a Permanent Richmond Airport Noise Advisory Committee

Should Council wish to establish a permanent airport noise advisory committee, staff recommend that the City's two appointed representatives to the YVR ANMC be the Chair and Vice-Chair of the City Committee in order to provide a direct link to the broader membership of the VAA Committee. Staff anticipate that the City representatives on the YVR ANMC would seek input and feedback from the City Committee on key issues to be discussed at the YVR ANMC as well as bring forward any community concerns to the YVR ANMC following discussion at the City Committee. The City Committee would also participate in any annual public meeting regarding aeronautical noise held by the VAA, as described in Option 1.

Staff estimate that the annual cost of establishing a permanent advisory committee that meets bi-monthly to be up to \$11,000 comprised of staff overtime to attend meetings, which typically occur outside of regular business hours, meeting costs, and fees for a consultant retained to provide technical information on issues raised at each of the meetings. Based on recent staff's experience in working with the Task Force on the variety of aviation-related issues, the input from the technical consultant has proven to be invaluable in terms of providing timely expert advice and carrying out specialized industry research. As such, the service of an expert consultant is deemed necessary to support the on-going function of a permanent advisory committee.

Financial Impact

There is no financial impact to the City at this time.

Should a permanent airport noise advisory committee be established that meets bi-monthly, staff estimate that an additional annual cost of up to \$11,000 would be incurred. This amount is not currently budgeted and will need to be provided.

Conclusion

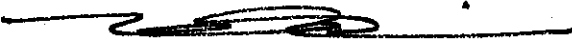
Staff recommend that the report of the Richmond Airport Noise Citizens Advisory Task Force be endorsed for purposes of further consultation, with revisions made to Recommendations 10 and 21, and forwarded to the relevant federal agencies including Vancouver Airport Authority, Transport Canada and NAV CANADA with a request to meet to discuss its implementation or the development of mutually acceptable alternative solutions that meet the intended objectives of each of the report recommendations.

As strict implementation of Recommendations 9 and 10 of the Task Force report appears inconsistent with comparable international airports and would negatively impact YVR operations, staff recommend that Recommendation 10 be revised such that VAA may continue to grant exemptions to allow night-time arrivals and departures of Chapter 3 aircraft but subject to a defined transition period to be determined and a maximum annual limit applicable to all aircraft types that is equal to the current ratio of night-time to annual movements.

In lieu of establishing a separate City advisory committee on aeronautical noise (as per Recommendation 21 of the Task Force report), staff recommend instead that the role of the City's representatives to the YVR Aeronautical Noise Management Committee be strengthened to provide improved City governance and liaison with the Vancouver Airport Authority regarding aeronautical noise management.

To advance the recommendations of the Task Force, staff also recommend that the Task Force report, with a revised Recommendation 10, be sent to the Vancouver Airport Authority, NAV CANADA and Transport Canada with a request for a meeting to discuss the recommendations and next steps and that staff be directed to report back in Fall 2010 on the outcome of these meetings and the status of the implementation of these recommendations, which would include the formal responses by the stakeholders as to how each of them was or will be addressed.

The recommendations being put forward in this report would prepare the next steps to address the long-term impacts of aeronautical noise on the community through sustainable solutions that maintain the international competitiveness of YVR, as the airport is a proven benefit to the City and the Richmond community in many ways.



for Joan Caravan
Transportation Planner
(604-276-4035)

JC:jc



City of Richmond

Report to Committee

To: General Purposes Committee

Date: January 4, 2010

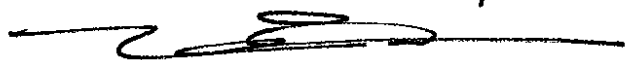
From: Victor Wei, P. Eng.
Director, Transportation

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Re: **FINAL REPORT OF THE RICHMOND AIRPORT NOISE CITIZENS ADVISORY
TASK FORCE – ENHANCING AERONAUTICAL NOISE MANAGEMENT AT YVR**

Staff Recommendation

1. That the final report of the Richmond Airport Noise Citizens Advisory Task Force, as described in the attached report, be endorsed for purposes of further consultation, except for Recommendation 21, and forwarded to the relevant federal agencies including Vancouver Airport Authority, Transport Canada and NAV CANADA with a request to meet to discuss its implementation or the development of mutually acceptable alternative solutions that meet the intended objectives of each of the report recommendations.
2. That Recommendation 21 of the Task Force report be deferred at this time and in lieu that:
 - (a) staff be directed to bring forward as soon as possible revised Terms of Reference for the Advisory Committee on the Environment to establish the direct reporting to General Purposes Committee of the City's representatives to the YVR Aeronautical Noise Management Committee at least twice per year;
 - (b) Vancouver Airport Authority be requested to modify the YVR Aeronautical Noise Management Committee meeting procedures and regularly report back to the YVR Aeronautical Noise Management Committee regarding how the deliberations of the Committee are considered by the VAA Board and/or senior VAA management as described in Sections 2.3.3 and 2.3.4 of the attached report; and
 - (c) the Richmond Airport Noise Citizens Advisory Task Force be retained through to Summer 2010 to allow for the opportunity to provide comment on discussions of the Task Force report with the relevant federal agencies as per Recommendation 1.
3. That Council reiterate its request to Vancouver Airport Authority to incorporate the comments previously submitted by the City on the *YVR 2009-2013 Noise Management Plan*, along with the above Task Force recommendations or alternatives to achieve their intended objectives, into its forthcoming aeronautical noise management action plan.
4. Per Recommendation 1, that the relevant federal agencies be requested to provide formal responses by May 31, 2010 as to how each of the Task Force recommendations was or will be addressed and that staff be directed to report back in Summer 2010 on the status of the implementation of the recommendations of the Task Force.



Victor Wei, P. Eng.
Director, Transportation
(604-276-4131)
Att. 2

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Staff Report

Origin

In April 2008, Council established the Richmond Airport Noise Citizens Advisory Task Force (the Task Force) to advise Council by providing a City forum for the discussion, generation and consideration of possible solutions to aeronautical noise and aircraft flight path issues affecting the City of Richmond. The Task Force has now completed its mandate and has submitted a final report with 22 recommendations for Council's consideration (see **Attachment 1**). This report provides staff comments on the Task Force's report and recommendations as well as the responses received from the main stakeholders (i.e., Transport Canada, NAV CANADA and Vancouver Airport Authority (VAA)) and the City's appointed representatives to the YVR Aeronautical Noise Management Committee (ANMC).

Analysis

1. Task Force Report & Recommendations

Staff attended all meetings of the Task Force as well as the public hearings and participated in discussions regarding the community feedback received and the formulation of Recommendations 1 to 18 to address the identified concerns. The development of these recommendations and their rationales was ably assisted by a consultant with broad knowledge of the aviation industry and specific expertise in providing instrument flight procedure design services. The consultant ensured that the resultant recommendations are realistic and technically feasible and could be implemented without unduly impacting the operations of YVR.

Staff support the intent of the recommendations directed to the relevant agencies but acknowledge that there may be different avenues to achieve the ultimate objective of each recommendation. For those recommendations that are technically specific (e.g., Recommendation 13), staff suggest that they can be viewed as illustrative of one possible approach to achieve the intent. As a whole, the report not only contributes to a greater understanding of the noise-related impacts of YVR operations, but also offers tangible solutions and advances collaboration amongst stakeholders, the City and the community to better manage aeronautical noise.

Attachment 2 compares the Task Force recommendations with the City's comments to VAA (approved by Council at its February 23, 2009 meeting) on the initiatives outlined in its *2009-2013 Noise Management Plan*. Based on a comparison of the two reports, staff note that:

- the two reports address many of the same topics, which indicates that Richmond is being consistent in seeking improvements in aeronautical noise management;
- the Task Force recommendations generally provide more specific detail regarding topics; and
- the Task Force recommendations do not conflict with the City's comments to VAA.

Staff offer the following comments on specific Task Force recommendations.

1.1 1992 Vancouver International Airport Environmental Assessment Panel (YVR EAP)
Report: Recommendations 1-4

VAA states in its response to the draft Task Force report (see Appendix 2 of the Task Force report) that all of the requirements of the Minister of Transport's 1992 approval of the 3rd runway project have been met. Recommendation 2 of the Task Force report references Recommendations 21 and 22 of the YVR EAP, which stated respectively that the Minister of Transport prepare an airport development plan for the Lower Mainland and that the VAA "address itself to the task of preparing Abbotsford and other airports to assume a larger role in the Lower Mainland's airport system."

Regional Airport Plan: per the final report issued in 1996 of the Environmental Monitoring and Implementation Committee, which provides the status of the YVR EAP recommendations as of December 31, 1996, Recommendation 22 was deemed completed on the basis of a single joint planning session held in April 1994 to update the *BC Regional Airport Overview for the Lower Mainland and Southern Vancouver Island*. At that meeting, it was concluded that there was no immediate requirement for the preparation of an airport development plan to address the long-term air transportation needs of the Lower Mainland. However, it was recommended that this conclusion be reviewed within the next five years (i.e., within the 1997-2001 period). A regional airport strategy is needed to provide certainty for all stakeholders on the roles (e.g., passenger and cargo split) and operations of each airport in the region, including municipal support and infrastructure. Staff therefore propose that Transport Canada be urged to lead an update of the BC regional airport development plan with a view to increasing the role of regional airports in Metro Vancouver.

Creation of ANMC: as noted in the Task Force report, a common view expressed by attendees at the public hearings was a lack of communication between VAA and the community regarding noise complaints. As Recommendations 2 and 3 of the YVR EAP pertain to the creation, structure and mandate of a Noise Management Committee (which became the YVR ANMC), staff suggest that improved communication, transparency and accountability between the YVR ANMC and the community is desirable (see Sections 1.6 and 2.3 for further discussion of the YVR ANMC).

1.2 Float Plane Operations: Recommendation 5

VAA has made efforts to address float plane operations, most recently by developing a flyer that identifies the preferred routing and altitude requirements for operations on the Fraser River that was distributed to float plane operators. However, the recommended procedures are guidelines only, as VAA has advised that it does not have the authority to publish the procedures as regulations. Per the VAA, this authority resides with Transport Canada and staff thus support the intent of Recommendation 5.

1.3 Aircraft Maintenance & Engine Run-Up Operations: Recommendations 6-8

VAA has completed a feasibility study of constructing a ground run-up enclosure (GRE), including development of a preliminary design. The project will be considered as part of VAA's capital program in 2010 and, if approved, would be constructed and operational by the end of

2011. Staff support these recommendations and further recommend that VAA be strongly urged to approve construction of a GRE.

1.4 Night Operations: Recommendations 9-12

The Task Force deliberated at length regarding these recommendations, particularly Recommendation 9(d), as there were comments received from the public who indicated a preference for a complete night-time ban on airport/aircraft operations, which would have entailed the deletion of Recommendation 9(d). While some members of the public questioned whether there is indeed a perceptible reduction in noise levels for Chapter 4 versus Chapter 3 aircraft such as to support the operation of Chapter 4 aircraft at any time, the Task Force was cognizant of VAA's operational needs and sought to present feasible recommendations that promote greater cooperation amongst the City, the community and stakeholders.

The Chapter 4 certification standard was introduced in January 2006 for all new subsonic jet aircraft entering service and improves on the Chapter 3 standard by a cumulative margin of 10 dBA. Aircraft certified to Chapter 4 are therefore at least one-third quieter than those currently certified to the Chapter 3 standard. Focusing on the typical aircraft that currently operate at night to/from YVR, many are A340 and B777 aircraft both of which are mostly Chapter 4 certified. However, most B747-400 aircraft are only Chapter 3 certified so those flights would be affected by Recommendation 9(c) and a corresponding reduction in noise levels should thus result. Overall, staff support Recommendations 9 to 12 as a reasonable balance between addressing the community's concerns while acknowledging the economic needs of the airport, particularly as Recommendation 9(d) allows for an assessment of its impact on the community and thus a reconsideration of its application.

1.5 Flights Operating Over West Richmond: Recommendations 13-15

Staff support the intent of the recommendations, which is to strengthen regulations pertaining to flights operating in the existing Noise Sensitive Area over Richmond.

1.6 Governance and Noise Management: Recommendations 16-18

VAA, through its ground lease with the Federal Government, has responsibility for airport and aircraft noise management activities at YVR and has a comprehensive noise management program to undertake this responsibility. The VAA works with partners to mitigate noise impacts on surrounding communities primarily through the YVR ANMC. The purpose of the Committee is to provide a balanced forum where industry and community stakeholders can discuss aeronautical noise management at YVR. While the YVR ANMC is an integral component of the YVR Aeronautical Noise Management Program, the Committee is consultative in nature and does not have executive authority. The objectives of the Committee are to:

- minimize the noise disturbance to those living in the vicinity of YVR, while recognizing the need for efficient and effective airport operations;
- assist in the development of a *Noise Management Plan* and provide input on the implementation of Plan initiatives; and
- balance stakeholder demands and expectations of their airport.

Staff believe that management of aircraft noise can be challenging given competing interests regarding aircraft noise such as:

- VAA is to operate the airport effectively, competitively, and profitably;
- airport operations create aeronautical noise;
- VAA is responsible for minimizing and monitoring aeronautical noise;
- VAA, NAV CANADA and Transport Canada are to listen to Richmond City Council and community complaints, and address them;
- VAA (and others) are to report aircraft noise violations to Transport Canada; and
- Transport Canada is to enforce aircraft noise violations.

Staff thus support the intent of Recommendation 18 to strengthen the independence of the YVR ANMC, as the same agency that creates aeronautical noise may not be the best one to monitor it and listen to and address all community complaints, as there are conflicting interests. Greater autonomy for the YVR ANMC could allow it to independently monitor aeronautical noise and enforce noise violations. Staff suggest that best practices and the structures of similar committees at other airports around the world be examined by VAA to identify measures to provide the Committee with greater means of self-government.

As part of this process proposed by the Task Force to improve transparency, accountability and communications, VAA should also be encouraged to hold an annual public meeting to present the progress on initiatives over the past year and identify the planned actions for the upcoming year as well as hear feedback from the community on concerns related to aeronautical noise. This public meeting would also provide a regular opportunity for the City's representatives to the YVR ANMC to hear the aeronautical noise concerns of the community that they represent. If requested by VAA, the City could assist in hosting such a public meeting.

1.7 Recommendations for Richmond City Council: Recommendations 19-22

With respect to City governance and City-VAA liaison regarding aeronautical noise management, the table below outlines the current arrangement and reporting structure.

Agency / Appointee	Reporting Structure
1 Council Appointee to VAA Board	With VAA staff, makes annual presentation to Committee/Council
2 Council Appointees to YVR ANMC (members are also part of the Advisory Committee on the Environment (ACE))	ACE reports annually to Committee/Council
2 Council Alternative Appointees to YVR ANMC (members are also part of ACE)	ACE reports annually to Committee/Council
1 formal City staff representative to YVR ANMC & 2 informal City staff representatives as needed	Periodic staff reports to Committee/Council as needed
Richmond Airport Noise Citizens Advisory Task Force (9 appointees)	Presentation of final report to Committee/Council in January 2010

Note: The City also appoints representatives to the YVR Environmental Advisory Committee.

City staff continually review ways to improve how its City representatives to the YVR ANMC may better represent the City's interests to the YVR ANMC and report back so that Council is apprised of events in a timely manner and can make decisions accordingly. While Recommendation 21 of the Task Force report seeks establishment of a new on-going City

advisory committee for aeronautical noise management that is separate from the YVR ANMC, staff believe that improved aeronautical noise management governance and reporting efficiencies can be achieved through enhancements to existing avenues rather than what may be a duplication of efforts. Accordingly, as on-going communication to Council from past City representatives to the YVR ANMC has not been consistently effective, City staff at this time recommend that:

- the City's YVR ANMC representatives no longer report back through ACE and instead report directly to General Purposes Committee at least twice a year;
- City staff bring forth recommendations to Council to change the ACE Term of Reference to achieve the above;
- the Task Force continue, and if requested by stakeholders to meet to better understand the Task Force recommendations, collaborate and explore solutions with them regarding Council's approved Task Force recommendations and/or their intent, so that VAA, NAV CANADA and Transport Canada responses to the City can be relevant and effective;
- once all comments and suggested alternative solutions from VAA, NAV CANADA and Transport Canada have been received on the Council endorsed recommendations, the Task Force comment on them through a City staff report to Council by Summer 2010; and
- as part of the City staff report noted above, Council consider whether or not the Task Force should be disbanded with the City's representatives to the YVR ANMC becoming the guardians of the Task Force recommendations and providing on-going monitoring and advancement of the recommendations.

2. Public Consultation on Draft Report & Recommendations

2.1 Comments from Stakeholders

The preliminary comments received from stakeholders on the draft report (see **Appendix 2** of the Task Force report) clearly indicate a willingness to meet and discuss further the objectives of the Task Force recommendations and the possible means to achieve their intent. Staff would request further, more detailed responses from the stakeholders upon Council endorsement of the recommendations and following subsequent meetings.

VAA has advised that, following the approval of its *2009-2013 Noise Management Plan* by the Minister of Transport, Infrastructure and Communities in August 2009, it will be initiating development of a work plan in January 2010 that identifies specific actions for each initiative within the Plan. Staff applaud this initiative and note that with the work plan intended to be completed by May 2010, the timing is opportune as the Task Force recommendations can thus be considered as potential actions for the relevant initiatives. As outlined in Attachment 2, there is a corresponding Plan initiative for each of the Task Force recommendations directed to stakeholders with the exception of those related to the YVR EAP. VAA's preliminary response addresses the recommendations pertaining to the YVR EAP save for that related to the development of a regional airport strategy. As discussed in Section 1.1, Transport Canada should be urged to lead this initiative.

2.2 Comments from the Community

As noted in the Task Force report, approximately 25 people attended a second public hearing to hear feedback on the draft report and 42 comment forms and submissions were received by the City. The results indicate general support for all recommendations with the exception of Recommendation 9(d), which would permit the operation of Chapter 4 certified aircraft at any

time. A contingent of approximately 20 residents from east Richmond (living in the area bounded by Cambie Road, No. 5 Road, Alderbridge Way, and Shell Road) prefer a complete ban on night-time operations of the airport between midnight and 7:00 am (see Section 1.4 for discussion of and staff comments on this topic).

2.3 Comments from City Representatives Appointed to YVR ANMC

The City's two appointed representatives to the YVR ANMC offer the following suggestions to facilitate further discussion of the Task Force recommendations amongst stakeholders:

- 2.3.1 *Inclusion of Technical Staff*: any future meetings held to discuss the Task Force recommendations should include technical staff with each agency (as opposed to, for example, only senior management), as these personnel would be the most knowledgeable as to the feasibility of implementing any operational procedures designed to mitigate the impacts of aeronautical noise.
- 2.3.2 *Education*: the Task Force recommendations do not specifically identify improved education of agency personnel (as well as aircraft operators such as float plane pilots) regarding the impacts of aeronautical noise on communities that surround airports. For example, aircraft noise mitigation and management currently is not part of the training curriculum for NAV CANADA personnel involved in developing flight path procedures. A better understanding and awareness of aeronautical noise impacts amongst all stakeholders should only improve decision-making on issues that affect aircraft and airport noise levels.
- 2.3.3 *YVR ANMC Structure & Procedures*: currently, some Committee meeting procedures limit the ability of the City's representatives to prepare for informed and meaningful input on Committee business. For example, while meeting agendas are distributed in advance, none of the agenda item material is made available for review prior to the meeting. The City's representatives are keen to assume a more engaged role and view becoming advocates for the Task Force recommendations as dovetailing with this function.
- 2.3.4 *Staff Comments on YVR ANMC Procedures*: in addition to the suggested revised meeting procedures noted in Section 2.3.3, which staff support, staff also note that currently there is no feedback provided to YVR ANMC members as to how the VAA Board or senior VAA management consider and/or act upon the deliberations of the Committee. Staff therefore recommend that VAA be requested to provide such reports back to the YVR ANMC on a regular basis.

3. Next Steps

Should Council endorse the Task Force report, staff would forward the report to the relevant federal agencies (i.e., VAA, Transport Canada and NAV CANADA) and request to meet to discuss the Task Force recommendations with a view to developing concrete actions that address the intent of the recommendations. Given that VAA intends to complete a detailed work plan for its *2009-2013 Noise Management Plan* by May 2010, staff would request formal responses from the stakeholders as to how each of the Task Force recommendations was or will be addressed by this same date so that staff can report back on the outcome of such meetings and the status of the Task Force recommendations in Summer 2010.

With respect to the role of the City's representatives to the YVR ANMC, staff propose to bring forward revised Terms of Reference for ACE to establish their direct reporting to Council at least twice per year and to request VAA to modify the YVR Aeronautical Noise Management Committee meeting procedures as suggested in Section 2.3.3 and provide regular feedback regarding how the deliberations of the Committee are considered by the VAA Board as described in Section 2.3.4.

Financial Impact

There is no financial impact to the City at this time.

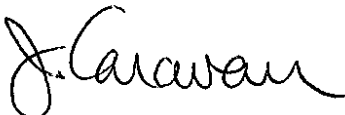
Conclusion

After 14 months of extensive discussions over 16 Task Force meetings and consultation with the general public during two public meetings on the issue of aeronautical noise in Richmond, the Richmond Airport Noise Citizens Advisory Task Force has now completed its mandate and submitted a report to Council with 22 recommendations to address identified community concerns related to aeronautical noise impacts. The Task Force has provided a high level of dedication in exploring this community issue and developed a set of well-balanced, well thought-out recommendations for Council's consideration.

Staff recommend that the report be endorsed for purposes of further consultation, except for Recommendation 21, and forwarded to the relevant federal agencies including Vancouver Airport Authority, Transport Canada and NAV CANADA with a request to meet to discuss its implementation or the development of mutually acceptable alternative solutions that meet the intended objectives of each of the report recommendations.

In lieu of establishing a separate City advisory committee on aeronautical noise (as per Recommendation 21 of the Task Force report), staff recommend instead that the role of the City's representatives to the YVR Aeronautical Noise Management Committee be strengthened to provide improved City governance and liaison with the Vancouver Airport Authority regarding aeronautical noise management.

To advance the recommendations of the Task Force, staff also recommend that the Task Force report be sent to the Vancouver Airport Authority, NAV CANADA and Transport Canada with a request for a meeting to discuss the recommendations and next steps and that staff be directed to report back in Summer 2010 on the outcome of these meetings and the status of the implementation of these recommendations, which would include the formal responses by the stakeholders as to how each of them was or will be addressed.



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JC:jc

➔ **Richmond Airport Noise Citizens Advisory Task Force** ➔

January 8, 2010

Richmond City Council
6911 No. 3 Road
Richmond, BC V6Y 2C1

Dear Mayor and Councillors:

In accordance with the terms of reference approved by Richmond City Council in April 2008, the Richmond Airport Noise Citizens Advisory Task Force has completed its review of aeronautical noise issues affecting Richmond. We have the honour to submit this report for your consideration.

As part of the process to finalize this report and its 22 recommendations, a draft version of the report was circulated to stakeholder agencies (i.e., Transport Canada, NAV CANADA and the Vancouver Airport Authority) for feedback. In addition, the general public was invited to attend a public hearing and an on-line comment form was available on the City's website.

Following careful consideration of the comments received, the Task Force resolved that the recommendations remained valid and did not require amendment. A clear goal of the Task Force from the outset was to produce a report and recommendations that would be seen as reasonable and workable. Hence, we are pleased that all three stakeholders have expressed a willingness to meet and further discuss the recommendations, as opposed to rejecting the recommendations as impracticable, which may have been their response had the Task Force chosen a more aggressive and confrontational approach. We hope that the City will take the earliest opportunity to meet with the agencies to advance the work of the Task Force. Pursuant to Recommendation 19, Task Force members will be available to help in this effort.

The Task Force acknowledges that a number of comments were received from residents of east Richmond in the vicinity of No. 5 Road and Cambie Road requesting a complete night-time ban on flights between midnight and 7:00 am; fulfilling this request would have required deletion of Recommendation 9(d). The Task Force debated this issue at length but concluded that the recommendation would be retained, as it is our intent to present practical and feasible recommendations that will foster greater dialogue and collaboration with stakeholders.

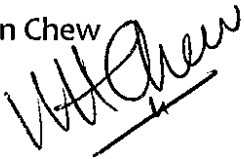
We look forward to presenting our report and its recommendations at the next appropriate General Purposes Committee meeting with a view to ultimately effecting positive changes in the collective management of aeronautical noise by the relevant federal agencies to ensure mutual long-term benefits for both the Vancouver Airport Authority and our community.

Thank you for this opportunity to help improve the quality of life for all Richmond residents.

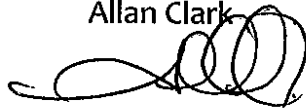
Yours sincerely,

Richmond Airport Noise Citizens Advisory Task Force

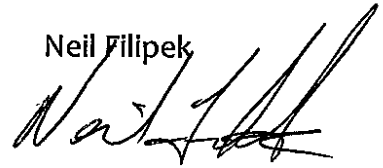
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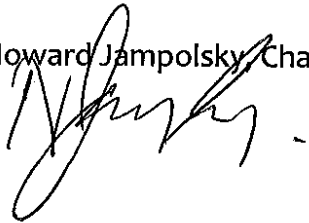
Allan Clark



Neil Filipek



Howard Jampolsky, Chair



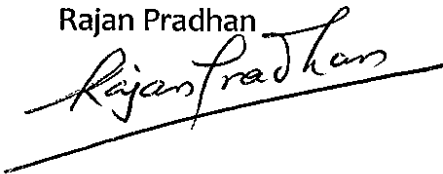
Fern Keene



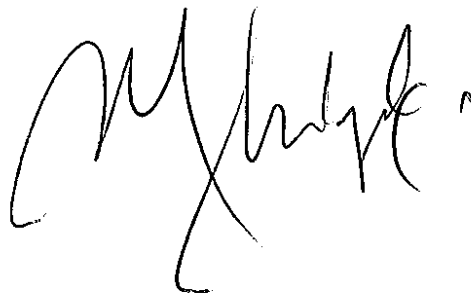
For Glen Livingstone



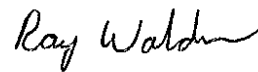
Rajan Pradhan



Mark Salopek



Ray Walden



Report of the Richmond Airport Noise Citizens Advisory Task Force

November 2009

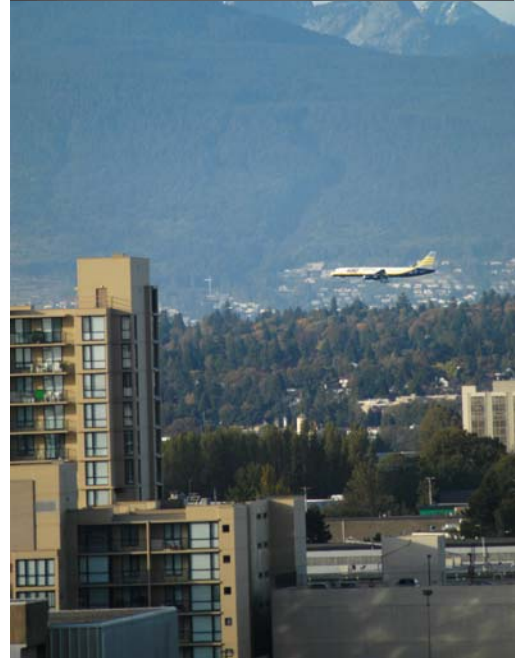


Table of Contents

Executive Summary and Recommendations	1
1992 Vancouver International Airport Environmental Assessment Panel (YVR EAP) Report	5
Float Plane Operations	5
Aircraft Maintenance & Engine Run-Up Operations.....	6
Night Operations.....	6
Flights Operating Over West Richmond.....	7
Governance and Noise Management	9
Recommendations for Richmond City Council	9
The Task Force and Its Assignment	11
Effects of Airport Operations on the Quality of Life for Residents of Richmond	13
1992 Vancouver International Airport Environmental Assessment Panel (YVR EAP) Report.....	15
Recommendations.....	15
Rationale	15
Float Plane Operations	17
Recommendations.....	17
Rationale	17
Aircraft Maintenance & Engine Run-Up Operations.....	21
Recommendations.....	21
Rationale	21
Night Operations.....	25
Recommendations.....	25
Rationale	25
Flights Operating Over West Richmond.....	28
Recommendations.....	28
Rationale	29
Governance and Noise Management	39
Recommendations.....	39
Rationale	39
Recommendations for Richmond City Council	42
Recommendations.....	42
Rationale	42

Appendices

Appendix 1:	1 st Round of Public Consultation (January-February 2009) Questionnaire Responses	45
Appendix 2:	2 nd Round of Public Consultation (October 2009) Stakeholder & Questionnaire Responses.....	54
Appendix 3:	City of Richmond Official Community Plan: Aircraft Noise Sensitive Development Policy	90
Appendix 4:	1992 Vancouver International Airport Environmental Assessment Panel Report: Recommendations relating to Aeronautical Noise Management	93
Appendix 5:	Vancouver VTA VFR Terminal Area Charts	97
Appendix 6:	Union of BC Municipalities: Resolution B111	99

Glossary

AGL:	Above Ground Level
AIC:	Aeronautical Information Circular
AIP:	Aeronautical Information Publication
ANMC:	Aeronautical Noise Management Committee
ASL:	Above Sea Level
EARP:	Environmental Assessment and Review Process
GRE:	Ground Run-up Enclosure
ICAO:	International Civil Aviation Organization
IFR:	Instrument Flight Rules
OCP:	Official Community Plan
SID:	Standard Instrument Departure
VAA:	Vancouver Airport Authority
VFR:	Visual Flight Rules
VOR:	VHF Omnidirectional Range
VTa:	Vancouver Terminal Area
WebTrak:	On-line tool that displays flight activity over Metro Vancouver including aircraft type, elevation and noise level
YVR:	Vancouver International Airport
YVR EAP:	Vancouver International Airport Environmental Assessment Panel

Executive Summary and Recommendations

In April 2008, Richmond City Council established the nine member Richmond Airport Noise Citizens Advisory Task Force (the Task Force) with the primary role of providing information, analysis, options, and recommendations to Council regarding aeronautical noise and flight path issues of concern to the Richmond community.

The Task Force, which comprised Richmond residents and included several people with significant expertise in the aviation industry, met 16 times between September 2008 and November 2009. Further to these meetings, two series of public hearings were held at Richmond City Hall in January-February 2009 and October 2009 to solicit community feedback on, respectively, aviation-related noise concerns and the draft recommendations of the Task Force developed to address the identified concerns.

Approximately 60 people attended the first round of public hearings and the Task Force heard from 24 delegations. A total of 53 comment forms were completed (Appendix 1). The presentations and comments indicated that there is a considerable effect on the community from the following aviation-related activities:

- float plane operations;
- night-time flights and operations of the airport, particularly between midnight and 7:00 am;
- low flying aircraft over the western portion of the city; and
- aircraft maintenance operations taking place throughout the night.

Based on the presentations made to the Task Force by the Richmond community and with assistance from City staff and a consultant, the Task Force identified and catalogued the key problems and developed recommendations as to how to mitigate these problems.

During this process, the Task Force recognized that an overriding problem is that three federally regulated yet independent agencies are responsible for all aviation matters in the metro Vancouver region. These are: (1) Transport Canada, (2) NAV CANADA and (3) the Vancouver Airport Authority (VAA). Each of these agencies is responsible for certain elements of aviation activities in this region and, in fact, some have overlapping responsibility. Although some of the Task Force's recommendations might be specifically directed to one of these agencies, it is not always clear which recommendations should be directed to which agency. Therefore, the Task Force recommends that the City of Richmond forward all recommendations to all agencies for appropriate attention and action.

The Task Force did not attempt to re-write aviation regulations, or find ways within the current legal and operational framework to solve all of the problems. This task is clearly outside not only the mandate of the Task Force but also its capabilities. Instead, the Task Force has created a list of carefully crafted recommendations for various federal and other appropriate agencies to consider and implement.

All recommendations made with regard to airmanship, aircraft operations, routes, and other aviation activities are made with consideration to the safe operation of aircraft. The Task Force believes all recommendations made can be implemented in a manner consistent with aviation safety standards and understands that in cases of emergency, a pilot is not only permitted, but required, to take whatever steps and actions are necessary to ensure that a safe resolution is achieved, regardless of the impacts of noise to the surrounding community.

The Task Force also recognizes that Vancouver International Airport (YVR) is of considerable importance to the economic health of Richmond, the Greater Vancouver area and the country. However, while these benefits are undeniable, historically the voice of the community has not been truly heard and weighed when airport and aviation-related decisions are made.

Prior to finalization of the recommendations, the Task Force solicited feedback on a draft report from the public and stakeholders via a second round of public consultation in October 2009. Approximately 25 people attended a second public hearing and a further 42 comment forms and submissions were received, including responses from Transport Canada, NAV CANADA and VAA (Appendix 2). The Task Force considered carefully the feedback and concluded that the recommendations remained valid and did not require revision.

In summary, the Task Force believes it has:

- identified the causes of most aviation-related noise that detrimentally affect the lives of many Richmond residents;
- determined that, for the responsible agencies (i.e., Transport Canada, NAV Canada and VAA), it should not be “business as usual”;
- developed a series of practical and sustainable recommendations to address the identified concerns; and
- provided a strong rationale and background information for each recommendation.

The recommendations:

- attempt to improve the quality of life for Richmond residents while addressing public safety concerns;
- are reasonable and economically feasible to implement by the appropriate agencies and airlines; and
- help to enhance the positive relationship among the three federally regulated agencies, the City of Richmond and the region.

There are also recommendations that are directed to the City of Richmond itself. The Task Force debated whether to provide these in a separate report to Council, or include them as part of the overall recommendations that will be forwarded to the federally regulated agencies. Ultimately, the Task Force felt that it was important that all parties involved be fully aware of the entire

scope of the problems and the recommendations for mitigating those problems, and thus have included the recommendations for City action within this report.

The Task Force notes that the local community identified at the public hearings that airport and aircraft noise may have health impacts. As this aspect was outside the mandate of the Task Force, the appropriate federal agencies should consider undertaking a study of the health implications of aviation noise in order to further improve the quality of life not only for Richmond residents but also for all Canadian communities in the vicinity of airports.

Finally, the Task Force hopes that Transport Canada, NAV CANADA, VAA, airlines, and other affected operators and agencies will respond to the recommendations with a positive “we can do better” attitude and approach, and not work to defeat the recommendations and their intent.

Recommendations

1992 Vancouver International Airport Environmental Assessment Panel (YVR EAP) Report

1. That the appropriate agencies coordinate a response that clearly and comprehensively advises which of the recommendations of the 1992 YVR EAP, as endorsed by the Minister of Transport of the day, have been implemented and to what degree.
2. In particular, that Transport Canada or other appropriate agencies provide a detailed report on the progress of an airport development plan for the Lower Mainland (metro Vancouver) region and initiatives with Abbotsford International Airport as per YVR EAP Recommendations 21 and 22.
3. That the responses as requested in Recommendations 1 and 2 include a detailed implementation plan for all outstanding recommendations approved, endorsed and required by the Minister of Transport of the day.
4. That VAA demonstrate how the YVR Aeronautical Noise Management Committee meets the intent of YVR EAP Recommendations 2 and 3.

Float Plane Operations

5. That VAA, NAV CANADA and other appropriate agencies introduce and publish new procedures for float plane operations to minimize noise impacts that include requiring:
 - a. Float planes to use the north part of the Middle Arm of the Fraser River and/or the channel north of Swishwash Island.
 - b. No flights over built-up areas below 1,000 ft until on final descent for landing.

- c. No powered float plane operations, including docking or ramping, on or adjacent to the Middle Arm of the Fraser River between 10:00 pm and 7:00 am.

Aircraft Maintenance & Engine Run-Up Operations

- 6. That VAA install a proper Ground Run-up Enclosure (GRE), as a high priority capital project, to be used for all aircraft engine maintenance run-ups.
- 7. That until a GRE is operational, VAA discontinue the granting of approval for engine run-ups between 10:00 pm and 7:00 am in airport areas and during wind conditions where the resulting noise is likely to affect residents living on the south side of the Middle Arm of the Fraser River.
- 8. That VAA implement an effective reporting, monitoring and enforcement system to better manage noise issues resulting from operations on the south side of the airport.

Night Operations

- 9. That VAA or other appropriate agencies implement the following curfew periods at YVR:
 - a. Non-noise certified jet aircraft shall not operate at any time.
 - b. All ICAO Annex 16 Chapter 2 aircraft shall not operate between 11:00 pm and 7:00 am.
 - c. All ICAO Annex 16 Chapter 3 aircraft shall not operate between midnight and 6:30 am.
 - d. All ICAO Annex 16 Chapter 4 aircraft may operate at any time for an initial two year trial period to allow for an assessment of the impact on the Richmond community.
 - e. All other aircraft shall not operate between midnight and 7:00 am.

10. That VAA or other appropriate agencies develop a program to eliminate the number of curfew exemptions granted over the next three years.
11. That VAA or other appropriate agencies publish a quarterly list of all curfew exemptions granted, including a reason for each exemption granted.
12. That VAA or other appropriate agencies require aircraft to use idle-only reverse thrust at all times on all runways. (*This reverse thrust restriction already exists on the north runway and should be applied to the south runway*).

Flights Operating Over West Richmond

13. That NAV CANADA or other appropriate agencies revise existing and develop new procedures for VFR (Visual Flight Rules) aircraft to better define and regulate the existing Noise Sensitive Area over Richmond as identified on Vancouver Terminal Area (VTA) charts to include:
 - a. Restrict and limit use of the airspace over West Richmond below 2,500 ft.
 - b. Amend the published VFR arrival routes for all aircraft, including float planes and helicopters, landing westbound on Runways 26L and 26R, on helipads, or on the Middle Arm of the Fraser River to include:
 - i. Revoke the current “Richmond Square” VFR checkpoint and replace it with a new checkpoint near the Blundell Road overpass on the east side of Highway 99.
 - ii. Amend the “Coal Pile Arrival” route to utilize the new Blundell Overpass checkpoint with the route proceeding from the YVR VOR to north of the George

- Massey Tunnel and then remaining east of Highway 99 to Blundell Road.
- iii. Require aircraft to remain at an altitude of not below 1,500 ft until final descent for landing.
 - c. Float planes arriving from the north should use a standard circuit for landing westbound on the Middle Arm of the Fraser River but be required to maintain an altitude of at least 1,000 ft on the downwind leg as per Recommendation 5b, and be restricted from turning base until east of the Richmond General Hospital.
 - d. For VFR aircraft, including float planes and helicopters, departing eastbound from Runway 08L or 08R, from helipads, or from the Middle Arm of the Fraser River eastbound:
 - i. Restrict right turns until climbing to at least 1,000 ft.
 - ii. For aircraft heading south, fly directly to the new Blundell Overpass VFR checkpoint in the area near the Blundell Road / Highway 99 overpass.
 - iii. Remain east of Highway 99 until the George Massey Tunnel.
14. That NAV CANADA and other appropriate agencies cancel the “Richmond One Departure” and require all non-jet aircraft to use only the new “Olympic One Departure.”
15. That a new Aeronautical Information Circular (AIC) or Aeronautical Information Publication (AIP) Supplement, whichever version is most suitable, be published in the Canada AIP to highlight the noise issues of Richmond, reinforce the existence of the Noise Sensitive Area and describe the existing and new noise control procedures.

Governance and Noise Management

16. That the appropriate agencies, such as the YVR Aeronautical Noise Management Committee, hold a public meeting (not just an open house) in each of Vancouver, Richmond, Delta, and Surrey at least once per year (e.g., evenings or weekends) where citizens are free to voice their concerns, and get feedback as appropriate.
17. That the YVR Aeronautical Noise Management Committee membership be expanded to include all flight operators, including float plane operators and members of the Task Force or a permanent City aeronautical noise advisory committee, if established by Council.
18. That the appropriate agencies, such as Transport Canada, establish an independent noise monitor agency with the authority to monitor and enforce noise mitigation measures and penalize noise violators consistent with the intent of YVR EAP Recommendation 3.

Recommendations for Richmond City Council

19. That the mandate of the Richmond Airport Noise Citizens Advisory Task Force be extended until all agencies have received, reviewed and reported back on these recommendations, at which time the Task Force recommends that it review the responses and report to Council with its final assessment of those responses, including any further recommendations, if necessary. After presenting this report to Council, the Task Force would not reconvene until the City receives feedback from VAA, NAV CANADA, Transport Canada or other appropriate agencies.
20. That the recommendations of the Task Force, if approved by Council, be publicized as widely as possible by the City, including

presentation(s) to senior levels of government, the media and other interested community organizations.

21. That if the Task Force is permanently disbanded, that a permanent City aeronautical noise advisory committee be established and its membership include the City of Richmond's appointees to the YVR Aeronautical Noise Management Committee.
22. That this report be forwarded to Transport Canada, NAV CANADA, the Vancouver Airport Authority, and other agencies and persons as deemed appropriate by Council.

The Task Force and Its Assignment

Task Force Members:

Ken Chew
Allan Clark
Neil Filipek
Howard Jampolsky
Fern Keene
Glen Livingstone
Rajan Pradhan
Mark Salopek
Ray Walden

As identified in its Terms of Reference, the purpose of the Task Force is to advise Council by providing a City forum for the discussion, consideration and co-ordination of aeronautical (e.g., aircraft and airport) noise and aircraft flight path issues affecting the City of Richmond. The role of the Task Force is to:

- a) advise City Council, with City staff and consultant assistance, by providing information, analysis, options, and recommendations regarding aeronautical noise and flight path issues of concern to the Richmond community, including:
 - daytime and night time aeronautical noise and
 - aircraft flight path location,while adhering to the fundamental principle of sustainability to achieve social, environmental and economic benefits;
- b) hold public hearings to listen to public ideas, concerns and suggestions;
- c) co-ordinate community interests and public participation to identify issues and develop feasible solutions to better manage aeronautical noise and aircraft flight path issues;
- d) enhance public awareness of and involvement in City aeronautical noise and aircraft flight path policies; and
- e) co-ordinate its activities and information with the City's Advisory Committee on the Environment, as necessary.

The major work items of the Task Force were to:

- a) identify aeronautical noise complaint sources (e.g., aircraft take-offs and landings, flight path locations);
- b) gather information from stakeholders (e.g., NAV CANADA, VAA , Transport Canada) regarding the regulation and practices of YVR hours of operation and aircraft flight paths;

- c) hold public hearings to hear public concerns regarding aeronautical noise and aircraft flight path issues;
- d) summarize the public concerns and any suggested solutions identified at the public hearings;
- e) evaluate the public concerns and develop options and strategies to address the concerns; and
- f) present to Council its final recommendations.

In formulating its recommendations, the Task Force was ably assisted by a consultant with broad knowledge of the aviation industry and specific expertise in providing instrument flight procedure design services.

Effects of Airport Operations on the Quality of Life for Residents of Richmond

Visual Flight Rules (VFR) are regulations that allow a pilot to operate an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going.

If the weather is worse than VFR minimums, pilots are required to use Instrument Flight Rules (IFR).

IFR are regulations and procedures for flying aircraft by referring only to the aircraft instrument panel for navigation.

While parts of Richmond are more adversely affected than others, all of Richmond is affected by aeronautical noise. Constant noise from transport-class aircraft (the large passenger and cargo jets) landing and taking off throughout the day and night are only part of the problem. The vast majority of complaints from citizens received by the Task Force concerned float plane traffic operating off the Middle Arm of the Fraser River west of the No. 2 Road Bridge, low level float planes, helicopters, commuter aircraft (e.g., Dash 8s), other VFR traffic, and aircraft maintenance operations, all of which generate significant and unacceptable levels of aviation noise throughout the day and night. As YVR continues to grow, so too will aviation-related noise and complaints from the community, if the noise is not better managed.

It is therefore crucial that, in order for the City of Richmond and VAA to enjoy a mutually beneficial and respectful relationship, there needs to be a true desire for both parties to try to better understand and manage their respective roles, responsibilities and challenges. A continuation of “business as usual” is not acceptable.

While agencies such as VAA, NAV CANADA and Transport Canada have the ability to better manage, reduce and eliminate airport and aircraft noise at source, the City has some ability to manage residents’ exposure to aviation noise via land use planning and urban design. The City’s Official Community Plan (OCP) includes policies related to managing Aircraft Noise Sensitive Development uses in areas of the city (Appendix 3).

The City’s land use policies appear to be achieving their objectives, as few concerns of airport or aircraft noise were identified during the public hearings or in the questionnaire responses by residents of newer residential areas in

Richmond; rather, the majority of complaints were from residents of older established neighbourhoods.

1992 Vancouver International Airport Environmental Assessment Panel (YVR EAP) Report

Recommendations

1. That the appropriate agencies coordinate a response that clearly and comprehensively advises which of the recommendations of the 1992 YVR EAP, as endorsed by the Minister of Transport of the day, have been implemented and to what degree.
2. In particular, that Transport Canada or other appropriate agencies provide a detailed report on the progress of an airport development plan for the Lower Mainland (metro Vancouver) region and initiatives with Abbotsford International Airport as per YVR EAP Recommendations 21 and 22.
3. That the responses as requested in Recommendations 1 and 2 include a detailed implementation plan for all outstanding recommendations approved, endorsed and required by the Minister of Transport of the day.
4. That VAA demonstrate how the YVR Aeronautical Noise Management Committee meets the intent of YVR EAP Recommendations 2 and 3.

Rationale

In 1989, the federal government established the Vancouver International Airport Environmental Assessment Panel (YVR EAP) to study environmental concerns relating to the proposed construction of a third runway at Vancouver International Airport.

The Panel held 11 public meetings where, in addition to concerns about airport expansion, Richmond residents voiced concerns about the present levels of aircraft and airport noise in the city. The aviation noise complaints of Richmond residents heard in the early 1990s are essentially the same as those received and documented by today's Task Force.

The spirit of the open review process was well noted in the final YVR EAP report issued in 1992. The YVR EAP report recognized and addressed some of the Richmond residents' complaints in its list of 22 recommendations to the stakeholders (Appendix 4), most of which were endorsed by the Minister of Transport of the day.

All stakeholders agreed that the Vancouver Airport Authority was given new processes for abating and managing aircraft noise. **Indeed, the VAA stated that it would be responsible to all levels of government and be responsible to local concerns in a way that an "Ottawa-based management structure could never achieve."**

Today, it is not clear which of the YVR EAP recommendations have been implemented and to what extent. It would be useful for all appropriate agencies (e.g., VAA, NAV CANADA, Transport Canada) to fully review the implementation status of the 1992 YVR EAP recommendations to determine what actions remain outstanding and develop an updated plan to address the issues with due consideration given to current community complaints.

Float Plane Operations

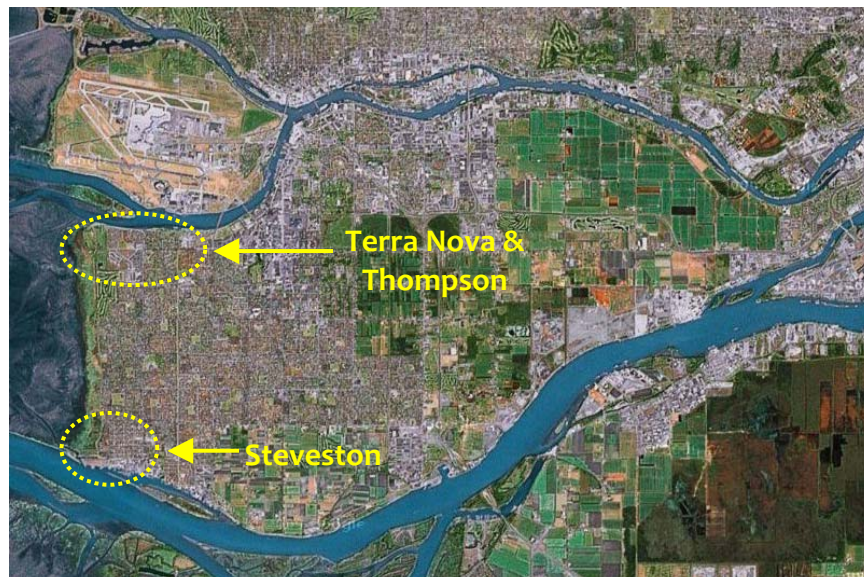
Recommendations

5. That VAA, NAV CANADA and other appropriate agencies introduce and publish new procedures for float plane operations to minimize noise impacts that include requiring:
 - a. Float planes to use the north part of the Middle Arm of the Fraser River and/or the channel north of Swishwash Island.
 - b. No flights over built-up areas below 1,000 ft until on final descent for landing.
 - c. No powered float plane operations, including docking or ramping, on or adjacent to the Middle Arm of the Fraser River between 10:00 pm and 7:00 am.

Rationale

Float plane operations are a significant source of noise for Richmond residents, particularly of the Thompson and Terra Nova areas, as well the Steveston area to a lesser extent (Exhibit 1). Float planes arriving and departing have often been observed operating at altitudes well below what is necessary, even for aircraft in the early and final stages of flight.

Exhibit 1: Main Richmond Neighbourhoods Affected by Float Plane Operations

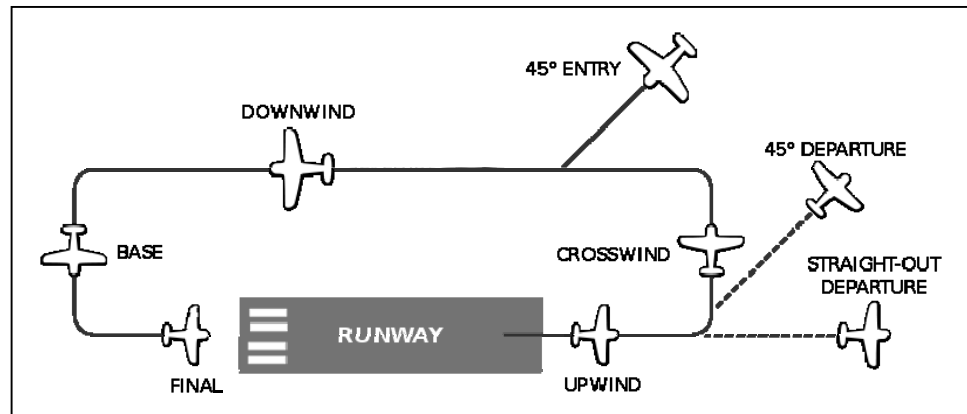


When aircraft arrive or take off at an airport, they often use a standard path that is known as a circuit pattern (Exhibit 2). In the diagram shown, the runway is actually the portion of the Middle Arm of the Fraser River used for water landings and takeoffs. The downwind leg is normally to be flown at 1,000 ft above the aerodrome elevation.

Exhibit 2: Circuit Pattern

In order to reduce takeoff and landing distance, aircraft land into the wind.

The circuit pattern is an aviation standard used universally throughout the world.



Currently, YVR Fraser River float plane operations use a circuit with the downwind leg to the south of the Fraser River over the Thompson and Terra Nova neighbourhoods of Richmond, and as far south as Granville Ave, regardless of which direction aircraft are landing or taking off.

Aircraft joining the circuit for landing are normally required to stay at 1,000 ft above the airport until turning “Base,” at which time the aircraft is free to descend for landing.

In aviation, altitudes are indicated as either AGL (above ground level) or ASL (above sea level).

The arrival procedure as currently published in the Water Aerodrome Supplement (WAS) is for the aircraft to fly downwind “not below 500’ ASL over the populated areas to the S (south).”

The normal standard operating procedure for 1,000 ft downwind should be required for float planes landing on the Fraser River, except in situations where weather or the safety of aircraft operations demands otherwise.

The Task Force recommends that pilots of float planes landing and departing from the Middle Arm of the Fraser River be required to follow this standard

operating procedure, and that there should be a system in place for penalizing violators.

Another unacceptable cause of noise for residents affected by float plane operations is aircraft operating too close to the south shore of the Fraser River in this area. The width of the Middle Arm of the Fraser River allows for aircraft to operate closer to the north side, thereby reducing noise to the residents. To further improve this situation, operators should be required to take-off and land in the area of water between the north shore of the Middle Arm of the Fraser River and Swishwash Island (Exhibit 3). The foliage and mass of the island are a proven means in reducing noise to the affected residents. **Many pilots sensitive to noise impacts on the community already use this body of water for their landings and take-offs**, and these flights are conducted in complete safety without any incursions into the path of wheeled-aircraft landing and departing on the south runway (Runway 08R/26L). Other pilots should be required by air traffic control to also conduct their operations in this same manner.

Exhibit 3:
Swishwash Island



Currently, YVR Fraser River departures may be made as early as 6:30 am. YVR float planes also should not be permitted to operate prior to 7:00 am, as per the restriction currently in place for both Vancouver and Victoria Harbours. Float planes are only legally permitted to operate in daylight hours, so during the winter months, these early departures are not an issue. However, during the summer months, float planes regularly depart prior to 7:00 am, and in some cases, considerably earlier. These flight operations have proven to be very disturbing to many residents living in the Thompson, Terra Nova and Steveston neighbourhoods of Richmond.

Aircraft Maintenance & Engine Run-Up Operations

Recommendations

6. That VAA install a proper Ground Run-up Enclosure (GRE), as a high priority capital project, to be used for all aircraft engine maintenance run-ups.
7. That until a GRE is operational, VAA discontinue the granting of approval for engine run-ups between 10:00 pm and 7:00 am in airport areas and during existing wind conditions where the resulting noise is likely to affect residents living on the south side of the Middle Arm of the Fraser River.
8. That VAA implement an effective reporting, monitoring and enforcement system to better manage noise issues resulting from operations on the south side of the airport.

Rationale

For residents on the south side of the Middle Arm of the Fraser River opposite the airport, living with the noise generated from YVR is a continual nuisance. Whether it is float planes operating or maintenance work being performed where engines are being tested (day and night), noise from the airport has detrimentally affected the quality of life for thousands of Richmond residents.

What is most sad about this situation is that the noise is avoidable without negatively impacting normal aviation operations including maintenance, which is universally understood as one of the cornerstones of aviation safety.

High-power ground run-ups of aircraft engines are a standard maintenance procedure and generate a significant amount of noise. Depending on the

aircraft engine power setting and duration, an engine ground run-up can create more noise than a takeoff. Additionally, winds coming from the north can carry this noise a significant distance further south over vast areas of residential Richmond. A ground run-up enclosure (GRE), which is an acoustic enclosure used for high-power engine tests that reduces the noise impact of ground engine run-ups on the community around an airport (Exhibit 4), is needed at YVR.

VAA has recently advised the community that it is investigating the construction of a GRE and the Task Force applauds this desire to move ahead with the project.

**Exhibit 4: Example
Ground Run-Up
Enclosure**

*GRE located at
Portland
International
Airport (PDX).*



The vast majority of engine run-ups are conducted on propeller-driven aircraft. Of the few turbine-engine run-ups, most are conducted on the north side of the airport and, in most cases, engines are removed from the aircraft and tested in an enclosed building that offers full and complete noise suppression. As a result, the GRE needed at YVR does not have to be so large as to accommodate all types of aircraft. This condition should make it far easier to find a suitable location for the construction of a GRE.

Given the implementation of a GRE, it will be critically important that all aircraft companies operating on the south side of YVR use the enclosure when conducting their engine run-ups. Currently, there is a ground run-up area at YVR at the west end of Sea Island and operators are requested to

Every aircraft in the world is identified with letters and/or numbers. Canadian registered aircraft are five letters starting with CF, CG or CI.

conduct operations at that location as it is further away from residents across the Middle Arm of the Fraser River. However, very often this requirement is ignored, and the engine run-ups are conducted outside the hangar facility, often with the engine and propeller blast directed towards this neighbourhood. The Task Force assumes that the reason the engine run-up area is not being consistently utilized is that it is a significant distance from the hangars and the aircraft need to be towed to the run-up area, which is likely considered to be inconvenient and time-consuming.

The GRE therefore must be in a suitable location that is convenient. Equally important is that companies that breach existing rules with regard to night-time engine run-ups should face punitive action for each violation.

Currently, operators can face fines for conducting engine run-ups **without permission from VAA**. It is very difficult, however, to enforce this requirement when the only way to determine if permission was granted is for a complainant to ask VAA and be able to provide the registration number of the aircraft in question. This is very difficult, if not impossible, as the complainant cannot see the registration letters on an aircraft, particularly at night. The registration markings on smaller aircraft are normally not illuminated. Further, the location of security fences on the south side of the airport do not enable individuals to get close enough to see the offending aircraft. Indeed, it is likely that by the time a person is able to get to the airport and find the aircraft, the engine run-up may be concluded. Clearly, the one piece of information required by a complainant regarding a night-time engine run-up is practically impossible to obtain. Moreover, the burden of proof is placed on the complainant, which is too onerous.

This situation was highlighted to the Task Force at the public hearings by one presenter who stated that when he had called VAA to complain about a night-time engine run-up, he was advised by VAA that the engine run-up was approved. The presenter was puzzled by this response, as he did not tell VAA

Night Operations

Recommendations

The International Civil Aviation Organization (ICAO), created in 1944 to promote the safe and orderly development of civil aviation worldwide, is a specialized agency of the United Nations.

*ICAO develops international air transport standards and regulations and serves as the medium for co-operation in all fields of civil aviation among its 190 contracting states. *

9. That VAA or other appropriate agencies implement the following curfew periods at YVR:
 - a. Non-noise certified jet aircraft shall not operate at any time.
 - b. All ICAO Annex 16 Chapter 2 aircraft shall not operate between 11:00 pm and 7:00 am.
 - c. All ICAO Annex 16 Chapter 3 aircraft shall not operate between midnight and 6:30 am.
 - d. All ICAO Annex 16 Chapter 4 aircraft may operate at any time for an initial two year trial period to allow for an assessment of the impact on the Richmond community.
 - e. All other aircraft shall not operate between midnight and 7:00 am.
10. That VAA or other appropriate agencies develop a program to eliminate the number of curfew exemptions granted over the next three years.
11. That VAA or other appropriate agencies publish a quarterly list of all curfew exemptions granted, including a reason for each exemption granted.
12. That VAA or other appropriate agencies require aircraft to use idle-only reverse thrust at all times on all runways. *(This reverse thrust restriction already exists on the north runway and should be applied to the south runway).*

Rationale

Per VAA's 2008 *Aeronautical Noise Management Report*, there were approximately 339,002 total aircraft movements at YVR during 2008, of which 278,800 were runway movements. Approximately 8,811 aircraft

the aircraft registration number and thus, how could VAA possibly know that the aircraft making the noise was the one approved for the run-up.

As the system for reporting and enforcing engine run-up procedures is arduous for a complainant, the Task Force believes that approvals for night-time engine run-ups should be discontinued, except in the designated ground run-up area and eventually in the GRE. VAA must also better police this issue. It is not acceptable that private citizens, who not only may need to leave their homes and beds at night but also who lack the ability to gain access to airport lands, be required to provide aircraft registration information to VAA.

and the resulting negative impacts to the community will correspondingly multiply. The Task Force's recommendations are consistent with existing practices at other international airports, are reasonable and are not anticipated to place undue hardship on the ability of VAA to operate YVR in a fiscally sound manner.

Flights Operating Over West Richmond

Recommendations

13. That NAV CANADA or other appropriate agencies revise existing and develop new procedures for VFR (Visual Flight Rules) aircraft to better define and regulate the existing Noise Sensitive Area over Richmond as identified on Vancouver Terminal Area (VTA) charts to include:
 - a. Restrict and limit use of the airspace over West Richmond below 2,500 ft.
 - b. Amend the published VFR arrival routes for all aircraft, including float planes and helicopters, landing westbound on Runways 26L and 26R, on helipads, or on the Middle Arm of the Fraser River to include:
 - i. Revoke the current “Richmond Square” VFR checkpoint and replacing it with a new checkpoint near the Blundell Rd overpass on the east side of Highway 99.
 - ii. Amend the “Coal Pile Arrival” route to utilize the new Blundell Overpass checkpoint with the route proceeding from the YVR VOR to north of the George Massey Tunnel and then remaining east of Highway 99 to Blundell Road.
 - iii. Require aircraft to remain at an altitude of not below 1,500 ft until final descent for landing.
 - c. Float planes arriving from the north should use a standard circuit for landing westbound on the Middle Arm of the Fraser River but be required to maintain an altitude of at least 1,000 ft on the downwind leg as per Recommendation 5b, and be restricted from turning base until east of Richmond General Hospital.

- d. For VFR aircraft, including float planes and helicopters, departing eastbound from Runway 08L or 08R, from helipads, or from the Middle Arm of the Fraser River eastbound:
 - i. Restrict right turns until climbing to at least 1,000 ft.
 - ii. For aircraft heading south, fly direct to the new Blundell Overpass VFR checkpoint in the area near the Blundell Road / Highway 99 overpass.
 - iii. Remain east of Highway 99 until the George Massey Tunnel.
- 14. That NAV CANADA and other appropriate agencies cancel the “Richmond One Departure” and require all non-jet aircraft to use only the new “Olympic One Departure.”
- 15. That a new Aeronautical Information Circular (AIC) or Aeronautical Information Publication (AIP) Supplement, whichever version is most suitable, be published in the Canada AIP to highlight the noise issues of Richmond, reinforce the existence of the Noise Sensitive Area and describe the existing and new noise control procedures.

Rationale

In reviewing the Vancouver area Canada Flight Supplement (CFS) and Vancouver Terminal Area (VTA) charts, including the Vancouver Terminal Procedures (VTP) chart, the Task Force noted that almost the entire land mass area of Vancouver and Richmond, plus much of the Lower Mainland, is shown as a “built-up area” (Appendix 5). **The CFS chart notes state that “All built-up areas depicted are noise sensitive. Min alt 2000’ ASL unless authorized.”** The VTA chart also contains the following instructions: **“Flight over built-up areas: - No waivers to published restrictions. - Minimum altitude 2000’ unless directed by ATC. Quiet hours: 2200 – 0700.”**

As demonstrated by actual operations and observed by Richmond residents, the Noise Sensitive Area designation over Richmond and the associated restrictions are either going unnoticed in the clutter of the current charts, or being ignored. Furthermore, the published arrival and departure routes are constructed in such a manner as to be inconsistent with the intent of noise management within the area. For these reasons, an education program, directed at aircrew and service providers appears necessary, in addition to amendments to current procedures.

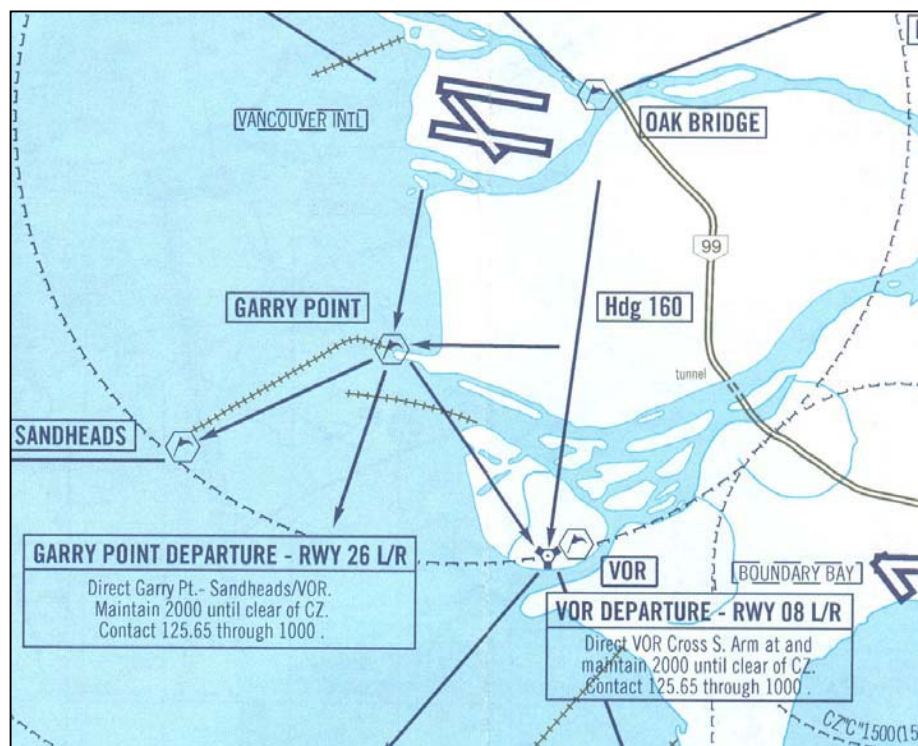
VFR departure routes for Runway 08L/R (Exhibit 5) as currently published on the Vancouver VTA chart requires aircraft cleared on the VOR (VHF Omnidirectional Range) Departure to fly heading 160° then proceed either west towards Garry Point or continue south to the YVR VOR and cross the South Arm of the Fraser River as shown in Exhibit 6.

Exhibit 5: Vancouver International Airport

Runway Names



**Exhibit 6: VTA Chart
for Vancouver VFR
Departure Routes**



Despite the published procedure and standard clearances, departing aircraft are frequently not flying the route as published, and instead are cutting to the west of the published track and flying over noise sensitive residential areas of West Richmond as documented in Exhibit 7 (i.e., the green line shows the aircraft track), which was taken from the *WebTrak* for YVR website.

**Exhibit 7: Sample
departure as shown
on WebTrak for
YVR.**

The green line
indicates the
aircraft track.

Obtained on August
20, 2009.



The VFR arrival routes for Runway 26L/R (Exhibit 5) are typically flown as published but again, the prescribed route requires arriving aircraft to fly over significant noise sensitive and highly densified residential neighbourhoods along No. 3 Road as they descend as shown in Exhibits 8-10.

Exhibit 8: Current Coal Pile VFR arrival route for Runway 26L/R via Richmond Square

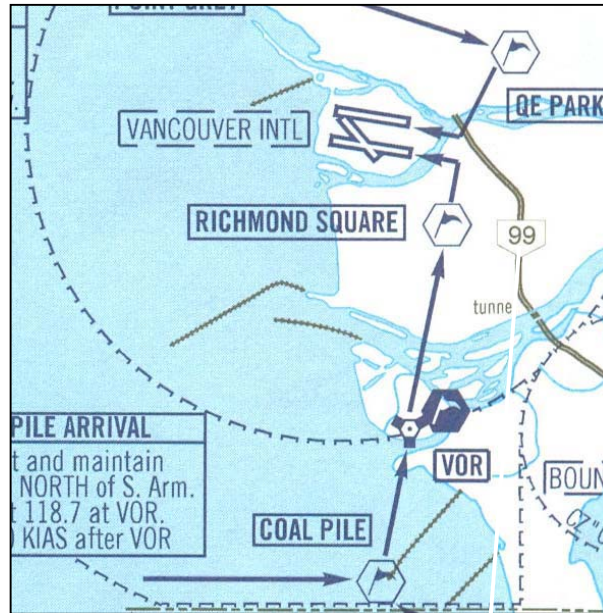


Exhibit 9: Current VOR VFR arrival route for Runway 26L/R – Float and Helicopters

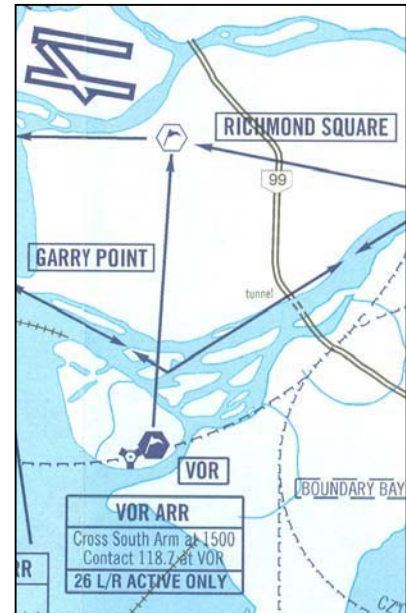
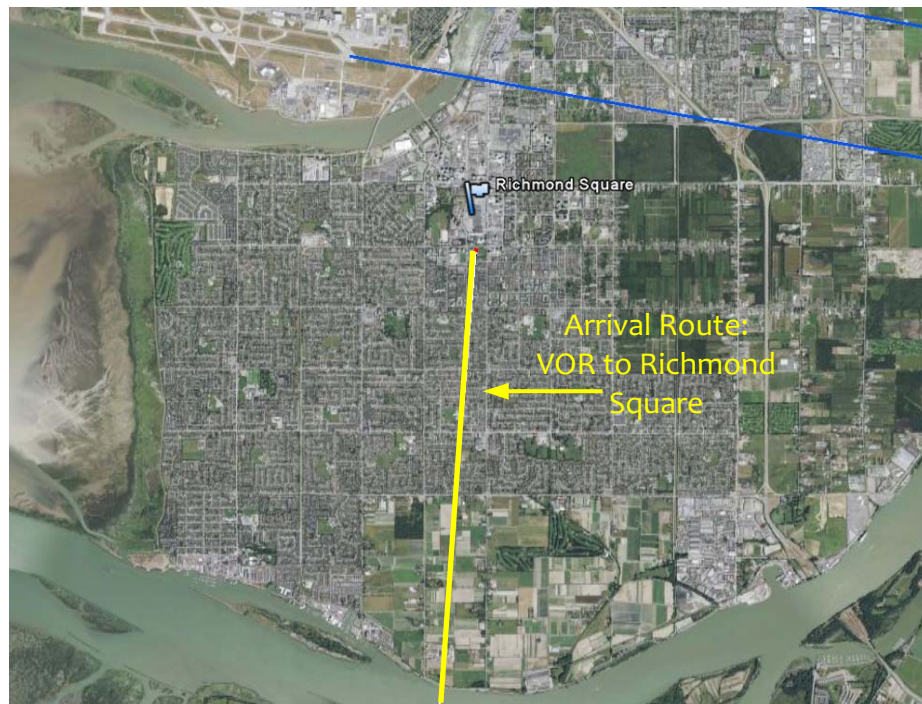


Exhibit 10: VFR arrival routes for Runway 26L/R via Richmond Square

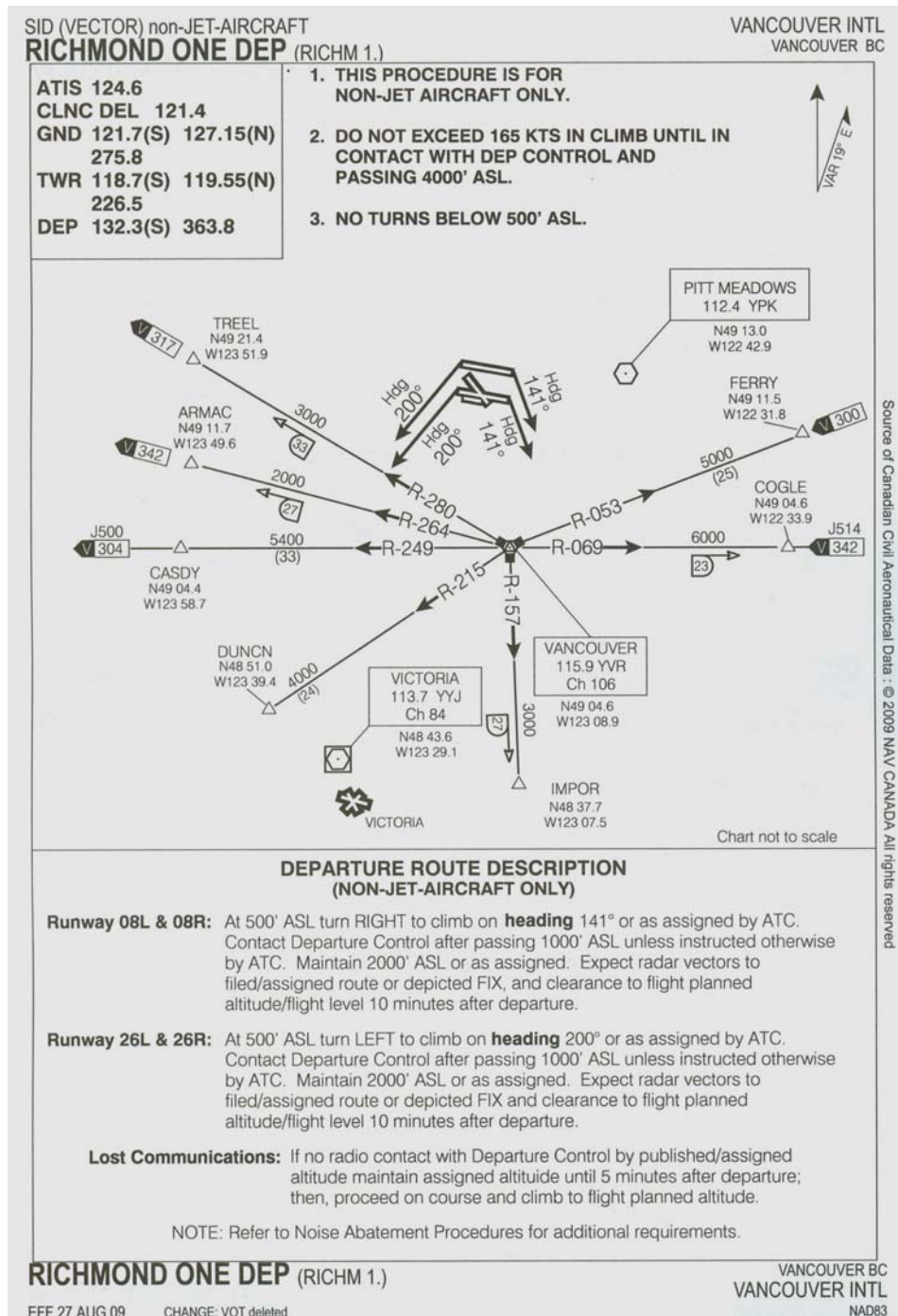


In accordance with the VTA chart's Float Plane and Helicopter Arrival and Departure Routes map, these aircraft also follow the VOR to Richmond Square route. Moreover, because float planes are landing on the Middle Arm of the Fraser River south of the main runways, they are required to descend earlier resulting in lower altitudes over the same residential areas.

Data viewed on the *WebTrak* for YVR site commonly shows single engine float aircraft along this route at altitudes that would not permit a landing on water in the event of an engine failure. While Canadian Aviation Regulations (CARS) 602.13 (1) states that this is permissible when approaching and landing at an aerodrome, the potential for a resulting hazard to person or property could be reduced by implementing the recommended route and altitude changes.

As shown in Exhibit 11, IFR departures on Runway 08R using the current Richmond One Standard Instrument Departure (SID) are required to turn 60° right to a heading of 141° with the turn to be made at an altitude of only 500 ft. With standard climb rates, this turn frequently starts near the east end of the runway.

Exhibit 11: Standard Instrument Departure Chart for Richmond One Departure

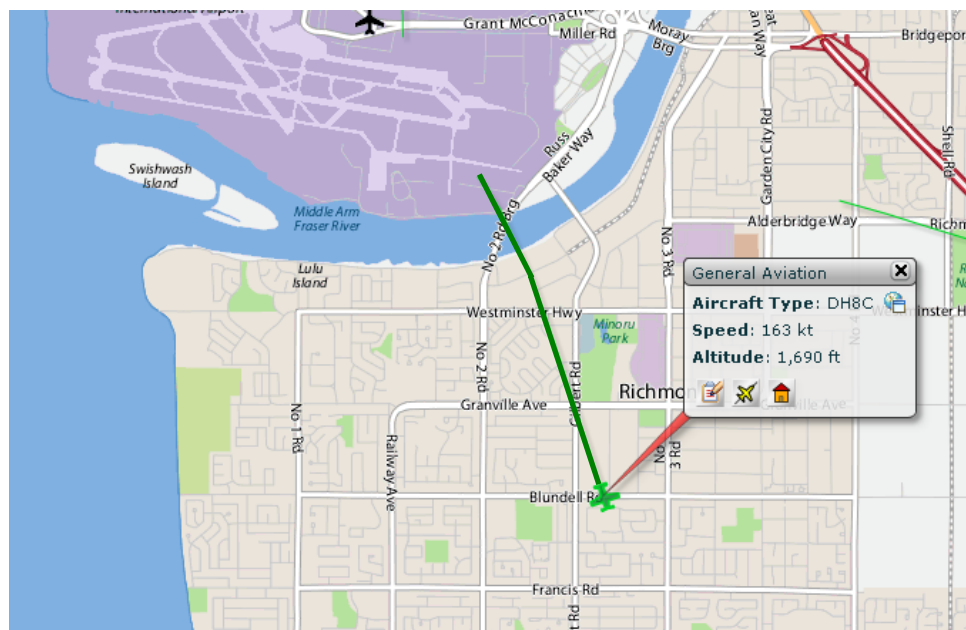


The resulting flight path takes the aircraft, which are at full power, over and towards significant residential areas initially at low altitude as they climb southeast towards further significantly built-up areas within the Richmond noise sensitive area (see Exhibit 12 from the Webtrak for YVR website).

Exhibit 12: Sample Departure Track as shown on WebTrak for YVR

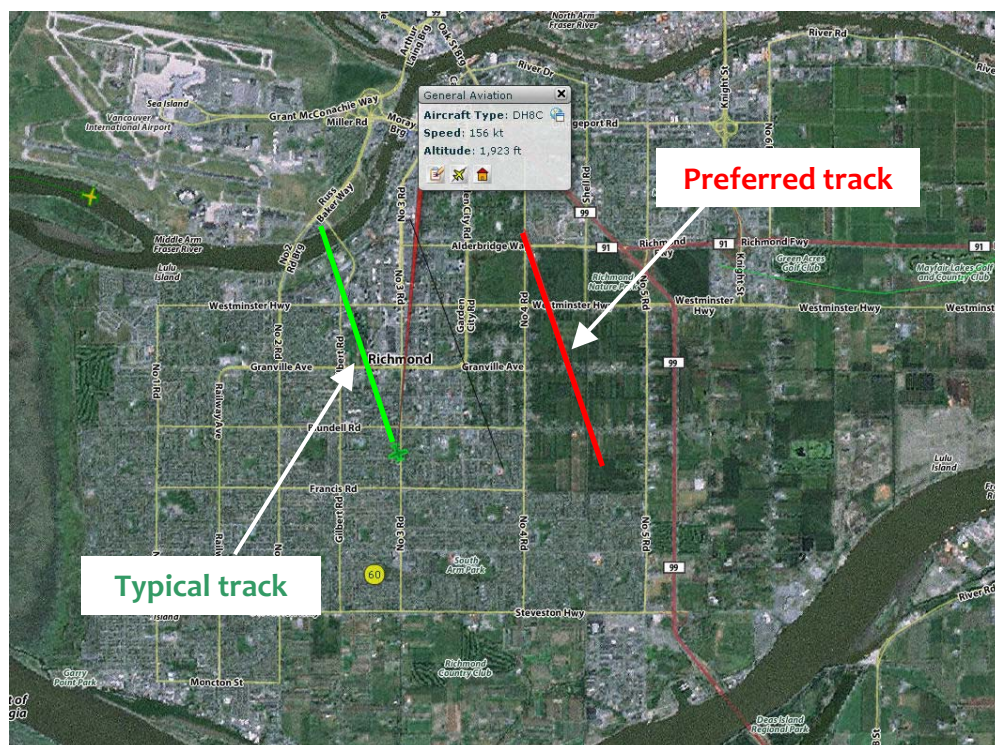
The green line indicates the aircraft track.

Obtained June 8, 2009.



By delaying the turn altitude until at least 1,000 ft above sea level or requiring the aircraft to fly straight until a specific distance east of the runway is reached, the aircraft could be better positioned to fly over less populated residential and more agricultural areas as shown in Exhibit 13.

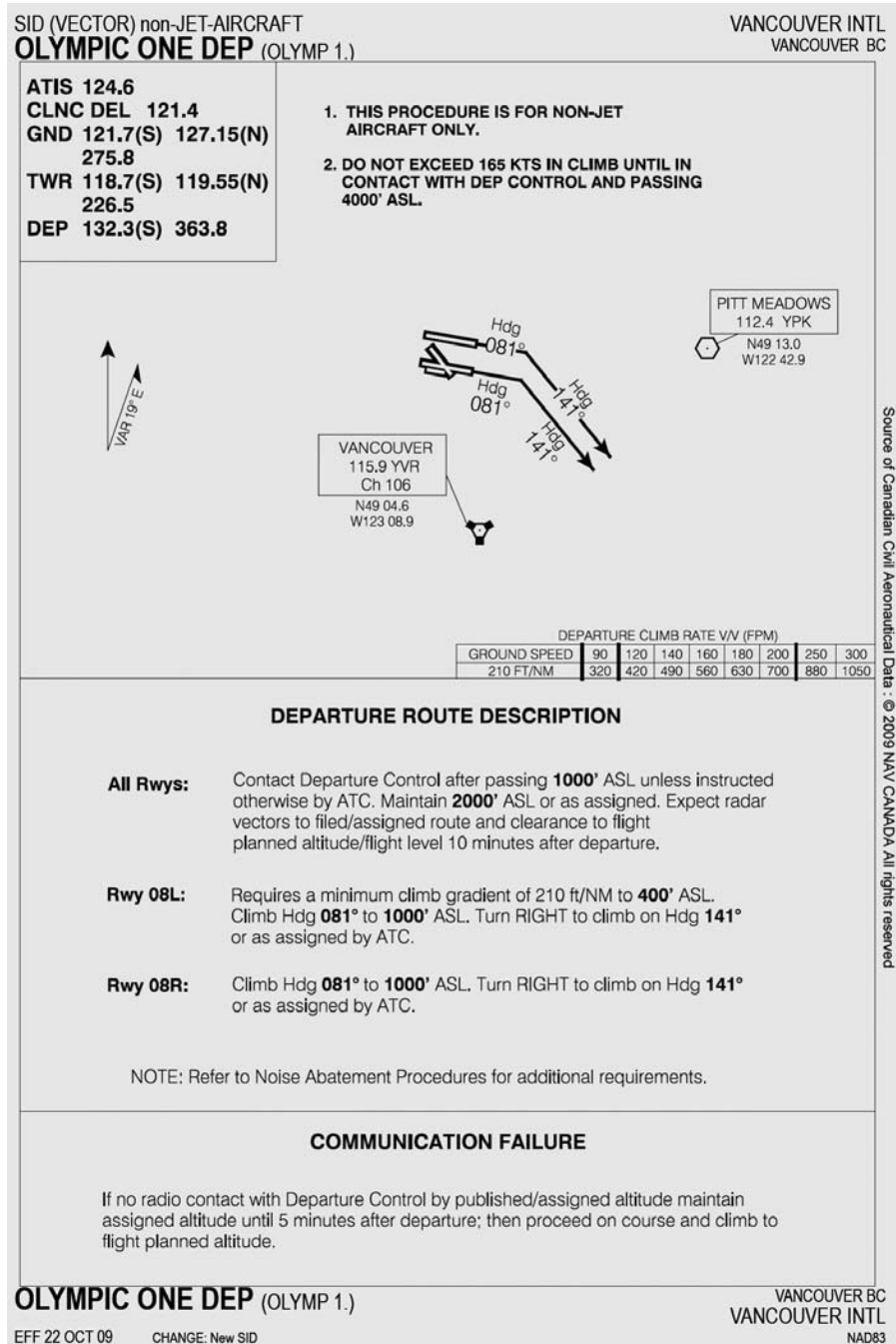
Exhibit 13: Preferred track option for Richmond One Departure



The new Olympic One SID departure (Exhibit 14), which is soon to be published and effective as of October 22, 2009 and likely created for air traffic security reasons over the Richmond Olympic Oval, does precisely this and is consistent with what the Task Force is recommending for revised altitudes and tracks.

Exhibit 14: New Olympic One Departure

Effective October 22, 2009.



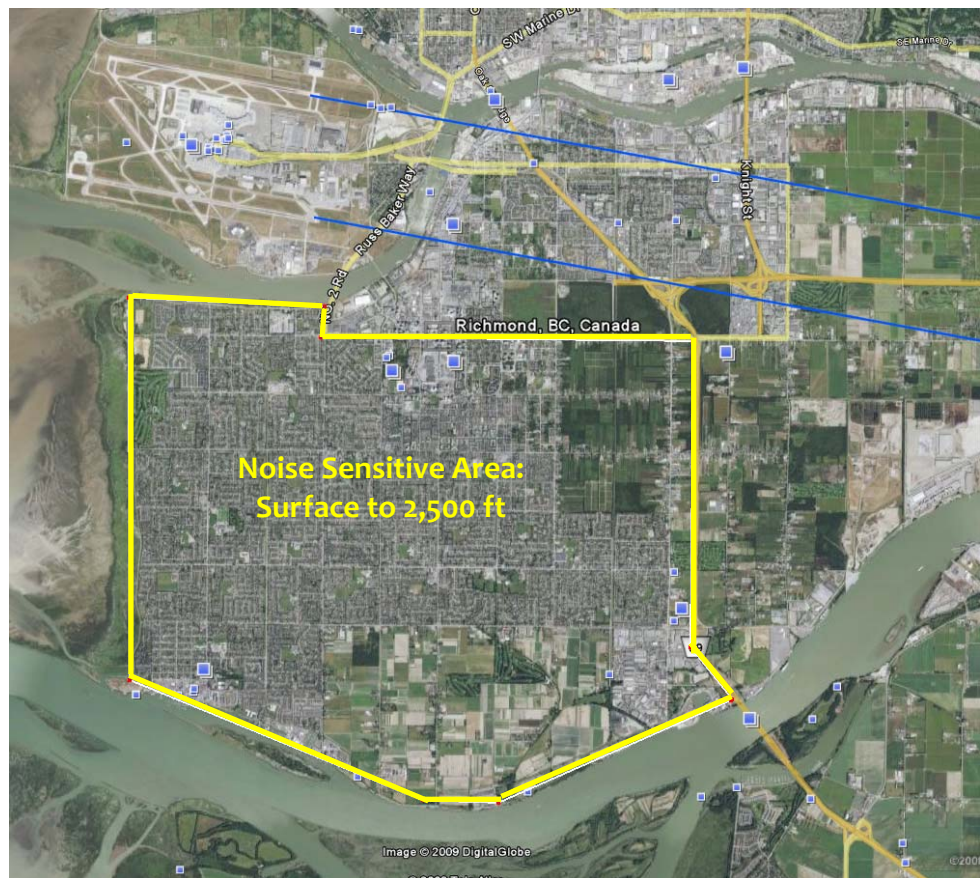
This new SID, as developed by NAV CANADA, is seen as a possible improvement to the departure noise generated over north and west Richmond by non-jet aircraft. Considering its pending operational implementation, it must be suitable and consistent with current NAV CANADA traffic management requirements. The Task Force therefore requests and recommends that:

- the Richmond One Departure be permanently cancelled; and
- the Olympic One Departure become the permanent non-turbo jet SID for Runways 08L and 08R.

In order to improve aircrew awareness and create an effective noise sensitive area, a newly defined Noise Sensitive Area over West Richmond, as depicted in Exhibit 15, is proposed. This revised area would generally include the areas west of Highway 99 and south of Westminster Highway and River Road and would be published by Aeronautical Information Circular (AIC) or Aeronautical Information Publication (AIP) Supplement. The creation of this new Noise Sensitive Area, along with re-routing aircraft and stricter adherence to published departure routes, would result in a significant noise exposure reduction for the residents of Richmond. In the opinion of the Task Force, the implementation of these recommendations would result in very little operational impact on the airport, NAV CANADA and aircraft operators.

Key to the creation of the revised Noise Sensitive Area is the relocation of the Richmond Square VFR checkpoint. The current VTA chart includes more than 90 such checkpoints, all of which are located over water or open areas with the exception of two, Richmond Square and Metrotown, which exist over densely populated built-up areas. The Richmond Square checkpoint has been in place since before the densification of Richmond's City Centre and the Task Force believes that continuing to direct a significant number of aircraft to this point today is not in keeping with sound aeronautical procedures. If there was no existing checkpoint at this location, it seems unlikely that it would be considered as a potential site given the surrounding population density.

**Exhibit 15: Proposed
Revised Noise
Sensitive Area for
West Richmond**



The creation of a Noise Sensitive Area is in keeping with many similar restrictions currently in place in numerous communities throughout Canada. Moreover, given that as currently published, Richmond is already considered a Noise Sensitive Area, the proposed revisions should not be difficult to accomplish. There are several currently published examples of well defined Noise Sensitive Areas including the Gulf Islands and Victoria Harbour. In addition, due to a Noise Sensitive Area near the Montreal-Trudeau International Airport, considerable effort was undertaken that resulted, among other measures, in new IFR departures for large transport aircraft operating under IFR for noise abatement purposes. The Task Force is requesting that similar consideration be given in the development of improved, more effective solutions for Richmond residents.

Governance and Noise Management

Recommendations

16. That the appropriate agencies, such as the YVR Aeronautical Noise Management Committee, hold a public meeting (not just an open house) in each of Vancouver, Richmond, Delta, and Surrey at least once per year (e.g., evenings or weekends) where citizens are free to voice their concerns, and get feedback as appropriate.
17. That the YVR Aeronautical Noise Management Committee membership be expanded to include all flight operators, including float plane operators and members of the Task Force or a permanent City aeronautical noise advisory committee, if established by Council.
18. That the appropriate agencies, such as Transport Canada, establish an independent noise monitor agency with the authority to monitor and enforce noise mitigation measures and penalize noise violators consistent with the intent of YVR EAP Recommendation 3.

Rationale

The “disconnect” between the public and those responsible for managing aeronautical operations in this region is the source of many problems for the City of Richmond, as well as for other municipalities in Metro Vancouver. Citizen groups in both Surrey and Delta concerned about aircraft noise have cited the lack of consultation and communication among local communities and airport/aircraft operators and regulators as a problem.

A lack of transparency and accountability to the public by federally regulated agencies such as VAA, NAV CANADA and Transport Canada was a common theme expressed at the public hearings. A recent example of this lack of community consultation was the Greater Vancouver area airspace changes implemented by NAV CANADA in May 2007 that resulted in a shift of aircraft arrival routes from crossing over rural areas of Surrey to more densely

populated areas. The ensuing concerns raised by the affected communities prompted NAV CANADA to revise the airspace changes and ultimately led the Union of BC Municipalities (UBCM) to adopt a resolution (Appendix 6) at its 2008 convention that the federal government:

- revisit the legislative framework of NAV CANADA to ensure that proper consultation takes place with affected communities and residents; and
- ensure that environmental impact studies take place prior to any airspace changes.

Richmond City Council supported this UBCM resolution, which was also endorsed by the Lower Mainland Local Government Association. The Task Force notes that the upcoming parliamentary review of the provisions and operations of the *Canadian Environmental Assessment Act*, required to commence by June 2010 per federal legislation, offers an opportunity for the City to seek an amendment to the Act to include airspace changes as a trigger for an environmental assessment. A parliamentary committee will lead the review and accept written submissions from the public and other interested community groups and agencies, such as UBCM and the City of Richmond.

The Aircraft Noise Abatement Task Force of the St. Petersburg-Clearwater International Airport in Florida includes representatives from local surrounding communities, airlines, general aviation, the military, and the airport.

A number of presenters at the Richmond public meetings also described frustrating attempts to contact VAA regarding noise complaints and a perceived sense of stonewalling by VAA to address their concerns. The limited opportunities and onerous procedures for the public to speak at a YVR ANMC meeting exacerbate this issue.

In November 2008, the BAA (British Airports Authority) that operates London Heathrow Airport asked the British government to appoint an independent assessor with the power to limit flights for environmental reasons (noise and air quality) if it was given approval for a third runway.

The establishment of an independent federal aeronautical noise monitor, similar to that at other airports such as St. Petersburg-Clearwater International Airport in Florida and that proposed for London Heathrow Airport should a new third runway be constructed there, would improve public confidence that noise complaints would be considered and better managed in a timely and objective manner. This agency should be federally funded and granted sufficient authority to investigate and enforce aviation

noise-related issues regionally and to develop and promote effective future mitigation measures in co-operation with all regional stakeholders.

Better communication among the public, aeronautical regulators, airports, aircraft operators, and aircraft maintenance companies will help everyone gain a better understanding of the problems and challenges facing all parties and improve management. The Task Force believes that these three recommendations are a good first step in bridging this gap.

Recommendations for Richmond City Council

Recommendations

19. That the mandate of the Richmond Airport Noise Citizens Advisory Task Force be extended until all agencies have received, reviewed and reported back on these recommendations, at which time the Task Force recommends that it review the responses and report to Council with its final assessment of those responses, including any further recommendations, if necessary. After presenting this report to Council, the Task Force would not reconvene until the City receives feedback from VAA, NAV CANADA, Transport Canada or other appropriate agencies.
20. That the recommendations of the Task Force, if approved by Council, be publicized as widely as possible by the City, including presentation(s) to senior levels of government, the media and other interested community organizations.
21. That if the Task Force is permanently disbanded, that a permanent City aeronautical noise advisory committee be established and its membership include the City of Richmond's appointees to the YVR Aeronautical Noise Management Committee.
22. That this report be forwarded to Transport Canada, NAV CANADA, the Vancouver Airport Authority, and other agencies and persons as deemed appropriate by Council.

Rationale

The recommendations contained in this report are intended to offer solutions to the identified issues. The Task Force recognizes that the agencies responsible will need to ensure the operational viability of any recommendation.

It would be naïve to believe that Transport Canada, NAV CANADA and VAA will simply accept and implement the recommendations of this report as is. Therefore, in order to advance the issues identified as being important to the residents and the City of Richmond, the replies of these agencies will need further study and will be crucial in determining the next steps.

Considering the time and effort invested by the Task Force, the consultant, the City, and those who participated in the public hearings, it would be more efficient if the current Task Force reconvenes once these responses are received, analyzes the responses and prepares a second report to Council.

The Task Force believes that communication, cooperation and action by all parties is paramount and it is the hope of the Task Force that this report will be the first step an ongoing process as all agencies work together to improve the quality of life for Richmond residents.

Appendices

- Appendix 1: 1st Round of Public Consultation (January-February 2009)
Questionnaire Responses
- Appendix 2: 2nd Round of Public Consultation (October 2009)
Stakeholder & Questionnaire Responses
- Appendix 3: City of Richmond Official Community Plan: Aircraft Noise
Sensitive Development Policy
- Appendix 4: 1992 Vancouver International Airport Environmental
Assessment Panel Report: Recommendations relating to
Aeronautical Noise Management
- Appendix 5: Vancouver VTA VFR Terminal Area Charts
- Appendix 6: Union of BC Municipalities: Resolution B111

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

Q: Please give us your comments regarding airport/aircraft noise in Richmond.

- Noise pollution, air pollution and safety are not priorities of YVR. 900 phone calls per year is not working, suggestions are not working, noise management is not being managed, safety is not being addressed, and air pollution, and radar nuking our bodies is not of their concern. And if that's not enough I hear them doing the run-up from 11pm till 6am, in my opinion they must have bad hearing not to take these complaints seriously.
- In the past couple of years there has been an increasing amount of aircraft noise, especially from propeller planes and smaller planes, in the early hours, i.e. 6:00 a.m. to 7:00 a.m. We think these are delivery planes for the most part (i.e. Fed. Ex. type). The planes fly, very low, over our area approx. every 10 minutes or less, especially Mondays to Fridays.
- The noise that is most disturbing to our neighbourhood is that of the Sea Planes. Commercial planes from YVR are fine.
- While I do not live directly below a major flight path, (I live on the dyke about a block north of Garry Point Park), I do see and hear float planes and helicopters overhead. I would like to say that this is NOT a concern nor an irritation.
- I have two main concerns:
 1. Engine run-up tests are performed at night at the airport. These tests create very loud noises and appear to be directed towards the Terra Nova area. This is an undesirable impact for both (human) residents as well as (animal) inhabitants of the nature areas. I am not convinced that all efforts have been pursued to minimize the impact of this testing;
 2. Float planes sometimes fly over the West Richmond area when they turn around before landing or after taking off from the South Terminal (Fraser River) area. The altitudes they fly at seem to be very low and the resulting noise is very startling, especially during early mornings.
- On behalf of my neighbours, we have made calls to the YVR regarding the number of aircraft flying over our homes/Broadmoor. We feel the air traffic has increased immensely in the past couple years. The planes, helicopters and float planes are a constant source of noise especially in the spring and summer months. We have flight noise that is making it impossible to have a dinner BBQ outside. Planes start flying over at 6:30AM. YVR informed us the pattern has NOT changed and we absolutely disagree with that comment.
- I noticed in the Summer there are more fly-by over my home. I was told by airport authority that direction of take-off is based on wind direction. And wind direction during the summer usually means a takeoff over Richmond.
- My main concerns are regarding 1) ground engine run-up; i.e., the noise, the time of day of the runup (I especially question why does this have to be done in the middle of the night such as at 230am?), and the awful smell emitted, and 2) float planes – the noise level and how low they are flying. I have not complained to YVR directly but from all I've heard and read, they are not receptive to the community's concerns so I feel "why waste my time?" These airport & aircraft related problems seem to be getting worse in recent years.
- I believe the time has come to look at night flight restrictions. Especially the freight aircraft. Develop control now or pay the price with ever growing night traffic.
- I live in Terra Nova. You can hear the aircraft engine testing starting right after I go to sleep. This is quite loud as my bedroom faces the airport.
- Aircraft flying over in the middle of the night constantly wake me up.... the international flights at 3 am are especially annoying! Those huge 777's and 747's are LOUD. Then there's the small low

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

flying aircraft that practically buzz the roof tops. During the day I understand.....but at late hours of the night????? If this problem does not change, I doubt I will stay much longer in Richmond.

- We live on East Richmond, just near Cambie Rd, and No. 5 Road, which have quite heavy air traffic all day long. Some of the morning hours around 7am to 9am and late nights around 12am to 2am. there are at least 10 to 20 airplanes flying just over our house very low and disturbing our sleep and our quiet morning time. Some airplanes fly so low that our house is shaking and very scary for us. We also have small babies in our house that make us worry that this loud noise wake them up from the sleep. Since I moved to Richmond, I never really slept through the night because of this loud aircrafts noise. And causing restless days, I feel like my quality of the health drop dramatically since I moved here due to lack of sleep.
- Extremely noisy small aircrafts, especially sea-plane type, flying unnecessarily low, sometimes late at night and very often before or at day break (5-6 AM during summer) are the greatest cause of grief. Almost always flying North to/from South in west Richmond. These small aircrafts are extremely noise.
- I have been living in this building for six years and over the years I've noticed more and more aircrafts flying over my home. There's 165 homes in my building and each year there seems to be more residential buildings are going up. The city needs to become more aware that we cannot have the airport operate over residential areas in the nights and early mornings. Recently, I've even noticed that small aircrafts are flying TOO low in the downtown Richmond area. Even after the crash that happened a year or so.
The larger commercial planes should not fly over land between longer hours. The noise is just immense. Especially when I live in a high rise, the sound seems to be amplified and just seems unfair to have to put up with this noise pollution.
I have two small children in the house now, I hope that this will not affect their health and hearing when they grow up. The consistent vibrations and noise emitted from the planes makes it very difficult to sleep in the morning. We'd like to see an extension of the hours of "no fly over land" from 6PM to 8AM. This would be much appreciated. I think that 7 AM is extremely too early to have the noise pollution in our living quarters when there are alternative options the airport can consider. We don't have other alternative options because we cannot simply pick ourselves up and move the whole family to a new home.
Again, we would really appreciate it if you can accommodate and hear us out. Thanks for your time.
Over the years I've noticed more planes are flying over the residential areas during restricted time and lower altitude than should. This may be because sometimes it's hard for the airport to monitor every single plane that's in the air.
Small and large planes are flying way too low in my area!
- The airport was here before 95 percent of today's residents were either born or moved into Richmond. A person's decision to purchase property here requires the factoring in of aircraft noise and airport night operations as much as traffic noise if someone wants to buy a house right on No. 3 Road or some similar street. Bottom Line: If you don't like aircraft operations associated with YVR or the seaplane base, then move.
The second element is employment. Every aircraft that is involved in night operations, for example, has a minimum of 2 to 3 aircrew. Plus 5 to 10 company-related ground crew and many more airport personnel. For anyone who has not been keeping up on recent events, the economy is going to Hell in a handbasket. I, for one, am not going to put those folks in night operations out of work because I can hear their aircraft every once in a while. It is not aircraft noise, it is the sound of people working and paying their taxes. Some of it right here in Richmond.

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

- 1. During the daytime, seaplanes often fly at low altitudes above my property; the noise level is extremely high.
- 2. During the night time, some YVR traffic can be heard, particularly when the shorter runway is used (the one that's at an angle from the 2 main runways)
- Aircraft engine noise has increased over the years and the number of flights have increased. My business was located at 11511 Bridgeport Rd. for 28 yrs, the noise at times was so loud that we could not carry on a phone conversation. We made the decision to sell our office/warehouse and move.
- During summer evenings, it is impossible to walk along the trail by the Oval because the noise coming from the airport creates health concerns to walkers. Sometimes the noise is so loud that one's eardrum starts to feel the discomfort even after leaving the area.
- Simply put the float plane base should be moved to Boundary Bay.
Have I flown floats from the south airport? Yes, I have flown on floats and helicopters from this base.
- We can not sleep during night time when there is a plane taking off at YVR.
- Airplanes going out at 3 a.m. in the morning can interrupt a person's sleep pattern.
Also the small planes going over our area have increased more causing too much noise and they don't stick to the same pattern when flying over your house. They fly too low and have no regard for us down below. They should have a certain route when going out and coming in and keep to it.
- Large passenger planes are often ascending eastward directly over the Richmond core, at a low dragged on altitude overhead residential neighbourhoods. It is impossible to speak or be heard when this happens. The noise is deafening because of their low altitude. In addition small commuter planes follow a North South route over same density at low altitude and many small planes piston type are noisier than the new advanced jet engines.
- I live in the recently high-rise developed area of Brighthouse in Richmond and find that the noise from the smaller aircraft is especially disturbing, very early in the mornings before 7 am - it sounds like they are flying through the courtyard of my 3-tower complex, the noise level is very high. Also, there is often a fuel-smell to the air in this neighbourhood, likely coming from the airplanes.
- It was brought to our attention by the residents in a complex that we managed that they are concerns about the noise level experienced by the aircraft flying over the building on a daily basis.
- Richmond Airport Noise Citizens Advisory Task Force:
Thank you for the opportunity to provide comments regarding the airport and aircraft noise. Unfortunately, I was not able to attend the two meetings that were held at the Richmond City Hall. Hopefully, the public feedback received at the meetings provided much insight into the various concerns that Richmond residents have regarding the airport and float aircraft noise. The airport and float aircraft noise and flight path issues are not new. Mr. Ralph Mace expressed his concerns in The Richmond Review (Task force wants to hear your views on airport noise, Published Wednesday, February 4th 2009). A little more than a decade ago (June 1997), Mr. David Fairweather submitted a letter outlining his concerns for public safety (due to the increasing frequency of float plane activity) to the Vancouver Airport Authority (YVR). In January 2001, he raised the ongoing issues with the General Manager of Urban Development and a planner of Policy Planning at Richmond City Hall. In March 2001, Richmond City Hall staff recommended action items in a report to Council. The full document trail is available on the City of Richmond website. https://www.richmond.ca/__shared/assets/040901_item131595.pdf

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

I am a Richmond resident and has lived in this city for the last 30 years, mostly in the Quilchena area (Seafair Neighbourhood). Our family is accustomed to aircrafts taking off and landing at YVR and know that the general flight paths are in east-west directions.

In January 2008, I moved out of the Quilchena area and into Terra Nova – a short distance away from my family. I knew aircraft noise from YVR would not be a major concern and the house is not in the flight path of aircrafts departing and arriving at YVR. What I didn't realize and soon discovered is the ongoing float plane activity. I am in one of the DIRECT flight paths of the float planes that land/take-off from the Middle Arm Fraser River. In the 3 week period (December 19th 2008 to January 11th 2009) I was home (on vacation from work), I observed from my north-east facing house window a minimum of 20-30 float planes flying over my house throughout the day – The majority of them flew at low altitudes. Some float planes also seem to hover in the area because you hear the float plane noise for a lengthy period of time.

- We are lucky to have the airport so close to the city. I knew where it was when I moved here and the little noise it makes is not an issue. If people don't like the noise they can move to White Rock or Langley.
- My main concern is regarding maintenance 'run ups' done in the very early hours starting around 4am. This has increased due to a new hanger built on Inglis Drive recently. I also have pollution concerns regarding aircraft. I do have a big issue with river traffic as well, especially Harbour Air aircraft.
- A necessary evil, aircraft noise, if we accept aircraft as necessary. From a maintenance standpoint scheduling is virtually impossible given that it is often the nature of aircraft to break at the most inconvenient time. If the travelling public flies during the day, aircraft must be maintained at night, and engine test are often an unavoidable aspect of this. Please consider also that for every aircraft making noise during the night hours, there are several maintenance technicians who will be trying to sleep during daylight hours when noise is considered "normal" or "acceptable".
- I would suggest an outreach consultation with immigrant citizens of Richmond in Mandarin and Cantonese. Many immigrants will not come to a public meeting for reasons which have nothing to do with acceptance/non-acceptance of aircraft noise. Kudos to the city for organizing this Committee.
- Propeller Aircraft: altitude concerns, way too low over populated areas. No protocols re noise redirection, flight paths. No enforcement.
Engine Run-Ups: 3 am – no respite and no cooperation from YVR re complaints.
24/7 Hours of Operation: why is this necessary when major airports like Toronto have a curfew (unless emergency etc).
Have Worked Shifts: very hard to sleep during day with float plane activity.
- My issues are: safety of low flying float planes over our homes; noise from run-ups midnight to 7:00 am; noise from departures midnight to 7:00 am.
- I just moved from downtown (907 Beach Ave) where I was enjoying a quiet neighbourhood, something I took for granted, in retrospect. Sep '08 after the 1st week, I regretted my move. Almost everyday at different times of the day, I was awoken by aircraft noise. Being a flight attendant, I treasure and need restful sleep and at different times of the day. I get sleep inertia all the time. The quality of life has plummeted for me. I have already started looking for another property to move to.
- I have worked at YVR for 35 years and have seen many, many changes. The biggest and worst change has been since YVR Airport Authority has taken over the management of the facility. Airport employees refer to them as airport "sorority". Just a bunch of appointed persons, many with no airport operation background. Why do airports many times the size of YVR have

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

midnight to 0600 or 0700 curfews and operate just fine? Nobody mentioned the reason Cathay Pacific roars out of YVR at 0300 is because of a Hong Kong airport curfew. YVR Airport Authority know only one thing, revenue generation, nothing else matters!! YVR are a kingdom of their own who answer to nobody except themselves.

- The airport/aircraft noise is just over our heads. I can't enjoy the garden that is right before my building as often the aircraft noise is so loud, it totally harms my life. I seldom open windows, balcony door because the air flights are so frequent.
- It's a nuisance. It affects our daily life. I have to shut my windows, door to balcony in order to avoid the noise. I can't use my balcony because of the noise.
- When I had my house built in Steveston and moved in at the end of January of 1987, there was minimal aircraft noise. Since then, aircraft have progressed to flying over my house at all times of the day and night. The most annoying is the float planes that seem to use No. 1 Road to the west as their route. It worsens in the Spring and Summer due to the availability of daylight to fly. I also have jet aircraft overhead at all hours of the night and early morning (2100-0400 hrs). I also have lighter aircraft flying over at early morning hours. I am sure that many of these aircraft are less than minimum level over residential areas. Please stop it!!!
- Starting from 2 or 3 year ago, after the YVR changed the flight path, we started to hear the aircraft noise 7:00 am in the morning from smaller aircraft and 2:00 am from bigger aircraft. We would be woken up in the middle of the night and we cannot get sufficient sleep.
- The aircraft are very noisy not only in the daytime but also in the night-time these years. There is a very big retirement community just beside my house. I think the airport should consider their situation and ours.
- Just interested in having airport noise not increased during midnight and 7 am.
- We moved to our present address 3 years ago. For the past 1½ years, we have found aircraft flying at low altitude over our house. YVR denies any change in the flight paths, however a friend of ours found this not to be true. We believe these aircraft are from the south terminal. They are not float planes as we have heard these planes when it is dark, i.e., 1:00 am and 5:30 am. These planes are particularly noisy "buzzy" type planes. At times it makes us feel we are under attack (like in the Second World War) as the planes "buzz" our house. These planes fly over frequently sometimes within as little as 10 minute intervals. We hope you can do something about this problem.
- It is very noisy when you walk on the roads and not suitable to sit outside.
- The Task Force might best concentrate on flight routes of the small aircraft/float planes/Helijet. YVR seems unaware of the noise these generate. Larger jets are quieter each generation (except the old courier jets which will hopefully soon end their lifespan), and they must use designated runways.
The slightly larger "circle route" using the Fraser River, Hwy 99, and West Dyke routes for smaller planes will eliminate a lot of noise over the central city area. Thank you for your efforts!
- Put in a hush house for turbo prop run-up.
- I live in an area in-line with direct flight path and affected with aircraft noise at all time of day and night all year round.
- For the past few years we have noticed a very large increase in the number of extremely noisy float planes flying at very low altitudes over our home. We are concerned about the safety of the people and homes in our neighbourhood.
- The low level operation of propeller aircraft over residential areas has become intolerable. YVR's flagrant disrespect of its host community during night hours with departures and engine run-ups

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

is shameful and needs a 11:00 pm to 7:00 am curfew. The health of shift workers and students is being particularly compromised.

- The noise over our house is very loud and stressful, the planes are flying very low going in and out over our house at all hours of the night, which is causing continued sleep interruption causing us not to be able to function properly at work or during the day from no sleep. We are continually woken out of a sound sleep thinking the planes are crashing into the house, windows and walls shaking. It is also a health issue as sometimes as many as fifteen planes come over leaving fuel fumes and black soot continually found on the inside and outside of the house.
- I am writing to voice my concerns in regard to the aircraft noise. I live South East of the airport – since the decision to change, to try a new runway whatever it sounds like the aircraft are skimming the roof top. Today at noon the aircraft going over shook the rafters of my home; one morning at 7:30 am I thought they were going to land on the roof. I have lived in close proximity to YVR since I was a child: I grew up in Kerrisdale – in certain weather conditions the planes flew close to our home but never this close. This noise is interfering with the use and enjoyment of my home.

Q: Do you have any suggestions to address the issues you have identified?

- Very simple fly planes TOWARDS the water, safer for residence and safer for passengers. Japan made an Island. Therefore with all their “non profit millions of dollars” they could construct that, and fly the planes over water not the lower mainland resulting in less pollution dumped over us from those air cared smog producing airplanes. Funny thing we the people said no to the north runway, but they and you the city officials let them do it anyways. I wonder if this to is going to fall on deaf ears? Oh and why is there millions of gallons of fuel doing on that “ecological” refuge around McDonald beach? and are you going to grant them more room to add more of those there?....I hope I didn’t vote for the wrong party? Thanks for hearing my gripes.
- One suggestion would be to have these planes take off and fly over the water. Another would be to vary the routes so that we don’t get all the noise from the smaller planes. Flying higher might also help although we are not certain smaller planes can reach a high altitude quickly.
- Sea Planes need to have schedules that are before 7am, so as to minimize the amount of people they wake from their sleep!! This is especially disturbing during the Summer months.
- 1. Investigate methods of containing the engine run-up test noise, or else consider ‘aiming’ the jets out towards the water;
2. Require float planes to fly higher up, and provide some means of random monitoring to check whether pilots are adhering to flight elevation requirements.
- Why not redirect helicopter flights over the water as well as Air Canada Jazz flights. It’s very noisy and very disturbing especially for our children.
- No. I would support anything that can be done to limit noise from aircraft in Richmond.
- Provide an appropriate enclosure for ground engine run-ups like many other airports adjacent to communities do. The appropriate authorities should be enforcing restrictions to float planes and penalizing them if they do not adhere to the restrictions. The authorities (YVR, Transport Canada and NAV CANADA) should also all have easily accessible ways where the community can voice their concerns and know that something is going to be done about them soon.
- A review of the many airports that have restrictions, implement their best ideas. The airport sadly is surrounded on 3 sides by homes. They must have a right to quiet sleep.
- Do the testing during the day. Why is this happening at night?

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

- Ya..... put a ban on times of flight arrivals and departures.
- Please fly the airplanes to other direction on the early morning and late night hours, not to the city where lots of residential areas.
- Flying unnecessarily low is dangerous, should flying higher. Alternate path – Above sea rather than over residential areas. For example, if they are headed to the islands, then they should go over sea as much as possible. Reduce/stop flights 5-7AM...Nothing worst than being startled and waken, once, twice, thrice...then not getting enough sleep before going to work! many days, the seaplane, small craft rush-hour appears to be 5-7AM. Isn't there a noise restriction by-law from 8pm-8am?!
- Suggestions were mentioned above:
 - 1) Longer “no fly over residential area” time. Extend the time from 6PM to 8AM. The AM seems to be more important than the PM due to the fact that most people like to sleep in the morning. Even if we don't sleep in, it's nice to hear peace and quiet in the morning. The birds and the wild life will have an extra hour in the morning to enjoy the peaceful morning, like ourselves.
 - 2) Small AND large aircrafts should not be allowed to fly in such a low altitude in our area
 - 3) Stricter reinforcement of the rules and regulations to fly over this area
 - 4) Increase fines, enforce fines toward aircrafts that fly low altitudes and those planes that fly over land at the wrong time.
 - 5) DO not allow any exceptions to the rules, even if there's lots of plane in the air waiting to land. We cannot allow any planes to fly over us in the night!!!
 - 6) We need stricter rules and to have harsher repercussion!
- Organize a tour of aircraft operators who either have low flying aircraft or night operations for those folks that have complaints about aircraft noise or night operations. Show the complainers the faces of the people that they want to put out of work.
- 1. Change the flight path for the seaplanes; keep them above the river/ocean, if possible. The air traffic is scarce anyways...
 2. Avoid using the shorter YVR runway at night.
- The weather also affects the noise level, with the location of the Airport there are no easy solutions to the problem, it will only get worse.
- Failing that, there should be a minimum flying height restriction established, air traffic corridors established, and flight restrictions established for these single engine planes flying over Richmond.

In the summer, they run up engines as early as 4:30AM. There should be noise level restrictions place on these plane like there has been on jets. Engine run tests should only be performed in soundproof buildings with the doors closed. The float planes should not be allowed to come out of the water using the engines to crawl up the ramp.

Without regulations this is the end result – unregulated activity to the sole benefit of the private sector to the disadvantage of the public. The river is for all of us to use and exploit but not to the advantage of only a few.
- Airport should be closed during night time like most international airports around the world.
- Fly higher and keep to a certain route so the noise is not so loud. As for the 3 a.m. flights discontinue them and give us peace. In Toronto you don't have flights coming in a 3 a.m. so why do we have them here.
- City of Richmond should require:
 1. Older planes be directed to fly a route minimizing over residential areas, and at a higher altitude , Require noise reduction retrofits of older planes, ask pilots when weather permits to

Appendix 1: 1st Round of Public Consultation (January-February 2009) Questionnaire Responses

follow noise abatement programs.

2. Hire a noise mitigation consultant
 3. Evaluate environmental quality and improve sustainable practices air quality, water, solid, waste and energy, fuel dumping etc
 4. Require airport contribute to greening community and improving air quality, noise pollution reduction initiatives
 5. Require airport to report back all of above to the City
 6. Upgrade the building bylaws to require builders to meet more than a minimum noise standard in all new condos and buildings to minimize the health risks of airport noise.
 7. Require the use of new plane technology to minimize both noise and environmental pollution. The dumping of jet fuel over the City and ocean should be discouraged. Raw jet fuel is often dumped while airborne over North Richmond neighbourhoods.
 8. It is up to the City of Richmond to spearhead and require these initiatives.
- It would be most helpful if the smaller aircraft were directed to not fly so low in this newly developed residential neighbourhood.
 - I have the following questions and request the Richmond Airport Noise Citizens Advisory Task Force to seek answers to:
 1. Are there regulated flight paths for float planes especially near populated areas? If no, I strongly urge the responsible agencies (NAV) to identify and enforce designated flight paths. Currently, the pilots are shortcutting through the neighbourhood instead of flying over water. The Terra Nova area is almost at built-out and is primarily a residential area. Public safety is paramount. It would be disastrous if a float plane lost control or engine power and landed on houses and people!
 2. The shortcutting through the neighbourhood explains for the low flying float planes and associated noise as the pilots prepare to land in the Middle Arm Fraser River. What is the minimum flying altitude over populated areas? 152 metres (500 feet)? As Mr. David Fairweather witnessed 10 years ago, some of these float planes fly below the standard of 152 metres.
 3. What is the allowable frequency of float plane activity? One, two or up to five float planes at low altitude flying over my house is tolerable. However, in excess of 20 or 30 float planes a day, it can definitely have long-term health impacts.
 - A tighter control of aircraft run ups, although I know this can be very difficult to control. There should be very hefty fines as a deterrent.
 - Have made two public presentations with suggestions. Could we ask YVR/NAV CANADA/Transport Canada officials for their expert knowledge and options? The way things are going our local city representatives need to go to bat and place restrictions on YVR's abuse of the community.
 - Insist that float planes fly at higher altitude over residential areas.
 - We suggest that all planes use the flight path over Highway 99 as this is mainly a non-residential area. Also restrict such planes to fly during daylight hours.
 - Can YVR change the airplane route so that it will minimize the noise level.
 - Please avoid doing aircraft maintenance in the night time, also please plan the airplane routes to avoid the noise level.
 - Send the aircraft out over Georgia Strait where they used to have to go before making their directional turns.
 - For aeroplane arrival or departure, do use the passage way of Pacific Ocean instead. Then it won't affect residents. It then avoids aeroplanes just over our heads and residential areas. The airport noise problem then avoided.

Appendix 1: 1st Round of Public Consultation (January-February 2009)

Questionnaire Responses

- The aircraft use the passage of the Pacific Ocean for in and out of town. So it won't go through residential areas.
- I suggest that YVR Airport Authority be compelled to adopt a midnight – 0700 curfew for all air traffic (emergencies excepted of course) to come in to line with the policies of most other major airports in the world.
- Change the flight paths of at least those that depart after 10 pm, if at all possible. Have a 2nd airport terminal to lessen traffic. Have a bylaw or subsidy to improve soundproofing of new developments.
- Higher elevation of float planes before flying over the city. Restriction of times for run-ups and departures.
- I want to stress that having lived in our current location for over 30 years there have been improvements re jet engine noise but the seaplane issue particularly is becoming intolerable. Suggest enforcing protocols re altitudes, flight path alteration notifications. Suggest curfews.
- I just hope there can be some balance and understanding with regard to the inevitability of aircraft noise at or near a major airport, and the efforts of those making this noise to minimize its impact while still ensuring aircraft operation, serviceability and safety.
- No planes in a residential area between 11:00 pm and 6:00 am. Fly higher over homes going in and out – not impossible, seen them up much higher. Fly along river, main streets (Cambie, Alderbridge), commercial areas. This is a serious health issue as well as a noise issue causing high levels of stress for those living under the flight path. The lights of huge jets should not be shining in the windows at night. My cousin was forced to move out of his heritage home after living there for 18 years because of the inconsideration of YVR.

Q: Was YVR helpful in addressing your comments?

- YVR makes engine running often difficult, always inconvenient and this is all out of respect for noise abatement.
- Told by neighbours not to bother.
- YVR was not helping at all, they are not responding to the complaint and even though I have left many messages for them to give me call back, they never did!
- Just keep logging it but nothing done about it.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

NOV-13-2009 14:01 From:



Transport
Canada

Transports
Canada

Pacific
Region

Région
du Pacifique

Suite 620
800 Burrard Street
Vancouver, B.C.
V6Z 2J8

Your File *Votre référence*

Our File *Notre référence*

RDIMS # 5371268

November 13, 2009

Mr. Victor Wei, P.Eng.
Director, Transportation
Planning & Development Department
City of Richmond
6911 No. 3 Road
Richmond BC
V6Y 2C1

Dear Mr Wei:

This is in response to your letter of October 8, 2009 requesting comments on the Report of the Richmond Airport Noise Citizens Advisory Task Force, September 2009. At the outset, I would like to thank the members of the Task Force for their time and energy in producing the report and the City of Richmond for giving Transport Canada the opportunity to comment on it. I will comment on Transport Canada responsibilities, as both the Vancouver Airport Authority and NAV CANADA will provide more detailed responses.

I note that the recommendations in the report deal primarily with residents' annoyance with aircraft noise at Vancouver International Airport. They do not deal with aircraft safety or compliance with aviation regulations. That being the case, I should explain the role of Transport Canada.

In the past, the Federal Government, through Transport Canada, operated most airports and the air traffic control system. Today, the Government maintains regulatory and safety oversight of these aviation activities, yet day-to-day operation has been transferred to independent entities. NAV CANADA now operates the air traffic control system and the Vancouver Airport Authority (YVRAA) now operates the Vancouver International Airport (YVR).

In the case of YVR, operational control, airport development decisions, and the management of local airport noise are all the responsibility of YVRAA. To manage noise, YVRAA adheres to a process that is mandated by Transport Canada and is common to most large airports in Canada.

Canada

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

NOV-13-2009 14:01 From:

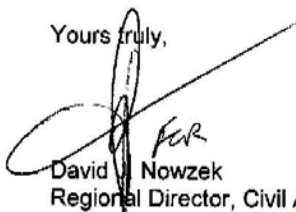
2

YVRAA invites stakeholders, including local governments and residents, to advise them on the operation of the airport through various advisory committees. One of these committees, the Aeronautical Noise Management Committee, advises YVRAA on issues of aircraft noise. It has broad based representation and includes four members from the City of Richmond (two staff representatives and two citizen representatives). This membership ensures that the City's interests and residents' concerns about noise are heard by YVRAA. It also ensures that information from YVRAA flows back to the community.

The operation of this committee, along with similar ones in place at other major airports in Canada, has proven effective in encouraging balanced dialogue among parties interested in airport noise. I encourage the City of Richmond to continue to participate in this process and bring the report recommendations to the committee for discussion. From Transport Canada's perspective, any dialogue on airport noise must continue to be made in this committee.

In closing, aviation is an essential component of the economic well being of Canada and B.C. in particular. I appreciate the City of Richmond supporting the airport and promoting the continued safe and efficient operation of it.

Yours truly,



David Nowzek
Regional Director, Civil Aviation

DJN/ad

Appendix 2: 2nd Round of Public Consultation (October 2009)
Stakeholder Responses

05-11-'09 14:17 FROM-

T-383 P002/003 F-573



November 05, 2009

Victor Wei, P. Eng.
Director, Transportation
Planning and Development Department
City of Richmond
6911 No. 3 Road
Richmond, BC V6Y 2C1

Dear Mr. Wei:

Thank you for your letter of October 8, 2009 and for providing me with a copy of the Richmond Airport Noise Citizens Advisory Task Force Final Report. I am pleased to offer some preliminary comments on those items in the Report that fall within NAV CANADA area of responsibility.

With respect to float plane operations, the report recommends that arriving and departing float planes use the north part of the Middle Arm of the Fraser River and/or the channel north of Swishwash Island. While I appreciate the intent of this recommendation, it is important to realize that it is not sufficient that small aircraft not experience an incursion into the path of wheeled aircraft landing and departing on the south runway. Small aircraft operating within 2500 feet of the south runway (26L/08R) are subject to wake turbulence. This limits operations north of the middle of Swishwash Island, for safety reasons.

Increasing the altitude of float operations, including the circuit pattern, and amending VFR arrival routes and relocating checkpoints would also need to be carefully assessed as to potential impact on traffic management and safety, including wake turbulence given the location of other routes in the area. Often, as you can no doubt appreciate, the altitudes assigned to VFR aircraft operating within the Vancouver control zone are required for aircraft separation.

.../2

Appendix 2: 2nd Round of Public Consultation (October 2009)
Stakeholder Responses

05-11-'09 14:17 FROM-

T-383 P003/003 F-573

- 2 -

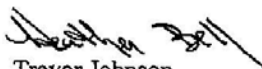
Additionally, the relocation of routes would result in additional noise in other areas not currently impacted. While some of those areas may be less populated or of a more commercial make up, a change would nevertheless not be without its impacts.

Early departure turns for non-jet aircraft are used because they increase capacity and in doing so reduce delays. They do this by enabling an earlier departure by a successive aircraft without jeopardizing separation from a slower small aircraft. Restricting right turns until aircraft have reached at least 1,000 ft ASL would increase the time before a successive departure could occur and therefore would have an impact on airport capacity that must be carefully considered.

With respect to the Olympic One Departure for use by non-jet aircraft, that departure procedure was put in place to meet strict security provisions regarding aircraft flight over Olympic facilities. Making it the permanent non-turbojet SID would have operational impacts as explained above. Currently, NAV CANADA intends to discontinue use of the Olympic One Departure once the Olympics have concluded.

The Richmond Airport Noise Citizens Advisory Task Force Report provides several recommendations that warrant further discussion and assessment. As an active member of the Vancouver International Airport's Noise Management Committee NAV CANADA would be pleased to participate in any further discussion as required.

Sincerely,


Trevor Johnson
General Manager,
Vancouver Flight Information Region

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses



9 November 2009

Victor Wei
Director, Transportation
CITY OF RICHMOND
6911 No. 3 Road
Richmond, BC
V6Y 2C1

Dear Mr. Wei,

RE: Draft Report of the Richmond Airport Noise Citizens Advisory Task Force

This letter is in response to your correspondence of 8 October 2009, in which you request our comments on the draft Richmond Airport Noise Citizens Advisory Task Force Report.

Since its creation in 1992, the Vancouver Airport Authority has worked hard to minimize the effect of aircraft noise on the community. Vancouver International Airport (YVR) is Canada's second busiest airport, and serves as a major regional hub for British Columbia. The Airport Authority operates YVR in the best interest of all people in the region. We have built a comprehensive noise management program that includes the YVR Noise Management Committee, a five year noise management plan, published noise abatement procedures, an airport noise monitoring and flight tracking system and complaint management and response.

The Report provided is very detailed and contains numerous recommendations and suggestions. Detailed comments on the recommendations that pertain to the Vancouver Airport Authority are attached. For convenience, I summarize them below under the headings used in the draft report.

1992 Vancouver International Airport Environmental Assessment Panel Report

All of the requirements of the Minister of Transport's 1992 approval of the Parallel Runway project have been met.

Float Plane Operations

The Airport Authority has met with float plane operators, TC and NAV CANADA; developed preferred arrival and departure routes; distributed these routings to pilots and posted signage at the float plane docks. More work is planned in the 2009-2013 YVR Noise Management Plan including the review and assessment of voluntary restrictions.

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Page 1 of 2



Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses



Aircraft Maintenance & Engine Run - Up Operations

The Airport Authority has improved our Airside Engine Run-up Directives, monitoring and enforcement however more is required. We are considering expanding the use of Closed Circuit TV. Preliminary design of an engine run up enclosure has been completed and a decision will be made on the project in 2010. If approved, the facility would be constructed and operational by year end 2011.

Night Operations

YVR is a 24 hour airport however night operations are currently restricted. For example, the north runway is generally closed at night; local training flights are prohibited; no Chapter 2 jet aircraft are allowed to depart; and aircraft are routed over the water when winds allow. In 2008, less than 3% of aircraft operations occurred between midnight and 0600. Additional initiatives to address night time noise are included in the 2009-2013 Noise Management Plan.

Flights Operating Over West Richmond

Vancouver Airport Authority does not have the authority to change or regulate flight paths. We would participate in any review of the recommended changes to flight procedures with NAV CANADA, Transport Canada, and the YVR Aeronautical Noise Management Committee.

Community Involvement:

The Airport Authority interacts with the community in many ways including our annual public meeting, the noise management committee, presentations to municipal councils and our website. Committee membership is reviewed on a regular basis and updated as required.

Other:

Where people live is a fundamental part of the aircraft noise problem. We're disappointed that the Task Force did not consider this important topic as the City of Richmond is responsible for managing land use. The Task Force should examine opportunities and responsibilities for the City to minimize and mitigate aircraft noise issues through land use planning.

We appreciate the opportunity to comment on the draft report. If you have any questions or would like clarification on our response please let me know.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Anne Murray', is written over a horizontal line.

Anne Murray
Vice President Community & Environmental Affairs

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Page 2 of 2



Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

Vancouver Airport Authority Response to the City of Richmond Airport Noise Citizens Advisory Task Force Recommendations (September 2009)

EARP Panel Recommendations – North Parallel Runway Project

Task Force Recommendations 1, 2, 3, 4

All of the requirements of the Minister of Transport 1992 approval of the Parallel Runway project were completed by November 1996.

The opening of the north parallel runway (08L/26R) at YVR culminated 50-years of planning including a lengthy independent environmental review and an Environmental Assessment Review Process (EARP) Panel. The EARP Panel recommended that the Parallel Runway Project be approved and made 22 recommendations, 10 of which were associated with noise mitigation measures. The Minister of Transport approved the Parallel Runway Project in June 1992, and responded to the EARP Panel recommendations. It is the Minister of Transport's response that outlines the requirements not the Panel report.

Three committees were established to ensure the Minister of Transport's response to the 22 EARP Panel recommendations were implemented: the Inter-agency Steering Committee (established by Transport Canada), the Environmental Monitoring and Implementation Committee (established by Vancouver Airport Authority); and the Wildlife Habitat Advisory Committee on Compensation (established by Environment Canada). The 1996 EMIC Annual Report and the final report of the Inter-agency Steering Committee confirm that all 22 requirements were met. Excerpts from the EMIC report are included in Attachment #1.

Float Plane Operations

Task Force Recommendations 5a) and 5b)

The Airport Authority does not have the authority to change or regulate flight paths. Should Transport Canada or NAV CANADA wish to review the recommended changes to flight procedures, we will participate in the review along with the YVR Aeronautical Noise Management Committee.

Task Force Recommendation 5c)

The 2009-2013 YVR Noise Management Plan includes an initiative to assess introduction of voluntary restrictions on float plane operations such as 2 vs. 3-bladed propeller aircraft and hours of operation. These restrictions would rely on voluntary compliance as they would be published in the Water Aerodrome Supplement, which is not a regulatory enabled document.

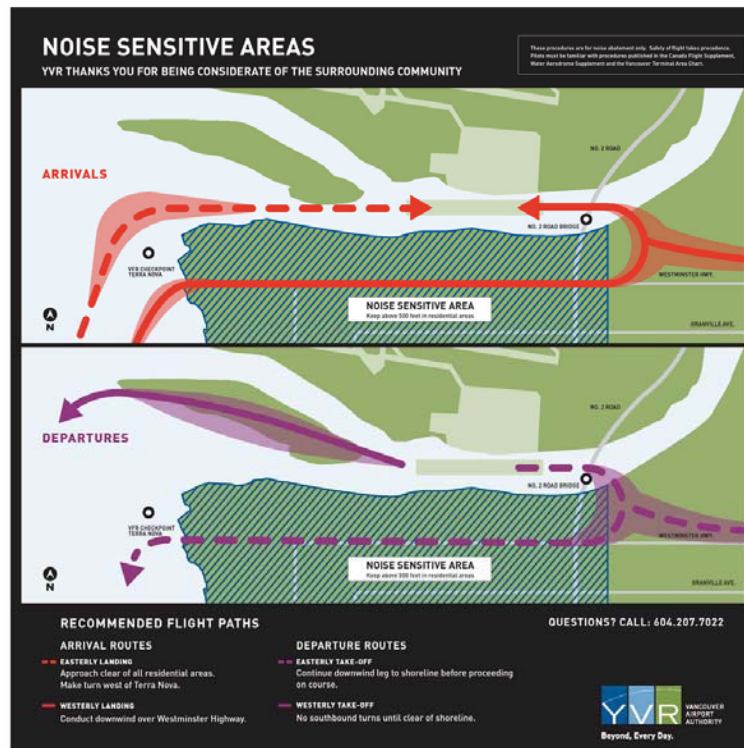
Float planes have been operating on the Middle arm of the Fraser as far back as the 1940s. At that time, the area south of the airport had very little residential development. In the 1980's and 1990's, this area saw increased residential development under the routes used by float planes arriving and departing the Middle Arm of the Fraser River. These developments were opposed by the Vancouver Airport Authority as residential use was considered incompatible with aircraft noise.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

We understand that the City intends to increase residential development in the area post Olympics. The Airport Authority continues to oppose new residential development in areas significantly affected by aircraft noise. Vancouver Airport Authority recommends the City introduce much stronger measures, beyond the current noise bylaw, to ensure that prospective buyers are made fully aware of aircraft noise impacts before committing to purchasing a home in the area.

Vancouver Airport Authority hosted two meetings in 2008 with YVR float plane operators, NAV CANADA, and Transport Canada to discuss community issues related to float plane flight paths and low flying aircraft. The input gathered was used to develop maps (see below) that illustrate the preferred arrival and departure routes from the Middle Arm of the Fraser River. The maps were printed and provided to the operators for distribution to their pilots, and large signs were installed at the float plane docks.

These procedures are not enforceable regulations and are meant to educate float plane operators of community issues and to encourage consistent operations among the various operators. Transport Canada intends to publish this information in future editions of the Water Aerodrome Supplement to ensure broader communication with float plane operators.



FILE: ANTF Recommendations September 2009 - YVRAA Response_final.doc

Page 2 of 6

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

Aircraft Maintenance & Engine Run - Up Operations

Task Force Recommendation 6

Preliminary design of an engine run-up enclosure has been completed and a decision will be made on the project in 2010. If approved, the facility would be constructed and operational by year end 2011.

Task Force Recommendation 7

Maintaining aircraft at night is critical to allowing operators to meet the travel schedules of the public. Engine run-ups will continue to be allowed in accordance with the Airport Operations Directives.

Task Force Recommendation 8

The Airport Authority currently uses CCTV cameras to monitor critical run-ups areas and will consider expanding the network of cameras to other areas of the airport. Suspected violations to the airport directives are sent to Transport Canada Civil Aviation for their follow-up.

Aircraft engines require regular maintenance to meet the rigors of operational service. To maintain a high level of safety, Transport Canada defines stringent maintenance standards and requires operators to perform run-ups to ensure that the engines and their components are working properly before the aircraft is put back into service.

Because most aircraft are in operational service during the day, the only time maintenance staff are able to gain access to the aircraft is during the night-time hours, and maintenance work must be completed and checked before the aircraft is put back into operational service the following morning.

To manage noise from run-up operations, the Vancouver Airport Authority maintains an Airport Operations Directive which details procedures on how, where, and when run-ups are permitted. In accordance with the Directive, operators must call Airport Operations and request approval for their run-up. If an approval is granted, the operator is assigned a specific location on the airfield and a heading for the run-up. The location and heading is intended to ensure that the run-up is conducted safely and to minimize noise. However, given the close proximity of residential developments to the airport, managing noise from engine run-ups proves very difficult.

Given that run-ups of propeller aircraft are currently the predominate source of complaints, the Airport Authority is currently assessing preliminary designs for the construction of a dedicated ground run-up enclosure (GRE) for propeller aircraft. Due to strict aeronautical zoning restrictions that govern the height and structures on the airfield and the limited airside space available, finding an ideal location for such a facility proves challenging.

Meetings with the main maintenance operators are required to determine their future aircraft fleet plans and maintenance requirements at YVR. A project definition report would be

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

prepared in 2010 and if approved, the facility would be constructed and operational before the end of 2011.

Night Operations

Task Force Recommendation 9

The Noise Abatement Procedures for YVR include the following restrictions on night-time operations:

- No departures of Chapter 2 aircraft over 34,000kg between midnight and 6AM.
- Departure/arrival of jet aircraft cargo, air carrier scheduled, and charter flights require the prior approval of YVRAA Operations between midnight and 7AM.
- No departure / arrival on runways 08L and 26R between 10PM and 7AM, except in cases of emergencies or maintenance.
- No local training flights between 10PM and 7AM.
- Two direction flow between 11PM and 6AM to keep both arrival and departure operations over the Strait of Georgia subject to safe operating conditions.

Additional initiatives to address night time noise are included in the 2009-2013 Noise Management Plan.

Task Force Recommendation 10

To meet the needs of the community, the Airport Authority intends to keep YVR open 24-hours.

Additional initiatives to address night time noise are included in the 2009-2013 Noise Management Plan.

Task Force Recommendation 11

Information on the number of aircraft operating during the night-time hours can be found in the annual noise reports prepared by the Airport Authority.

Task Force Recommendation 12

A request to amend the Noise Abatement Procedures to include a reverse thrust restriction for the south runway was submitted to Transport Canada in 2008 and is awaiting publication.

YVR is the second busiest airport in Canada, and like all international airports in Canada is open 24-hours. Noise Abatement Procedures for YVR are designed to minimize noise at night. In addition to the above procedures, NAV CANADA will issue special vectoring instructions to certain aircraft to minimize over-flights of populated areas subject to weather and operational constraints.

The Airport Authority is responsible for managing YVR in the best interest of the broader community and to effectively support the economic needs of the Province. Having 24-hour airport operations is critical to responding to the demands for aviation services by the community. It is our intent to remain a 24-hour facility to serve the needs of the community.

The Airport Authority monitors compliance with the Noise Abatement Procedures and forwards details of the operation to Transport Canada Civil Aviation Enforcement for

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

investigation and action as required. Transport Canada may issue sanctions, including monetary fines, based on the results of their investigation. The results of investigations that have resulted in sanctions are posted on the Transport Canada website.

As part of work on the initiatives contained in the 2009-2013 YVR Noise Management Plan Vancouver Airport Authority will:

- Review current guidelines for granting approval for operations for jet aircraft between the hours of mid-night and 7AM and will consider using the aircraft noise rating scheme established by the Airport Council International in the granting approvals,
- Assess the impacts of extending the current prior approval requirement for jet operations between the hours of mid-night to 7:00AM to all aircraft.

As this would introduce new noise control measures, their implementation is subject to the Transport Canada "check-list" protocol for implementation new or amending existing noise abatement procedures (Advisory Circular 3002-002). This requires the proponent of the procedure complete a full analysis of the proposal, consult with specified stakeholders before submitting to Transport Canada who can either approve or deny the proposal.

Flights Operating Over West Richmond

Task Force Recommendations 13, 14

The Airport Authority does not have the authority to change or regulate flight paths. Should Transport Canada or NAV CANADA wish to review the recommended changes to flight procedures, we will participate in the review along with the YVR Aeronautical Noise Management Committee.

Task Force Recommendation 15

The Airport Authority regularly communicates on noise management issues with aircraft operators. Examples include the YVR Fly Quiet Awards and annual presentations at the YVR Chief Pilot's Meeting. Several initiatives in the 2009-2013 YVR Noise Management Plan are aimed at augmenting our existing methods of communicating with pilots and airlines.

As the recommended procedures are proposed solely for the purposes of noise mitigation, the Transport Canada "check-list" protocol referenced earlier would apply. Any change to current procedures could ultimately shift aircraft operations over different parts of Richmond or other municipalities. This must be considered as the objective is to seek the best solution for all communities.

Community Involvement:

Task Force Recommendation 16

The Airport Authority hosts an annual public meeting each year. The community is invited and has the opportunity to address questions or concerns directly to senior Airport Authority officials. The meeting is advertised in local community and ethnic papers and on the Authority website.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

Task Force Recommendation 17

The Noise Management Committee membership is reviewed on a regular basis and updated as required. The Airport Authority will invite a representative of float plane operators to join the committee. The City of Richmond is well represented with three members appointed by City Council.

Task Force Recommendation 18

Transport Canada is responsible for enforcement of Noise Abatement Procedures under the Aeronautics Act. An independent monitoring agency is not required.

Vancouver Airport Authority updates Lower Mainland city councils, including the City of Richmond, annually. The presentation and questions from council includes a discussion of noise management activities and issues.

The City of Richmond currently has three representatives on the YVR Aeronautical Noise Management Committee—two citizen and one staff, although more than one City of Richmond staff regularly attend meetings. The citizen representatives are appointed independently by City Council to represent the interests of local residents.

Recommendations for Richmond City Council

Task Force Recommendations 19-22

A critical component of aircraft noise management is land use planning. Any gains achieved through operating restrictions or flight procedures will be negated if people continue to live and move into high aircraft noise and traffic areas. The City should review its practice of allowing residential development in high aircraft noise areas. The Task Force should examine opportunities and responsibilities for the City to minimize and mitigate aircraft noise issues through land use planning.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

TABLE 1

Environmental Assessment and Review Process (EARP) Panel Recommendations, Response and Current Status

<p>Legend: The EARP Panel Recommendations (August 1991) are in standard typeface. The Federal Government's Response (June 1992) is in italics. The Status as at 31 December 1996 is listed in bold.</p>	
1.	<p>The Panel recommends that the Minister of the Environment direct the Federal Environmental Assessment Review Office (FEARO) to develop guidelines for the incorporation of environmental costs into cost-benefit studies conducted in connection with the implementation of the Environmental Assessment and Review Process (EARP).</p> <p><i>FEARO is prepared to undertake the development of appropriate guidelines, in consultation with other federal departments.</i></p> <p>The Canadian Environmental Assessment Agency, which has replaced the Federal Environmental Assessment Review Office (FEARO), is developing draft guidelines based on the 1991 Canadian Environmental Assessment Research Council (CEARC) report, <i>Integrating Economics and EIA: Institutional Design and Analytical Tools</i>. A draft guide is expected to be available for federal departments to review in early December 1996 and the final version should be completed by April 1997.</p>
2.	<p>The Panel recommends that the Noise Management Committee set specific goals; monitor and evaluate airport noise; report periodically on monitoring; produce an annual report; investigate mitigation measures; and make recommendations to airport management.*</p> <p><i>Transport Canada agrees with this recommendation and will increase the scope of the existing Noise Management Committee to address these issues, consistent with the response to recommendations 3 and 7.</i></p> <p>Noise monitoring and noise studies are reported in quarterly and annual reports. The Committee is active as described in the Federal Government's Response to EARP Panel Recommendations. The committee's work and reporting will be ongoing. Annual Reports have been published from 1992 to 1995. The Annual Report for 1996 will be published April 1997.</p>
3.	<p>The Panel recommends that the Noise Management Committee have a specified membership; function as indicated; and have access to noise records. *</p> <p><i>Transport Canada concurs with the spirit and intent of this recommendation, and agrees to expand the existing Noise Management Committee to include the membership recommended. The committee will be funded by, and report to, airport management. It will produce a publicly available annual report. *</i></p> <p>Considerable work has been done in the Airport Authority's Noise Management Committee. The committee membership was expanded as recommended and reports to the Airport Authority Management. The Noise Management Committee operates separately from other environmental committees and produces its own annual report.</p>

* Condensed from the original. Copies of the full text can be obtained from the Airport Authority.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

4. The Panel recommends that as new aircraft tracking technologies are developed at YVR through the implementation of the Radar Modernization Program (RAMP) and the Canadian Automated Air Traffic System (CAATS), airport management use these systems to identify and obtain evidence against aircraft deviating from approved noise abatement procedures and thereby causing noise disturbance.

Transport Canada agrees with this recommendation and will implement appropriate systems as soon as it is technically feasible to do so.

The Airport Authority has installed a new Airport Noise Monitoring System (ANMS) which has the capability of interfacing with the Radar Modernization Program (RAMP), giving accurate and real-time correlation of aircraft with noise events at the Noise Monitoring Terminals.

5. The Panel recommends that:
- a) the parallel runway be operated primarily as an arrival runway;
 - b) generally, only Stage 3 aircraft be permitted to operate on the parallel runway;
 - c) generally, all operations on the parallel runway be banned from 10:00 p.m. to 7:00 a.m.; and
 - d) landings on the parallel runway generally be conducted with the aircraft in the least-noisy configuration possible and with minimal use of reverse-thrust for braking.*

- a) *Transport Canada is prepared to operate the new runway primarily as an arrival runway, but may need to use it for departures when traffic demand approaches capacity limits at YVR, such as during peak times.*
- b) *Transport Canada is prepared to restrict departures on the new runway to Stage 3 aircraft, but not arrivals.*
- c,d) *Transport Canada agrees with these recommendations.**

The new runway is operated according to the following noise mitigation measures:

- a. the new runway will be operated primarily as an arrival runway;
- b. takeoffs by noisier Stage 2 aircraft will not normally be permitted;
- c. no operations will be permitted between 10 pm and 7 am; and
- d. landings will be conducted in the least noisy configuration possible with minimal use of reverse-thrust braking in accordance with safe operations.

These conditions will not apply during emergencies or maintenance of the existing main runway including snow removal. These procedures are included in the Canada Air Pilot West manual.

6. The Panel recommends that the BC Ministry of Municipal Affairs seek the cooperation of the City of Richmond in a pilot project focused on the Bridgeport area of Richmond, with the objective of investigating how airport noise impacts in British Columbia might be minimized through the use of provincial and municipal regulatory powers.

Transport Canada supports this recommendation and would be pleased to participate in a pilot project headed by the BC Ministry of Municipal Affairs and involving municipal governments.

An amendment to the Aeronautics Act permits the Minister of Transport to enable a Municipality to enact land use controls in the vicinity of airports. This will be accomplished by a municipal bylaw, with the power of a federal regulation, by publication directly in the Canada Gazette.

The Province has been advised that a municipality wishing to proceed under the Act should contact Transport Canada, Aviation Group, Air Navigation System Requirements. Transport Canada will continue to pursue discussions with the Province in the context of airport transfers.

The Airport Authority is working with the City of Richmond, who recently passed a noise insulation bylaw.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

7. The Panel Recommends that a noise compensation program for those affected by the proposed runway, along the lines suggested in the report, be accepted in principle and referred to the Noise Management Committee for study and action.

*Transport Canada will institute a comprehensive noise mitigation program in lieu of a noise compensation program as recommended by the panel.**

The Airport Authority has initiated a comprehensive noise mitigation program which is fully supported by Transport Canada.

8. The Panel recommends that at least one new noise-monitoring site be established in the Marpole area (e.g. Oak Street and 70th Avenue) and two more in the Bridgeport area of Richmond.

Transport Canada accepts this recommendation, subject to the availability of technically feasible sites.

Three new noise monitoring terminals have been added to the network as part of the new Airport Noise Monitoring System.

9. The Panel recommends that:

- a) the Noise Management Committee, with the assistance of Transport Canada, carry out detailed surveys of the existing noise environment;*
- b) in conjunction with the above and with a view to possible clarification of apparent noise anomalies in the south slope of Vancouver, the Noise Management Committee and Transport Canada develop an ongoing research program involving topographic and meteorological aspects of noise in the south slope area.

*a) The Noise Management Committee will be mandated to undertake annual studies to identify noise zones and changes in noise contours.**

b) Transport Canada will periodically monitor noise levels on the south slope and release the results.

The Airport Authority continues to produce Noise Exposure Forecasts (NEF) annually and will use the model to generate contours every year. Noise levels on the South Slope of the City of Vancouver are continually being monitored.

10. The Panel recommends that:

- a) the Noise Management Committee carry out a social and building survey of the numbers and the characteristics of residents in the delineated baseline noise zones, their living patterns, their sensitivity to noise and the condition of their homes;*
- b) the Noise Management Committee simultaneously conduct research on possible noise mitigation and compensation measures, including commissioned independent professional research and visits to airports which have effective mitigation, compensation and public consultation programs.

a) Transport Canada, in conjunction with the Noise Management Committee, will undertake research on the noise impacts around the airport to determine baseline conditions and to measure the impact of the new runway as well as any subsequent mitigation measures.

b) It is expected that the Noise Management Committee will be free to undertake appropriate research projects within its approved budget.

The Airport Authority, in consultation with the Noise Management Committee, completed a baseline social survey of community reactions to airport noise.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

11. The Panel recommends that:
- a) the base case for determining incremental effects of noise be the most recent set of Ldn contours prior to the opening of a new runway;
 - b) these be updated annually thereafter; and
 - c) incremental noise impacts be identified using the Ldn 60 as the cutoff cumulative noise level and SEL contours out to the 75 dBA level, together with frequency of occurrence for sporadic noise, in order to enable the NMC to determine incremental impacts warranting compensation.

Transport Canada accepts these recommendations, with the provisos contained in the response to recommendations 7 and 9, including recognition of the NEF as the approved methodology for noise management and mitigation.

The Airport Authority prepared Noise Exposure Forecast (NEF) contours based on operational data prior to the opening of the new runway to identify the base case. The contours will be updated annually thereafter to determine any incremental impacts of the new runway.

12. The Panel recommends that Transport Canada commission an independent, public environmental review of its bird strike control program and guidelines for land use in the vicinity of airports to assess their effects on habitat capability in light of the proposed runway flight patterns and helicopter paths, and also examine the potential effect on migratory birds of the new approach light system across Sturgeon Bank.

*Transport Canada proposes to conduct the public review through a committee with membership as specified. All of these findings, as well as the committee's decisions and deliberations, will be summarized and documented in a report that will be available to the public for review and comment.**

A Blue Ribbon Panel of aviation experts was convened on September 19, 1995. The panel analysed the Wildlife Control Program at Vancouver International Airport; the Avifauna Study of Sea Island and surrounding areas and the Aviation Study concentrating on interactions between aircraft and birds on Sea Island. The Panel reviewed the data compiled through the work plan and provided recommendations and conclusions to ensure that wildlife would be adequately preserved and that aviation safety would not be compromised. The report, dated December 1995, concluded that Transport Canada has satisfactorily addressed recommendation #12, and the results presented in the Blue Ribbon Panel Report are available for public review.

13. The Panel recommends that:
- a) development in the Airport North area be limited to the runway, associated taxiways and landscaping essential for the operation of the runway;
 - b) airport-related commercial and other urban uses be permanently prohibited north of the runway;
 - c) the remainder of land north of the runway be dedicated to the conservation and enhancement of wildlife values; and
 - d) land uses incompatible with wildlife values in Airport North be phased out where feasible.

a) Transport Canada concurs with the intent of this recommendation. However, modifications will be needed to ensure that aviation safety, Transport Canada's number one priority, is not compromised. The dedication of land immediately adjacent to the parallel runway to conservation and enhancement of wildlife values raises serious concerns over bird strikes and, therefore, aviation safety. Accordingly, a buffer or transitional zone must be established between the operational and conservation areas, to ensure that safety is not compromised by other objectives.

Appendix 2: 2nd Round of Public Consultation (October 2009) Stakeholder Responses

20. The Panel recommends that Transport Canada give serious consideration to funding the Musqueam Indian Band's proposal for interpretive signage, a cultural exhibit at the new airport facilities, a cultural centre at Marpole and a Musqueam Indian Band Museum.

Transport Canada agrees to develop appropriate signs and displays to reflect the historic use of Sea Island by the Musqueam people, and to include a cultural exhibit at the new airport facilities. As well, Transport Canada has given serious consideration to the Panel's suggestions with respect to additional funding for the Musqueam Band, and will be discussing with the band a fair and reasonable amount of monetary compensation for possible loss of traditional hunting, fishing and gathering opportunities.

The Airport Authority has arranged for Musqueam cultural displays in the new terminal. This includes two 17 foot welcome figures, one spindle whorl, four weavings and an artistic stream bed.

Transport Canada negotiated a monetary compensation with the band for any possible infringement of aboriginal hunting, fishing and gathering activities arising from the construction and operations of the new parallel runway.

21. The Panel recommends that the Minister of Transport initiate the preparation of an airport development plan for the Lower Mainland Region, involving Transport Canada, the VIAA, the GVRD and the BC Ministry of Highways and Transportation along with communities, interest groups, and business interests involved.

See response to Recommendation 22.

22. The Panel recommends that as soon as an airport development plan is complete, the VIAA address itself to the task of preparing Abbotsford and other airports to assume a larger role in the Lower Mainland's airport system.

Transport Canada's long-range planning will address the need for an airport development plan dealing with the long-term air transportation needs of the Lower Mainland, as recommend by the panel. Air Navigation system planning, which deals with the airspace, air traffic control and other related services and facilities, is ongoing. Planning specific to airports will be conducted on a system-wide basis by Transport Canada, as well as for individual airports by their operators. Transport Canada will continue to involve the Vancouver International Airport Authority, the GVRD, provincial government departments, along with local airport operators, communities, interest groups, business interests and airport users.

A joint planning session was held on April 21, 1994 to update the "BC Regional Airport Overview for the Lower Mainland and Southern Vancouver Island". The final report was distributed in October 1994 to the Mayors, GVRD, Airport Authority, Province of British Columbia and Airport Managers.

The general conclusion was that there is no immediate requirement for such a specific airport development plan to be prepared. However, it was recommended that this conclusion be reviewed within the next five years. As airport operations are transferred from Transport Canada to other operators and communities in the Lower Mainland are expected to assume a greater role in the development planning of their airports in cooperation with the Vancouver International Airport Authority. Transport Canada will remain responsible for safety and security within a regulatory framework.

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

Questionnaire Responses

1992 YVR EAP Report

- We have to insist/encourage clarity and transparency from VAA, and accountability/responsiveness from Transport & Nav Canada (TC). Reports, recommendations and committees only give the appearance of activity. Like green-washing, eventually the PR bubble bursts and agencies are left with a hostile citizenry. VAA & TC need to realize that taking a Noise Mgmt. approach that is responsible and respectful to YVR neighbours will be in their own interest in the long term.
- Good.
- **Where is the recommendations that specify the impacts of YVR on the health of our environment. Humans, unborn babies, and wildlife are being poisoned by the airport's air pollution and the contamination that will occur if the oil pipeline and transfer station is built. We should have a recommendation against the fuel transport proposal.**

Float Plane Operations

- Float planes and other propeller aircraft are a constant source of disturbance over West Richmond during early morning hours. I would suggest the current 1,000 ft mandatory altitude is rarely enforced. Either a higher minimum altitude with enforcement or a flight path over water instead of densely populated residential areas would make more sense.
- Who will enforce the recommended ceiling of 1000 ft as it doesn't seem the current ceiling is enforced?
- Recommend for further tree plantings to utilize the ability of trees to reduce noise all over the city and paid for by YVR.

Aircraft Maintenance & Engine Run-Up Operations

- These are very reasonable recommendations and way overdue.
- Strongly agree with all three points.
- Good.
- We should recommend the airport reduce its total number of flights/take-offs to deal with this issue over the long-term.

Night Operations

- These are very reasonable recommendations and way overdue. Why should 3% of flights cause so much sleep disturbance, with resultant health and safety effects. Why do we allow Cathay Pacific, for one, to wake us with departures at 3 am so that they can abide by noise restrictions in Hong Kong? The adverse health affects have been studied around European airports, US cities are actively implementing restrictions. Why are VAA & TC so resistant? It doesn't make sense. I would prefer quiet hours between 10 pm and 6 am, vs. 11 pm and 7 am. A good first step would be better adherence to YVR's own existing policies instead of the nightly violations we experience.
- I don't understand all the technical terms in this section. The bottom line is where I live, there is far too much high decibel aircraft at unreasonable hours; primarily early morning hours. Quieter planes should be given more access. Noisier planes should be made to use flight paths with less impact on residents.
- A complete ban on night time would be preferable.
- No planes should be permitted between midnight and 7 am. Period. Yes! Cut the curfew exemptions! And good for you for pushing for YVR transparency and publishing details for the public.

Appendix 2: 2nd Round of Public Consultation (October 2009)

Questionnaire Responses & Submissions

Flights Operating Over West Richmond

- Although I don't understand all the flight path routing information, point 13a would seem to be a good starting point for addressing issues over West Richmond. I would question enforcement strategy if implemented.
- Good.
- The number of flights that travel over any portion of Richmond should be capped at current levels and we should be recommending a strategy to reduce this number. Looking at the Noise Sensitive Area Map on Page 35 is discrimination to those living outside. Those recommendations demonstrate the inequality that separates the rich and poor in the world.

Governance and Noise Management

- It's time people realized that Richmond has the international Airport. It has had it for years. Anyone who moves here must accept that, or don't move here. Aircraft need to move freely and safely. Noise is a by-product so get over it.
- The introduction of the Flight Web-Tracking tool is a major step toward transparency. It should be expanded to include all flights operations, especially cargo traffic and include Chapter 2/3/4 information about operating aircraft and provide names/contact info for flight operators so that they can directly receive feedback on the effects of their operations.
- I would welcome a public meeting not only to voice my concerns but to become educated with the challenges YVR has in addressing noise issues. I would like to see float plane operators more involved in the resolution process as they are part of the problem.
- Good.
- Richmond should be making the airplane type allowances, not YVR. These are good recommendations but are only a start. We require solutions now and for the long-term. Use stronger language and recommend goals that include health factors and environmental degradation due to YVR operations.

Recommendations for Richmond City Council

- Extending/suspending the Task Force to monitor responses from VAA & TC makes good sense; otherwise we're back to the 1992 Panel report with little follow-up.
- Yes, good!
- Recommend that the people of Richmond stop being used as guinea pigs. Demand that Council ban all flights and air travel over Richmond between midnight and 7 am. For airport operations that do occur, fines or higher taxes should be recommended for YVR to pay into a community fund that researches health effects of people living under the flight path, and provide them with health support. Recommend that City Council stop approving housing densification/rezoning under the current flight paths.

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

Other Comments on Draft Final Report & Recommendations

- It appears that the task force has made great effort to understand the technical issues and strike a reasonable balance point between the benefits of airport operations and restrictions for our health and safety (I don't even raise the right of quiet enjoyment.) It would be helpful to obtain/provide a synopsis of flight restrictions and curfews at major airports, and related trends, as evidence for the reasonable nature of the recommended restrictions.
- **Excellent.**
- I will be attending the meeting this week on airport noise to voice my concerns about the airport noise. I have lived in East Richmond for 12 years and I find the aircraft noise at night (between midnight and 7 am) most disturbing and it interrupts my sleep. I strongly support the effort to implement a complete night time ban on all plane departures & arrivals at these times.
- I have lived in East Richmond for 14 years and I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. I strongly support the effort to implement a complete night time ban on all plane departures & arrivals. Trying sleeping in the heat of summer with the windows open and planes flying.
- I am sending this e-mail to you to let you know how adversely I and my family are affected by, in particular, the takeoff and landing noise from YVR at night. We literally do not ever get a solid nights sleep. What I do not understand is why in other countries and in other large cities a complete ban on night-time operations is in effect, and it does not seem possible for the YVR airport authority to institute one here or to even understand why one is necessary.

Quite simply, if we the taxpayers are to keep our jobs in order to earn the money necessary to pay our taxes, then it would seem self evident to me that we need to get some sleep. As a resident who is awake every night from 2am on, I would like to know why our elected officials are not proposing a complete night time ban on operations at YVR.

I was told be a representative for the airport authority that companies such as Cathay Pacific want late night departures "so that their passengers can arrive at their destination rested first thing in the morning" Great!!!! What about all the bleary-eyed, sleep deprived taxpayers of Richmond???? What are we? Are we just considered not worthy of serious consideration? That is certainly how it appears to me. To say that I am disappointed in the Mayor and all of the present councillors is putting it mildly. You should all be forced to come to my area and try to sleep for a week. I am sure that then you would be better able to see why a total night-time ban is the only solution.
- I've lived in East Richmond for 25 years. For more than the last decade, the ever-increasing aircraft noise at night (between midnight and 7am) is causing me greater and greater stress as a result of constant sleep disturbances. Forecasts by YVR of 61,225 aircrafts arriving and departing during Midnight and 7a.m. in 2015 is cause for great alarm and concern for my health. That is 167 flights per night! How can such plans even be considered?!

Please, please, please listen to our concerns about this very real health hazard and move toward a complete night-time ban on all plane departures and arrivals. I VERY strongly support such a ban! Major metropolitan areas elsewhere in Canada do not suffer the same inhumane treatment that we are subjected to. Can we not take a page from their book?
- **I live in East Richmond four years and I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. I strongly support the effort to implement a complete night time ban on all plane departures & arrivals.**
- I have lived in East Richmond for eighteen (18) years and I find that the aircraft noise at night DOES NOT disturb my sleep. I DO NOT support the ban on night time airplane departures and arrivals. I SAY LET THEM FLY!!

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

- We have lived at 4120 Dallyn Road since 1965. While we have accepted the 'airplane noise' during the daytime as necessary, we find that the noise at night often disturbs our sleep and strongly support the effort to implement a complete night time ban on all departures and arrivals at YVR.
- We bought our house 10 years ago and have found the airport noise to be worse and worse as the years have gone by. I have phoned on several occasions in the middle of the night when the aircraft noise has become unbearable. I am not on the direct flight pass but at times the noise is so loud in the middle of the night that it has woke me up when some really loud plane goes by. I find this aircraft noise at night between midnight and 7 am disturbs my sleep and strongly support the effort to implement a complete night time ban on all plane departures and arrivals. Some of the planes are older planes that are especially loud and are even more annoying than the more up to date planes.

Sleep disturbances are not healthy for any individual and can affect your daily living. We pay both residential taxes as well as we also own a store that has well over 3000 customers and pay high corporate taxes so we should be able to have a voice on this issue. I am sure the planes arriving and departing will get even worse in the future and I am deeply concerned as I need to get sleep that is not disturbed all night long. I feel having a quite time between midnight and 7 am is not too much to ask. I do plan to attend the Richmond City Hall public meeting on October 28 to listen to the discussion.
- We have lived in East Richmond for 49 years and we find the aircraft noise at night (between midnight and 7 am) unbearable. We are both in our 70's and our sleep is disturbed every night. We strongly support the effort to implement a complete night time ban on all plane departures and arrivals. We feel as taxpayers and residents of Richmond for almost 50 years, are concerns should be addressed. Again, we support night time bans on planes from midnight to 7 am.
- We have lived in East Richmond for about ten years and we find the aircraft noise at night (between midnight and 7 am) disturbs our sleep. We strongly support the effort to implement a complete night ban on all plane departures & arrivals. Thank you!!!
- I lived in East Richmond and I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. My husband finds it is hard to fall asleep too. We also have 2 seniors at home and a 2 year old baby. I strongly support the effort to implement a complete night time ban on all plane departures and arrivals.
- I live in East Richmond XXX years and I find the aircraft noise at night between midnight and 7 am disturbs my sleep. I strongly support the effort to implement a complete night time ban on all plane departure and arrivals at YVR.
- I have lived in East Richmond at the above address for 26 years and I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. The noise has grown increasingly over the years and I strongly support the effort to implement a complete night time ban on all plane departures & arrivals.
- We have lived in East Richmond for 21 years and we find the aircraft noise at night (between midnight and 7:00 AM) disturbs our sleep. We strongly support the effort to implement a complete night time ban on all plane departures and arrivals.
- Regretfully we were unable to attend the meeting at Richmond City Hall on October 28th, but fully support the effort to have planes banned from landing and taking off during the hours of midnight to 7:00 AM at Vancouver International Airport. We strongly feel we have enough noise issues with the frequent flights going over our home now and feel it is not unreasonable to be given your support and consideration to receive a peaceful night's sleep and sincerely hope the mayor and councillors at Richmond City Hall will also support our request as long time residents and homeowners in East Richmond.

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

- I live in Richmond for 10 Years and I find the aircraft noise at night(between midnight and 7am) disturbs my sleep. I strongly support the effort to implement a complete night time ban on all departures & arrivals. I hope you can take some action in the next city hall meeting in my behalf, I thank you for attention to this matter.
- I lived in East Richmond 11988 Woodhead Road 2 years long and I find the aircraft noise at night(between midnight and 7 am)disturbs the people in my family sleep. I strongly support the effort to implement a complete night time ban on all plane departures& arrivals. Please give me a quite night for sleep!
- We have been an East Richmond resident for the past 30 years and are concerned about the aircraft noise during midnight to 7 am. Over the years there has been an increase in the noise level. We strongly support the effort to implement a complete night time ban on all departures and arrivals at YVR.
- We have lived in Richmond for 24 years. Over the last 15 years or so, we find departures and arrivals of aircraft after midnight and into the wee hours of the mornings to effect our sleeping pattern. Since East Richmond is under both flight paths and is one of the older established neighbourhoods, our homes have been soundproofed to withstand this kind of racket in the very early mornings.

It has come to my attention that your appointed citizens airport task force wants to continue with all planes that have been certified Chapter 4 to fly during the middle of the night. We also understand that some older aircraft (Chapter 3) have been certified to Chapter 4 but make just as much racket during those early morning hours.

Please give us back some of our quality of life and allow us to have a peaceful night sleep throughout the year. We are not asking much, just 7 hours a night so we can sleep like a log rather than counting airplanes overhead. If the airport task force is not willing to change its recommendation to an all out ban from midnight to 7 am, then you have the power to do so when it reaches Council chambers. Thank you kindly.

- I have lived in East Richmond since 1956 (53 years) at the same address and I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. I strongly support the effort to implement a complete night time ban on all plane departures and arrivals. As one plane wakes you up and you finally get back to sleep, another one comes over.

P.S. Please do something for East Richmond so we can get our rest. We have no sidewalk on our street, our ditches maybe getting cleaned out once every three years. I hear it might be every 5 years now. You do everything for the west side. We all pay taxes.

- We have lived at the above address since 1958. Over the last 10 years or so, we find departures and arrivals of aircraft after midnight and into the early mornings to be disturbing. Since we have lived in this neighbourhood for all of these years, it has been very peaceful in the early mornings for most of our lives. Now, all kinds of jets are departing and arriving in the wee hours of the morning disrupting our sleep pattern. Since East Richmond is under both flight paths and is one of the older established neighbourhoods, our homes have been soundproofed to withstand this kind of racket in the very early mornings.

It has come to my attention that your appointed citizens airport task force wants to continue with all planes that have been certified Chapter 4 to fly during the middle of the night. We also understand that some older aircraft (Chapter 3) have been certified to Chapter 4 but make just as much racket during those early morning hours.

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Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

recommendation to an all out ban from midnight to 7 am, then you have the power to do so when it reaches Council chambers. Thank you kindly.

- We have lived at the above address since _____. Over the last 15 years or so, we find departures and arrivals of aircraft after midnight and into the wee hours of the mornings to affect our sleeping pattern. Since East Richmond is under both flight paths and is one of the older established neighbourhoods, our homes have been soundproofed to withstand this kind of racket in the very early mornings.

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- *Another nine form letters were received from different individuals but with the same wording as that above.*
- I was unable to attend the airport task force meeting on Oct. 28 due to a very late completion hour at work. However, had I been there, I would have had some suggestions that I would like to submit to the task force. I do not have an email address for the them, so will count on you to either furnish me with one or to forward my ideas.

I live in East Richmond and although I am appreciative of the work the committee has done so far, I am extremely disappointed that they are not recommending a complete ban on takeoffs and landings between 2315-0600 hrs. This is the only reasonable solution. Other countries and cities who care about their taxpayers have such a ban. One only has to look at South Korea, Belgium, Zurich, CDG, LHR, to name a few. Other forward thinking places are YYZ, Amsterdam, Frankfurt, Palm Beach, Phuket, etc, etc, etc.

The excuse for night time takeoffs is always cargo revenue. I would like to see solid proof that we, as Canadians, are actually shipping money-making cargo out of YVR. My understanding from all the news sources is that we import more than we export to China etc. Therefore, what is the justification for the night-time takeoffs?

The answer that I received on the phone from YVR is that airlines such as Cathay want their passengers to “arrive at their destination refreshed and ready to conduct business.” Great. How about all the bleary-eyed, sleep-deprived taxpayers in Richmond who can barely drag their weary bones out of bed to go to work? Are we not worthy of the highest degree of consideration?

At the very least, while there are still late night departures and landings, there should be an immediate financial penalty for such takeoffs and landings. While this will not stop the incessant noise, it seems that for the airport authority and the airlines (FedEx, Cathay, Philippines, China Air, etc), money may be the only thing that talks. My experience as a former Air Canada member of the flight crew for 45 years is that monetary penalties encourage the companies to rethink their schedules big time.

As far as the representation at the meetings from East Richmond, and speaking strictly as a spouse of a person who immigrated to this country from Asia, it must never be forgotten that 95% of our neighbours around here are from Asia. As such, they are trained to not speak out to government or to quasi government groups. To do so is considered quite risky. As well, most immigrants do not have the luxury of a 9-5 job with a pension at the end, and evenings free to go

Appendix 2: 2nd Round of Public Consultation (October 2009)

Questionnaire Responses & Submissions

to speak at Richmond City Hall. Even if they did, there is always the difficulty of speaking in a second language when nervous and exhausted. The words do not come easily, people look puzzled and apparently do not understand the point you are trying to make, and the whole thing becomes an exercise in frustrating, embarrassing humility. Who would want to risk this?

However, when I have small, private conversations with my neighbours, let me assure you that they are no less tired than I am. They are just less confident to face the Richmond City Hall meetings than the people from West Richmond and Steveston.

I wish my comments to be considered by the airport noise committee and request that you forward this email to them.

- I live in East in Richmond on Woodhead Road 2 years long and I find the aircraft noise at night (between midnight and 7 am) disturbs the people in my family. I strongly support the effort to implement a complete night time ban on all plane departures and arrivals. Please give me a quiet night of sleep!
- Thanks for the project you have started. I lived in East Richmond for almost 30 years at the same address. I find the aircraft noise at night (between midnight and 7 am) disturbs my sleep. I strongly support the effort to implement a complete night time ban on all plane departures and arrivals. And because of the noises, I noticed that the windows and glass doors also rattle and have loosened. May be someone is responsible for this damage as my back door is not closing properly and I would like to have double window glasses, if I can have help from the government. Being a pensioner, I am not able to afford the expenses.

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

HOME PHONE: (604) 270-1400

FROM THE DESK OF
DOUG LOUTH

4140 DALLYN RD. RICHMOND, BC V6X2S7

October 20, 2009
Richmond Airport Noise Citizens Advisory Task Force
Chair and Committee Members

Re: Report of the Richmond Airport Noise Citizens Advisory Task Force:

I would like to address your committee concerning several recommendations that fall short and don't address the relevant issue of **SLEEP DISTURBANCE** for the Citizens of East Richmond.

For instance, page 25 recommendation 9 (d) allows for chapter 4 and any chapter 3 recently modify to chapter 4 to operate between midnight and 7:00am.

When this issue of night operation was discussed in committee on June 18, it was me who suggested members vote for either a curfew, curfew with different ranges of hours or alternative measures. When you put the question to the members of the committee it was voted by a show of hands, 6 voted in favour 0000 - 7000, one voted no and there were several abstentions. Since you have nine members on the committee a majority is 50% + one. Since only seven members present with two regrets at this meeting, you had an 86% vote in favour to request a curfew from 0000 to 0700 am. The minutes reflect the recommendation should stand as other airports have similar restrictions. Your consultant advised your committee that Chapter 4 aircraft are flying and the recommendation should be reinstated.

Changes in the June 18 minutes, it was agreed to change the hours in recommendation 7c to 0000 - 0630 hrs. add "4" after chapter 3 and agree to delete recommendation 7d.

After the June meeting, it was pointed out the draft report didn't contain any of the above changes voted on by members of the committee. In the minutes of August 26, 2009, you approved the minutes dated June 18, 2009, with no revision, therefore adopting the recommendations again, you already approved in June. In the same August minutes, committee members are reassured that staff will ensure all agreed upon changes arising from the June 18, 2009, meeting are incorporated into the report. Not true. All future draft reports sent to committee members didn't have those above changes made in the area of night operations. Why? To me it was obvious. The majority of members voted at the June 18 meeting, affirmatively for the changes above, but there was a hidden agenda, to scuttle recommendation 9 in the final report. Even the final draft report e-mailed to members dated September 15, didn't have any of the changes the committee voted in favour of at their June 15, 2009, meeting. Again, we have to ask why?

So why did this issue come forward at the last meeting and why was there not a motion to reconsider deleting the recommendations the committee voted on at their June meeting? I was under the impression that any committee appointed by council under the terms of reference **Decision-Making Process** shall follow the council procedure by-law as far as applicable. Since there was a quorum present at the last meeting, someone who voted affirmatively should have raised this issue again. In my opinion this issue should not be up for discussion, but it is a little late now. I have my own questions. Why the sudden change in heart by a

FROM THE DESK OF
DOUG LOUTH

member of the committee at the very last minute to change recommendation number 9, voted for at the June 18, meeting to ban all flights? Why were the members of the committee not warned before their last meeting of September 17, this was coming, instead of being blindsided at the last minute? Where did the suggestion to change the recommendation come from, was it senior staff, the consultant, any member of council or YVR?

REASONS FOR BANNING AIRCRAFT FROM MIDNIGHT TO 7AM FOR EAST RICHMOND RESIDENTS:

*Sleep deprivation, sleep disturbance, windows and building rattle at 3 am, quality of life and here is a quote from a resident in the **URBAN SYSTEM** report to city council "all residents should receive equal, fair quiet living" As your report clearly states on page 40, residents are frustrated complaining to YVR. By not answering our complaints, residents are discouraged and eventually give up calling. If YVR can frustrate callers, then they have succeeded in their objective of not resolving night time complaints and continued with operations and make the claim that complaints are declining. As late as last week, I'm still waiting for a call from YVR.*

Further reasons for changing your report:

1. Recommendation 9 (e): I don't want to confuse the issue for the residents concerning chapter 3 versus chapter 4. We were led to believe Chapter 4 aircraft are like a whisper jet, according to a member of the committee and there are no chapter 4 flying right now. This is not true. Your consultant confirmed in the **MINUTES** of the June 18 meeting that chapter 4 aircraft are flying today. Again, Why was his comments ignored and what are the real reasons for changing the recommendation from banning all flights to allowing chapter 4 and any chapter 3 re-certify to chapter 4 to fly after midnight?
2. In YVR 2001 noise management annual report page 13. modifications from chapter 2 to chapter 3 have proven more economically viable for some operators (The heart of the matter for them, **PROFIT - SLEEP DISTURBANCE FOR THE EAST RICHMOND HOME OWNERS**) "While these modifications allow the aircraft to comply with the **MINIMUM** chapter 3 certification requirements, they may not necessarily make the aircraft quieter to the human ear. The discrepancy between noise performance of a chapter 2 aircraft that has been modified to meet chapter 3 certifications and an OEM chapter 3 aircraft is a **MAJOR DILEMMA FOR AIRPORT OPERATORS. So WHY SHOULD WE BELIEVE THE AIRLINE INDUSTRY AND AIRPORT OPERATORS (YVR) THAT THESE MODIFICATIONS TO CHAPTER 3 AIRCRAFT TO CHAPTER 4 WILL BE ANY DIFFERENT?**
3. Are we supposed to trust a few members of the committee who are not experts in this area that the new chapter 4 aircraft is a whisper jet? I don't think so. Where is this coming from?
4. In an IATA release (International Air Transport Association) - Aviation Environment - "Chapter 4 standards one-third quieter - On January 1, 2006, a more stringent noise certification standards (pdf, 72b) chapter 4 - was introduced for new aircraft designs. Chapter 4 are AT LEAST one-third quieter than those currently certified to the chapter 3 standards." My god only one-third quieter. That means 90dba to 60dba is not a whisper aircraft.
5. In an article printed from Aviation Environment Federation - An NGO Perspective, ON Chapter 4 Noise Standards: "The new chapter four standard is based on the sum of the improvements at three measurement points. In other words, the **AVERAGE** background reduction at

FROM THE TASK OF
DOUG LOUTH

each of the three measurement points is little over 3dba. Against average background noise levels, changes of this magnitude can be very difficult to perceive for the **AVERAGE** person. By the time the new standard comes into force, it will be nearly 30 years since the introduction of the current chapter 3 standard. Is it really the best we can expect from an industry that prides itself on its rate of technological innovation? Quite simply, the answer is no" The article goes on explaining how many aircrafts have improved on chapter 3 by 20dba and how 95% of the current in-production are capable of meeting the new standards and 75% are capable of meeting an improvement of at **LEAST** 14dba. **STILL NOT A WHISPER JET.**

6. City of Richmond - **URBAN SYSTEM REPORT** to City Council in 2004 makes the claim that 69.5% of residents living in East Richmond that **SLEEP DISRUPTION IS CAUSED BY AIRPORT NOISE**. This information was given to you at your first meeting in September 2008, but was put off until your next meeting according to the minutes and **NEVER BROUGHT FORWARD FOR DISCUSSION. WHY?**
7. YVR Noise Management Information Session - Summary notes - Held in the East Richmond Community Centre on September 15, 2004, 84% of the residents who showed up to this open house complained about **NIGHT TIME OPERATION AND SLEEP DISTURBANCE**. Again this information was given to you for your first meeting in September 2008, and again the residents of East Richmond were ignored.
8. We know that Airbus and Boeing through their web site have many aircraft already certified as chapter 4, but some members of the committee are telling a different story. Why? We know if the airline industries apply to re certify its chapter 3 to chapter 4, it will be more economically for them to go down this path. For the citizens of East Richmond chapter 3 certify as chapter 4 is not a **WHISPER JET** at 3A.M. The airline industries and YVR continue to make **PROFIT** on the backs of the residents of East Richmond.
9. In the report comments were made that 3% of aircraft movement are from night operations and generated 33% of all noise complaints. In a Richmond News article, November 2, 2007, the airport's 20 year master plan, they project 484,000 takeoffs and landings over the next two decades. Therefore, these two reasons should be even more grounds for a complete ban. In an e-mail dated September 2, 2009, from a member of your committee to all members states, "I think we should have an operational ban from midnight to 6:30a.m. Chapter 4 included. A ban is a ban. Let Richmond sleep." Then at the last meeting changed his mine. Why? Not even a motion to reconsider was brought forward, but just a train moving on down the track. I was very disappointed because I thought this issue was put to bed. Obviously I was wrong. **TEN YEARS** of campaigning with city staff and council was flushed down the drain in the blink of an eye.
10. In the Richmond News dated November 2, 2007, a member of the committee is quoted "that Vancouver International Airport is a source of irritation. The noise is sometimes unbearable. It goes on from 10 at night till six in the morning. Most airports in Canada have curfews." Why the sudden change?
11. In the same article the mayor was also quoted. "airplane noise and dogs are the top two complaints he gets from the public."
12. In a letter to Mayor Dianne Watts with copies to our local federal MP's, Mayor Ferguson of White Rock and Mayor Jackson of Delta, he writes that the attendees to the two open

Appendix 2: 2nd Round of Public Consultation (October 2009) Questionnaire Responses & Submissions

FROM THE DESK OF
DOUG LOUTH

*houses complained about night-time operation. Again, I refer you to your own appendix 1 attached to your report, showing those who attended the two meetings and sent in their responses to an on-line survey were concerned about **sleep** and night operations. Now some members of the committee would like to split hairs and tell us that night-time operation and sleep disturbance are two different things. Maybe so, but if you have night-time operation, then you are having night-time departures and arrivals, engine run-ups and anything else that makes the airport function. Please give us a break and stop splitting hairs on night-time operation versus sleep disturbance. They go hand in hand.*

13. YVR noise management committee held a public meeting on their premises sometime in 2006 or 2007. I am not sure of the date, but somebody from the city staff was present. I was also there. I can tell you without a doubt the citizens from all over the lower mainland, including Richmond were not impressed about night operation and sleep disturbance. It was a feisty meeting to say the least. Not 25, or 50 people attended, but I estimate well over two hundred. Of course, YVR will not let you see who attended or provide minutes of the meeting, claiming confidentiality, just as I was denied information from your two meetings. Let me assure you the meeting held on their turf was very quiet as we watched the planes departed. I can't imagine the CEO or any YVR executives not having soundproof offices. They don't want to be disturbed while conducting business. It is OK for them to go home at night and get a good night sleep, while the residents of East Richmond have **SLEEP DISTURBANCE AND OUR QUALITY OF LIFE SUFFERS**, so they can make profit on our backs. It is obvious the airport operators, aeronautical operators and the airline industries are not interested in being **GOOD CORPORATE CITIZENS**, supported by the Department Of Transport.

RECOMMENDATION UNDER NIGHT OPERATION

Mr. chairperson and members of the committee, I strongly urge you to reconsider your position and change midnight to 6:30 am to midnight to 7:00 am and add chapter 4 to (c) drop your recommendation (d) and (e) now becomes (d) for the citizens of East Richmond under the heading of night operation page 25. See below - changes underlined:

9. That VIAA or other appropriate agencies implement the following curfew periods at YVR:

- a. Non-noise certified jet aircraft shall not operate at any time.
- b. All ICAO Annex 16 Chapter 2 aircraft shall not operate between 11:00 pm and 7:00 am
- c. All ICAO Annex 16 Chapter 3 & 4 aircraft shall not operate between midnight and 7:00 am.
- d. All ICAO Annex 16 Chapter 4 aircraft may operate at any time for an initial two year trial period to allow for an assessment of the impact on the Richmond community.
DELETE D
- e. All other aircraft shall not operate between midnight and 7:00 am. THIS NOW BECOMES D

Appendix 2: 2nd Round of Public Consultation (October 2009)
Questionnaire Responses & Submissions

FROM THE DESK OF
DOUG LOUTH

GOVERNANCE AND NOISE MANAGEMENT

Your committee asked me to prepare some rationale and recommendation on transparency and accountability on governance and noise management of your report. I did, and the only recommendation I advocated was not implemented into the report. Therefore, I would like the committee to add a new number 19 to page 39 of the report for the following reason. It is very important to impress the Government of Canada to change legislation, because the agencies controlling our lives don't want to change or be **GOOD CORPORATE CITIZENS**. We are tired of being bounced around like a ping pong ball.

RECOMMENDATION UNDER GOVERNANCE AND NOISE MANAGEMENT

This would become number 19 of your report:

Nav. Canada, Department of Transport and Vancouver International Airport Authority shall be required to be more transparent and accountable to the public and municipalities. This shall require the Government Of Canada to change any legislation covering airport operators and aeronautical operators.

GOVERNANCE AND NOISE MANAGEMENT

The rationale for this recommendation is to persuade YVR executives to change the time of their annual public meeting from the early afternoon to the evening, when more of the public stake-holders (citizens) can voice their opinions on the operation of the airport. They chose the early afternoon, because most of the common people work and can't attend. Only executives from other companies, also known as stake-holder, attend this meeting, to praise and pat YVR executives on the back. I attended the last annual meeting and put this question to the CEO and his comment was we will take it under advisement. Meaning, nothing is going to change. The Government Of Canada needs to use the carrot or stick to get them to change.

RECOMMENDATION UNDER GOVERNANCE AND NOISE MANAGEMENT

This would become number 20 of your report:

YVR shall hold their annual public meeting in the evening rather than the early afternoon.

FROM THE DESK OF
DOUG LOUTH

Mr. chairperson, and members of the committee. How many times have I heard and seen comments that nobody complained about sleep disturbance at the public meetings held early this year. Since I was in Australia, I'm not privileged to what occurred at those meetings. However, I did provide your committee with my seven page report at your first meeting, and it contained information on the Urban System Report to council and YVR Noise management Information Session held in East Richmond. Both of those reports contained high percentages of East Richmond residents complaining about **SLEEP DISTURBANCE**, but was completely ignored. In addition, to my report, your Appendix 1 - Public Hearing Comments & Questionnaire Responses, contains many samples of residents complaining about **SLEEP, HAVING CURFEWS, NOISE ETC** and again it was ignored. Why?

Mr. chairperson, and members of the Task force, you have a duty to represent all the citizens of Richmond. It is not up to you to consider what YVR will agree to or not. The time has come for a common sense approach and not a political choice and ban all flights from midnight to 7am. Ten years ago when I recommended to council a committee should be structured, I didn't think I would be before my very own committee pleading with you to do the right thing for all of Richmond Residents. It is very hard for me to see something I started ten years ago get sidetrack for whatever reasons.

I hope you will listen to citizens who are here tonight and in your heart, correct the injustices in the report to reflect reality. The time has come for the airport operators, airline industries, aeronautical operators and the federal government to make changes so residents living under the flight path be given some quiet time. Home owners living in older established neighbourhood are only asking for 7 hours a night (0000 to 07000) for sleep. YVR will have approximately 17 hours to run their operation. You can't tell me these high paid executives from the airports and industries can't solve the problem of night operation which is circling the world. That is what they get paid for, solving problems. If they can't do it, or will not do it, then let the common folks do it for them.

Sincerely yours,

Doug Louth

**WHY IS
YVR
UNCOMFORTABLE
ABOUT USING
THE NORTH RUNWAY...
ESPECIALLY
FOR DEPARTURES
OF LARGE AIRCRAFT
AT ANY TIME
OF DAY OR NIGHT?**

1

STATING THE CASE

DURING SEVERAL MONTHS IN THE LATE SPRING AND EARLY SUMMER 2009 YVR ran notices in every edition of each Richmond newspaper.

These notices were titled: "SUMMER RUNWAY OPERATIONS AT YVR."
The public was advised that 'Vancouver Airport Authority (was) conducting a mandatory runway lighting upgrade.'

Quote: 'This operation requires nightly closures of the south runway from 9pm to 7am, from July 5 to September 5.'

'During this time, the north runway will be used for departures and arrivals as required.'

"Great!" I thought, "we would actually get some peace and quiet for a change."
How wrong I was.

The following two e-mails were sent to the Richmond News after having complained to Operations at YVR:

11:30 pm SUNDAY NIGHT, JUNE 21, 2009

I have just watched the 8th (eighth) sizeable and noisy jet take off from the South Runway of YVR in the last half hour.

[These planes were taking off into the east wind.]

During the departure of the eight flights, not one plane was seen to have taken off from the North Runway.

I live on the 14th (fourteenth) floor from which I can clearly see the airspace east of the North Runway.

As I write, the YVR Departure Times show the following:

		date	time	gate	
United Airlines	UA768	Chicago	06/21	Departed At 22:50	D70
Air Canada	AC8290	Edmonton	06/21	Departed At 22:55	C31
Air Canada	AC8449	Whitehorse	06/21	Departed At 22:55	B11
WestJet	WS628	Toronto	06/21	Departed At 22:58	A2
Air Canada	AC1170	Toronto	06/21	Departed At 23:10	B20
Air Canada	AC162	Toronto	06/21	Departed At 23:30	B16
Air New Zealand	NZ4732	Toronto	06/21	Departed At 23:30	B16
United Airlines	UA8436	Toronto	06/21	Departed At 23:30	B16

**THIS MEANS THAT EVERY FLIGHT LEAVING YVR IS OVERFLYING THE MOST
POPULATED SECTION OF RICHMOND AT THIS TIME OF NIGHT.**

**Appendix 2: 2nd Round of Public Consultation (October 2009)
Questionnaire Responses & Submissions**

You must realise that North Runway flights pass over industrial and less populated areas of Richmond, yet the Operations at YVR choose to fly these planes over the heart of Richmond at these times of night — and later.

During the last ten days, I have noticed an inordinate number of flights overflying the heart of Richmond — especially clustered in the lunch hours, and the late afternoon / early evening dinner hours.

The wind, generally coming from the East during this period, is no excuse. Because at one point, last week in broad daylight, seven large planes overflowed the area between Odlin and Alderbridge — while at the same time no similar flight was seen to be taking off from the North Runway.

That was when, in speaking with an Operations person at YVR, and as it related to noise complaints, I was advised that YVR “really hears it” from the people living along South West Marine Drive.

Tough shit.

Is this the reason for thousands of taxpayers in the heart of Richmond to be harassed by countless low overflights?

Or, is this to punish Richmond for showing resistance to the insane idea of piping fuel through the heart of Richmond?

[End of first e-mail]xxxxxxxxxxxxxxxxxx

To: editor@richmond-news.com

This is a follow-up to my earlier e-mail of approx 12:20 am.
I have just finished talking to an Operations person at YVR.
She tells me that the North Runway has not been used for years after 10pm due to a “noise abatement” situation or agreement when it was built.

Who were they trying to placate — the people who lived along SW Marine Drive?

Rasmus Hansen
604-313-1381
1410-8871 Lansdowne Rd

[End of second e-mail]xxxxxxxxxxxxxxxxxx

OBSERVATIONS and CHALLENGES

THE FOLLOWING IS THE TEXT OF AN E-MAIL SENT TO A MEMBER OF PARLIAMENT:

I have taken the liberty to "cc" to you an e-mail I wrote to the people at YVR. They advertised activity relating to improvement of the south runway lighting which would require closing the south runway from 9pm to 7am (July 15 to Sept 5).

Please understand that this would have been a godsend — a very appreciated break from the CONSTANT 24-hour use of the south runway which put flights over the heart of Richmond at all hours of the day and night.

Why don't they use the north runway?

A question to which I could only ASSUME the following from phone conversations with the Operations People at YVR.

1 - Due to a "Noise Abatement Agreement" and as a condition of building the north runway, it was NOT to be used between 9pm and some time in the morning!!!

2 - The people at YVR "certainly 'hear it' from the people along SW Marine drive" because of noise?!!

3 - There is possibly an issue of cost / staffing which affects using the north runway.

In this day and age, when Richmond has put itself on the map, there are thousands of constituents now living under the south-runway-flightpath.

The north runway is still in line with basically industrial areas of Richmond / Lulu Island, and these areas are shut down at night.

But we still have the vast majority of overflights through the very heart of Richmond day and night.

I would challenge you to challenge YVR to give an accurate total of flights departing eastwards from YVR (this is when there is an east or east-southeast wind) — this figure should only include planes of the size of 737's and up.

At this writing, 12:20 am (now Sunday morning, Aug 2nd) some enormous plane just roared past this building.

**Appendix 2: 2nd Round of Public Consultation (October 2009)
Questionnaire Responses & Submissions**

I live in a building at Centre Pointe, facing west on the 14th floor from which there is a pretty sweeping view of parts of YVR.

When we have incessant overflights[*] during the day from the south runway, I have tried my best to see similar overflights[*] from the north runway — without success.

Something needs to be changed very soon. The reasons and excuses I am hearing are just not good enough.

As another issue, YVR really DOES NOT NEED another runway until it FULLY USES WHAT IT CURRENTLY HAS.

Thank you for your attention,

Rasmus Hansen,
1410-8871 Lansdowne Road,
Richmond, V6X 3X8
(604) 313-1381.

[End of e-mail]xxxxxxxxxxxxx

[*departures]

AT THIS TIME
IN 2009
THE DEMOGRAPHICS
HAVE CHANGED...
RICHMOND'S
THOUSANDS OF CONSTITUTENTS
NEED TO BE RESPECTED.

(THEY COLLECTIVELY BRING
MILLIONS OF DOLLARS
TO THE "VANCOUVER" ECONOMY.)

NOISE ABATEMENT PRE-CONDITIONS
WHICH STIFLE YVR FROM FULLY USING
THE NORTH RUNWAY
ARE OUTDATED AND NEED TO BE ELIMINATED.

WHEN THERE IS AN EAST WIND
YVR MUST REALISTICALLY USE THE NORTH RUNWAY
DURING THE DAY AND ESPECIALLY AT NIGHT
FOR ALL DEPARTURES OF LARGE CIVIL AIRCRAFT
AND MILITARY JETS.

Appendix 3: City of Richmond Official Community Plan Aircraft Noise Sensitive Development Policy Areas

The City of Richmond has the responsibility to balance and co-ordinate many interests in the city including growth, land use, urban design, roads and other infrastructure, community services, and the environment.

The City of Richmond acknowledges that:

- Aircraft Noise: is regarded mainly a nuisance;
- Aircraft Noise Sensitive Development (ANSD) Uses: include residential uses (e.g., single detached, multi-unit residential uses [e.g., apartments, townhouses], hospitals and child care uses);
- Land Use Management: per provincial legislation (e.g., the Local Government Act and Community Charter), the City has the jurisdiction to manage land uses including ANSD land uses and their location, urban design and density;
- Aircraft Noise Management: Transport Canada has:
 - a variety of regulations which it, NAV CANADA and VAA are to follow to avoid, eliminate, reduce, and manage aircraft noise (e.g., the approved 1992 EARP recommendations), and,
 - federal guidelines that the City may use to guide its decisions regarding where ANSD land uses may locate to minimize the impact of aircraft noise; and
- Building Height: the management of building height is a safety issue that is regulated federally by Transport Canada (e.g., a maximum of 47 m [150 ft] in the City Centre).

To better co-ordinate competing interests, the City undertook an extensive study in 2004 regarding how it could better manage ANSD land uses and determined that:

- (1) it has the ability to manage land uses;
- (2) as the Transport Canada guidelines are guidelines, they could be interpreted flexibly;
- (3) Council did not agree to fully apply Transport Canada's guidelines as to where to allow ANSD land uses in relation to the airport. This was partly because the City disagreed with the assumptions on which Transport Canada's guidelines were based (e.g., near the airport, not all residential land uses were or would be single detached residential uses, but in places, multi family uses could occur);
- (4) the City has more urban design and aircraft noise mitigation control over multi-family uses; and

Appendix 3: City of Richmond Official Community Plan Aircraft Noise Sensitive Development Policy Areas

(5) by allowing some multi unit residential uses near the airport with extra aircraft noise mitigation controls and covenants, a more acceptable balance between land use and managing aircraft noise could be attained.

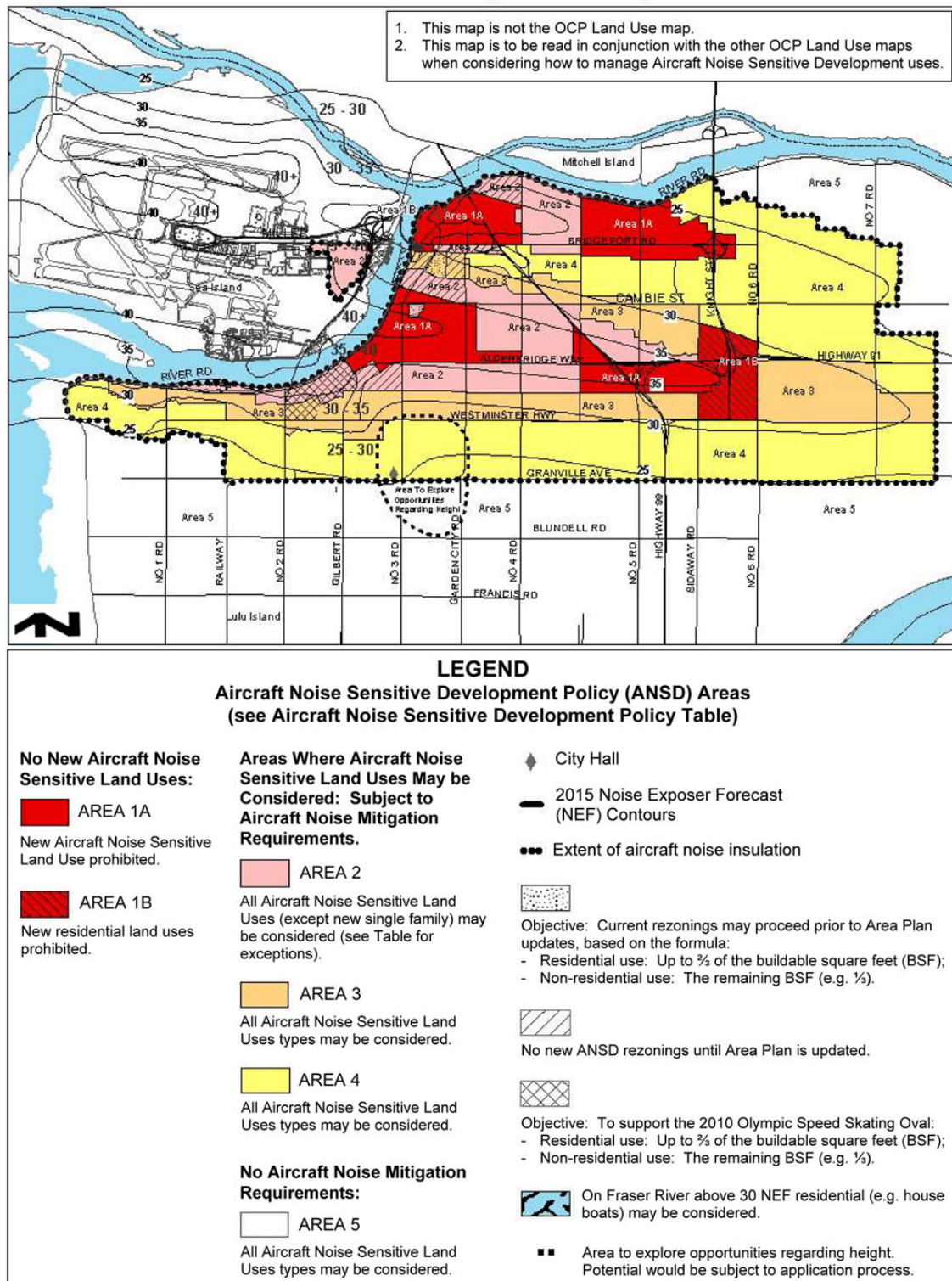
In recognition of the above findings, Richmond formally amended its Official Community Plan (OCP) on November 24, 2004 to better clarify how it would flexibly apply Transport Canada's aircraft noise guidelines (e.g., by allowing only apartments and townhouses in only some areas near the airport based on professional developer/consultant noise studies, and noise mitigation insulation and covenants). See Figure 1 for a map of the Aircraft Noise Sensitive Development areas.

While Transport Canada and VAA disagree with the above City approach, it should not mean that Transport Canada, NAV CANADA, VAA and other federal agencies should avoid doing what they can to better eliminate, reduce and manage aircraft noise.

Appendix 3: City of Richmond Official Community Plan
Aircraft Noise Sensitive Development Policy Areas

Aircraft Noise Sensitive Development Map

Figure 1: Aircraft Noise Sensitive Development Areas



Appendix 4: 1992 Vancouver International Airport Environmental Assessment Panel Report: Recommendations relating to Aeronautical Noise Management

Of the 22 recommendations of the 1992 report of the Vancouver International Airport Environmental Assessment Panel (YVR EAP), Recommendations 2 through 11 were directly aimed at abating airport-related noise and its effects on surrounding areas.

2. The Panel recommends that the Noise Management Committee:
 - a) promote the goal of achieving and maintaining the noise environment around YVR in a state not worse than that described in the EIS for the year 2001 with mitigation;
 - b) monitor and evaluate the noise environment around YVR on a continuous basis, including investigation of the noise regime created by all airport operations, their effects on residents and the effectiveness of noise mitigation and compensation measures;
 - c) report periodically on the noise environment around YVR including the publication of:
 - i. the results of monitoring and any other studies that it may carry out; and
 - ii. an independent annual public report describing the state of the noise environment during the previous year and mitigative measures taken to abate noise;
 - d) investigate measures for identifying and abating noise problems and advise Transport Canada on the development and evaluation of appropriate mitigation and compensation programs, such as those recommended by the Air Transportation Association of Canada (ATAC) limiting quiet hour use stage two aircraft and the provision of run-up noise barriers; and
 - e) address its recommendations to YVR management, which shall carry out these recommendations or show cause why it is not able to do so.
3. The Panel recommends that the Noise Management Committee:
 - a) consist of representatives appointed by Transport Canada, the Canadian Airline Pilots Association, the Air Transportation Association of Canada, the Canadian Air Traffic Control Association, the City of Vancouver, the City of Richmond, the Musqueam Indian Band, and at least two representatives of citizens groups for each of the Cities of Vancouver and Richmond;
 - b) be a permanent, self-governing body located in Richmond and operated independently of Transport Canada;

Appendix 4: 1992 Vancouver International Airport Environmental Assessment Panel Report: Recommendations relating to Aeronautical Noise Management

- c) be provided by Transport Canada with a budget adequate to carry out whatever program it deems necessary for the performance of its duties;
- d) have access, within a reasonable period, to any records which Transport Canada may compile in the course of its own noise control, abatement, monitoring and other relevant programs; and
- e) be separate from any environmental review committee whose duty is to consider impacts on land, air and water quality, and fish and wildlife.

The Minister of Transport of the day did not accept the proposed independence of the committee per Recommendation 3 and advised that the committee would be funded by, and report to, airport management and produce a public annual report. The Task Force believes the committee has not served its purpose under this structure and that an independent body would be more effective. The Task Force has addressed this shortcoming in its Recommendation 18.

- 4. The Panel recommends that as new aircraft tracking technologies are developed at YVR through the implementation of the Radar Modernization Program (RAMP) and the Canadian Automated Air Traffic Systems (CAATS), airport management use these systems to identify and obtain evidence against aircraft deviating from approved noise abatement procedures and thereby causing noise disturbances.
- 5. The Panel recommends that :
 - a) the parallel runway be operated as an arrival runway, except when departures are necessary for emergencies or routine maintenance of the main runway, and in due course when routine departures become necessary because capacity limits of YVR have been reached;
 - b) only Stage 3 aircraft be permitted to operate on the parallel runway, except when Stage 2 operations are necessary for emergencies or routine maintenance of the main runway;
 - c) all operations on the parallel runway be banned from 10:00 pm to 7:00 am, except when night-time operations are necessary for emergencies or routine maintenance of the main runway; and
 - d) landings on the parallel runway be conducted with the aircraft in the least noisy configuration possible and with minimal use of reverse thrust for braking, consistent with

Appendix 4: 1992 Vancouver International Airport Environmental Assessment Panel Report: Recommendations relating to Aeronautical Noise Management

the principle that there be no compromise of air safety, and in compliance with applicable procedures of the International Civil Aviation Organization.

6. The Panel recommends that the BC Ministry of Municipal Affairs seek the cooperation of the City of Richmond in a pilot project focused on the Bridgeport area of Richmond with the objective of investigating how airport noise impacts in British Columbia might be minimized through the use of provincial and municipal regulatory powers.
7. The Panel recommends that a noise compensation program for those affected by the proposed runway, along the lines suggested in this report, be accepted in principle and referred to the Noise Management Committee for study and action.

The Minister of Transport of the day did not support Recommendation 7 and advised that a comprehensive noise mitigation program would be instituted in lieu of a noise compensation program.

8. The Panel recommends that at least one new noise monitoring site be established in the Marpole area (e.g., Oak Street and 70th Avenue) and two more in the Bridgeport area of Richmond.
9. The Panel recommends that :
 - a) the Noise Management Committee, with the assistance of Transport Canada, carry out detailed surveys of the existing noise environment, commencing in 1991, to identify existing noise zones out to the L_{dn} 60 dBA contour, supplemented by SEL zones out to the SEL 75 dBA contour; and
 - b) in conjunction with the above and with a view to possible clarification of apparent noise anomalies in the south slope of Vancouver, the Noise Management Committee and Transport Canada develop an ongoing research program involving topographic and meteorological aspects of noise in the south slope area.
10. The Panel recommends that :
 - a) the Noise Management Committee carry out a social and building survey of the numbers and the characteristics of residents living in the delineated baseline noise zones, their living patterns, their sensitivity to noise and the condition of their homes. Questions to

Appendix 4: 1992 Vancouver International Airport Environmental Assessment Panel Report: Recommendations relating to Aeronautical Noise Management

be asked in this survey should include people's reactions to major impacts including speech masking, sleep disturbance, health effects and annoyance; and

- b) the Noise Management Committee simultaneously conduct research on possible noise mitigation and compensation measures, including commissioned independent professional research and visits to airports which have effective mitigation, compensation and public consultation programs.

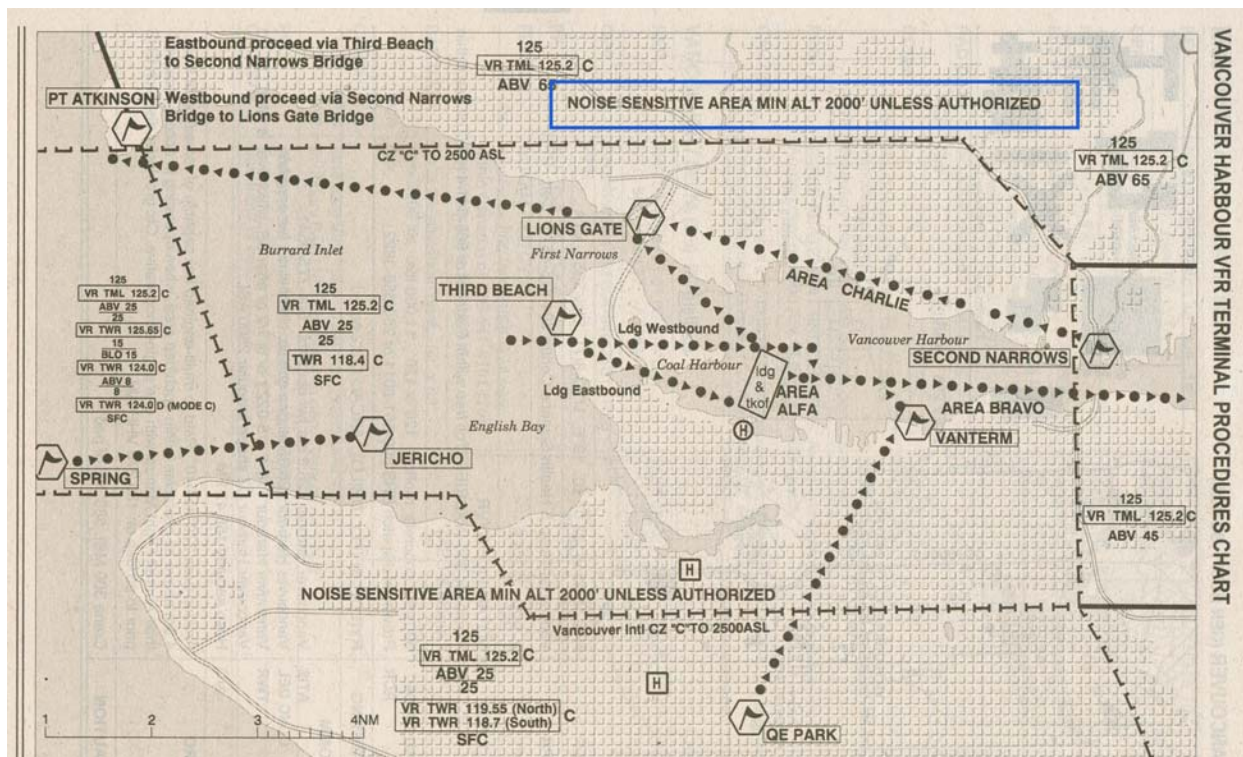
11. The Panel recommends that :

- a) the base case for determining incremental effects of noise be the most recent set of L_{dn} contours prior to the opening of a new runway;
- b) these be updated annually thereafter; and
- c) incremental noise impacts be identified using the L_{dn} 60 as the cut-off cumulative noise level and SEL contours out the 75 dBA level, together with frequency of occurrence for sporadic noise, in order to enable the NMC to determine incremental impacts warranting compensation.

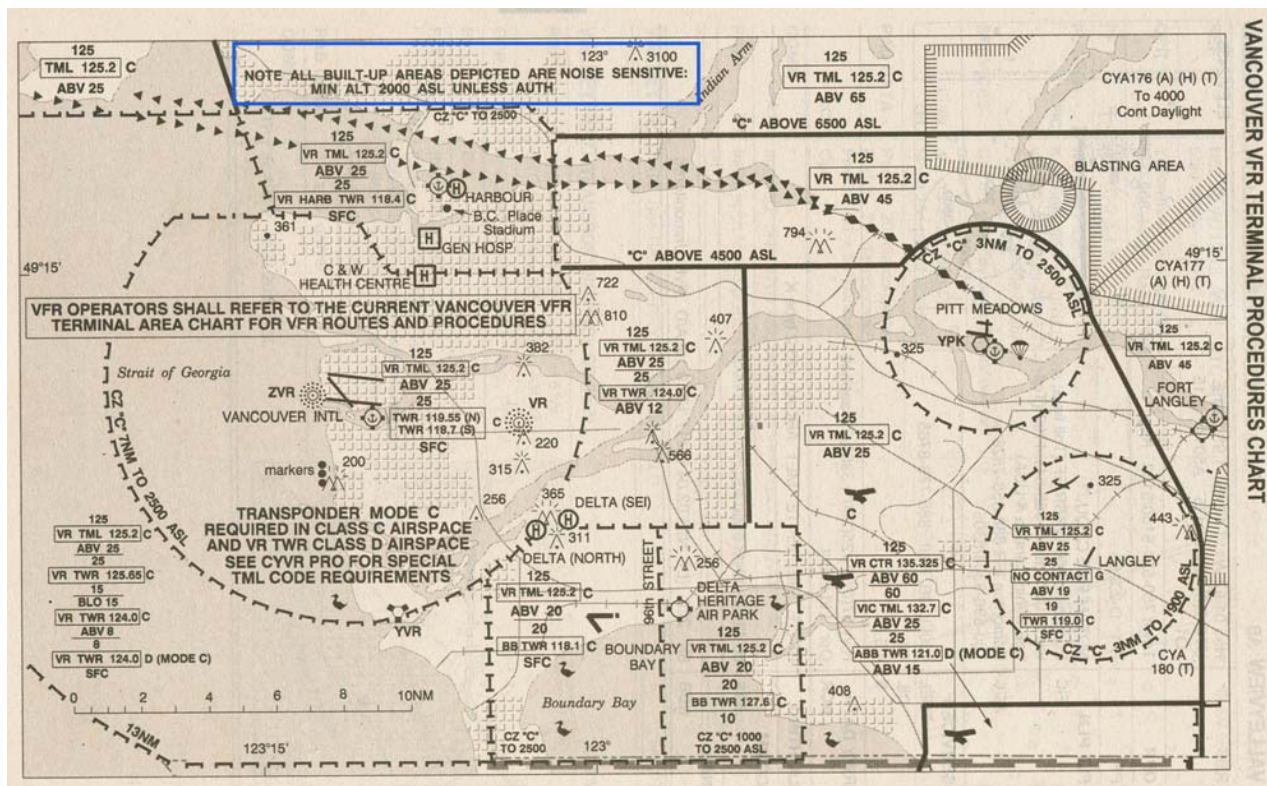
Recommendations 21 and 22 addressed the issue of future runway capacity for the region and the need to maximize the use of existing airfield resources.

- 21. The Panel recommends that the Minister of Transport initiate the preparation of an airport development plan for the Lower Mainland Region, involving Transport Canada, the VIAA, the GVRD, and the BC Ministry of Highways and Transportation along with communities, interest groups, and business interests involved.
- 22. The Panel recommends that as soon as an airport development plan is complete, the VIAA address itself to the task of preparing Abbotsford Airport and others to assume a larger role in the Lower Mainland's airport system.

Appendix 5: Vancouver VTA VFR Terminal Area Charts



Vancouver Harbour VFR Terminal Procedures Chart



Vancouver VFR Terminal Procedures Chart



Appendix 6: Union of BC Municipalities: Resolution B111 (2008)

B111 NAV CANADA CONSULTATION

Surrey

WHEREAS the Aeronautical Study's changes implemented by NAV CANADA on May 7, 2007 have negatively impacted many residents in the Lower Mainland;

AND WHEREAS the impacted communities and residents were not consulted during the Aeronautical Study;

AND WHEREAS NAV CANADA's governance model does not require consultation with communities or affected municipalities where air traffic changes take place;

AND WHEREAS there is not currently a requirement for an environmental impact study to take place when considering airspace changes;

AND WHEREAS the Minister of Transportation will only exert authority on issues concerning air safety;

THEREFORE BE IT RESOLVED that the Union of BC Municipalities (UBCM) call upon the federal government to revisit the legislative framework of NAV CANADA to ensure that proper consultation takes place with affected communities and residents;

AND BE IT FURTHER RESOLVED that the UBCM call upon the federal government to ensure that environmental impact studies take place prior to any airspace changes.

Comparison of Task Force Recommendations and Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - 1992 Vancouver International Airport Environmental	<ol style="list-style-type: none"> 1. That the appropriate agencies coordinate a response that clearly and comprehensively advises which of the recommendation of the 1992 YVR EAP, as endorsed by the Minister of Transport of the day, have been implemented and to what degree. 2. In particular, that Transport Canada or other appropriate agencies provide a detailed report on the progress of an airport development plan for the Lower Mainland region and initiatives with Abbotsford International Airport as per YVR EAP Recommendations 21 and 22. 3. That the responses as requested in recommendations 1 and 2 include a detailed implementation plan for all outstanding recommendations approved, endorsed and required by the Minister of transport of the day. 4. That VAA demonstrate how the YVR Aeronautical Noise Management Committee meets the intent of YVR EAP recommendations 2 and 3. 	<ul style="list-style-type: none"> • The YVR EAP is not addressed. • Re: A Regional Airport Strategy: <ul style="list-style-type: none"> – Not addressed in the City's comments on YVR's 2009 – 2013 Noise Management Plan. – However, in the City's comments on "YVR: Your Airport 2027" (YVR's land use plan), the City formally supports such a Strategy (Council approved its comment on Sept 11, 2006). – Transport Canada approved YVR's land use plan: entitled: "YVR: Your Airport 2027" on June 19, 2008. – Metro Vancouver also supports such a Strategy.
Task Force Topic: - Float Plane Operations	<ol style="list-style-type: none"> 5. That VAA, NAV CANADA and other appropriate agencies introduce and publish new procedures for float plane operations to minimize noise impacts that include requiring: <ol style="list-style-type: none"> a. Float planes to use the north part of the Middle Arm of the Fraser River and/or the channel north of Swishwash Island. b. No flights over built-up areas below 1,000 ft until on final descent for landing. c. No powered float plane operations, including docking or ramping, on or adjacent to the Middle Arm of the Fraser River between 10:00 pm and 7:00 am. 	<p>6.1 – Float Plane Over-flights Develop education and awareness web material explaining over-flight routes and encourage Transport Canada to address these non-YVR operations.</p> <p>Richmond's Comments</p> <ul style="list-style-type: none"> • <i>Reducing float plane and helicopter noise is a main issue for Richmond residents.</i> • <i>This action is supported and Transport Canada should be asked to establish better rules and enforcement.</i> <hr/> <p>7.1 – YVR Float Operations Enhance education and awareness of community issues through regular meetings with the float plane operators.</p> <ul style="list-style-type: none"> • <i>As reduced float plane noise is a main issue for Richmond residents, meetings should include the public for example, the citizen representatives to the YVR ANMC.</i> <p>7.2 - YVR Float Operations Create "preferred" arrival and departure routes for the Fraser River, monitor use, and report to operators.</p> <ul style="list-style-type: none"> • <i>As reducing float plane noise is a main issue for Richmond residents, please establish required routes which are enforceable, with penalties.</i> • <i>Please consult with the City and community when doing so.</i> <p>7.3 - YVR Float Operations Review and assess voluntary restrictions on float plane operations, e.g., 2 vs. 3-bladed propeller, time of day.</p> <ul style="list-style-type: none"> • <i>Disagree, as voluntary actions don't work.</i> • <i>Please establish requirements which are enforceable.</i> • <i>Also, please reduce unnecessary float plane idling.</i> <hr/> <p>8.1 – Education and Awareness Industry Develop a training module on noise management for flight schools.</p> <ul style="list-style-type: none"> • <i>Supported: please clarify the purpose.</i> • <i>Please consult with the public when preparing the modules to incorporate their comments and suggestions to make them more useful.</i>

**Comparison of Task Force Recommendations and
Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives**

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - Aircraft Maintenance & Engine Run-up Operations	<p>6. That VAA install a proper Ground Run-up Enclosure (GRE), as a high priority capital project, to be used for all aircraft engine maintenance run-ups.</p> <p>7. That until a GRE is operational, VAA discontinue the granting of approval for engine run-ups between 10:00 pm and 7:00 am in airport areas and during wind conditions where the resulting noise is likely to affect residents living on the south side of the Middle Arm of the Fraser River.</p> <p>8. That VAA implement an effective reporting, monitoring and enforcement system to deal with noise issues resulting from operations on the south side of the airport.</p>	<p>4.1 – Run-ups Assess engineering noise control measures for propeller engine run-ups and build a dedicated run-up facility of propeller aircraft if feasible.</p> <ul style="list-style-type: none"> <i>Please address all types of engine run- up noise, not just propeller engine run-up noise.</i> <i>Reducing engine run-up noise is very important to Richmond and the public. This was again recently verified at the City's Task Force public meeting in January 2009.</i> <i>If feasible, please build the facility, as soon as possible.</i> <i>Also, please determine how well the existing run-up area at the west end of Sea Island is being used and how could it be improved.</i> <i>A sound-proof structure located near maintenance hangers for engine run-ups may be used more constructively.</i> <i>Should a sound-proof structure be built, encourage engine run-ups not be conducted in the open air.</i> <p>4.2 – Run-ups Explore the use of multi-lateration technology (receivers to pinpoint the location of a noise source) and CCTV (closed-circuit television) cameras to monitor compliance with the Engine Run-up Directive.</p> <ul style="list-style-type: none"> <i>Agree; however, such technology should only be used if the intent is to better enforce run-ups with and without approval.</i> <p>4.3 – Run-ups Review other possible control mechanisms for enforcement of Engine Run-up Directives.</p> <ul style="list-style-type: none"> <i>As reduced run-up noise is a main issue, considering other enforcement mechanisms is encouraged.</i> <p>4.4 – Run-ups Assess further restrictions on run-up activities - hours / duration.</p> <ul style="list-style-type: none"> <i>As reducing run-up noise is a main issue, please establish restrictions, as voluntary actions are not sufficiently reducing noise.</i> <i>Operators need rules, backed up with enforcement and penalties for violations.</i> <i>Please clarify the community impacts of the future "engine run-up" area.</i> <i>Information on violators should be posted for on the YVR web site</i>

**Comparison of Task Force Recommendations and
Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives**

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - Night Operations	<p>9. That VAA implement the following curfew periods at YVR:</p> <ol style="list-style-type: none"> Non-noise certified jet aircraft shall not operate at any time. All ICAO Annex 16 Chapter 2 aircraft shall not operate between 11:00 pm and 7:00 am. All ICAO Annex Chapter 3 aircraft shall not operate between midnight and 6:30 am. All ICAO Annex 16 Chapter 4 aircraft may operate at any time for an initial two year trial period to allow for an assessment of the impact on the Richmond community. All other aircraft shall not operate between midnight and 7:00 am. <p>10. That VAA develop a program to eliminate the number of curfew exemptions granted over the next three years.</p> <p>11. That VAA publish a quarterly list of all curfew exemptions granted, including a reason for each exemption granted.</p> <p>12. That VAA require aircraft to use idle-only reverse thrust at all times on all runways. <i>(This reverse thrust restriction already exists on the north runway and should be applied to the south runway).</i></p>	<p>1.1 – Night-time Operations Review current guidelines for granting approval for operations for jet aircraft between the hours of mid-night and 0700 local.</p> <ul style="list-style-type: none"> <i>Night time flights and noise have become an important issue in Richmond.</i> <i>The objective is to restrict midnight to 7 am approvals.</i> <i>The process, rules and enforcement need to achieve this objective and reduce night noise.</i> <i>YVR is requested to meet with the public to discuss, clarify and improve how night flights and noise can be reduced and better managed.</i> <i>Improved criteria for when and when not night flights occur are needed, as well as better enforcement of the rules and penalties for violators.</i> <i>YVR is requested to review the current guidelines in consultation with the public and municipalities.</i> <p>1.2 – Night-time Operations Prepare a study assessing the impacts of extending the current prior approval requirement for jet operations between the hours of mid-night to 0700 local to <u>all</u> aircraft.</p> <ul style="list-style-type: none"> <i>As stated, since reducing night noise has become very important, the study as a first step, to extend prior approvals to all planes, is welcomed.</i> <i>Many complaints come from noise generated by smaller aircraft.</i> <i>Having all planes receive prior approval is expected to reduce noise</i> <p>1.3 – Night-time Operations Explore the feasibility of developing a night-time Standard Instrument Departure (SID) procedure for aircraft on westerly routes departing runway 08 (the west).</p> <ul style="list-style-type: none"> <i>As reducing night noise is very important, studying, as a first step, how to improve procedures, is welcomed.</i> <i>Please develop night-time SID procedure(s) as feasible.</i> <i>Please consult with the community regarding the airport's night operations.</i>

Comparison of Task Force Recommendations and Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - Flights Operating Over West Richmond	<p>13. That NAV CANADA and other appropriate agencies revise existing and develop new procedures for VFR aircraft to better define and regulate the existing Noise Sensitive Area over Richmond to include:</p> <ol style="list-style-type: none"> Restrict and limit use of airspace over West Richmond below 2,500 ft. Amend the published VFR arrival routes for all aircraft, including float planes and helicopters, landing westbound on runways 26L and 26R, on helipads, or on the Middle Arm of the Fraser River to include: <ol style="list-style-type: none"> Revoke the current "Richmond Square" VFR Checkpoint near the Blundell Road overpass on the east side of Highway 99 to Blundell Road. Amend the "Coal Pile Arrival" route to utilize the new Blundell Overpass checkpoint with the route proceeding from YVR VOR to north of the George Massey Tunnel and then remaining east of highway 99 to Blundell Road. Require aircraft to maintain at an altitude of not below 1,500 ft until final descent or landing. Float planes arriving from the north should use a standard circuit for landing westbound on the Middle Arm of the Fraser River but be required to maintain an altitude of at least 1,000 ft on the downwind leg as per Recommendation 5b, and be restricted from turning base until west of the Richmond General Hospital. For VFR aircraft, including float planes and helicopters, departing eastbound from Runway 08L or 08R, from helipads to from the Middle Arm of the Fraser River eastbound: <ol style="list-style-type: none"> Restrict right turns until climbing to at least 1,000 ft. For aircraft heading south, fly directly to the new Blundell Overpass VFR checkpoint in the area near the Blundell Road / Highway 99 overpass. Remain east of Highway 99 until the George Massey Tunnel. <p>14. That NAV CANADA and other appropriate agencies cancel the Richmond One Departure" and require all non-jet aircraft to use only the new "Olympic One Departure".</p> <p>15. That a new Aeronautical Information Circular (AIC) of Aeronautical Information Publication (AIP) Supplement, whichever version is most suitable, be published in the Canada AIP to highlight the noise issues in Richmond, reinforce the existence of the noise sensitive area and describe the existing and new noise control procedures.</p>	<p>2.1 – Arrivals and Departures Support and work with NAV CANADA during the implementation of Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures in an effort to minimize over-flights of populated areas wherever possible.</p> <ul style="list-style-type: none"> <i>Minimizing over-flights of populated areas is supported by Richmond, as it is main issue. Smaller aircraft still fly low over residential areas when talking off and descending.</i> <i>Richmond supports improved NAV CANADA activities to reduce aircraft noise.</i> <i>Better enforcement of take off and approach flight paths should be implemented.</i> <i>YVR is requested to support the UBC M Bill 111 as it directly encourages NAV CANADA to assist in reducing and managing aircraft noise.</i> <p>2.2 – Arrivals and Departures Support Transport Canada in their project to replace the current Vertical Noise Abatement Procedures with Noise Abatement Departure Procedures.</p> <ul style="list-style-type: none"> <i>All Transport Canada efforts to improve noise abatement procedures are welcomed.</i> <i>Once installed, please share the results with the community to that ensure such action results in noise reduction.</i> <p>2.3 – Arrivals and Departures Explore the use of de-rated thrust (the amount of thrust needed for an aircraft to take off when it is below capacity) take-off procedures.</p> <ul style="list-style-type: none"> <i>As reducing noise is important, this initiative is welcomed, as it is assumed that less needed thrust will result in less noise.</i> <hr/> <p>5.1 – ILS Flight Inspections Develop education and awareness web material explaining the ILS system and required flight inspections. (local flights that circle the airport to monitor the operation of the Instrument Landing System)</p> <ul style="list-style-type: none"> <i>This action is supported as prevention is always preferred.</i> <i>Please clarify to whom the education is being targeted.</i> <hr/> <p>5.2 – ILS Flight Inspections Enhance community web-based notification of upcoming ILS flight inspections.</p> <ul style="list-style-type: none"> <i>This is supported, as YVR may receive fewer complaints if the public better understands the source of the noise and why it is occurring.</i> <hr/> <p>8.1 – Education and Awareness Industry Develop a training module on noise management for flight schools.</p> <ul style="list-style-type: none"> <i>Supported: please clarify the purpose.</i> <i>Please consult with the public when preparing the modules to incorporate their comments and suggestions to make them more useful.</i>

**Comparison of Task Force Recommendations and
Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives**

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - Governance and Noise Management	<p>16. That the appropriate agencies, such as YVR Noise Management Committee, hold a public meeting in each of Vancouver Richmond, Delta and Surrey at least once per year where citizens are free to voice their concerns, and get feedback as appropriate.</p> <p>17. That the YVR Airport Noise Management Committee membership be expanded to include all flight operators, including float plane operators and members of the Task Force or a permanent City aeronautical noise advisory committee, if desired by Council.</p> <p>18. That the appropriate agencies, such as Transport Canada, establish an independent noise monitor agency with the authority to monitor and enforce noise mitigation measures and penalize noise violators consistent with the intent of the YVR EAP Recommendation 3.</p>	<p>14.1 – Communication Review the Terms of Reference for the YVR Aeronautical Noise Management Committee.</p> <ul style="list-style-type: none"> • <i>Richmond supports this review</i> • <i>When doing it please consult with Richmond.</i> • <i>Please add a Richmond Health Services representative to the VIAA Noise Management Committee.</i> <p>14.2 – Communication Increase use of the web to provide information and updates on noise management activities.</p> <ul style="list-style-type: none"> • <i>Agree. Please follow up postings with open public meetings.</i> <p>14.3 – Communication Prepare and publish regular web-based noise monitoring reports.</p> <ul style="list-style-type: none"> • <i>Agree. Please follow up postings with open public meetings.</i> <p>14.4 – Communication Develop and trial a community liaison program.</p> <ul style="list-style-type: none"> • <i>Strongly agree, but please clarify its purpose.</i> • <i>Richmond will be pleased to assist YVR in this work.</i> • <i>One of its purposes should be to hold open public meetings.</i> • <i>Please consult with Richmond on this work.</i> <p>14.5 – Communication Develop an email notification system that advises the community of particular operations at the airport – e.g. maintenance, north runway departures to reduce delay, ILS flight checks, etc.</p> <ul style="list-style-type: none"> • <i>Agree. Please add this information in a quarterly YVR news flyer to be distributed to nearby communities for those who may not have e-mail access.</i> • <i>Please notify the community early and often.</i> <p>14.6 – Communication Additional City Comment</p> <ul style="list-style-type: none"> • <i>Publish violations periodically.</i> <p>16.1 – Roles and Responsibilities Clarify roles and responsibilities between Airport Authority, Transport Canada, and NAV CANADA regarding noise management activities.</p> <ul style="list-style-type: none"> • <i>This is a good initiative as there is confusion regarding who does what.</i> • <i>As well improved communications and decision-making often result once the roles are clarified.</i> • <i>Please advise the City and community of the results.</i>

**Comparison of Task Force Recommendations and
Richmond City Council Comments on YVR 2009-2013 Noise Management Plan Initiatives**

	Richmond Airport Noise Citizens Advisory Task Force Recommendations	Richmond City Council Comments on YVR 2009- 2013 Noise Management Plan Initiatives
Task Force Topic: - Recommendations for Richmond City Council	<p>19. That the mandate of the Richmond Airport Noise Citizens Task Force be extended until all agencies have received, reviewed and reported back on these recommendations, at which time the Task force would review the responses and report to Council with its final assessment of those responses, including and further recommendations, if necessary. After presenting this report to Council, the Task Force would not reconvene until the City receives feedback from VAA, NAV CANADA, Transport Canada or other appropriate agencies.</p> <p>20. That the recommendations of the Task Force, if approved by Council, be publicized as widely as possible by the City, including presentation(s) to senior levels of government, the media and other interested community organizations.</p> <p>21. That if the Task Force is permanently disbanded, that a permanent City airport noise advisory committee be established and its membership include the City of Richmond's appointees to the YVR Airport Noise Management Committee.</p> <p>22. That this report be forwarded to Transport Canada, NAV CANADA, the Vancouver Airport Authority, and other agencies as deemed appropriate by Council.</p>	Not Addressed



23 April 2010

Victor Wei, P.Eng.
Director, Transportation
CITY OF RICHMOND
6911 No. 3 Road
Richmond, BC V6Y 2C1

VIA FAX: (604) 276-4132

Dear Mr. Wei:

RE: Night-time Operations at Vancouver International Airport

Thank you for taking the time to meet with us on 25 March 2010. At this meeting you requested information on the impacts associated with restricting or banning night flights and the viability of imposing extra fees for operations at night.

Vancouver International Airport (YVR) is managed by the Vancouver Airport Authority, a not-for-profit corporation, under a long term ground lease with the Federal Government. The mandate of the Airport Authority is to serve the community by providing air services and to help contribute to the economic performance of the region and Province. The ability to operate 24-hours is critical to properly fulfilling this role.

YVR remains a key economic generator for the Lower Mainland and the Province contributing approximately \$1.7 billion in Gross Domestic Product (GDP), \$3.4 billion economic output, and \$1.1 billion in wages. In addition, operations at YVR contribute approximately \$680 million in annual tax revenue to all levels of government – of this, approximately \$22 million is paid to municipal governments. In addition, the Airport Authority paid approximately \$15.1 million in Payment in Lieu of Taxes (PILT) to the City of Richmond in 2009.

Businesses located at YVR are a significant source of employment for residents in the Lower Mainland. YVR supports approximately 27,000 direct jobs, with over 6,000 Richmond residents working at the airport.

In 2009, there were approximately 253,380 aircraft landings and takeoffs on the runways at YVR, with about 3% (7,595) of these occurring between the hours of midnight and 6:00am. This is down approximately 17% from our peak of 9,235 night operations in the year 2000. The 7,595 night-time operations in 2009 averages to approximately 21 operations per day, and the majority (63%) of these operations are arrivals. Of the 7,595 night-time operations in 2009: 23% were propeller aircraft; 5% were business jets; 49% were narrow body jets; and 22% were wide body jets.

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Page 1 of 3





Under Part II of the published noise abatement procedures for YVR, jet aircraft operations between the hours of midnight and 7:00am must have approval from the Airport Authority. When reviewing requests from airlines, the Airport Authority will assess the benefits of each operation to the broader community. In general, operations that carry passengers or cargo to and from YVR are approved, whereas ferry (repositioning) flights and technical stops (refueling) operations are denied.

While there are some scheduled passenger services at night, most of the operations are dedicated to cargo operations. The main cargo integrators at YVR include DHL Express, Federal Express, Purolator Courier, and United Parcel Service. Through these integrators, the region is connected to a global distribution system that is essential for BC companies to compete in world markets. The inability to operate at night would likely mean many of these integrators would relocate their sort facilities, leading to increased cost for customers and loss of markets for regional business as well as a loss of employment on Sea Island.

A report prepared by Pricewaterhouse Coopers LLP in 2004, estimated that upwards of 40% of the cargo business growth forecast for YVR in the next 20 years could be lost as a result of banning flights at night, especially when the potential loss of courier companies based at YVR is considered. The report also estimated that the economic loss would likely affect Richmond and other Greater Vancouver municipalities to a much greater extent than the rest of the Province.

The ability to serve the Asia-Pacific passenger markets through YVR is also contingent on operating at night for the following reasons:

- Night-time departures from YVR arrive in Asia in the morning which permits a wide range of connections. This is particularly attractive to Asia-based carriers who must supply passengers for their extensive route networks.
- To be viable, some flights bound for Asia, from YVR, will route through airports in Eastern Canada and the US. These flights arrive at YVR in the evening which means that they must depart YVR at night.
- There are many new airports in Asia that do not have slot controls and curfews. These airports are replacing older airports that have these restrictions which, in some cases, govern the departure times from YVR.

Restricting or banning night flights would impact the ability to properly service destinations in Asia and would negate benefits from initiatives such as China's approved destination status and the new Open Skies agreements of which the City of Richmond is a key supporter.

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With regards to extra fees or surcharges for night-time operations, the largest portion of an airline's operating cost is associated with the fuel and labour. It is estimated that less than 3-5% of an airline's operating cost is associated with airport fees; therefore, there would need to be a substantial increase in airport fees in order to change or modify behavior and the higher cost would ultimately be passed onto the passengers.

The Airport Authority attempts to keep costs low to ensure that the residents of Richmond and other parts of the Lower Mainland can have the air services they want in order to stay connected with friends and family. The Airport Authority is not convinced that extra fees for night-time operations is an effective way to manage the issue of night time operations and believes the community's desire for air travel and market connectivity would be impacted. In addition, this is not a good time to impose additional costs on airlines given the state of the aviation industry.

Thank you for the opportunity to provide comments. Should you have any questions regarding the above, please feel free to contact me at (604) 276-6366.

Sincerely yours,

A handwritten signature in blue ink that reads 'Mark C. Cheng'.

Mark Christopher Cheng, M.Eng. (mech)
Superintendent Noise Abatement & Air Quality
Vancouver Airport Authority

Direct Approach

Consulting Inc.



Report to Staff
for the
City of Richmond

Airport Night Time Bans and Violation Fee Practices



23 May 2010

TABLE OF CONTENTS

1	EXECUTIVE SUMMARY	18
2	SCOPE.....	19
3	NOISE CERTIFICATION LEVELS	19
4	ICAO NOISE CHARGE POLICY	20
5	MONTREAL - PIERRE ELLIOT TRUDEAU INTERNATIONAL AIRPORT (CYUL)	20
6	TORONTO LESTER B. PEARSON INTERNATIONAL AIRPORT (CYYZ)	22
7	FRANKFURT - MAIN (EDDF).....	25
8	AMSTERDAM - SCHIPHOL (EHAM)	26
9	LONDON – HEATHROW (EGLL).....	27
10	GENEVA, SWITZERLAND (LSGG).....	29
11	FRANCE – VARIOUS AIRPORTS	30
12	SAN JOSE – CALIFORNIA (KSJC).....	33
13	REGIONAL COMPARISON.....	35
	13.1 VANCOUVER (CYVR).....	35
	13.2 CALGARY (CYYC)	36
	13.3 SEATTLE TACOMA (KSEA).....	36
	13.4 PORTLAND (KPWM).....	36
	13.5 LOS ANGELES (KLAX)	37
	13.6 REGIONAL SUMMARY	38
14	TRANSPORT CANADA NOISE REGULATION: CARS 602.106.....	39
15	CONCLUSION	41
16	APPENDIX	43
	16.1 TRANSPORT CANADA VIOLATION FEE SCHEDULE - CARS 103 SCHEDULE II....	43
	16.2 PENALIZED CANADIAN AIRPORTS.....	43
	16.3 NOISE ABATEMENT PROCEDURES – CANADIAN AIRPORTS	44
	16.4 AMSTERDAM (SCHIPHOL) - NOISE CONTROL DETAILS.....	45
	16.4.1 <i>Airport slot control</i>	45
	16.4.2 <i>Schiphol Airport Charges</i>	46
	16.4.3 <i>Premium or Discount Rate by Aircraft Types and Noise category</i>	46
	16.4.4 <i>Amsterdam Day / Night Fee Schedule</i>	47
	16.4.5 <i>Chapter 2 Ban Surcharge</i>	47
	16.5 FRANKFURT	48
	16.5.1 <i>Aircraft categories for Noise Charges</i>	48
	16.5.2 <i>Aircraft Noise Charges</i>	49
	16.6 LONDON – HEATHROW.....	50
	16.6.1 <i>Details of Noise Level Charges and Surcharges</i>	50
	16.6.2 <i>London - Sample Aircraft by QC Rating</i>	51
	16.7 AIRPORT SCHEDULED TRAFFIC – SAMPLE.....	52
	16.8 AIRPORT ANNUAL MOVEMENTS	52
	16.9 AIRPORTS WITH NOISE CHARGES:	53

Change Record

Revision	Date	Responsible Person	Description of Document Change
Original	09 May 2010	WH	Original
Rev 1	18 May 2010	MW	Amended
Rev 2	23 May 2010	MW	Regional comparison requested

Property Statement:

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Executive summary

The scope of this study and report, as requested by City of Richmond staff, is to research and report on the existence of and any requirements or conditions related to night time flight bans, and to determine if extra or higher user fees are being imposed for night flights and if so their effectiveness in discouraging night flights.

Despite numerous and repeated attempts at contacting various international airports which were asked to provide data on operators and customers at the airport, most of them were reluctant to do so or did not return email or phone calls with the information requested. Much of what was obtained was instead gathered from public information sources. This led to a lack of detailed information on the actual effectiveness of that publicly available information.

Airports are normally governed by a Board of Directors and operated by a Local Airport Authority. With the commercialization of Canadian airports, Canadian airport authorities and operators became businesses providing a service to their customers. Those customers expect confidentiality. Often information on businesses in Canada is only occasionally available through the Freedom of Information Act.

Potential noise infractions in Canada are normally reported to Transport Canada through the Civil Aviation Daily Occurrence Report (CADOR) system as filed by the airport authority or NAVCANADA. Once the CADOR is received an investigation is commenced to document the evidence and determine if an offence actually occurred. If the determination is that an offence did occur, there are a number of factors that are taken into consideration before the offender is possibly penalized and the penalty determined. The penalty schedule is documented in the Civil Aviation Regulations (CAD's), number 103 as shown in the Appendix.

Some Canadian airports, including Toronto Pearson and Montreal Trudeau, now employ an in-house system of fees or penalties for noise control procedure or curfew non-conformances. This is in addition to any CARS regulation infractions handled by Transport Canada within the normal regulatory framework. There was no indication given by the airport operators as to the effectiveness of these penalties. These charges are levied against the published restrictions, and not meant to actually discourage night time operations but instead to conform to the published night operations plan.

Information on commercial air operator violations is public domain and available through Transport Canada only after the operator has been convicted. A list of noise related convictions and penalties are included in the Appendix.

There is misinformation about how some Canadian airports have total "Night Bans". A case in point is Toronto Pearson. Toronto does not have a total night time ban for aircraft movements as most people think or would like to believe. Toronto does have night time restrictions however aircraft do operate out of the airport 24 hours a day.

Amsterdam's Schiphol airport is one example where a system of fees and discounts is used to discourage noisier aircraft. Quieter aircraft receive a discount on the airport charges, while relatively noisy aircraft have to pay a surcharge, and there is an extra surcharge applied for nights. No information was provided with respect to the effectiveness of this policy. Similarly London airports, including Heathrow, employ a system of noise quota limits and landing fee discounts for quieter aircraft.

Our research could not determine any comparable airports to Vancouver International that have a total night time restriction. Both Geneva Switzerland and San Jose California do employ night time bans; however their operations are somewhat different from CYVR and considered non-comparable sites.

It must be noted that some airports are state run, or are subject to stricter forms of governance. Most airports are run as distinct businesses which provide a service to their customers and stakeholders. As businesses they must satisfy their customers and pay their operating costs. Therefore without firm regulatory requirements there is little incentive to increase fees or apply penalties. And any increased cost to the airlines will be passed on to the flying public.

Scope

This report was commissioned by the City of Richmond to research all airports of similar size, complexity and operational characteristics as Vancouver International Airport.

The scope of this study and report, as provided by City staff, is to research and report on the existence of and any requirements or conditions related to night time flight bans, and to determine if extra or higher user fees are being imposed for night flights and if so, their effectiveness in discouraging night flights. An economic assessment was not expected as part of the report.

Those airports studied are participants on the Boeing Airport Noise and Emissions Regulations page. This web site is provided by Boeing and is considered by the aviation industry as one of the best sources of airport noise and flight restriction information. This can be found at:
<http://www.boeing.com/commercial/noise/index.html>

This report includes two airports in Canada. None of the airports researched in the USA that are comparable to Vancouver have night time restrictions. Included is San Jose Airport in California because of its noise program and available data, even though their customers are not comparable to Vancouver due to the lack of significant international traffic. Amsterdam's Schiphol Airport and Frankfurt Germany are also included. The airports contacted had night time Noise Abatement Bans in effect and which were published by the Airport through various media venues and official aviation documents.

The report is based on information determined through Official publications, written and via verbal contact with the airport operators.

The data collected for each airport may include but is not limited to:

- night flight ban hours in effect
- type of operations affected
- non-compliance fees
- exemptions
- administration of penalties

Noise certification levels

The American Federal Aviation Authorities noise definitions for aircraft types fall under Federal Aviation Regulation (FAR) 36. Under this the aircraft are categorized in various "Stages". Although not identical, the FAR 36 Stages are roughly equivalent to the ICAO Annex 16 method of defining by "Chapter".

For example, an Annex 16 Chapter 4 aircraft noise certification is roughly equivalent to the FAA Stage 4 certification. The greater the aircraft's Stage or Chapter value, the quieter the aircraft. Therefore a Chapter 4 aircraft is measurably quieter than a Chapter 3 aircraft.

Each aircraft and engine combination will be certified at a specific maximum weight. The certification is long and complicated, so no specific threshold values will be detailed in this report however both departures and arrival sound monitoring is done during the certification process. Some common type comparisons are shown in the Appendix for London under their "QC" program.

ICAO has recommended that all Chapter 2 aircraft be phased out. Canada agreed to comply with this by 01 April 2002, however the Minister of Transport may provide exemptions for aircraft operating to northern and remote locations.

ICAO Noise Charge Policy

ICAO's policy with regard to noise charges was first developed in 1981 and is contained in *ICAO's Policies on Charges for Airports and Air Navigation Services* (Doc 9082/6). The Council recognized that, although reductions are being achieved in aircraft noise at source, many airports need to apply noise alleviation or prevention measures. The Council considers that the costs incurred may, at the discretion of States, be attributed to airports and recovered from the users. In the event that noise-related charges are levied, the Council recommends that they should be levied only at airports experiencing noise problems and should be designed to recover no more than the costs applied to their alleviation or prevention; and that they should be non-discriminatory between users and not be established at such levels as to be prohibitively high for the operation of certain aircraft.

Practical advice on determining the cost basis for noise-related charges and their collection is provided in the [*ICAO Airport Economics Manual \(Doc 9562\)*](#), and information on noise-related charges actually levied is provided in the *ICAO Manual of Airport and Air Navigation Facility Tariffs* (Doc 7100).

Reference: <http://www.icao.int/icao/en/env/noise.htm>

Montreal - Pierre Elliot Trudeau International Airport (CYUL)

The airport has noise operating restrictions in place and in use. The airline has to contact Airside Operations when operations are not in compliance with the curfews. Airside Operations take into account a number of pre-determined factors when deciding on approving or disapproving operational exemptions during curfew hours as shown in Table CYUL-3. Normally an exemption is not authorized if the departure will not occur more than 1 hour after the curfew takes effect.

These factors are:

- Air Traffic Control delays
- De-Icing conditions
- Weather conditions
- Mechanical
- Reason for departure delay for CYUL
- Reason for departure delay from CYUL
- Any other delay information that is provided

Operators have pre-determined seasonal quotas that are based on the number of operations at the airport that are pre-approved and may depart.

Some operators, due to their operational requirements, have free slots anytime during the curfew. However, these tend to be concentrated in the winter season when charters and schedule flights are operating to and from vacation destinations.

The YUL airside operational staff were very helpful on the phone providing the data collected but could not provide any more information. The Operations staff advised that they would attempt to have other departments at the airport return a phone call or electronically send the information requested.

The following data was received from the Deputy Director, Montreal Airport Airside Operations.

Table CYUL-1
Montreal (CYUL) investigations by year

Year	Investigations	Penalized
2009	10	0
2008	48	19
2007	65	8
2006	24	2

Table CYUL-2
Penalty year, number of fines and cost.

YEAR	NUMBER	AMOUNT IN \$
2009	0	-
2008	1	7000
	3	6250
	1	5000
	1	3800
	5	3500
	1	3000
	7	UNKNOWN
2007	1 COMPANY 15 EVENTS	60,000
	4	3500
	3	3000
2006	1 COMPANY 2 EVENTS	5000
	1	3500

Table CYUL-3
YUL AIRPORT CURFEWS

Noise operating restrictions by turbo-jet and turbo-fan aircraft.		
AIRCRAFT	PERIOD - LOCAL TIME	
Noise Certification and Weight Limitations	Arrivals Prohibited	Departures Prohibited
All non-noise certificated aircraft (i.e. Non-Chapter 2,3,or 4)	All Times	All Times
All ICAO Chapter 2 aircraft (US FAR Part 36, Stage 2 aircraft)	2330 to 0700	2300 to 0700
All ICAO Chapter 3 aircraft (US FAR Part 36, Stage 3 aircraft) over 45,000 kg (max. certificated take-off wt).	0100 to 0700	0000 to 0700
Exemptions: May be authorized in advance by the Director, Operations for specific flights and determinate periods.		

* Editorial note: Chapter 4 certified aircraft are not restricted.

Summary:

Montreal (Trudeau) has noise abatement procedures which include limits on aircraft up to and including Chapter 3 restrictions based on time of day. There is no outright night time ban. There is a system of seasonal operator noise quotas. There are no noise specific surcharges.

Toronto Lester B. Pearson international Airport (CYYZ)

Toronto Airport operates under a restricted night operations policy that was transferred to the Greater Toronto Airports Authority (GTAA) in 1996 from the Federal Government ownership. As stipulated in the ground lease for Toronto Pearson and Transport Canada with the federal government, the GTAA is responsible for noise mitigation for aircraft operating to and from Toronto Pearson within a 10 nautical mile radius of the airport.

The Toronto Pearson restrictions are outlined in the bulletin shown below as Figure CYYZ-1

The GTAA is the only airport in Canada that has a maximum cap on night time operations imposed by Transport Canada. The cap is currently 12,948 yearly movements during the period from November 1 to October 31 of each calendar year. The cap has never been reduced since transfer and has actually increased. The increase in the cap is directly proportional and tied to the passenger growth during the year.


The GTAA Noise Management Office monitors adherence to noise operating restrictions and noise abatement procedures at Toronto Pearson. In addition to receiving, analyzing, and responding to complaints concerning aircraft noise from the public, the GTAA reviews and recommends amendments to the operating restrictions and noise abatement procedures. The GTAA Enforcement Office investigates potential violations, takes preventative actions, and recommends assessment of penalties to be implemented by Transport Canada. Although noise management at Toronto Pearson is the responsibility of the GTAA, enforcement of all published procedures rests with Civil Aviation at Transport Canada.

The airport has an Aviation Enforcement Specialist who conducts approximately 400 investigations a year into potential night time violations. This results in an average of ten convictions per year. The airport is promoting voluntary compliance with the noise policy and working with their clients successfully to attain compliance. When an operator is found to be non-compliant there is a policy that is followed. Depending on the reason for the non-compliance, this would normally start off with a written warning. Repeated offences are then followed up, with consideration to the number of violations, and an additional financial penalty is levied. The amount is determined by multiplying the applicable landing fee by sixteen. The operator is also reported to Transport Canada through the CADORS system for any additional sanctions under the CARs if applicable.

Summary:

Toronto (Pearson) has noise abatement procedures which include limits on aircraft up to and including Chapter 3 restrictions based on time of day. There is no outright night time ban. There is a system of maximum traffic limits, both total and night time. There are no noise specific surcharges. Penalties for non-compliance with established night time procedures may include a surcharge of up to 16 times the normal fees plus reporting to Transport Canada for possible enforcement.

Figure CYYZ-1
GTAA Operations Bulletin: Night Flight Restriction Program



GTAA

BULLETIN: # 10-03-001
March 8, 2010
GREATER TORONTO AIRPORTS AUTHORITY

OPERATIONS BULLETIN

To: T1 Air Carriers, T3 Air Carriers, Transport Canada, Government Agencies, Duty Managers, AOCC Supervisors, Ground Handlers, Cargo Area, General Aviation, Nav Canada, Airport Coordination Canada, GTAA Management

From: Howard Bohan-Vice President, Operations and Customer Experience

Subject: Toronto Pearson International Airport
Night Flight Restriction Program – Summer 2010 (March 28, 2010 – October 30, 2010)

The Greater Toronto Airports Authority (GTAA) is required to develop and maintain a comprehensive aircraft noise mitigation program and to manage the number of flights during the night restricted hours. Effective **November 1, 2009**, a new Night Flight Restriction Program (NFRP) was implemented. The new Program, including procedures for General Aviation (GA) operations, is outlined in the attached summary. As there have been changes to the standard operating procedures used in the past, please ensure that you have read and fully understand the new operating procedures.

To ensure that the number of flights during the restricted hours remains proportionate to overall traffic levels, limits have been placed on the total number of flights which may occur between 0030 and 0629L in any year. The GTAA will not exceed the established limit and will carefully manage the number of flights within the restricted hours.

All aircraft **not** operating on a scheduled and repetitive basis are required to request permission to operate during the restricted hours by contacting the Resource Management Unit (RMU) on the day of operation at (416) 776-3480 or 1-(800) 267-SLOT (7568).

Toronto Pearson based GA operations will also be able to schedule slots by submitting a slot request to the Facility Allocation Office at least 24 hours prior to the anticipated flight time and not more than 30 days in advance. A budget for these slots has been established and will not be exceeded.

Medevac operations of any priority are permitted to operate during the restricted hours. Contact RMU prior to operating to obtain night flight approval.

P.O. Box 9001, 4111 Connaught Drive, Toronto, ON, Ontario, Canada M3P 1B2 www.gtaa.com

GREATER TORONTO AIRPORTS AUTHORITY
 Operations Bulletin: # 10-03-001
 Night Flight Restriction Program – Summer 2010 (March 28, 2010 – October 30, 2010)
 March 8, 2010
 Page 3 of 5

TORONTO PEARSON INTERNATIONAL AIRPORT
NIGHT FLIGHT RESTRICTION PROGRAM – SUMMER 2010
 (APPLICABLE TO ALL AIRCRAFT)

1. EFFECTIVE PERIOD **MARCH 28, 2010 – OCTOBER 30, 2010**

2. RESTRICTIONS (as published in the CANADA AIR PILOT & CANADA FLIGHT SUPPLEMENT)

- a) Subject to paragraph 2b) or 2c), arrivals and departures of all aircraft are restricted as per the table below:

Aircraft	Restricted Hours – local time
<i>Noise certification or type</i>	<i>Arrivals & Departures</i>
All non-noise certificated jet aircraft	2000 - 0800
All ICAO annex 16, vol 1 Chapter 2 & equivalent aircraft	0000 - 0700
All ICAO annex 16, vol 1 Chapter 3 & equivalent aircraft	0030 - 0630
All other aircraft	0030 - 0630

- b) All aircraft operating on a scheduled and repetitive basis are required to obtain an exemption (Section 3) or an extension (Section 4) to operate during the restricted hours.
- c) All other operators are required to obtain permission to operate during the restricted hours by contacting the Resource Management Unit (RMU) on the day of operation at (416) 776-3480 or 1-(800) 267-SLOT(7568).
- d) Toronto Pearson based General Aviation (GA) operators may obtain pre-approved GA Night Flight Budget Pool slots (Section 5).
- e) Maintenance power run-ups are prohibited between 0000-0700 L unless authorized by the Airport Duty Manager at (416) 776-3030.
- f) Training flights are not permitted in the Toronto Control Zone except initial departure to or final arrival from other locations from 0000-0700L.
- g) **Medevac operations of any priority are permitted during the restricted hours. Contact the RMU to obtain night flight approval prior to operating.**

3. EXEMPTION OPERATIONS

A limited number of exemptions for Chapter 3 or equivalent operations may be approved in advance conditional on the GTAA's ability to remain within the total number of flights agreed on with Transport Canada. Applications must be received in writing, and in complete detail **once** at the start of each season, no later than 30 days prior to the intended operation. Subsequent communications relating to changes, or additions should be made through normal SCR submission processes. Information regarding exemption criteria may be obtained from Facility Allocation at (416) 776-3548. An operator's history of compliance with exemption times and frequency of extension requests will be considered in evaluating exemption requests.

- NOTES:**
- a) Exemption operations are allocated by GTAA Facility Allocation group and must be submitted by a slot request sent to Airport Coordination Canada Limited (ACCL) at (905) 673-6380, Fax. (905) 673-9892 or Teletype YYZSCAC, YYZTMCR. ACCL will forward the slot request to the GTAA for terminal coordination evaluation.
- b) Exemption operations delayed beyond approved slot times will not require an operating extension. Contact the RMU at (416) 776-3480 or 1-(800) 267-SLOT(7568) with the revised estimated arrival/departure time. **It is the operator responsibility to ensure that all applicable agencies are notified of delays (e.g. Canada Customs, Taxi/Limo compound, etc)**

4. OPERATING EXTENSIONS

Frankfurt - Main (EDDF)

Frankfurt Airport has night time restrictions at the airport. The airport officials did provide some information, however much of this was deemed as not valuable for this report.

The essence of the Frankfurt restrictions is:

- Aircraft without an ICAO Annex 16 noise certificate are not permitted to take off or land.
- Aircraft with a noise certificate in accordance with ICAO Annex 16 Volume 1, Part II, **Chapter 2 are not permitted to take off or land between 1900-0700**
- Take-offs and landings of flights are not permitted unless they have been coordinated at least one day in advance by the Scheduling Coordinator 2100-0500.
- **Landings are not permitted for any kind of flights 2300-0400.**

As with most other airports with restrictions, there are some exceptions.

As a result of the building of a new runway, the following notice was issued which further restricts aircraft less than Chapter 3:

Sept 14, 2009

Intensification of Noise Regulations at Frankfurt

Airline customers received notice of new noise regulation at the airport as part of the realization of the new landing runway. The first stage of the noise regulation will start on October 25th 2009. Marginally compliant **Chapter 3 airplanes (Chapter 3 minus 5) will be banned from operating in and out of the airport between 2000-0800**. In addition, the use of reverse thrust is prohibited on the runway system except for safety reasons and aircraft movements under their own engine power are prohibited on the entire runway system as well as apron areas (except movements connected with take-off or landing). The second phase of the new noise regulations (which were not specified) will be effective with the opening of the new runway in autumn 2011.

In addition, there are noise-related charges as specified in the Airport Charges Regulation for Frankfurt Main Airport (valid July 01, 2010). In calculating these charges the various aircraft are placed into 12 categories. These categories, their noise dB levels, and the aircraft associated are shown in Table EDDF-1 in the Appendix while the charges by category and time of night are shown in Table EDDF-2.

Summary:

Frankfurt has noise abatement procedures which include strict routes and operating restrictions based on aircraft noise certification levels. Chapter 2 departures are not authorized 1900 – 0700 kts, and all arrivals are not permitted between 2300 – 0400. Greater restrictions, which will include Chapter 3 minus aircraft (i.e. those just under the normal Chapter 3 level) will be implemented in 2011. There is no total night time ban, however there is a system in place for noise category specific surcharges.

Amsterdam - Schiphol (EHAM)

Amsterdam Airport Schiphol is a noise-restricted airport that uses three different noise related measures. This is in addition to a Government Noise Surcharge

First is a pricing differentiation over and above the base landing and take-off charge. This additional charge is applied according to the noise category per aircraft registration. Each aircraft type and operation is evaluated and categorized. Surcharges of 40% above the "basic compensation" is applied to the noisiest aircraft, while a discount of 15% to the basic compensation is applied for the quietest.

Second is the application of higher landing and take-off charges applicable during the night. Daytime operations are less expensive than night operations making it more desirable for operators to try and schedule during daytime hours.

And thirdly is a total ban on Chapter 2 aircraft. Despite the Chapter 2 ban, Schiphol airport does publish fees applicable for any Chapter 2 aircraft that land despite the "ban".

These fees are all shown in tables included in the Appendix.

In this way quieter aircraft receive a discount on the airport charges, while relatively noisy aircraft have to pay a surcharge, with an extra surcharge for nights. In this way Schiphol is trying to encourage certain air traffic to come to Amsterdam Airport Schiphol and discourage other air traffic. Their noise program's aim is to also avoid the statutory limit established noise values from being exceeded. The exact maximum noise statutory value is complicated and an explanation was not provided.

It is important to note that Schiphol operates the airport with night restrictions, but not a total ban. The airport operator balances the economical benefits with the requirements of the community and the airlines to reach the desired outcome. During the night regime period, special landing procedures, take-off routes and runway combinations are in use.

The time period of the local night regime is currently under review. Legal extension of the night regime period from 06:00 to 07:00 hours is being considered in order to reduce the perceived community annoyance (sleep disturbance) due to aircraft noise at night. However, since in the opinion of their aviation sector, an extension of the restrictions to the period 07:00 would cause significant economic damage, this is still being debated and has not been implemented yet.

Included in the Appendix is the Airport Charges page as published on the Boeing Noise and Emissions site. This describes the method used to calculate the extra charges.

The night procedures program in place at Schiphol as provided is provided in the Appendix. Specific data on compliant and non compliant numbers was not made available by the airport operator.

Summary:

Amsterdam (Schiphol) has noise abatement procedures which include strict routings and Chapter 2 restrictions. There is no outright night time ban. There is a system of yearly and night time traffic and noise value quotas. Landing charges are based in part on noise certification levels. In addition to the airport fee system, there are also government noise surcharges.

London – Heathrow (EGLL)

London Heathrow did not respond to our requests for information. The following is taken from public information sources.

London Heathrow has set and published the following long-term objective for the management of aircraft noise:

"To limit aircraft noise impacts and gain the trust of our stakeholders that we are using best practicable means to achieve this goal, and to continue this approach into the future, within the framework established by government."

They have also published a set five key themes for their program over the next five years. These themes establish a framework for the airport's **Noise Action Plan** and help form priorities. They are:

1. Reducing noise impacts wherever practicable. This includes:
 - 1.1. Quietest fleet practicable
 - 1.2. Quietest practicable aircraft operations, balanced against NO_x and CO₂ emissions
 - 1.3. Effective and credible noise mitigation schemes.
2. Engaging with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans.
3. Influencing planning policy to minimize the number of noise-sensitive properties around our airports.
4. Organizing ourselves to continue to manage noise efficiently and effectively.
5. Continuing to build on our understanding of aircraft noise to further inform our priorities, strategies and targets.

To help achieve this London authorities have stated an objective to progressively encourage the use of quieter aircraft (day and night for Heathrow and Gatwick; night only for Stansted), i.e. a progressive decrease in the overall night quota per season over the next years.

Night is defined as 2300 – 0700

The "quota period" is 2330 - 0600

Aircraft are assigned a Certification Noise Levels (EPNLs) which are used for determining the QC category and quota count value. These are also then used to determine the ability to operate at specific times.

Certificated Noise Level (EPNdB)	Quote Count	Take-off permitted during night * (2300 – 07)	Take-off permitted Quota period (2330 – 0600)
Greater than 101.9 (noisier)	16	N	N
99-101.9	8	N	N
96-98.9	4	Y	N
93-95.9	2	Y	Y
90-92.9	1	Y	Y
87-89.9	0.5	Y	Y
84-86.9	0.25	Y	Y
Below 84 (quieter)	0	Y	Y

* Some exceptions permitted if it was scheduled prior to 2300 hrs, the takeoff was delayed for reasons beyond the operator's control, or the airport operator has "not given notice to the aircraft operator precluding take-off."

The specified quota limits are:

Heathrow: 5,340
Gatwick: 6,400
Stansted: 4,750

The maximum of total occasions on which aircraft described in the table above may take-off or land are:

Heathrow: 3,250
Gatwick: 11,200
Stansted: 7,000

Note: There is a provision to be able to "carry over" up to 10% of any unused movements or quota values. Similarly if there is an overrun, then there is required to be a downward adjustment applied to the next reporting period.

Reference: UK AIP Sup #006/2010 25 Feb 2010
<http://www.boeing.com/commercial/noise/LondonAirportsNOTAM25Feb2010.pdf>

Summary:

London (Heathrow) and several other airports are managed by the British Airport Authority (BAA). Heathrow has noise abatement procedures which include noise level specific restrictions. There is no outright night time ban however there is a limit on night time movements. There is a noise quota time period in place. Landing charges are based in part on the aircrafts noise certification level.

Geneva, Switzerland (LSGG)

Geneva employs a system of total night time bans for Departures between 2300 – 0500 (UTC), and for Arrivals between 2300 – 0400 (UTC) as shown below in the site's published restriction information.

Geneva local time is +2 hrs ahead of Universal Time UTC

The Geneva airport traffic however is not truly comparable to YVR in their arrivals and departures are largely to and from other European cities and there are not as many intercontinental flights as at YVR. The annual movements for Geneva are approx. 190,000 vs. 313,984 for YVR (2009). Therefore the same scheduling problems for overseas time zones as is experienced at YVR do not apply.

These restrictions are published as follows:

Arrivals:

Arrivals of Commercial Air Transport are:

- **banned from 2301* to 0359* UTC** and
- **restricted from 0400* to 0459* UTC.**

Arrivals from 0400 to 0459* UTC are only permitted provided the carrier:*

- a) *has submitted and received prior approval from the Geneva Airport Authority to publish an STA during this time frame, and*
 - b) *holds a Geneva airport slot during this time frame issued by Slot Coordination Switzerland.*
- Delayed arrivals may be tolerated between 2300* and 2330* UTC. Prior approval from the GVA Airport Authorities must be obtained.*

Departures:

Departures of Commercial Air Transport are:

- **banned from 2301* to 0459* UTC** and
- **restricted from 2101* to 2300* UTC**

Departures from 2101 to 2300* UTC are only permitted provided:*

- a) *aircraft with a noise index less than 98 EPNdB are used to destinations (non-stop flights only) of more than 5,000 km (2,800 nm), or*
- b) *aircraft with a noise index less than 96 EPNdB are used for all other destinations.*

NOTE: The noise index is the EPNL value that is the arithmetic average of the Chapter 3 Flyover and Lateral cert levels.

Delayed departures may be tolerated between 2300 and 2330* UTC. Prior approval from the GVA Airport Authorities must be obtained.*

Prior permission is required from the Geneva airport authorities by all commercial air transport operations during the night bans described in AIP Switzerland ISGG and, Permission to operate in the night ban is only granted in exceptional circumstances.

Summary:

Geneva airport has noise abatement procedures which include noise level specific restrictions. There is a night time ban however there are some possible exceptions. The Geneva traffic type and volume however is not considered comparable to Vancouver International.

France – Various Airports

Charles de-Gaulle and Paris Orly, among other French airports, operate with a system of noise abatement procedures, noise restrictions similar to most other airports, and noise “acoustic group” fees.

The main De-Gaulle noise restriction threshold is currently set at “Chapter 3 minus 5”, which refers to typical Chapter 3 noise levels minus 5 EPNdB (noise units).

These airports in France use a noise tax formula with a higher effective rates based on time and airport.

The tables below show an example for a B747. At Paris - Orly tax is 1464 Euros from 6am to 6pm, but increases to 14,646 Euros between 10pm and 6am. If that same aircraft operated out of Paris - Charles de-Gaulle then the costs are reduced to 592 Euros and 5920 Euros respectively. This is intended to encourage non-quiet hours flights and operations out of airports that are less noise sensitive.

A formula, which is derived below used the factors:

- Tax Rate (Table F-2)
- Time Factor
- Acoustic Factor

There are 3 time periods. Each is weighted in the calculation:

- 6:00am – 6:00pm
- 6:00pm – 10:00pm, and
- 10:00pm – 6:00am.

The time factors are as follows:

- 6:00am – 6:00pm = 12
- 6:00pm – 10:00pm = 36
- 10:00pm – 6:00am. = 120

The actual formula applied in Table F-3 is derived:

The tax on air noise pollution is to be paid for each takeoff of an aircraft whose maximum takeoff weight (MTOW) is greater than or equal to 2 tons. For each takeoff the tax can be calculated using the following formula :

$$T = t \times c \times \log(M)$$

- T is the amount of the tax for one takeoff
- t is the tax rate applied to each airport, the tax rates are given in the appendix to this document
- c is the modulation term based on the acoustic group to which the aircraft belongs and its takeoff time

M is the maximum takeoff weight of the aircraft.

SINCE THE 1ST OF JANUARY 2008, THE MODULATION TERM DEPENDS ON TAKEOFF TIME BETWEEN 6 AM AND 6 PM (DAY), BETWEEN 6 PM AND 10 PM (EVENING) AND BETWEEN 10 PM AND 6 AM (NIGHT) : DÉCRET N° 2007-1825 DU 24 DÉCEMBRE 2007.

Table F-1
Acoustic Groups

Acoustic group	Type of aircraft included in each category
GROUP 1	<ul style="list-style-type: none"> Aircraft not included in the acoustic groups 2, 3, 4 or 5.
GROUP 2	<ul style="list-style-type: none"> Chapter 3 or 5 noise certificated aircraft with a corrected cumulative margin less than 5 EPNdB.
GROUP 3	<ul style="list-style-type: none"> Chapter 3 or 5 noise certificated aircraft with a corrected cumulative margin greater than or equal to 5 EPNdB and less than 8 EPNdB.
GROUP 4	<ul style="list-style-type: none"> Chapter 3 or 5 noise certificated aircraft with a corrected cumulative margin greater than or equal to 8 EPNdB and less than 13 EPNdB.
GROUP 5a	<ul style="list-style-type: none"> Chapter 3 or 5 noise certificated aircraft with a corrected cumulative margin greater than 13 EPNdB.
GROUP 5b	<ul style="list-style-type: none"> Chapter 6, 8, 10 or 11 noise certificated aircraft.

- Tax rate applied to each airport** (Arrêté du 26 décembre 2007 fixant le tarif de la taxe sur les nuisances sonores aériennes applicable sur chaque aéroport mentionné au IV de l'article 1609 quaterbis A du code général des impôts)

Airports	Tax rate
Paris-Orly	47 €
Toulouse-Blagnac	30 €
Paris-Charles-de-Gaulle	19 €
Nantes-Atlantique	22 €
Bordeaux-Mérignac	6 €
Lyon-Saint-Exupéry	7 €
Marseille-Provence	7 €
Nice-Côte d'Azur	6 €
Strasbourg-Entzheim	0,5 €

Table F-2
Tax Rate

Table F-3
Example for B747:

- Tax amount for a B747-400 takeoff (motorisation PW4056 ; acoustic group 2)

		6 AM – 6 PM	6 PM – 10 PM	10 PM – 6 AM
1st group of airports	Paris-Orly	$47 \text{ €} \times 12 \times \log(395) = 1\,464 \text{ €}$	$47 \text{ €} \times 36 \times \log(395) = 4\,393 \text{ €}$	$47 \text{ €} \times 120 \times \log(395) = 14\,645 \text{ €}$
	Toulouse-Blagnac	$30 \text{ €} \times 12 \times \log(395) = 935 \text{ €}$	$30 \text{ €} \times 36 \times \log(395) = 2\,804 \text{ €}$	$30 \text{ €} \times 120 \times \log(395) = 9\,348 \text{ €}$
2nd group of airports	Paris-Charles-de-Gaulle	$19 \text{ €} \times 12 \times \log(395) = 592 \text{ €}$	$19 \text{ €} \times 36 \times \log(395) = 1\,776 \text{ €}$	$19 \text{ €} \times 120 \times \log(395) = 5\,920 \text{ €}$
	Nantes-Atlantique	$22 \text{ €} \times 12 \times \log(395) = 686 \text{ €}$	$22 \text{ €} \times 36 \times \log(395) = 2\,057 \text{ €}$	$22 \text{ €} \times 120 \times \log(395) = 6\,855 \text{ €}$
3rd group of airports	Bordeaux-Mérignac	$6 \text{ €} \times 12 \times \log(395) = 187 \text{ €}$	$6 \text{ €} \times 36 \times \log(395) = 561 \text{ €}$	$6 \text{ €} \times 120 \times \log(395) = 1\,870 \text{ €}$
	Lyon-Saint-Exupéry	$7 \text{ €} \times 12 \times \log(395) = 218 \text{ €}$	$7 \text{ €} \times 36 \times \log(395) = 654 \text{ €}$	$7 \text{ €} \times 120 \times \log(395) = 2\,181 \text{ €}$
	Marseille-Provence	$7 \text{ €} \times 12 \times \log(395) = 218 \text{ €}$	$7 \text{ €} \times 36 \times \log(395) = 654 \text{ €}$	$7 \text{ €} \times 120 \times \log(395) = 2\,181 \text{ €}$
	Nice-Côte d'Azur	$6 \text{ €} \times 12 \times \log(395) = 187 \text{ €}$	$6 \text{ €} \times 36 \times \log(395) = 561 \text{ €}$	$6 \text{ €} \times 120 \times \log(395) = 1\,870 \text{ €}$
4th group of airports		$0,5 \text{ €} \times 12 \times \log(395) = 16 \text{ €}$	$0,5 \text{ €} \times 36 \times \log(395) = 47 \text{ €}$	$0,5 \text{ €} \times 120 \times \log(395) = 156 \text{ €}$

Source: <http://www.boeing.com/commercial/noise/FranceNoiseTax2008.pdf>

Summary:

Most of the significant French airports are subject to a system of noise abatement procedures, noise restrictions, and operating fees based on noise certification levels. There is no outright night time ban. The fee system is meant to encourage traffic to use less sensitive airports (i.e., Charles de-Gaulle vs. Paris Orly).

San Jose – California (KSJC)

San Jose Airport has a night time curfew in place and published. Although this airport cannot really be compared to Vancouver International Airport it was considered worthwhile including for two reasons. It is one of the few airports in the USA with night time restrictions and it was willing to share its data for this study. An airport official reported that the curfew appears to be effective and a deterrent. They were also quick to point out that there is a process for their customers to receive approval to operate during the curfew hours for the following reasons; mechanical, weather and Air Traffic Control delays.

Citations Issued:

2008	34
2009	16
2010 (to date)	10

Note; The citations to date comprised were issued to 34 airline companies and 26 to Charter or General Aviation aircraft.

San Jose Curfew information:

In October 2003, Mineta San José International Airport (SJC), with the approval of the Federal Aviation Administration (FAA), revised the curfew portion of its noise control program from a weight-based curfew to a noise-based curfew. The revised noise control program also included enforcement provisions where operators are fined \$2,500 for every curfew intrusion.

During the curfew period FAR 36 Stage II aircraft may **not** operate between the hours of 11:00 p.m. and 7:00 a.m.

FAR 36 Stage III aircraft (those at or below 89.0 EPNdB per FAR AC 36-1H average of takeoff / sideline / approach noise levels) or any other “grandfathered” Stage 3 Jet Aircraft can operate between the hours of 11:30 p.m. to 6:30 a.m. The aircraft that are grandfathered and therefore can operate even during the curfew are detailed in the “Attachment A/B” from SJC as shown on the following page.

With this grandfathering of aircraft which are permitted to operate during the curfew, it might appear that the curfew is less effective than the Chapter 4 only operation as recommended by the Richmond Citizen’s Task Force.

Summary:

There is a night time ban in place however there are some grandfathered aircraft types and possible exceptions. San Jose airport has noise abatement procedures which include Stage 2 restrictions. There are no restrictions for Stage 3 or quieter, except as applied to the night time ban. The San Jose traffic type and volume however is not considered comparable to Vancouver International.

ATTACHMENT A/B	
Manufacturer	Model
Aerospatiale	SN 601 Corvette
BAE Systems	146-100A
Beech	Beechjet 400 ¹
Boeing	B-717
Bombardier	BD-700-1A10 (Global Express), BD-100-1A10 (Challenger 300), CL-600 (all models), CL-601 (all models), CL-604, CRJ200, CRJ700, CRJ900
Cessna	Citation (all models) ²
Dassault	Falcon 10, Falcon 20 (Stage 3 models only) ³ , Falcon 50 ¹ , Falcon 200, Falcon 900, Falcon 2000
Embraer	135 (all models), 145 (all models)
Fairchild Dornier	Dornier 328-300
Fokker	F70, F100
Gulfstream	G100, G200, G-IV, G-V, G-II (Stage 3 retrofitted) ⁴ , G-IIB (Stage 3 retrofitted) ⁴ , and G-III (Stage 3 retrofitted) ⁴
Israel Aircraft	1124 Westwind (all models), 1125 Astra (all models), Galaxy
Learjet	31 (all models), 35 (all models), 36 (all models), 45 (all models), 55 (all models) ⁵ , 60 (all models)
McDonnell Douglas	MD-90
Mitsubishi	MU-300 (Diamond I), MU-300-10 (Diamond II) ¹
Raytheon	C-29A, 390 Premier, Hawker 125 (Stage 3 models) ⁶
Sabreliner	Sabreliner 65 ¹
<p>¹ Grandfathered under San Jose Municipal Code §25.03.255.</p> <p>² 552 Citation II, 560 Citation V, 650 Citation III, and 650 Citation VI are grandfathered under San Jose Municipal Code §25.03.255.</p> <p>³ Stage 3 Falcon 20-Basic/D/E/F (M2851) and 20-G (M2500) models are grandfathered under San Jose Municipal Code §25.03.255.</p> <p>⁴ Grandfathered under San Jose Municipal Code §25.03.255, but only if Equipped with Quiet Technology Aerospace Stage 3 hush-kit described in FAA Supplemental Type Certificate (STC) No. STO2618AT. The G-IITT covered by the March 22, 2004 amendment to STC No. STO2618AT, or any other aircraft types referred to in subsequent amendments to STC No. STO2618AT, are not authorized to operate during the curfew.</p> <p>⁵ 55B and 55C are grandfathered under San Jose Municipal Code §25.03.255.</p> <p>⁶ Stage 3 versions of 125-1A, 125-3A, 125-400A, 125-600A, and 125-700A are grandfathered under San Jose Municipal Code §25.03.255.</p> <p>Source: FAA AC 36-1H, Appendix 1</p>	

July 2009

Regional Comparison

At the request of the City of Richmond, a simple regional comparison of the noise restrictions and any curfews is included. Airports included are Calgary International (CYYC), Seattle Tacoma International (KSEA), Portland International (KPWM), and Los Angeles International (KLAX) These sites represent likely competitors to Vancouver International.

VANCOUVER (CYVR)

(Current)

Noise Abatement Procedures - Yes

Preferential Runways: Yes

Airport Curfews: None

Process for Requesting Approvals for Night Restricted Operations at Vancouver International Airport

Night Restrictions: (Local Time):

1). 0001-0600: Departure of ICAO Annex 16 Chapter 2 or FAA FAR Part 36 Stage 2 certified JET AIRCRAFT 34,000 kg and over not permitted.

2). 0001-0700: Departure/Arrival of JET AIRCRAFT cargo, air carrier scheduled and charter flights require the prior approval of YVRAA OPERATIONS.*

3). 2200-0700: Departure/Arrival of ALL AIRCRAFT on Rwy 08L & 26R not permitted.**

4). 2200-0700: Local training flights not permitted.

*YVRAA OPERATIONS may permit exemptions for emergencies and airfield maintenance, as well as for delays experienced at Vancouver Intl, such as for weather, mechanical or ATC. YVRAA OPERATIONS will provide log numbers with exemptions or approvals. Tel: 604-207 7022, Fax: 604-276-6099 (24 hours).

**YVRAA OPERATIONS may permit exemptions for emergencies and airfield maintenance.

Operating Quota - None

Noise Budget Restrictions - None

Noise Surcharge - None

Chapter 3 Restrictions: None (Operates In accordance with noise abatement and preferred runways)

CALGARY (CYYC)

Noise Abatement Procedures: Yes

Preferential Runways: Yes

Operating Quota - None

Noise Budget Restrictions - None

Airport Curfews - None

Noise Surcharge Noise – None

Noise Level Limits - None

Chapter 3 Restrictions - None

SEATTLE TACOMA (KSEA)

Noise Abatement Procedures: Yes

North Flow	The Initial Departure Corridor is 4 degrees each side of the 341 degree radial of the Sea-Tac Airport VOR, extending 8 DME north of the Airport and a minimum altitude of 4,000feet before turning.
Between the hours of 10:00 pm and 6:00 am jet aircraft departing north are vectored west over Elliott Bay, then turned north or south over Puget Sound once out of Elliott Bay.	
South Flow	The initial Departure Corridor is 4 degrees each side of the 161 degree radial extending 5 DME south of the airport and a minimum altitude of 3,000 ft before turning.
Reverse Thrust	Between the hours of 10:00 pm and 7:00 am, the use of extended reverse thrust is discouraged beyond what is necessary for operational or safety reasons.

Airport Curfews: No

Prior to the phase-out of Stage 2 airplanes over 75,000 lbs in the U.S., there was a curfew on those operations at the airport. None currently.

Preferential Runways - Yes

During nighttime hours, 10pm to 6am, it is preferred that aircraft equipped with flight management system (FMS) operate through the North Flow Nighttime Noise Abatement Corridor. This measure is operational when traffic and other conditions permit, as determined by the FAA. In such conditions, during nighttime hours, departures can be shifted from south to the north, thus utilizing the established noise abatement corridor. This procedure is limited to those times when it can be done safely and efficiently.

Noise Surcharge – None

Noise Level Limits - None

Stage 3 Restrictions – None

PORTLAND (KPWM)

Preferential Runways: Yes (See Noise Abatement Procedures.)

Noise Abatement Procedures: Yes

-Voluntarily limit use of Runway 18/36 by noise-critical aircraft unless crosswinds exceed 15 knots

23 May 2010

36

- "Noise-critical" aircraft are those having Estimated Maximum A-weighted Sound Levels (from FAA Advisory Circular 36-3H) greater than 80 dBA
 - Would limit many jets and loud turboprops, such as Lear 25s and FedEx Caravan 208s
- Continue preferred use of:
- Runway 29 for early morning departures
 - Runway 11 for late night arrivals
 - "Harbor visual" approach for Runway 29 arrivals

Airport Curfews - None
Noise Budget Restrictions - None
Noise Surcharge - None
Noise Level Limits - None
Stage 3 Restrictions - None

LOS ANGELES (KLAX)

Noise Abatement Procedures: Yes

Over-Ocean Operations:

This procedure provides some relief from arriving aircraft noise to those close-in communities to the east of the Airport between the hours of 0000 and 0630. During this period, aircraft approach the Airport from over the ocean toward the east and depart over the ocean toward the west, unless the ATC determines that the weather conditions are unsafe for such operations.

Early Turn Restrictions:

Pilots of all aircraft departing toward the west shall maintain runway heading until past the shoreline before commencing any turns unless specifically instructed otherwise by the ATC.

For departures from the north runways (24 R/L) LAWA defines the shoreline as the 158 Radial of the Santa Monica Airport (SMO) VOR. When instructed to turn at the shoreline, please turn when you intercept the SMO VOR R-158.

For departures from the south runways (25 R/L) LAWA defines the shoreline as the 154 Radial of the SMO VOR. When instructed to turn at the shoreline, please turn when you intercept the SMO VOR R-154.

Preferential Runways - Yes
Airport Curfews - None
Operating Quota - None
Noise Budget Restrictions - None
Noise Surcharge - None
Noise Level Limits - None
Stage 3 Restrictions - None

REGIONAL SUMMARY

SITE	Noise Surcharges	Noise Certification Restrictions			Curfew
		Stage 2 *	Stage 3	Stage 4	
Vancouver	None	Yes	None	None	None
Calgary	None	Yes	None	None	None
Seattle	None	Yes	None	None	None
Portland	None	Yes	None	None	None
Los Angeles	None	Yes	None	None	None

Notes:

FAA FAR "Stage" certification levels considered equivalent to the numerically equivalent ICAO Annex 16 "Chapter" levels.

* Chapter / Stage 2 Aircraft:

Canada: Chapter 2 airplanes >75,000 lbs are banned from operating in Canada except for those aircraft authorized by the Minister of Transport (northern exemptions). The phase out of Chapter 2 airplanes >75,000 in Canada was complete as of April 1, 2002. Those airplanes are ban from operating in Canada with the exception of a very limited number of exemptions for aircraft operating to northern and remote locations.

USA: Stage 2 airplanes >75,000 lbs are prohibited from operating at airports within the 48 contiguous states. U.S. Stage 2 Phase out complete as of 12/31/1999 (CFR Part 91.801).

Transport Canada Noise Regulation: CARS 602.106

Potential noise infractions in Canada are normally reported to Transport Canada through the Civil Aviation Daily Occurrence Report (CADOR) system as filed by the airport authority or NAVCANADA.

The purpose of the system is to provide initial information on occurrences involving any Canadian registered aircraft as well as events which occur at Canadian airports, in Canadian sovereign airspace, or international airspace for which Canada has accepted responsibility that includes events involving foreign registered aircraft.

Once Transport Canada receives the CADOR an investigation is commenced to document the evidence and determine if an offence actually occurred. If the determination is that an offence indeed did occur, there are a number of factors that are taken into consideration before the offender is possibly penalized and the extent of the penalty determined. The penalty schedule is documented in the Civil Aviation Regulations (CARs), number 103 titled Administration and Compliance as shown in the Appendix.

A search of the CADORS using "Aerodrome – Noise" and the entire 2009 calendar year as the search parameter, the result shows 27 returning entries. All of these alleged infractions were reported in the Quebec Region and all but 2 at the Montreal Trudeau airport. No other CADORS reports for noise infractions in any other region were found through this search method, including none at Vancouver International. It is unknown if this is as a result of increased reporting by the Quebec Region only or an error in the system. Considering the apparent disparity, confirmation was thought worthy; however at the time of delivery of this report the Transport Canada inspector responsible for the Pacific Region has not yet confirmed the accuracy of this result.

The Civil Aviation Regulations govern flight in Canada. Included in the CARs are regulations with respect to aircraft noise restricted runways. Below are the regulations as taken directly from the CARs and a table summarizing the specific airports and runways which have noise restrictions.

Noise-restricted Runways

602.106 (1) Subject to subsection (2), no person shall operate a subsonic turbo-jet aeroplane that has a maximum certificated take-off weight of more than 34,000 kg (74,956 pounds) on take-off at a noise-restricted runway set out in column II of an item of the table to this section at an aerodrome set out in column I of that item, unless there is on board:

(a) a certificate of airworthiness indicating that the aeroplane meets the applicable noise emission standards;

(b) a certificate of noise compliance issued in respect of the aeroplane; or

(c) where the aeroplane is not a Canadian aircraft, a document issued by the state of registry that specifies that the aeroplane meets the applicable noise emission requirements of that state.

(2) Subsection (1) does not apply

(a) to the extent that it is inconsistent with any obligation assumed by Canada in respect of a foreign state in a treaty, convention or agreement;

(b) where the pilot-in-command of an aircraft has declared an emergency; or

(c) where an aircraft is operated on

(i) an air evacuation operation,

(ii) any other emergency air operation, or

(iii) a departure from an aerodrome at which it was required to land because of an emergency.

	Column I	Column II
Item	Aerodrome*	Noise-restricted Runways for Take-off *
1.	Vancouver International Airport	08L, 08R, 12, 26R
2.	Calgary International Airport	07, 10, 16, 25, 28
3.	Edmonton City Centre (Blatchford Field) Airport	All runways
4.	Edmonton International Airport	12
5.	Winnipeg International Airport	13, 18
6.	Hamilton Airport	06
7.	Toronto/Lester B. Pearson International Airport	05, 06L, 06R, 15L, 15R
8.	Ottawa/Macdonald-Cartier International Airport	32
9.	Montréal/Pierre Elliott Trudeau International Airport	All runways

* Information taken from the aeronautical information publication of the Department of Transport entitled *Canada Flight Supplement*

Conclusion

Numerous attempts were made to contact a wide variety of airports throughout North America, the United States, and overseas, particularly in Europe. In the majority of cases the airports were less than communicative, and it was difficult to speak directly with the proper authorities. For that reason much of the information in this report required gathering from various public sources. Therefore the accuracy can not be specifically confirmed. There may also be more relevant information that was undiscovered. Despite this however the authors would like to specifically mention the helpfulness of the Montreal Airport Authorities.

It is important to note that International Airports are in competition for business and provide a service to their stakeholders, clients, customers and airlines. That business by its nature needs to balance its operational requirements with that of its customers. This balance needs to meet the requirements of the airline schedules that are in turn driven by customer demand and international travel time differences.

Few airports discovered during the course of this study employ a total night time ban of flights to or from the airport. All airports researched had a published process in place to evaluate the requests from their customers to operate at the airport during the restricted or curfew hours.

Many airports have some sort of night time restrictions or slot allocation system for regular customers who need to operate out of the airport during the night. And there are examples of other control methods such as higher noise fees for night or weekend operations, as is done in Bern Switzerland which charges double the normal noise fee on Sundays and statutory holidays. Airports with restrictions also recognized the need for flexibility and exemptions for a number of mitigating reasons that were otherwise uncontrollable by the airline.

Some airports in the USA that were considered comparable and may be in competition with Vancouver International Airport, such as Seattle International, Phoenix, Dallas, and Portland were found to have no night time curfews at all.

San Jose International Airport in California reported that the curfew in place was effective and considered it a deterrent for aircraft that were not authorized to operate during the curfew. However the traffic that operates from SJC is not comparable to YVR insofar as it does not have the same international and intercontinental traffic demands. And there are several aircraft which have grandfather rights to operate despite the curfew. The true existence of a night curfew is therefore questioned.

Most European airports studied, such as Amsterdam Airport Schiphol, London Heathrow, Paris de-Gaulle, and Frankfurt – Main all have fairly substantial noise restrictions. In many cases the fee structure is tied to the specific aircraft noise levels. The fee structure often appears to be structured to try and encourage non-quiet hours operations, or to transfer traffic to less sensitive airports (ex Orly vs. de-Galle). No specific confirmation however was obtained from any of the airport authorities on the specific effectiveness of these inducements.

The two comparable Canadian airports that were contacted and prepared to share comparable data for this report were Montreal Pierre Elliot Trudeau International Airport and Toronto Lester B. Pearson International. Both employ a system of penalties for operational violations of the airports night time restrictions. However these charges as stated were not meant to specifically discourage night operations, but rather night time procedure compliance.

The publicly available Transport Canada data was limited. Specific details surrounding the occurrence are not available and some may be for a day-time infraction of noise abatement procedures and not specifically related to any night-time ban or restriction.

The research could not determine any comparable airports to Vancouver International (CYVR) that have a total night time restriction. Geneva Switzerland does employ a night time ban; however their operations are somewhat different from Vancouver International. San Jose does employ a curfew with penalty system however again this is a non-comparable site. Amsterdam's Schiphol airport is one example of a European

airport that employs a system of fees and discounts to discourage noisier aircraft. Quieter aircraft receive a discount on the airport charges, while relatively noisy aircraft have to pay a surcharge, while there is an extra surcharge applied for nights. No information was provided with respect to the effectiveness of this policy.

It must also be considered that airports are in the business of providing service to their customers and stakeholders. As businesses they must satisfy their customers and pay their operating costs. Therefore without firm regulatory requirements there is little incentive to increase fees or apply penalties. And any increased cost to the airlines will certainly be passed on to the flying public.

Appendix

Transport Canada Violation Fee Schedule - CARS 103 Schedule II

Column I	Column II	
	Maximum Amount of Penalty (\$)	
	Individual	Corporation
	3,000	15,000
	3,000	15,000
	3,000	15,000
Designated Provision	5,000	25,000

Penalized Canadian Airports

The following is the published data of penalized airports by Transport Canada (TC). *

There is information up to 2 years in arrears available thru the Access to Information Request, however, it takes up to 2 months to get the data.

Offenders may request any offences older than 2 years be removed from TC records and TC will comply, therefore data older than 2 years can not be deemed accurate.

Year	Month	Airport	Number
2010	February	Toronto	3
2009	October	Victoria Harbour	1
2009	September	Montreal	3
2009	August	Montreal	1
2009	July	Vancouver	1
2009	May	Montreal	2
2009	April	Montreal	3

* No detailed information was provided or readily available to further explain the penalties included in the table above and specifically if they were for day or night violations.

Noise Abatement Procedures – Canadian Airports

Airport	Restricted Hours	Preferential	Quieter aircraft only at night?	Total
		Runway (Y/N)		
Toronto Pearson (CYYZ)	0030-0630 (0000-0700 for Chapter 2) Night Flight Restriction Program	Y 0000-0630	Y	N
Vancouver (CYVR)	0001-0600 – Ch 2 A/C departures not permitted 0001-0700 – Ch 3 ARR/DEP restricted	Y 2300-0600	Y	N
Montreal Trudeau (CYUL)	2330 to 0700 – Ch 2 Arrivals prohibited 2300 to 0700 – Ch2 Departures prohibited 0100 to 0700 – Ch 3 Arrivals prohibited (A/C over 45,000 kg) Exemptions approved in advance 0000 to 0700 – Ch 3 Departures prohibited (A/C over 45,000 kg) Exemptions approved in advance	Y 2300-0700	Y	N
Ottawa (CYOW)	2200-0700 Quiet Hours Procedures 2300-0700 operations permitted with prior approval	Y All Hours	N	N
Calgary (CYYC)	2300-0700(M-F), 2300-0900(S-S) Quiet Hours Procedures - No Flight Restrictions	Y CH2 Restricted to Rwy 34	N	N
Edmonton (CYEG)	2300-0700 - "Quiet Mode Operations" Quiet Hours Procedures - No Flight Restrictions	Y	N	N
Winnipeg (CYWG)	2300-0700 - Quiet Hours Procedures No Flight Restrictions	Y All Hours	N	N
Halifax (CYHZ)	None - Halifax Stanfield International Airport is 35 km outside Halifax	N	N	N

* CYYZ is the only airport in Canada assigned a Cap on Night-time Operations by Transport Canada

Amsterdam (Schiphol) - Noise Control details

Airport Slot Control

From the Boeing Noise and Emissions Control site:

Slot monitoring should take into account the existence and implementation of lease contracts, joint operations, etc. as well as last minute changes. Special attention will be focused on airlines that have operated without obtaining a slot.

One of the main issues of monitoring slot performance at Amsterdam Airport Schiphol is caused by the legally set special noise regime during the night and early morning period (23.00 – 06.59 LT). Because of this strict regime it is not allowed to operate during this period without an allocated night or early morning slot as indicated in the capacity declaration rules. Operating in the night or early morning period without a proper slot causes prejudice to airport operations.

If airlines have operated during the night and/or early morning period without a proper slot repeatedly and intentionally, failure to re-coordinate their slots and continue their abusive operations, the matter will be handled in accordance with the following steps:

1. It is the airline's responsibility to monitor it's off slot operations and to inform the coordinator.
2. Within 5 working days after the off slot operation the airline concerned must advise the coordinator about the reason(s) thereof.
3. Upon receipt of this information the coordinator informs the airline involved within 2 working days whether the off slot operation is to be regarded as 'beyond control'.
4. If the airline involved fails to report the off slot operation within 5 working days to the coordinator, it will be classified as an abuse.
5. After 5 formally recorded abuses the airline involved will be invited by the coordinator for a meeting within 5 working days to present its plan on how to correct the situation.
6. After this meeting or if the airline in question fails to respond within the indicated 5 working days, the Inspectorate of the Ministry of Transport and Public Works will advise the airline involved that after a period of 10 working days, effective from the date of postmark, to implement actions to rectify the situation an administrative penalty will be levied by the Inspectorate amounting to € 15.000,-- for any further abuse by the same airline, with a maximum of € 300.000,--
7. The SSPC will be informed throughout the process.

The following reasons could be considered as being beyond control and unforeseen:

- technical failures and aircraft defects that occurred at other stations than home base;
- return to airport because of in-flight failure (such as: bird strike);
- local ATC directives severely disturbing 'normal' operations;
- unforeseen ATC delays local and/or en-route (strikes, radar failures, political);
- severe weather conditions at foreign stations and/or home stations (with limitation to 'snowballing');
- limited runway use for exceptional reasons at foreign stations or at home stations (with limitation to 'snowballing');
- major schedule change due to political reason;
- political instructions (for instance major events with possible effects on safety, Heads of State on board, military);
- urgent matters (medical, violence on board, technical).

Schiphol Airport Charges

Premium or Discount Rate by Aircraft Types and Noise category

Noise category MCC3 (basic compensation +40%)	Noise category A (basic compensation +40%)	Noise category B (basic compensation)	Noise category C (basic compensation -15%)
Airbus A300 B707 B727 B737-100/200/400 B767-200/300 B747-100/200/300/SP	Airbus A310 Airbus A321 B737-300/500 B747-400	Airbus A319 Airbus A320 Airbus A330 B737-600/700/800/900 B757-200/300 B767-400 B777-200/300er	Airbus 318 Airbus A340-200/300/500/600 Airbus A380 B717
Antonov all types BAC 1-11 DC-8 DC-9 DC-10 Ilyushin all types Tupolev all types Yak42	BAe types not mentioned Fokker 27 Lockheed all types MD-81/82/83/87/88 Tristar all types	ATR42 ATR72 BAe 146/AVRO RJ series Bombardier CRJ700 Bombardier 900 Canadair CL600 Canadair RJ 700/900 Dash all types Embraer 170/175/190/195 Fokker 50 Fokker 100 MD-11 Shorts 360	BAe ATP BAe Jetstream Bombardier Global Express Canadair CL601/604 Canadair RJ 100/200 Dornier 328/JET/prop Embraer EMB-120 (Brasilia) Embraer 135/145 Fokker 70 MD-90 Saab all types
Gulfstream II/III Hawker 700 (HS 125-700)	Cessna 650 Falcon 10/20/50	Cessna 500 other types Falcon 200/900/2000 Hawker 800 (BAe 125-800) IAI other types Learjet 31/35/36/45/55/60	Beech all types Cessna 560 XL Cessna 750 Dornier 228 Gulfstream IV/V Hawker 800 XP IAI Galaxy/Astra 1125/Astra SPX Piper 31 NA
All other aircraft not mentioned in noise categories MCC3, A, B of C		All helicopters	Alle aircraft < 6 ton MTOW Alle (turbo-)props ≤ 9 ton MTOW

Amsterdam Day / Night Fee Schedule

Landing and take-off charges (charge per 1.000 kg)	Category MCC3			Category A			Category B			Category C		
	day	night		day	night		day	night		day	night	
	landing/ take-off	landing	take-off	landing/ take-off	landing	take-off	landing/ take-off	landing	take-off	landing/ take-off	landing	take-off
Point-to-point flight												
Connected handling	€ 6.51	€ 12.40	€ 14.65	€ 6.51	€ 8.27	€ 9.77	€ 4.65	€ 5.91	€ 6.98	€ 3.95	€ 5.02	€ 5.93
Disconnected handling	€ 5.21	€ 9.92	€ 11.72	€ 5.21	€ 6.61	€ 7.81	€ 3.72	€ 4.72	€ 5.58	€ 3.16	€ 4.02	€ 4.74
Local/instruction flight												
Connected handling	€ 3.26	€ 6.20	€ 7.32	€ 3.26	€ 4.13	€ 4.88	€ 2.33	€ 2.95	€ 3.49	€ 1.98	€ 2.51	€ 2.96
Disconnected handling	€ 2.60	€ 4.96	€ 5.86	€ 2.60	€ 3.31	€ 3.91	€ 1.86	€ 2.36	€ 2.79	€ 1.58	€ 2.01	€ 2.37
Cargo flight	€ 3.39	€ 6.45	€ 7.62	€ 3.39	€ 4.30	€ 5.08	€ 2.42	€ 3.07	€ 3.63	€ 2.06	€ 2.61	€ 3.08

Minimum charge based on an MTOW of 20 tonnes

Day: 06.00 – 23.00 hrs

Night: 23.00 – 06.00 hrs

Chapter 2 surcharge per landing:

- Up to 100.000 kg: € 1,837.80
- Over 100.000 kg: € 2,756.70

Passenger Charges	
Passenger Service Charge	
per departing local passenger	€ 14.24
per departing transfer passenger	€ 5.98
Security Service Charge	
per departing local passenger	€ 12.94
per departing transfer passenger	€ 7.25

Parking Charge	
per 1,000 kg per period of 24 hours	€ 1.64

Chapter 2 Ban Surcharge

Surcharge

If, in spite of the above ban, Chapter 2 aircraft land at Schiphol Airport an additional surcharge on the landing charges will apply.

The basis for calculating the surcharge is as follows:

- up to 100 tonnes MTOW € 1,837.80 per landing
- from 100 tonnes MTOW € 2,756.70 per landing

Frankfurt

Aircraft categories for Noise Charges

Table EDDF-1

1.2.6 Allocation of turbo jet aircraft certified according to ICAO Annex 16/3 and 16/4, propeller-driven aircraft and helicopters

Category 1: LAZ to 68,9 dB(A)	Category 2: LAZ 69,0 to 70,4dB(A)
Jets with MTOM \leq 34 t, as far as not allocated otherwise All propeller-driven aircraft with MTOM \leq 34 t All helicopters B 712 B 736 BAe 146 / Avro RJ CRJ7 CRJ9 Fokker 70 Gulfstream IV/V GLEX/GL5T	A 318 B 737 B 752 E 170 E 190 Fokker 100 MD90
Category 3: LAZ 70,5 to 71,9 dB(A)	Category 4: LAZ 72,0 to 73,4 dB(A)
A 319, A 320 A 321 B 733 B 735 B 738 B 753	A 306 A 30B A 310 B 734 TU 204
Category 5: LAZ 73,5 to 74,9 dB(A)	Category 6: LAZ 75,0 to 76,4 dB(A)
B 762 L 1011 Tristar TU 154 YK 42/142	A 332, A 333 A 345, A 346 B72L, B73E B 763 B 764 B 772, B773 B77L, B77W IL 76 Reengined IL 96
Category 7: LAZ 76,5 to 77,9 dB(A)	Category 8: LAZ 78,0 to 79,4 dB(A)
A 342, A343 AN 12 B 747-S DC 87 DC 9 Hushkit MD 11 MD 80 bis MD 83, MD 88 MD 87	A 388 B 727 Hushkit B 737-200 Hushkit DC 10
Category 9: LAZ 79,5 to 80,9 dB(A)	Category 10: LAZ 81,0 to 82,4dB(A)
B 744	B 741 B 742 B 743
Category 11: LAZ 82,5 to 83,9 dB(A)	Category 12: LAZ 84,0 dB(A) and above
B707/720	AN 124 IL 76

Aircraft Noise Charges

Table EDDF-2

Noise charges during 24 hrs. per landing and per take-off in €											
Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5	Cat. 6	Cat. 7	Cat. 8	Cat. 9	Cat. 10	Cat. 11	Cat. 12
11.00	22.00	30.00	41.00	51.00	87.00	95.00	270.00	280.00	1,100.00	5,000.00	16,000.00
Additional night surplus charge in night time 1 per landing and per take-off (22.00 – 22.59 und 05.00 – 05.59 hrs local time) in €											
Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5	Cat. 6	Cat. 7	Cat. 8	Cat. 9	Cat. 10	Cat. 11	Cat. 12
45.00	55.00	65.00	115.00	135.00	205.00	225.00	600.00	650.00	2,800.00	14,000.00	35,000.00
Alternative: Additional night surplus charge in night time 2 per landing and per take-off (23.00 – 04.59 hrs. local time) in €											
Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5	Cat. 6	Cat. 7	Cat. 8	Cat. 9	Cat. 10	Cat. 11	Cat. 12
60.00	75.00	80.00	145.00	165.00	235.00	260.00	700.00	750.00	3,500.00	16,000.00	41,000.00

London – Heathrow

Details of Noise Level Charges and Surcharges

5 Heathrow – Schedule of Charges

5.1 Charge on Landing

Charge is based on the Maximum Total Weight Authorised (see paragraph 1.1.14) and NO_x emissions (see paragraphs 1.1.2, 1.1.4, 1.1.7 and 1.1.8).

Domestic and International Flights

(GBP)					
Helicopters	196.00				
Fixed wing aircraft not exceeding 16 metric tonnes	776.00				
	♦ Ch 2 & Non Cert	@Ch3 High	*Ch 3 Base	•Ch3 Minus	^Ch4 or Equivalent
Fixed wing aircraft over 16 metric tonnes	2,328.00	1,164.00	776.00	698.40	659.60

Night Period Between 0000 – 0329 UTC (GMT) 1 April to 31 October and 0100 – 0429 UTC (GMT) 1 November to 31 March the charge will be 2.5 times the base charge.

***Base Charges** – These apply to jet aircraft meeting the requirements of ICAO Annex 16 Chapter 3, to non-jet aircraft and to all aircraft not exceeding 16 metric tonnes (see paragraph 3.1.3 and 3.1.4).

♦ **Surcharges** - The base charge is subject to a 200% surcharge for ICAO Annex 16 Chapter 2 jet aircraft and for jet aircraft not meeting Chapter 2 noise certification standards (see paragraph 3.1.5).

@ **The Chapter 3 high** charge applies to those Chapter 3 aircraft whose certified noise performance lies within 5EPNdB of Chapter 3 limits (see paragraph 3.1.7 to 3.1.9).

• **The Chapter 3 minus** charge applies to jet and non-jet aircraft in excess of 16 metric tonnes with QC values on BOTH ARRIVALS AND DEPARTURES of 0.25, 0.5, 1.0 or are exempt (See paragraph 3.1.10 and 3.1.11).

^ **The Chapter 4 or Chapter 4 equivalent** charge applies to aircraft which were first put into service on or after 1 January 2006 and/or meet the noise certification standards of ICAO Annex 16 Chapter 4 (See paragraph 3.1.12).

London - Sample Aircraft by QC Rating

The following table demonstrates how some larger and newer aircraft, such as the B777, can take-off and meet lower noise ratings than an older and smaller aircraft such as the B727.

Table EGLL-1

FOR ARRIVALS		Maximum Certified Landing Weight (Tonnes)							
Noise Level Band		< 84	84 - 86.9	87 - 89.9	90 - 92.9	93 - 95.9	96 - 98.9	99 - 101.9	> 101.9
Quota Count (QC)		Exempt	0.25	0.5	1	2	4	8	16
Aircraft	Engine								
A320-212	CFM56-5-A3			68					
B737-800	CFM56-7B27			66.36					
B727-200	FedEx Hushkit			75.3					
B747-400	CF6-50E2						285.76		
A340-313	CFM56-5C4			200					
A330-322	PW4168			179					
B767-200	PW4056			136.08					
B747-300	JT9D						285.76		
B777-200	GE90B			208.65					

FOR DEPARTURES									
A320-212	CFM56-5-A3			70.49	78				
B737-800	CFM56-7B27			73.1	79.02				
B727-200	FedEx Hushkit						88.36		
B747-400	PW4056						394.63		
A340-313	CFM56-5C4					275	280		
A330-322	PW4168					217			
B767-200	PW4056				162.79	181.44			
B747-300	JT9D							377.84	
B777-200	GE90B			229.52	242.67				

Reference: UK AIP Sup #006/2010 25 Feb 2010

Airport Scheduled Traffic – Sample

The following number of arrivals and departures were taken from the respective airport's web site to illustrate the frequency and time of both departures and arrivals.

The schedules are samples for movements scheduled between 2300 hrs Friday May 14th and 0559 hrs Saturday May 15th. All times are local time.

* Due to site difficulties the London Heathrow and Amsterdam Schiphol figures are for 2300 hrs Monday May 17th and 0559 hrs Tuesday May 18th.

Sample for Friday May 14th / Saturday May 15th, 2010

	2300 - 0559		
	ARRIVALS	DEPARTURES	TOTAL
Site			
Vancouver (CYVR)	12	10	22
Toronto (CYYZ)	38	11	49
Montreal (CYUL)	14	4	18 *
London Heathrow (EGLL)	14	0	14
Amsterdam (EHAM)	46	12	58 *
Frankfurt (EDDF)	28	16	44
Geneva (LSGG)	1	0	1
San Jose (KSJC)	3	1	4

* data for Monday May 17 / Tuesday 18 May 2010

Airport Annual Movements

The following illustrate the number of annual movements reported at the respective airports for 2009. This is intended to show the relationship in activity between each site. The figures are unofficial and as obtained from available public sources.

Annua		Note
	2009	
Vancouver (CYVR)	313,984	2
Toronto (CYYZ)	407,724	2
Montreal (CYUL)	211,999	2
London Heathrow (EGLL)	478,518	
Amsterdam (EHAM)	446,592	
Frankfurt (EDDF)	485,783	
Geneva (LSGG)	190,000	1
San Jose (KSJC)	47,450	3

Notes:

- 1) 2008 data
- 2) Source: Wikipedia
- 3) Approximate only available. Site said "Approx 130 / day".

Airports with Noise Charges:

From the Boeing site, the following is a list of all 91 airports which show a "Noise Charge" against the site's listing. The specifics of each charge has not been established except for those specifically used in the report.

AIRPORT	CODE	COUNTRY	City
Aberdeen Airport	ABZ	Scotland	Aberdeen
Adelaide International	ADL	Australia	Adelaide
Ajaccio Airport	AJA	France	Ajaccio
Alicante	ALC	Spain	Alicante
Augsburg Airport	AGB	Germany	Augsburg
Barajas-Madrid Airport	MAD	Spain	Madrid
Basel-Mulhouse Airport	BSL	Switzerland	Basel
Biarritz Bayonne Anglet	BIQ	France	Biarrit
Bodo	BOO	Norway	Bodo
Bremen-Neueland	BRE	Germany	Bremen
Brisbane International	BNE	Australia	Queensland
Cairns International Airport	CNS	Australia	Cairns
Cannes	CEQ	France	Mandelieu
Cayenne-Rochambeau	CAY	Guyane Francaise	Matoury
Charleroi	CRL	Belgium	Brussels
Clermont-Ferrand/Auvergne	CFE	France	Clermont-Ferrand
Cote D'Azur	NCE	France	Nice
Dresden	DRS	Germany	Dresden
Dusseldorf	DUS	Germany	Dusseldorf
Dusseldorf Monchengladbach	MGL	Germany	Monchengladbach
Edinburgh	EDI	Scotland,	Edinburgh
Egelsbach Airport	QEF	Germany	Egelsbach
Ferihegy	BUD	Hungary	Budapest
Fort de France	FDF	Martinique FWI	Le Lamentin,
Friedrichshafen Airport	FDH	Germany	Friedrichshafen
Fukuoka	FUK	Japan	Fukuoka
Gimpo Airport	SEL	South Korea	Seoul
Gran Canaria Airport	LPA	Spain	Telde
Hahn Airport	HHN	Germany	Lautzenhausen
Hannover-Langenhagen	HAJ	Germany	Hannover
Hualien Airport	HUN	Taiwan	Hualien
Innsbruck Airport	INN	Austria	Innsbruck
Jonkoping	JKG	Sweden	Jonkoping
Kaohsiung International	KHH	Taiwan, ROC	Kaohsiung
Karlstad	KSD	Sweden	Karlstad
Kent International Airport	MSE	UK	N. Caterbury
Kiel Holtenau Airport	KEL	Germany	Kiel
Kiruna Airport	KRN	Sweden	Kiruna
Landvetter	GOT	Sweden	Goteborg
Laurence G Hanscom	BED	US	Bedford
Le Bourget	LBG	France	Paris
Leipzig Halle Airport	LEJ	Germany	Leipzig
Lille Airport	LIL	France	Lille
Luebeck Airport	LBC	Germany	Luebeck

Luleå - Kallax	LLA	Sweden	Luleå
Luxembourg International	LUX	Luxembourg	Luxembourg
Lyon Saint Exupery	LYS	France	Satolas
Maastricht Aachen	MST	The Netherlands	Maastricht
Malmo Airport	MMX	Sweden	Malmo
Marseille-Provence Intl	MRS	France	Marignane
Montpellier Airport	MPL	France	Montpellier
Munich	MUC	Germany	Munich
Munster	FMO	Germany	Munster/Osnabruck
Nantes Atlantique Airport	NTE	France	Nantes
Narita International	NRT	Japan	Tokyo
New Chitose Intl.	SPK	Japan	Sapporo
Norwich International	NWI	UK	Norwich
Noumea La Tontouta Intl	NOU	New Caledonia	Tontouta
Nurnberg	NUE	Germany	Nurnberg
Okecie Warsaw Frederic Chopin	WAW	Poland	Warsaw
Paderborn-Lippstadt	PAD	Germany	Paderborn
Pafos International	PFO	Cyprus	Pafos
Palma de Mallorca	PMI	Spain	Palma de Mallorca
Pointe-A-Pitre	PTP	Guadeloupe FWI	Pointe-A-Pitre
Pontoise	POX	France	Paris
Rotterdam	RTM	The Netherlands	Rotterdam
Saarbruecken-Ensheim	SCN	Germany	Saarbrucken
Saint Denis/Gillot	RUN	Reunion	Saint Denis/Gillot
Samedan Airport	SMV	Switzerland	Samedan
Sarasota-Bradenton	SRQ	US	Sarasota/Bradenton
Schonefeld	SXF	Germany	Berlin
Sion Airport	SIO	Switzerland	Sion
Songshan	TSA	Taiwan	Taipei
Southampton Intl.	SOU	UK	Southampton
Split Airport	SPU	Croatia	Split/Kastela
Strasbourg Airport	SXB	France	Strasbourg
Stuttgart Airport	STR	Germany	Stuttgart
Sundsvall-Härnösand	SDL	Sweden	Sundsvall-Härnösand
Tahiti-Faa'a Intl.	PPT	French Polynesia	Faa'a
Taoyuan Intl.	TPE	Taiwan, ROC	Taipei
Tegel	TXL	Germany	Berlin
Tenerife Sur-Reina Sofia	TFS	Spain	Tenerife
Tokyo Intl. (Haneda)	HND	Japan	Tokyo
Toronto-Lester B Pearson Intl	YYZ	Canada	Toronto
Toulouse-Blagnac	TLS	France	Blagnac
Truckee Tahoe Airport	TRK	US	Truckee
Umea Airport	UME	Sweden	Umea
Valencia Airport	VLC	Spain	Valencia
Vienna International	VIE	Austria	Vienna
Visby Airport	VBV	Sweden	Visby
Zurich Airport	ZRH	Switzerland	Zurich