

BACKGROUND

The City has retained the Consultant to undertake a review of Nav Canada's May 10, 2007 flight path changes that were implemented to increase YVR's capacity and improve air traffic control functionality. The Consultant was instructed to make recommendations for aircraft noise abatement taking into consideration all impacted areas of Surrey and surrounding communities. The Consultant is a certified expert in providing instrument approach, flight procedure design and airspace configuration services worldwide. In addition to his experience as a pilot, the Consultant has undertaken assignments from Nav Canada and Transport Canada in airspace and instrument procedures design and airport safety certification. The Consultant has designed standard terminal approach routes ("STARS") for Vancouver International Airport and is highly qualified to independently review Nav Canada's flight path amendments and make recommendations for improvements to these changes.

Staff have retained BKL Consultants Ltd. to work with YVR staff in selecting appropriate locations for aircraft noise monitoring devices in Surrey.

At its meeting of September 17, 2007, Council adopted the following resolution:

"THAT City of Surrey and City Council request NavCanada to review the current flight pattern arrangement;

AND THAT NavCanada and Transport Canada consult with residents;

AND THAT NavCanada provide monthly updates on their review and actions to Surrey Council in writing or by delegation;

AND THAT NavCanada find solutions to the current noise pollution problems."

On September 24, 2007 a representative of NavCanada announced that a new visual route would be tested for aircraft approaching YVR from the south. This trial for visual flight rules route would take flights further west over Semiahmoo Bay and away from the Crescent Beach and Ocean Park areas of Surrey.

Nav Canada undertook a 90 day review of the new May 2007 STARS, which was completed in January 2008. The review resulted in further changes (that were made effective February 14, 2008) to the south approaches to YVR's north/south runway in response to concerns from Delta residents. This moved aircraft slightly further from the populated areas of White Rock/Crescent Beach and Tsawwassen.

On February 25, 2008, Nav Canada advised the City it would not respond to the City's letter of January 16, 2008 (copies attached as Appendix "C") containing a number of questions regarding its review of airspace and route changes in the vicinity of YVR.

DISCUSSION

1. **Surrey Membership on YVR Aeronautical Noise Management Committee (the "Committee")**

At its meeting of March 12, 2008, the Committee voted to make the City of Surrey a permanent member of the Committee. Surrey joins Vancouver, Richmond and Delta as the Committee's municipal members. In addition to YVR staff, the Committee has representatives from Nav Canada, Transport Canada, the airlines and the pilots associations. The role of the Committee and its objectives are summarized as:

- provide a forum for the exchange of relevant information amongst all stakeholders,
- discuss, analyze and provide advice on noise management issues,
- assist in the development of a Noise Management Plan,
- provide recommendations on noise abatement practices to guide efforts of the implementation of the Noise Management Program, and
- minimize the noise disturbance to those living in the vicinity of YVR while recognizing the need for efficient and effective airport operations.

Total complaints to the YVR Noise Management staff increased 485% in 2007 compared to 2006 and 857% compared to the last four years on average. Sixty-two percent of the 2007 noise complaints deal with Nav Canada's flight path changes of May 10, 2007.

At the Committee meeting YVR staff advised that the City's noise consultants could meet with YVR staff to work out the best locations for new automated noise monitoring devices in Surrey. Once the monitoring devices are installed the City's consultants and YVR staff will be able to track and analyze flight and noise data and occurrences of reported excess noise to assess the impacts on Surrey residents of arrivals and departures from YVR.

2. **Summary of Consultant's Recommendations for Flight Path Modifications to Nav Canada (See the Report attached as Appendix "A")**

The Consultant in making his recommendations took into consideration, in part, the concerns brought to his attention by Air Canada's technical staff. Apparently the new STARS configurations require most of the Instrument Flight Rules ("IFR") arriving aircraft to flight plan for lengthier arrivals with greater fuel consumption than the pre May 2007 STARS. This has had the effect of removing aircraft from their optimal vertical profiles, which cancels out aircraft operating efficiencies, one of the objectives of the revised May 2007 STARS.

Discussions with Air Canada technical staff have confirmed they are not satisfied with the increases in flight distances of the new approach routes. Air Canada estimates the increased fuel costs are in the range of \$2 – \$4 million per year. This is in direct contradiction to the Nav Canada 90 day review, which stated "it is estimated that the routing changes made at Vancouver are saving aircraft operators \$20 million in fuel costs and reducing green house gas emissions by 79,000 metric tonnes of CO₂ annually."

On April 8, 2008 the City received a letter from Rob Reid, Air Canada's Executive Vice-President and Chief Operating Officer. Without giving any reasons he states that:

"While initially having concerns about the STARS, Nav Canada has worked with Air Canada and others and our initial concerns have been alleviated."

The main recommendations of the Consultant's Report concerning flight path changes are as follows:

(a) Amend the Alex Fraser Visual Approach Runway 26L & 26R.

At pages 11 - 13 of the Report the Consultant describes the Alex Fraser Visual procedures as fundamentally flawed. Because of this aircraft are finding it difficult to meet the landing approach procedure requirements. The Consultant proposes flight path and navigational changes (at p. 13 and see Schedule 17.5 E) and new notations in the Canada Air Pilot publication.

(b) Amend the Pitt Meadows Visual Approach Runway 26L & 26R.

The Consultant proposes a new route (at p. 14 and see Schedule 17.5 E) for aircraft to mitigate noise impacts to residents in north Surrey, Guildford and Fleetwood. This route follows more closely the Fraser River.

(c) Implement "Off Peak" hours STARS for arrivals to Runway 26L & 26R as an alternative to the current CANUCK and GRIZZ STARS when peak capacity is not required using arrivals similar to the current MEADOWS and previous GARTH STARS.

Discussed in the Report (at p. 14 – 16 and see Schedule 17.6 F) is a recommendation to utilize pre May 2007 flight paths when the full capacity of YVR is not required. The use of off-peak alternative flight paths is favoured by Air Canada's technical staff and would result in a net distance saving of approximately 13 nautical miles and 4 minutes of time. It also permits aircraft to maintain a more favourable pre-programmed vertical decent profile with less noise.

- (d) **Vertical Profile - Request Nav Canada to conduct a review of the existing arrivals to determine if a revised vertical profile would reduce noise exposure to surrounding communities.**

In addition to the lateral flight path, significant portions of the noise comes from changes to aircraft power settings and flap configurations as the aircraft prepares for final descent. The Report discusses (at p. 16 – 17) recommendations that will allow aircraft to be in a stabilized approach configuration while over noise sensitive areas.

- (e) **Request Nav Canada conduct an internal review of departure procedures to determine if the current Standard Instrument Departures ("SIDS") and controller vectoring procedures are contributing to the increased noise in the south Surrey area, and as necessary, modify any internal operational directives to keep aircraft further from the noise sensitive areas (at p. 18).**
- (f) **Request Nav Canada design and implement new RNAV SIDS to provide accurate and optimum track guidance towards less noise sensitive areas and lessen the controller workload.**

At p. 19 the Report notes the advantages for noise abatement of implementing Global Navigation Satellite Systems for departures.

Noise Monitoring

The City's noise consultants are working with YVR staff to have new noise monitoring stations installed in Surrey this summer as part of an area-wide aircraft noise monitoring upgrade. The Surrey team has met and prepared a list of candidate locations in each of the areas where monitoring would be appropriate.

The second stage will be to visit each of these candidate locations, take noise measurements and listen to determine if the site is appropriate from the perspective of not having extraneous noise sources that would over-ride the effectiveness of the site to measure aircraft noise.

The third stage will be to arrange to take detailed measurements over a 24 to 48 hour period at these locations which would then be correlated with YVR data on flight tracks to confirm the noise monitoring device would be able to measure aircraft overflights and distinguish these events compared to other noise in the area.

The final stage would be to select the most effective sites and install permanent noise monitoring devices at these locations.

Proposed Regulations Requiring Environmental Assessments and Public Consultation

Under the *Civil Air Navigation Services Commercialization Act*, R.S.C. 1996, c. 20 ("CANSCA"), which establishes the authority of Nav Canada, there is no statutory provision that requires Nav Canada to undertake an environmental assessment before implementing changes to flight paths. This is in contrast to Australian regulations, which require that environmental aspects be considered and assessed in flight path design.

To ensure that environmental impacts are given proper consideration in Canadian flight path design, Legal Services recommends that CANSCA be amended and that a regulation be introduced, which clearly establishes that an environmental assessment must be undertaken prior to any changes in flight paths. The draft regulation also includes notification of proposed changes to municipalities and their inhabitants who are affected by the proposal. The proposed legislative changes are contained in Appendix "B" to this report.

Public Consultation

Through the Mayor's Nav Canada Working Group on Aircraft Noise staff and the Consultant have met with representatives of Surrey Citizens Against Aircraft Noise ("SCAANS") and other concerned residents who have been impacted by aircraft noise at various locations in Surrey by the flight path changes. The Consultant has received valuable input from the Mayor's Nav Canada Working Group in making the recommendations contained in his attached Report. The executive of SCAANS have endorsed the recommendations contained in this report.

CONCLUSION

The City has begun an important dialogue with YVR, Nav Canada, the airlines and chief pilots by joining the YVR Aeronautical Noise Management Committee. The next step will be to begin discussions with Nav Canada on the recommendations contained in the Consultant's Report. This discussion will now include the airlines, which in the case of Air Canada, is a major customer of Nav Canada.

It is recommended that Council:

- Authorize staff to forward a copy of this report including the Consultant's report and interim recommendations attached as Appendix "A" (the "Report") and the proposed legislative amendments regarding environmental impact assessment and public consultation described in Appendix "B" to this report to Transport Canada, Nav Canada, the YVR Noise Management Committee, and area Members of Parliament; and authorize the Mayor to communicate the concerns of Surrey City Council and Surrey residents regarding changes to air traffic flight patterns in the YVR area to the Minister of Transport and the Chair of Nav Canada;

- Request that Nav Canada conduct a new Aeronautical Study for redesigned YVR flight paths in consultation with impacted communities;
- Request Nav Canada to meet with the City's Consultant to discuss implementation of his recommendations as interim measures pending the completion of a new Aeronautical Study for YVR flight paths; and;
- Authorize BKL Consultants Ltd., the City's noise consultant, to select noise-monitoring devices/locations in Surrey in cooperation with YVR technical staff to measure and record aircraft noise.

CRAIG MacFARLANE
City Solicitor

CM:mlg
Attachs.

APPENDIX "B"

Proposed Amendments to Civil Air Navigation Services Commercialization Act

PLANNING AND MANAGEMENT OF AIRSPACE

Corporation may plan and manage airspace

13. Subject to the Governor in Council's right under the *Aeronautics Act* to make regulations respecting the classification and use of airspace and the control and use of aerial routes and subject to an assessment of environmental impacts, including noise pollution on populated and environmentally sensitive areas, the Corporation has the right to plan and manage Canadian airspaces and any other airspace in respect of which Canada has responsibility for the provision of air traffic control services, other than airspace under the control of a person acting under the authority of the Minister of National Defence.

CHANGING SERVICES AND CLOSING FACILITIES

Notice of changes

15. (1) Where the Corporation proposes to do anything mentioned in *section 13 and* section 14 and, in the opinion of the Board of Directors of the Corporation acting reasonably and in good faith, the proposal is likely to affect in a significant group of users or the inhabitants of a municipality or regional district, the Corporation shall give notice of the proposal in accordance with this section.

Contents of notice

- (2) The notice must
- (a) set out the particulars of the proposal, and
 - (b) specify that persons interested in making representations in writing to the Corporation about the proposal may do so by writing to the address set out in the notice.

How notice is to be given

- (3) The Corporation shall send, by mail or by electronic means, a copy of the notice to
- (a) representative organizations of users whose members will, in the opinion of the Corporation, be affected by the proposal,
 - (b) any municipality or regional district whose inhabitants are affected by the proposal, and
 - (c) every user and other person who has, at least 10 days before, notified the Corporation of their desire to receive notice or announcements under this Act,

and, after having done so, the Corporation shall post an electronic version of the notice in a location that is generally accessible to persons who have access to what is commonly referred to as the internet.

APPENDIX "C"

Our File: 0220-07
Direct Line: (604) 591-4255

VIA FAX (613) 563-3487

January 16, 2008

NavCanada
P.O. Box 3411, Station "D"
Ottawa, ON K1P 5L6

ATTENTION: Michelle Bishop
Manager of Government & Public Affairs

Dear Madam:

Re: Aircraft Noise in Surrey

Further to your presentation to Council on January 14, 2008 on the 90 day review of the new standard arrival routes ("STAR") to Vancouver Airport (the "Review"), the City has the following questions arising from the Review that you agreed would be answered in writing:

ARRIVALS

1. Will Nav Canada agree to an independent third party reviewing the conclusions of the Review and investigate whether anything more can be done to mitigate noise and environmental damage?
2. Will Nav Canada agree to noise monitoring in locations and times suggested by the City or a third party consultant hired by the City?
3. Does Nav Canada have intentions to implement a program of ongoing monitoring and reporting to the City? If so, how often?
4. What type of enforcement measures will be applied to ensure noise abatement measures and flight paths are adhered to?
5. The revised STAR route places aircraft in the middle of Boundary Bay (Review, page 19), yet pilots are permitted to request visual landings that take them off of the STAR route. What is the maximum number of visual flight requests that will be permitted to fly off the STAR? Is the number of flights taken off "STAR" tracked? Can visual flight requests be denied altogether?
6. What is the margin of flight space related to the STAR route for runway 26 (i.e. how far from a waypoint can a pilot fly and still be considered on STAR)? Is it possible that a flight can be on the "STAR route" designated in the middle of Boundary Bay yet due to the wide margin of a STAR route still able fly over land on the south side of the Bay?

7. The report states that the acceptance rate at YVR has increased by 25% (Review, page 4). This equates currently to exactly how many arrival flights per day flying in the area of South Surrey? How many arrival flights per day do you expect to be using the same air space in the next 10 years?
8. Is it possible to direct aircraft to pass the relocated MIBKO waypoint (in addition to the GOVAV waypoint) before they are permitted to turn northward? Alternatively, could the GOVAV waypoint be moved westward so that it is equal distance from the west and east coast of Semiahmoo Bay?
9. Why is it necessary to direct arrivals from the MIBKO - KEPGI - PEMBU waypoints (Review, page 19)? Can these flights not be directed to fly directly from MIBKO to GOREG, before they are required to turn west?

DEPARTURES

10. The Review notes that there has been no significant change in the number of departures that fly over the South Surrey Area. Can you advise how many of these flights crossed, or came within 1 km of the peninsula prior to May 14, 2007? How many departure flights/per day fly currently fly over the South Surrey/White Rock peninsula in comparison?
11. Given that the airport is located to the northwest of the South Surrey area, is it possible, between the hours of 00:01 and 07:00 to direct all south and southeast bound flights to fly west of the MEVGO and GOVAV waypoints before they are permitted to turn east, thus avoiding South Surrey altogether? (see map on page7)
12. Regarding westbound departures off of runway 08R on their southern heading, could you clarify where precisely the southern route is? Is this route now closer to Ocean Park or Crescent Beach?

GENERAL

13. Nav Canada is required to conduct a review of the recent flight routes one year after the implemented changes (May 2008). Will this review still take place? Will Nav Canada continue to respond to citizen concerns regarding the changes made in May 2007 and the recently made mitigations?
14. What are Stage II and Stage III recommendations/actions that resulted from the Nav Canada review three years ago and will the recommended changes have any impact on the communities in Surrey when they are implemented? If so, how?
 15. Nav Canada asserts that Abbotsford's flight path conflicts with the pre May 10, 2007 YVR flight paths for transborder flights. Why were alternatives not assessed for Abbotsford's flight paths to maintain some or all of the pre May 10, 2007 flight paths?

16. Can you please advise whom is responsible for governing/monitoring/controlling the level of traffic and concomitant noise that occurs in the airspace outside an airport's 10 nautical mile radius?
17. Why is it that all noise abatement procedures apply only within 10 nautical miles of the airport? How can this buffer zone be expanded to include communities that reside outside the 10 nautical miles that are heavily impacted by a large volume of low flying commercial aircraft?

Yours truly,

CRAIG MacFARLANE
City Solicitor

CM:mlg

c.c. City Manager



Direct Line/Ligne directe : (613) 563-7520

February 25, 2008

BY EMAIL

Craig McFarlane
City Solicitor
City of Surrey
14245 – 56th Avenue
Surrey, BC V3X 3A2

Dear Mr. McFarlane:

I am in receipt of your letter of January 16, 2008 containing a number of questions regarding NAV CANADA's review of airspace and route changes in the Vancouver area. I apologize for the delay in replying.

NAV CANADA has endeavored to be responsive to Surrey City Council and to resident complaints and to be transparent in our communications.

Southern British Columbia has numerous airports, including four of the top ten busiest airports in Canada. Because of the volume of activity and the need to safely manage the routing of aircraft to all area airports, residents throughout the region are exposed to some degree of aircraft noise.

We have always been very clear that we could not eliminate aircraft noise for residents of South Surrey and that going back to pre May 2007 routings was not practicable. In fact, doing so would simply result in the re-emergence of a serious air traffic bottleneck with the associated delays and potential safety issues exacerbated by the continuing growth in air travel. Quite simply, this is not an option.

That being said, NAV CANADA has acknowledged the issues raised by residents and has taken steps to address them in a substantive manner, making reasonable adjustments to routes where possible.

As you are aware, in mid-September, we implemented, on a trial basis, a procedural change that substantially mitigated noise from arrival aircraft for the majority of the residents of the South Surrey area. Our 90-day review indicated our intention to put in place formal, published changes, establishing the route trialed in mid-September. That was done, as promised, just last week on February 14, 2008

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NAV CANADA is charged with a vital job of safeguarding public safety in a complex airspace. That must be our first priority. We maintain a safety record in Canada amongst the best in the world and are widely recognized for our expertise.

At the same time, we have learned over time that a safe system is an efficient system – and one that is environmentally friendly as well. The report we released in early January strikes a balance among all of these critical factors, addressing noise complaints while ensuring that the significant safety, efficiency and environmental benefits of the Vancouver Airspace review are maintained now and into the future.

This is where I believe our interests converge. And this is why I must inform you that we will not be replying to the specific questions contained in your letter which seek only to reopen what is has been sufficiently debated, considered and addressed.

Thank you for your correspondence, and your interest in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Michelle Bishop". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michelle Bishop
Manager, Government and Public Affairs