



## SEA-TAC STAKEHOLDER ADVISORY ROUND TABLE

### Aviation Noise Work Group Meeting Summary

Monday, December 10, 2018

5:30-7:30PM, Conference Center Sea-Tac Airport

Member	Interest Represented	
John Resing	Federal Way	x
Yarden Weidenfeld	Federal Way	x
Earnest Thompson	Normandy Park	x
Mark Hoppen	Normandy Park	x
Eric Zimmerman	Normandy Park	x
Tom Fagerstrom	Port of Seattle	x
Robert Tykoski	Port of Seattle	x
Scott Kennedy	Alaska Airlines	x
Marco Milanese	Port of Seattle	x
Scott Ingham	Delta Air Lines	x
Vince Mestre	L&B	x
Stan Shepherd	Port of Seattle	x
Chris Schaffer	FAA	x
Chris Hall	Federal Way	x
Lance Lyttle	Port of Seattle	x

**Facilitator:** Phyllis Shulman, Civic Alchemy;

**Note Taker:** Kristen Legg, Floyd|Snider

**Other Attendees:** Dave Kaplan, Port of Seattle

#### Meeting Objectives

Objectives: To complete discussions on the Voluntary Curfew and Draft Runway Use Agreement in order to solicit feedback from StART and begin implementation steps. To identify and discuss additional near-term noise reduction actions and to prepare for the 2019 Work Plan.

#### Meeting Summary:

The facilitator suggested that, at the next full StART meeting, Stan Shepherd provide a concise overview of the evolution of thought and a summary of the three Aviation Noise Working Group meetings that have been held during the last two months. The Working Group agreed that was an appropriate way to

update the larger StART group. The Working Group asked for confirmation that the discussion of possible actions to reduce ground noise would be on the Working Group's agenda in 2019. It was confirmed that this discussion would begin at the January Working Group meeting. The Port staff will begin analysis on discussion topics for ground noise as well as work with the airlines to request a reverse thrust discussion related to this topic.

#### Continuation of Review of Draft "Fly Quiet Late Night Noise Limitation Program" (Program):

The noise consultant reviewed the latest iteration of the Program and the suggested renaming of the effort from "Voluntary Curfew" to "Fly Quiet Late Night Noise Limitation Program". It was noted by the Working Group that the name "Voluntary Curfew" did not completely correspond to the components of the effort being suggested. It was also noted that other airports utilize a variety of names for similar efforts around the country. The objective of the Program is to reduce late night aviation noise, particularly focusing on the noisiest aircraft. The Program would have three components:

1. A request to all late-night carriers to move late-night operations to less sensitive hours;
2. Include a late-night noise penalty in the Fly Quiet Program computations to incentivize airlines to transition to quieter aircraft; and
3. publicize on a more regular basis all four Fly Quiet Program category rankings for all air carriers.

The general guidelines for the Program include:

- It is intended for the hours of 12:00am to 5:00am.
- It will utilize the Port's current Fly Quiet Program and add a new 4<sup>th</sup> category for loud aircraft noise during the late night hours.
- It's specific to aircraft whose noise profile is above a defined threshold.

The noise consultant reviewed how the Program would be implemented. Only aircraft types flying above an average single event noise threshold will receive a Fly Quiet Program penalty score. The average noise SEL threshold is intended to be set so that noisier aircraft in the late night hours are penalized in the FQA scoring system. A penalty is based on the maximum of the four noise monitors. The noise consultant shared example data for measurement and arrival and departure noise comparisons to show which aircraft would likely be penalized and what SEL would likely be used as part of the Fly Quiet Program. Additional analysis to determine the exact SEL still needs to occur, but it appears that the Departure SEL would likely fall around 89 to 90 SEL at Noise Monitor Site 19. Additional data regarding arrival noise was reviewed. Arrival noise is quieter than departure noise; therefore, the penalty would likely be instituted around 84 to 85 SEL at Noise Monitor Site 12.

The preliminary methodology for the penalty would include a noise threshold that would be set for each of the four noise monitors with the maximum noise from the loudest of the four monitors used to determine the amount of penalty. The penalty would only be for aircraft above the threshold. The noise consultant provided examples of what the late-night penalty scores would look like given average SEL and examples of the effect of the penalty on current air carriers who fly during the late-night hours. The next steps for this Program include reviewing the Draft Program with the larger StART group, developing

the specific threshold for each site, creating communication materials that explain the process, revising the FQA Scoring Spreadsheet, and meeting with the airline operators to educate them on the Program.

Discussion focused on questions related to how the Fly Quiet Program would be changed and how the scoring would work. Questions and responses to questions included:

1. What are the current three categories in the Fly Quiet Program and how will this new program affect that?

*Response:*

- How successful they are staying in the corridor on arrival and departure? We give a score for each airline based on their compliance with the airport's noise abatement corridors.
- How quiet is their fleet? A score is given with the quietest airline getting the highest score and others ranked according to the overall noise level of their operations.
- Nighttime engine maintenance run-up regulations are in place at Sea-Tac. Run-ups that do not adhere to the nighttime rules result in a deduction of points to the total score.

2. What is the difference between the current FQA scoring and what the Working Group is currently discussing?

*Response:* We are adding a fourth scoring category. It would result in the deduction of points for any flights between the hours of midnight and 5 am that exceed a given threshold.

3. Is there a way to make the Fly Quiet Program include the reduction of ground noise, which is more of a problem for SeaTac, Burien, and Normandy Park? It seems like it could be good tool.

*Response:* This can be explored when the Working Group discusses ground noise in 2019

Discussion also focused on whether this effort was moving away from an actual curfew to more of a noise limitation program. Responses from StART community representatives to this concern included:

- The guidance from StART is acting within the envelop of realistic possibility. This would represent progress and StART can take pride in its implementation.
- There is a long-term objective to be pursued, but it seems unlikely that Congress will change the law regarding an airport's ability to set mandatory curfews any time soon. Tangible results are good to reach now.
- In creating StART, it seems like even something modest like this program will demonstrate that StART can work and it can be built upon.
- The proposed Program is just one of the building blocks. There will be additional efforts related to ground noise, reverse thrust etc. At the end of the day, there will be a number of approaches coming together and it will be impactful.

- This effort demonstrates progress. It's modest, but it represents a big step for an airport, especially a large international one, to take.

### Review of Revised Draft of Runway Use Agreement

Port staff reviewed changes made to the Draft Runway Use Agreement based on the Working Group's comments from the previous meeting. Examples of south-flow and north flow runway usage at night and a high level overview of what it means to move flights from the 3<sup>rd</sup> runway to the other runways, from 12:00am to 5:00am, were shown. It was noted that the new agreement would include monthly monitoring. Next steps included discussing the revised draft at the next StART meeting, engage the FAA in reviewing and providing input, identifying whether environmental review will be required, and additional steps leading to the finalization of the new Runway Use Agreement.

Questions and responses to questions included:

1. How much time will it take to get through the FAA review?

*Response: A number of months. It took 4 to 5 months to go through the process in 2010. Much of the language from the 2010 agreement still exists in the new draft, which may expedite the process.*

2. How receptive has the FAA been so far to establishing a new agreement?

*Response: The conversations between the Port staff and the FAA have been pretty positive so far. The draft has been shared with the FAA so they are aware of its contents. It will require legal review. Air Traffic Control still has to weigh in on the content.*

3. A few meetings back, the FAA representative stated that the Air Traffic Control Tower had informally begun employing some of the tactics outlined in the Draft Agreement. Is that true?

*Response: Barring periodic nighttime runway closures, it's true from 1 AM to 5 AM. However, from 12 AM to 1 AM, a number of landings are occurring on the third runway on a regular basis.*

4. When does the new Cathy Pacific flight start and how often will they be flying?

*Response: The new flight is replacing a flight that was flown by Delta Air Lines. Starting in 2019, they intend to depart around 1:00am approximately 4 times a week. They will be flying an A350, which is a quiet aircraft. It will usually depart from the east runway.*

Discussion focused on the tension that exists between adding new flights and major projects at the airport and reducing noise impacts to the surrounding communities. It is difficult for communities to support new projects/flights without first witnessing the airport's commitment to noise reduction. Concern was expressed regarding the Port's marketing strategies and whether it would be in the interest of StART to discuss this tension around marketing. It was noted that StART might also

desire to provide guidance on longer-term initiatives on the Congressional/Federal level. A community representative also noted that it is important to take into account how ideas for reducing noise may affect the larger regional economy. It was stated that it is important to acknowledge the benefits that the airport also brings, that people in the region desire, including economical travel, delivery of goods (for example, the shift to more on-line ordering), and jobs. The objective is to be able to provide guidance to the airport on how to channel the growth with as little impact to the communities as possible.

### A320 Vortex

Port staff described that the A320, A319, and A321 whistle noise occurs between 7-30 miles from landing and is caused by a circular vent hole under the wing. Airlines flying the A320 fleet at Sea-Tac include:

- American
- Air Canada
- Alaska
- Delta
- United
- Jet Blue
- Spirit
- Allegiant
- Frontier
- Volaris

Retrofitting the aircraft with a specific part can mitigate the noise. Retrofits can happen when the aircraft is receiving heavy maintenance, typically every two years. Fuel tanks and systems have to be fully drained for the work to occur. It is unknown how many aircraft have already been retrofitted, but a visual spot check suggests that about 50% of A320's at Sea-Tac have been retrofitted. It is unknown what plans the airlines have to retrofit their fleets.

Discussion focused on what the Port could do to encourage retrofitting of aircraft. The suggestions included:

- Provide incentives in the Fly Quiet Program and/or encourage the airlines to retrofit.
- Identify, if possible, how many aircraft are still needing the retrofit.
- Add to the Fly Quiet Program a voluntary program that communicates to the airlines that Sea-Tac will deduct points if they don't retrofit their planes.
- Ask Port staff to come up with a draft letter of inquiry to all the airlines, not just the ones in StART. Ask airlines to provide information on:
  - How many A320's do they have in their fleets that fly into Sea-Tac?
  - How many aircraft have been retrofitted?
  - What is the plan and timeline to complete the retrofit?

- What is the cost per aircraft to complete the retrofit?
- Ask StART airlines representatives what they think would be the best way to encourage the retrofitting. Letter from the Port? Letter from StART?
- Provide to the Working Group the Jet Blue presentation on the costs of their retrofit program.
- Request Alaska Airlines and Delta Air Lines StART representatives to share, at the next StART meeting, whether they have plans for retrofitting their fleets and if so, the timeline.

This topic will be summarized at the StART meeting and additional feedback from StART will be solicited.

### Continuation of Glide Slope Angle Analysis

Port staff recapped information regarding the Instrument Landing System and existing conditions. Instrument Landing Systems are composed of two primary ground components: the Localizer, which provides horizontal information, and the Glideslope (GS), which provides vertical information. Three degree GS is the standard. Existing GS angles and crossing heights were reviewed as well as the three categories of ILS (CAT I, CAT II, CAT III). Port staff provided information and case studies in the US and Germany where the GS is greater than three degrees. Port staff reviewed some options and what measures might need to be taken to increase the GS. It was discussed whether anything greater than three degrees would require a waiver from the FAA. Additional analysis would need to be done to determine the feasibility of a greater than three degree GS. It was noted that potential impacts to surrounding airports and airspace would need to be analyzed.

Questions and responses to questions included:

1. What other airports in the US have a greater than three degree GS?

*Response: Cleveland and Newark, but more information would need to be gathered to understand their situation. There is no CAT III in the US with a greater than three degree GS.*

2. How many CAT I approaches are there at Sea-Tac?

*Response: The answer would require additional data review.*

3. Given the significant fuel savings to the airlines with the CAT III precision, wouldn't all airports be going to CAT III equipment over the next few years?

*Response: There are other strategies that play into the decision. There are a number of considerations that would go into changing the approaches.*

4. Why does the 34 R runway have an inboard GS of 2.75 degrees?

*Response: It was established a long time ago and never modified. It is uncertain what the incentive for the FAA to change the GS to 3 degrees would be. The change has limited noise reduction benefit as it changes the angle about 20 feet vertically per mile.*

5. What is the angle of a plane at take off at a 3.1 degree GS? Could the plane be landed at the same angle as takeoff?

*Response: The angle at takeoff depends on the aircraft. Landing does not occur at the exact same angle as a departing plane.*

6. Would all runways have to have the same GS?

*Response: With the exception of Runway 34R, all runway ends have a three degree GS*

Discussion focused on identifying what the Working Group's goal might be regarding the GS. Would the preference be to explore a change to a 3.1 degree GS? The Port stated it is willing to explore the costs and benefits of a change. It was noted that it would be important to consider the impacts of a GS change as a higher GS may require additional use of reverse thrust to slow down landing aircraft.

Next steps include:

- Consider asking one of the StART airline representatives to do a "back of the envelope" calculation of what fuel savings are accomplished with a change in GS.
- Discuss a preferred GS goal at the next Aviation Noise Working Group meeting.
- Ask StART representatives from Delta Air Lines, Alaska Airlines, and the FAA what their perspectives and concerns are regarding increasing GS above 3 degrees.
- Provide additional analysis through a visual that shows what the difference in aircraft height over houses and neighborhoods for different GS approaches and takeoffs would be and what the decibel change might be.
- Consider bringing in an FAA employee from the flight procedure office to provide information on all the ins and outs of take off/landing/airport flow.

### 2019 Scheduling

The facilitator confirmed that the Aviation Noise Working Group would continue in 2019. Upon discussion it was decided that the Working Group would move its meetings to the second Monday of each month from the fourth Monday of each month so as to overlap with StART meetings. A meeting invitation for the next six months will be sent to Working Group participants. Unless a Working Group participant notified the facilitator that they would like to not be on the Working Group, it is assumed that all current participants will remain engaged.

The next Aviation Noise Working Group will be on 01/14/19 at the airport.