



SEA-TAC STAKEHOLDER ADVISORY ROUND TABLE

StART FACILITATOR'S MEETING SUMMARY

Wednesday, February 27, 2019

6:00-8:00 pm, Seattle Tacoma International Airport Conference Center

Member	Interest Represented		Member	Interest Represented	
John Parness	Burien	-	Tejvir Basra	SeaTac	-
Terry Plumb	Burien	X	Robert Akhtar	SeaTac	X
Brian Wilson	Burien	X	Joe Scorcio	SeaTac	X
Lisa Marshall (Alt)	Burien	-	Carl Cole	SeaTac	X
John Resing	Federal Way	X	Katrina (Trina) Cook	Tukwila	X
Chris Hall	Federal Way	X	Joon (Thomas) Lee	Tukwila	-
Yarden Weidenfeld	Federal Way	-	Brandon Miles	Tukwila	-
Sheila Brush	Des Moines	X	Lance Lyttle	Port of Seattle	X
Ken Rogers	Des Moines	-	Mike Ehl	Port of Seattle	-
Michael Matthias	Des Moines	X	Tony Gonchar	Delta Air Lines	-
Eric Zimmerman	Normandy Park	-	Scott Ingham (Alt)	Delta Air Lines	X
Earnest Thompson	Normandy Park	X	Scott Kennedy	Alaska Airlines	X
Mark Hoppen	Normandy Park	X	Matt Shelby (Alt)	Alaska Airlines	-
Jennifer Ferrer-Santa Ines (Alt)	Normandy Park	-	Laura Sanders	Lynden (air cargo)	X
Non-Member			Non-Member		
Randy Fiertz	FAA	-	Jason Richie	FAA	-
Joelle Briggs	FAA	-	Chris Schaffer	FAA	X

Additional Participants:

Marco Milanese, Port of Seattle
 Eric Schinfeld, Port of Seattle
 Robert Tykoski, Port of Seattle
 Mark Coates, Port of Seattle
 Clare Gallagher, Port of Seattle
 Stan Shepherd, Port of Seattle.

Facilitator: Phyllis Shulman, Civic Alchemy

Note Taker: Megan King, Floyd | Snider

Meeting Objectives:

To recap and preview Aviation Noise and Federal Policy Working Group meetings. To discuss additional potential noise reduction initiatives. To discuss StART's 2019 priorities.

Welcome

Lance Lyttle, Sea-Tac Airport Managing Director

Lyttle welcomed the group to the first meeting of the year. He thanked the StART members and members of the public who attended and spoke on behalf of StART at the January 22nd Port Commission meeting. Lyttle stated that he looks forward to identifying StART's 2019 priorities based on the discussion at today's meeting. Lyttle acknowledged that this will be the final StART meeting for Joe Scorcio, outgoing SeaTac City Manager and thanked Joe for helping develop StART and his active involvement since StART's inception.

Scorcio thanked the group, encouraged ongoing collaboration, and introduced Carl Cole, the new SeaTac City Manager, who will participate in StART as the City's primary staff representative.

Facilitator's Update

Phyllis Shulman, Civic Alchemy

The facilitator acknowledged that the February meetings of the Aviation Noise Working Group and the Federal Policy Working Group were canceled due to snow. She also stated that the 2018 StART Annual Report was finalized and will be posted to the StART website. A bound copy was handed out to each participating StART entity. The facilitator notified StART participants that it has come to her attention that past StART meetings have been audio recorded by community members and that this could occur at future meetings.

Recap of the 1/14 Aviation Noise Working Group Meeting

Stan Shepherd, Port of Seattle

The StART Aviation Noise Working Group (Working Group) provided a recap of their last meeting. The Working Group meeting summary for the last meeting is attached as Appendix B. The update included:

- Draft language for an updated Runway Use Agreement has been prepared and provided to the FAA for review and response.
- Identification of nighttime noise thresholds is ongoing. The noise consultant expects to have thresholds ready to share with the Noise Working Group at their March meeting.
- A letter is being drafted regarding the A320 whistling noise, requesting information on when modifications will be made. The letter will be reviewed by the Noise Working Group and then sent to all airlines who operate the A320 series aircraft.
- The meeting included a presentation on reverse thrust including when and why it is utilized. It was recommended that the Port request airlines to add language, in airfield operations manuals,

that more clearly describes that reverse thrust be used only when necessary for the safe operation of the aircraft.

- The Working Group will be reviewing the topic of noise abatement departure profiles for aircraft departures.

Preview of Federal Policy Working Group

Eric Schinfeld, Port of Seattle – Federal Government Relations

Schinfeld provided a preview of the Federal Policy Working Group. He stated that the membership of the Working Group included a number of congressional offices including the offices of Senator Cantwell and Senator Murray. Staff from Congressman Rick Larsen, who is the Chair of the U.S. House of Representatives' Aviation subcommittee, will also be participating. The Working Group will provide an opportunity to address federal issues of interest to StART and an opportunity for collaboration between the Port, congressional offices, and communities. Potential areas for collaboration include:

- Identifying what noise/air quality/aviation-related policy issues to focus on. Congressional members can provide guidance on strategy
- Providing input to congressional representatives on how to craft new bills to address community concerns
- Building relationships with the National Quiet Skies Network and with congressional representatives in other areas/districts, in order to build momentum

Questions from StART participants included:

- Will evaluation of the FAA Reauthorizations Bill be a part of the Working Group scope?

Response: Yes – both Fernando Ruiz from Rep. Smith's office and Vince Mestre, noise consultant will be assisting with a review of the Bill.

- Will the focus of the Working Group only include items that were on the handout from the previous StART meeting?

Response: No. The handout was developed as a starting point, but the StART discussions do not have to be limited to those items. The Working Group will identify items of relevance from the FAA Reauthorization Bill to work on. The Working Group will distill and develop priorities for their work.

Comments included:

- A bill by Congressman Lynch should be considered as a possible focus. Rep. Lynch is from Massachusetts (Logan Airport/Boston area). Bill focuses on human health studies/evaluations.

Presentation of Glide Slope Analysis Recommendation

Robert Tykoski, Port of Seattle – Airfield/Airspace Planner

Tykoski gave an overview of glide slope analysis and shared the recommendation of the Working Group. The presentation can be found [here](#)

StART discussed the analysis and questions included:

- What is the range of costs for the different alternatives?

Response: Very conceptual costs, but initial estimates vary from \$5 million to \$30 million.

- Are there different technologies that can be considered?

Response: Majority of airports utilize traditional technologies. Sea-Tac Airport has additional elevation changes adjacent to runway ends that make alternative technologies less applicable. There are some technologies that can be considered and will be evaluated further.

- Is there anything StART can do to encourage the Port to implement the recommendation, and what is the timeline?

Response: Schedule for implementation of the recommended alternative can take upwards of four years because it is FAA-owned equipment and requires substantial site work to prepare the area. The Port reimburses the FAA for the expenditures tied to moving the equipment. This is not a short-term near-term fix. Tykoski will inquire as to whether letter writing would have any effect on the timing.

- Does the FAA absorb any of the cost?

Response: No. Since it could be tied to an efficiency project there may be potential for federal funding.

- What are the benefits that come from this? Is there an inverse proportionality, or noise dispersion?

Response: It is assumed that there are benefits as the elevation of an aircraft is raised, ground noise lessens. However; in this instance, the elevation increase is not anticipated to result in a noticeable change in noise with most aircraft.

Comments included:

- This is a good example of what the purpose of the working groups was- to identify near-term efforts that could be done and get the process moving. Although it's not immediate, it will have an impact in the future. If actions aren't started now, it will take even longer.
- A difference of 300 feet, is about the difference of a home being a mile farther away – which is a real difference and would matter for residents in Federal Way.

StART participants confirmed support for the glide slope recommendation.

Airfield Taxiing Noise Reduction Initiative

Mark Coates, Port of Seattle – Airfield Operation

Coates reviewed a new airfield taxiing noise reduction initiative that is being analyzed by the FAA. A graphic can be found [here](#). The FAA is working on the initiative with the support of the airlines. This concept will keep airplanes moving once they land and may reduce noise from aircraft when they power-up to cross runways. The initiative could impact about 50% of arriving flights during south-flow operations. The next step in the initiative is to do a safety risk assessment that identifies and tries to address any risks. Depending upon the risk assessment, the FAA may conduct a test, starting around May. The initiative has a potential to decrease ground noise during conditions when this new taxi flow is in effect. Alaska Airlines and Delta Air Lines are supportive of the concept. The initiative has the potential to lessen the amount of time it takes to get to a gate and should save fuel. The Port will monitor noise levels to see if there is a noticeable difference in noise when the FAA runs the test.

Questions included:

- Will the analysis consider future conditions of higher traffic? Concern is that the end around taxiway will create more noise for the neighborhoods right at the northern end of the airport.

Response: As long as the aircraft remain in motion, less noise will be generated. This would not add any new taxiways at the airport and instead, better utilizes current taxiways. Currently, planes line up with tails pointing toward the west, staging them to cross an active runway. Once clear, all planes cross the runway, sending noise to the west. This concept would reduce the need for that occurrence.

- What is the thrust level when an aircraft powers-up to cross a runway ?

Response: About 40% increase to get the aircraft to move.

- Delta Air Lines has a No Reverse Thrust policy – why doesn't Alaska Airlines?

Response: Alaska Airlines instructs pilots to, when possible, limit reverse thrust to only when needed. Sometimes it is required due to conditions. Delta's manual says the same - use Idle thrust, unless required. The wording in each airlines' flight manuals are slightly different. Reverse thrust is used to slow planes down once they land. Acceleration to get a plane to move from a full stop is not "reverse thrust".

- What measures will be used to quantify a decrease in noise during the test?

Response: There are noise monitors on the west side of the airfield. Part of the assessment could be observing if there is a decrease in noise hotline messages during the testing phase.

Development of 2019 Priorities

Phyllis Shulman

StART participants engaged in small group discussions to develop input into 2019 priorities for StART. Each group reported out their preferences. These preferences will be compiled with previous comments

and Shulman will consolidate comments, analyze what themes emerged, and communicate the results to StART and Working Groups prior to the next StART meeting. It was stated that it is important to consider the availability of StART members when expanding or adding new working groups.

Public Comment

Compiled public comment are included here as Appendix A.

Meeting Wrap Up

Lance Lyttle, Port of Seattle

Lyttle clarified that issues that are not addressed in the scope of the SAMP process can be addressed through a separate process. Lyttle thanked the community members and StART participants for their time and contribution.

Next Meeting:

April 24, 2019, 6:00 pm – 8:00 pm

Location: *SeaTac International Airport Conference Center*

Appendix A Summary of Public Comments

1. Bernadine Lund (Federal Way) (oral comments):
 - Was very upset by the recent Commissioners meeting where it was discussed how SAMP would be handled. It was stated that there were risks to adding quality of life to the SAMP environmental review.
 - Asked whether a lower than 65 DNL could be used for environmental review in the SAMP.
 - Concerned that some public comments on the SAMP were not addressed, and night-time flights would not be addressed.
2. Blanche Hill (Normandy Park) (oral comments):
 - Stated that a two-day summit was coming up on a number of topics including biofuels. Recommends that StART host a summit on alternative forms of transportation, such as hyperloop.
3. David Goebel (Vashon Quiet Skies) (oral comments):
 - Has been recording meetings, for own use, and for note taking. Also, writes reviews on meetings, and posts those articles.
 - Based on internet research, San Diego has 3.5% glide slope angle. Questions whether this means it is possible to get an allowance.
 - Legislation about dispersion – the effect is on the Next Gen neighborhoods including Vashon Island. So, what it would do for us, would be to bring it back to how it was before Next Gen. Also creates cookie cutter approaches, results in planes getting low for many miles.
4. Debi Wagner (Burien) (oral comments):
 - Expressed concern that community representatives from Burien on StART are absent. Inquired about why members can't be replaced, or have a different community member sit in, if they are absent from a meeting. *(Facilitator's response: A City is responsible for appointing community representatives. According to the Operating Procedures, if an appointed community representative can no longer serve or their term expires, the City may appoint a replacement. There cannot be a temporary replacement if a member is still an appointee but is absent from a meeting.*
 - Discussions on noise are self-governed by the Port and FAA, which is the same as the cigarette industry saying smoking is fine. This group should include an independent aviation engineer .
5. Rodger Kadeg (SeaTac) (oral comments):
 - Expressed appreciation and for the work Joe Scorcio has done for the committee and the City of SeaTac. It is finally at the point where instead of butting heads we are working towards solutions. Encourages more working groups. This is looking toward real solutions which is appreciated.
 - Concerned with the responses given to Commissions regarding noise issues and utilizing 65 DNL as the standard in the SAMP. An evaluation of the actual physical impact, irrespective of noise level is required, in the SAMP. A doctor who is lead for SEPA at the

state level, confirmed this. The staff seemed resistant to the Commissioner questions about the 65 DNL level.

6. JC Harris (SeaTac) (oral comments):

- Was struck by the cost of implementation of the glide slope options. Wonders whether changing the glide slope is the best use of funding. The possible cost of changing the glide slope, \$25 million could do a lot of good with public health and noise mitigation. Perhaps StART should determine what funding the Port has available and identify the options/best use for those funds.

7. Anne Kroeker, (written comments):

- We, the audience community, appreciate the involvement of our thoughts and ideas, to the larger committee.
- I cannot emphasize enough how important it would be for this group to give overview and feedback to the SAMP process development, as it has not been a regular SEPA process from the start. Advocating to bring a 3rd party expert analysis to the process would alleviate any surprises later as to what was included or not that should have been and a perspective of how this process has gone for other projects. I believe our State's Department of Ecology would be a source of help here. As I said in my public testimony to the Port Commissioners yesterday, it is best practice and serves all parties better, to have this outside expert direction and input. For example, I believe that not including Night-time flight noise in the parameters of the SEPA Environmental Health analysis, as the Port is suggesting, is outside the scoping process and would be in violation of the following Washington State checklist based on the "chapter [70.107](#) RCW, the Noise Control Act of 1974":

173-60-040

Maximum permissible environmental noise levels.

2. (1) No person shall cause or permit noise to intrude into the property of another person which noise exceeds the maximum permissible noise levels set forth below in this section.

3. (2)(a) The noise limitations established are as set forth in the following table after any applicable adjustments provided for herein are applied.

edna of

noise source edna of

receiving property

Class A Class B Class C

class a 55 dBA 57 dBA 60 dBA

class b 57 60 65

class c 60 65 70

4. (b) Between the hours of 10:00 p.m. and 7:00 a.m. the noise limitations of the foregoing table shall be reduced by 10 dBA for receiving property within Class A EDNAs.
5. (c) At any hour of the day or night the applicable noise limitations in (a) and (b) above may be exceeded for any receiving property by no more than:
 6. (i) 5 dBA for a total of 15 minutes in any one-hour period; or
 7. (ii) 10 dBA for a total of 5 minutes in any one-hour period; or
 8. (iii) 15 dBA for a total of 1.5 minutes in any one-hour period.
9. [Order 74-32, § 173-60-040, filed 4/22/75, effective 9/1/75.]
- 10.
- 11.

**12. 173-60-050
Exemptions.**

13. (1) The following shall be exempt from the provisions of WAC [173-60-040](#) between the hours of 7:00 a.m. and 10:00 p.m.:
 14. (a) Sounds originating from residential property relating to temporary projects for the maintenance or repair of homes, grounds and appurtenances.
 15. (b) Sounds created by the discharge of firearms on authorized shooting ranges.
 16. (c) Sounds created by blasting.
 17. (d) Sounds created by aircraft engine testing and maintenance not related to flight operations: Provided, that aircraft testing and maintenance shall be conducted at remote sites whenever possible.
 18. (e) Sounds created by the installation or repair of essential utility services.
19. (2) The following shall be exempt from the provisions of WAC [173-60-040](#) (2)(b):
 20. (a) Noise from electrical substations and existing stationary equipment used in the conveyance of water, waste water, and natural gas by a utility.
 21. (b) Noise from existing industrial installations which exceed the standards contained in these regulations and which, over the previous three years, have consistently operated in excess of 15 hours per day as a consequence of process necessity and/or demonstrated routine normal

operation. Changes in working hours, which would affect exemptions under this regulation, require approval of the department.

22. (3) The following shall be exempt from the provisions of WAC [173-60-040](#), except insofar as such provisions relate to the reception of noise within Class A EDNAs between the hours of 10:00 p.m. and 7:00 a.m.

23. (a) Sounds originating from temporary construction sites as a result of construction activity.

24. (b) Sounds originating from forest harvesting and silvicultural activity.

25. (4) The following shall be exempt from all provisions of WAC [173-60-040](#):

26. (a) Sounds created by motor vehicles when regulated by chapter [173-62](#) WAC.

27. (b) Sounds originating from aircraft in flight and sounds that originate at airports which are directly related to flight operations.

28. (c) Sounds created by surface carriers engaged in interstate commerce by railroad.

29. (d) Sounds created by warning devices not operating continuously for more than five minutes, or bells, chimes, and carillons.

30. (e) Sounds created by safety and protective devices where noise suppression would defeat the intent of the device or is not economically feasible.

31. (f) Sounds created by emergency equipment and work necessary in the interests of law enforcement or for health safety or welfare of the community.

32. (g) Sounds originating from motor vehicle racing events at existing authorized facilities.

33. (h) Sounds originating from officially sanctioned parades and other public events.

34. (i) Sounds emitted from petroleum refinery boilers during startup of said boilers: Provided, That the startup operation is performed during daytime hours whenever possible.

35. (j) Sounds created by the discharge of firearms in the course of hunting.

36. (k) Sounds caused by natural phenomena and unamplified human voices.

37. (l) Sounds created by motor vehicles, licensed or unlicensed, when operated off public highways except when such sounds are received in Class A EDNAs.

38. (m) Sounds originating from existing natural gas transmission and distribution facilities. However, in circumstances where such sounds impact EDNA Class A environments and

complaints are received, the director or his designee may take action to abate by application of EDNA Class C source limits to the facility under the requirements of WAC 173-60-050(5).

39. (6) Nothing in these exemptions is intended to preclude the department from requiring installation of the best available noise abatement technology consistent with economic feasibility. The establishment of any such requirement shall be subject to the provisions of the Administrative Procedure Act, chapter [34.04](#) RCW.

40. [Statutory Authority: Chapter [70.107](#) RCW. WSR 94-12-001 (Order 92-41), § 173-60-050, filed 5/18/94, effective 6/18/94; WSR 83-15-046 (Order DE 82-42), § 173-60-050, filed 7/19/83; Order DE 77-1, § 173-60-050, filed 6/2/77; Order 75-18, § 173-60-050, filed 8/1/75; Order 74-32, § 173-60-050, filed 4/22/75, effective 9/1/75.]

- Requiring some standards for testing changes, as new procedures are put into practice, such as has been suggested for the airfield noise assessment options brought forward to your committee, would be useful to tell whether the proposed changes are helping or not. For example, adding noise monitors to the areas on the taxiing field, to see what the noise levels are now and then after the TDFM procedure has started, is the only real way to get solid data on which to base future decisions. Of course, corroboration from noise complaints recorded will help but should not be the sole way to test whether the new system is better or not.
- I agree with the Aviation Noise Working Group's interest in hearing more about sound barriers around the airfield. In addition, has anyone asked, or looked into, the possibility of electric power storage for the airplanes, as they are plugged into the airport power, which might be enough to get them through the taxiing/on-the-ground movement? While I am not an electrical engineer, I do know that hybrid electric engines have been around for a long time and would guess that this question has already been asked and maybe even answered.

Appendix B

START FACILITATOR'S MEETING SUMMARY
AVIATION NOISE WORKING GROUP
Monday, January 14, 2019
5:30-7:30PM, Conference Center, Sea-Tac Airport

Member	Interest Represented
John Resing	Federal Way
Terry Plumb	Burien
Yarden Weidenfeld	Federal Way
Chris Hall	Federal Way
Earnest Thompson	Normandy Park
Mark Hoppen	Normandy Park
Eric Zimmerman	Normandy Park
Joe Scorcio	SeaTac
Jennifer Kester	SeaTac
Robert Akhtar	SeaTac
Shelia Brush	Des Moines
Tom Fagerstrom	Port of Seattle
Robert Tykoski	Port of Seattle
Tim Toerber	Port of Seattle
Scott Kennedy	Alaska Airlines
Marco Milanese	Port of Seattle
Stan Shepherd	Port of Seattle
Scott Ingham	Delta Air Lines
Steve Osterdahl	Alaska Airlines
Jason Ritchie	FAA
Vince Mestre	L&B

Facilitator: Phyllis Shulman, Civic Alchemy;

Note Taker: Megan King, Floyd Snider

Other Attendees: Tom Eckert, Delta Airlines; Lance Lyttle, Port of Seattle

Meeting Objectives:

To continue discussions on the Glide Slope Analysis and to identify and begin discussions on ground noise assessment actions.

Meeting Summary:

Update on the Implementation of the Draft Rolling Work Plan

The updates included:

- Runway Use Agreement: The draft agreement has been forwarded to the FAA on 12/17. Likely review is delayed by the partial federal government shutdown. The next step will be a response from the FAA.
- Late Night Noise Limitation Program: Port staff and the noise consultant are just completing the analysis with a recommendation for noise thresholds. The noise consultant and Port staff are proposing six noise thresholds to capture departure and arrival levels at four noise monitor locations. Staff expects to have updated noise thresholds ready to share with the Working Group by the next meeting. It was stated that communication with the airlines about the program is expected to commence in March 2019. The Port intends to communicate individually with each airline and update the airlines at a number of venues before the program's official launch.
- A320 Arrival Noise Retrofit: Port staff shared a first draft of a letter that, once finalized, will be sent to airlines that operate the A320 series aircraft at Sea-Tac. The letter asks for a response from airlines on their schedule and plans for retrofitting their fleets. Port staff will continue to revise the letter including strengthening language as to the Port's goal and preferred outcomes related to the retrofit.

Review of Possible Action Steps for Glide Slope Changes

Port staff presented alternatives for Runway 34R glide slope adjustments and put forth a recommendation. The recommendation (Alternative One) was stated as:

- Runway 34R (south end, north flow) are Cat1/2
- Runway 34R (the 1st/inboard runway) is currently at 2.75 (other runways are at 3.0), and Port will attempt to increase to 3.1

Staff stated that currently, only two airports (Cleveland and Newark) have a glide slope greater than 3 degrees that are Cat 1/2. (SEA is a Cat1/2 on 34 RWY ends). The FAA prioritization process for the project is outside of the Port's control and its potential implementation could also be impacted by the partial federal government shutdown.

Questions included:

- For glide slope changes in height at certain distances, what is the resulting impact on noise levels?
 - *Response: Adjusting the glide slope would not be expected to result in a significant reduction in noise levels, but some reduction could be noticeable in certain locations.*
- Why is the relocation of the glide slope antenna occurring as part of SAMP?

- *Response: The glide slope antennas are being moved to allow for construction of taxiways associated with SAMP. Two new parallel taxiways will be constructed. The path of one of the taxiways will be over the location of the current antenna. SAMP also assumes changing the 2.75-degree angle to a standard 3.00-degree angle. Flight change procedures typically require a two-year schedule for FAA approval.*
- How would the Port describe the benefit to the community members of the recommended glide slope changes?
- *Response: Only two other airports in the US currently have a CAT 1/2 approach at 3.1 degrees. Alternative One aligns with the desire of StART members to implement action as soon as possible. Other glide slope options put forward could end up being impeded by possible factors that are outside of the Port's control. What is the goal of the change? Would this be an anomaly to have some glide slopes at 3.1 degrees and some at 3 degrees?*
 - *Response: The goal would be to have all glide slopes aligned with one standard, but variation is allowed. Antenna could be sited in a location that allows for future adjustments to glide slope angles.*
- How does the design process work? What are the next steps?
 - *Response: First, there would be a request to the Port Commission for funding and to expedite the process, permission to design "at risk". This would allow the FAA to do a feasibility assessment, if requested.*
- Could this project be conducted outside the scope of the SAMP?
 - *Response: The schedule of the SAMP is underway. If there were to be delays in SAMP, the port could look for means to potentially pull the project outside of that process.*

During the discussion, Working Group members noted that taking action on glide slope is an example of a success, even if it has only incremental benefit. Alaska Airlines lent their support to Alternative One. The FAA must approve any changes to the glide slope.

Next Steps: The Working Group will bring forward a recommendation to StART that a request be made to the Port Commission to expedite the process of changing the glide slope and begin a design "at risk".

Utilization of Reverse Thrust Presentation

The noise consultant presented information defining what reverse thrust is, the purpose of using reverse thrust, how it is utilized in flight operations, and runway and weather conditions that affect its use.

Highlights of this information include:

- Reverse thrust is a misnomer – engines do not run in reverse. With newer aircraft, air instead of being directed out the back of the engine, is directed out towards the sides of the engine.
 - Weather affects usage. Reverse thrust provides an improved margin of safety and is less optional in wet conditions. Reverse thrust is just as effective in wet conditions as in dry conditions.

- Short runways are also a reason for the use of reverse thrust.
- In Europe, airports have requests for the reduced use of reverse thrust, but no hard requirements.
- O'Hare Airport in Chicago 'requests' airline pilots to use reverse thrust to the least degree possible. Seattle also requests pilots to use reverse thrust no more than necessary during the nighttime hours. Current language could be more effective if changed to say 'use no more than necessary for safety'.

Alaska Airlines' Director, ATC & Airspace Operations reviewed Alaska Airline's utilization of reverse thrust during normal runway operations. These operations included:

- Reverse Thrust Slide: Max Reverse: (70-100%) is used in emergency situations only.
- Delta Air Lines and Alaska Airlines have policies that encourage use of idle reverse thrust during evening/night hours (10PM-7AM). Use of idle thrust is based on length of runway, weather conditions, load, and whether the auto braking system is operational.

Alaska Airlines and Delta Air Lines are exploring with the FAA if there is a way to change taxi procedures during south-flow operations to increase efficiency and reduce the number of times airplanes have to stop to wait to cross an active runway. This stopping and starting could be a significant contributor to airfield ground noise. For example, going from idle thrust to breakaway thrust is approximately 10 times increase in noise. It was also acknowledged that an increase in noise could occur when multiple aircraft start their engines at the same time. It was stated that what community members might think is noise from reverse thrust may actually be the stopping and starting of taxing engines. StART participants noted that this confirms the experiences of community members, particularly in Normandy Park. Changing taxi procedures has the potential to significantly decrease ground noise, reduce fuel consumption, increase safety, and reduce the time it takes to get to the gates. The airlines are working with the FAA and have designated a 60-day test plan to implement new taxi procedures beginning in March. This plan could also reduce the number of aircraft staged on the SW side of the airport waiting to cross runways.

The decision process for a permanent procedure change includes running a test of the new procedures for 60 days, review of the data by the FAA Safety Board and FAA authorization. FAA has stated that they are supportive of the 60-day test. A StART member stated that the psychological impact of thinking that nothing is being done makes issues worse, or more painful. It is important to communicate the changes that StART is initiating as well as important safety considerations that may constrain choices.

Next steps: Working Group members agreed that it could be useful to create less ambiguous language to pilots to use reverse thrust no more than necessary for safety. The Port will prepare modified language to share with the group during an upcoming meeting. Both, Alaska Airlines and Delta Air Lines representatives stated that their flight manuals direct the use of idle thrust unless needed for safety and agreed that updated language from the Port of Seattle could be helpful. The Working Group collectively expressed support for the test plan.

Airfield Noise Assessment Options and Considerations

The noise consultant reviewed some of the potential topics to consider in an airfield noise assessment.

- FAA has a program they are putting in place that reduces queuing on taxiways, called TDFM (flow management program) that optimizes the release of aircraft from the gates all the way to the next gate at the next airport. The goal is to minimize queuing and to eliminate conflict or delays. Sea-Tac is on list to be included in deployment test, but relatively low on the list because Sea-Tac has limited space to hold aircraft.
- Takeoff Roll: Use of de-rated thrust during takeoff is already being utilized so is not recommended for further analysis.

The Working Group added sound barriers as a potential topic to consider in an airfield noise assessment.

Working Group members commented that it could be helpful to learn more about a ground run-up enclosure (GRE) for aircraft maintenance and communicate this knowledge to the community at large. It was stated that there is confusion in the community about the use of a GRE and whether they contribute to the reduction of maintenance noise. This was recommended as a possible presentation and discussion at a Working Group or StART meeting. It was requested that additional ideas for topics be emailed to the facilitator.
