



## Ted Stevens Anchorage International Airport (FAR) Part 150 Noise Compatibility Study Update

Study Input Committee Summary Notes  
February 12, 2013 1:30 p.m. Airfield Maintenance Facility

<i>NAME</i>	<i>AFFILIATION</i>	<i>PRESENT</i> ✓
<b>Staff and Consultants</b>		
John Parrott	ANC ✓	
John Johansen	ANC ✓	
Trudy Wassel	ANC ✓	
Ryk Dunkelberg	Barnard Dunkelberg & Company ✓	
Kate Andrus	Barnard Dunkelberg & Company ✓	
Jen Wolchansky	Barnard Dunkelberg & Company ✓	
Vince Mestre	Landrum and Brown ✓	
Mary Vigilante	Synergy Consultants	
Wende Wilber	CRW Engineering Group ✓	
Eva Welch	AECOM ✓	
 <b>Committee Members</b>		
Merle Akers	Turnagain Community Council ✓	
Bob Auth	Spenard Community Council ✓	
Judy Chapman	Citizen Representative ✓	
Bruce Greenwood	FAA ✓	
Mary Lee	Citizen Representative ✓	
Jim Seeley	LHD Pilot Association	
Patricia Sullivan	FAA Airports Division ✓	
Breck Tostevin	Turnagain Community Council ✓	
Katie Gage	ANC ✓	
Scott Lytle	ANC ✓	
Daniel Burgess	Citizen Representative ✓	
David Chilson	FAA ✓	
 <b>Other</b>		
Brienna Demeris		
Pete Fitzgerald		
Cathy Hammond		
Mike Lee		
Jim Montgomery		
Pat Oien		
Evan Pfahler		
Jane A. Smyth		
Tonia Winken		

## Summary Notes

Mr. Dunkelberg began the fourth meeting of the Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Study Update Input Committee by presenting the meeting agenda as follows:

- ▶ **Introductions**
  - Mr. Mestre will discuss Background on Noise, Noise Metrics and Forecasts
  - Ms. Andrus will discuss Land Use Analysis
  - Review of Forecasts
  
- ▶ **Meeting Protocol**
  
- ▶ **Brief Refresher on Part 150 Study**
  - What is the purpose of a Part 150 Study?
  - What are Noise Metrics?
  
- ▶ **Description of Supplemental Noise Metrics**
  - Single Event Metrics
  - Cumulative Noise Metrics
  
- ▶ **Graphical Descriptions of Part 150 Study components Flight Tracks**
  - Flight Tracks for East and West Flows
  - Time Above Noise Levels
  - Existing (2009), 2020, and 2030 Noise Contours
  
- ▶ **Discussion of Land Use and Population Analysis**
  
- ▶ **Next Steps**
  - Alternatives Development
  - Alternatives Analysis
  - Public Input on Alternatives
  - Development of Recommendations
  
- ▶ **Questions/Comments**
  - Study Committee Members
  - Members of the Public



## ***Introductions***

Mr. Dunkelberg introduced the Part 150 Study team and gave a brief overview of the agenda for this meeting.

## ***Committee Role and Meeting Protocol***

Mr. Dunkelberg stated that the Study Input Committee is expected to act as a major resource for the Airport staff and Consultant team in developing alternatives for the Part 150 Noise Study. He asked that all questions wait until the technical portion of the presentation is completed. Then, questions will be taken from each member in turn, so that all committee members get a chance to ask questions and pose comments. Members of the public who attend Study Input Committee meetings will be allowed to speak at the close of committee business.

## ***Study Details***

Mr. Dunkelberg reviewed that the purpose of the Part 150 Noise Compatibility Study is to identify existing noise exposure surrounding the Airport, identify potential future noise exposure, evaluate various alternatives to reduce the number of people affected by noise, and to make recommendations as to viable abatement/mitigation measures to reduce the number of people affected by noise living near the Airport. He discussed the two distinct parts of a Part 150 Noise Compatibility Study: Noise Exposure Maps (NEMs) and a Noise Compatibility Program (NCP). After a complete analysis of noise and land use conditions at the Airport, both the NEMs and the NCP will be submitted for approval or disapproval by the Federal Aviation Administration (FAA). If approved, the measures and recommendations contained in the NCP are eligible for implementation and federal funding.

## ***Why Update Study?***

Mr. Dunkelberg explained that for the Airport to continue receiving federal funding for noise mitigation it must have current noise exposure maps (and the current NEMs are over 10 years old). Additionally, there have been changes in aircraft fleet mix, aircraft noise levels, change in aircraft activity levels, changes in airfield development and the release of an updated Integrated Noise Model (INM).

## ***Noise Metrics***

Mr. Dunkelberg introduced Vince Mestre, who discussed noise metrics, specifically single event and cumulative noise metrics. Mr. Mestre described various supplemental noise metrics including the Lmax, SEL, Flow DNL, Time Above, and Number Above metrics. He explained that while these supplemental metrics are not required for an FAR Part 150 Noise Study, they explain a lot of information that is not evident in the DNL metrics.



### ***Graphical Representation of Flight Tracks and Noise Metrics***

Mr. Mestre reviewed a number of graphics that showed typical east and west flow flight tracks, supplemental noise metrics, including LEQ, SEL, Time Above, Number Above, Flow DNL, and Lmax. These graphics helped to show activity and noise levels at the airport in the context of various noise metrics.

Additionally, Mr. Mestre reviewed the updated contours which included the addition of ground run-ups.

### ***Land Use Metrics***

Kate Andrus reviewed land use data within the airport surroundings. She explained existing (2009) land use, as well as 2020 and 2030 forecasts for land use. Ms. Andrus showed that there are very few people that would fall within the 65 DNL contour for noise impacts in the 2020 forecast, which is the contour that the FAA uses to base land use compatibility. The 2030 noise contours were presented for informational use only.

### ***Next Steps and Homework***

Mr. Dunkelberg explained the next steps and distributed a handout detailing the alternatives development process. He asked that participants read the information and draft any questions and/or comments that they have on the process. The next Study Input Committee Meeting will likely be in May, and topics discussed will include alternatives development and alternatives analysis.

### **Questions and Comments**

*Question:* Why did we choose the Beaver aircraft?

*Answer:* This type of aircraft was chosen because the Single Event Level (SEL) is one of the larger SELs (because it is a slow moving plane that results in a long duration of noise). The Beaver is just one representative aircraft modeled for SELs along with the 737 and the 747. There are approximately 250,000 operations per year at ANC, therefore it was not possible to provide the SELs (or show the tracks) for each type of aircraft. DNL takes into account all of the tracks, and for the SELs we are just showing examples of different types of aircraft that we found to be most representative of the fleet. The purpose of the supplemental metrics (i.e., SEL) is to show those noise levels that a person hears when an aircraft flies over versus the DNL which is an annual average.

*Question:* Why are there only two run-up areas on the map?

*Answer:* We used an annual operations log to identify run up locations and operations. These two areas (Taxiway Q and Taxiway J) are the only areas identified by the Airport for aircraft to use for full-power run-ups. These are the only permitted areas for full-power run-ups. We are not sure what was authorized in the past, but full power run-ups are allowed only at these places currently. It does not mean run-ups do not happen outside of these areas, but if they do happen elsewhere, they probably are not authorized.



*Comment:* It was brought to attention that in addition to the preferential runway use in place, a change in the fleet mix (to quieter aircraft) also accounts for some of the reduction in the noise contours. Additionally, it was noted that a good example of an administrative measure that is currently included in ANC's Noise Compatibility program is how the airport has implemented the preferential runway use program – this was an effective administration measure.

*Question:* When the aircraft are departing north from the runway, do they always turn and go south?

*Answer:* Most of the time the aircraft will depart heading north and will take a left to turn south.

*Question:* Does the analysis take into effect future changes in land use?

*Answer:* We will consider adopted land use plans, but if the plans or changes are in the *process* of being adopted, we do not. But we do consider existing and (officially) planned land use.

*Question:* Is there anything in the materials that quantifies noise at Lake Hood separately from the main airport?

*Answer:* We have not broken out Lake Hood from ANC. We have combined them into one noise contour. If you look at the contours, you can generally see the influences from Lake Hood, but we have not run separate contours (except for single events).

*Question:* On the noise contour maps, there are estimates of residences/acres affected, but the maps do not seem like they are drawn lot by lot – they are more generalized.

*Answer:* We used 2010 Census tract/block information and overlaid them in GIS to determine the number of residences/people in those contours. If sound insulation of homes within the 65 DNL and greater contours is a recommendation of the Part 150 Study, we will look at an aerial to determine the number of homes and each individual address to determine the eligibility boundary. The eligibility boundary may extend to a physical boundary (to include a full block for example), but this will be determined during the development of the Noise Compatibility Plan (NCP).

*Question:* There is a Site #8 that is not listed in the table, and there are no noise monitoring sites north of this. How can we account for noise up there? Is there a monitoring site in Northern Lights?

*Answer:* FAR Part 150 does not actually require the study to include these types of measurements. However, we use these measurements as a reality check on the model - to ensure the model is accurately predicting the noise of an aircraft. These measurements are taken over a short period of time and are also useful for telling us information that we cannot necessarily glean from the model (ambient noise, etc.). What we measured helps confirm the model and give us additional information about ambient noise and flight tracks. The sites were chosen based on the noise engineers judgment and people who volunteered their houses, and represent of areas near the airport (primarily those under flight tracks).



There are two different types of sites. The first set of sites is the airport's permanent sites. The second set of sites is those we used for noise monitoring as part of this Study. Site 8 of the Part 150 Study sites was determined to be too close to Site 10 to provide separate data from the Part 150 Study monitoring. The monitor was therefore left at Site 10 for an extended period of time. The site mentioned in the meeting on page C.32 is Site 8 of the permanent noise monitoring sites.

No. There is no monitoring site north of Northern Lights. However, as stated above, the noise monitoring helps confirm the model, but is not required as part of the Part 150 Study. Therefore, a site north of Northern Lights is not necessary to ensure that the noise predicted in the model around those areas is correct.

*Question:* One member mentioned that he hasn't received an answer to his questions that he submitted in writing.

*Answer:* Comments and questions posed in meetings and in other forums are included in the meeting notes and the Frequently Asked Questions (FAQs) that are posted online.

*Question:* One member questioned the contours based on the SELs shown for the Beaver, stating that if the Beaver was used as one of the noisier aircraft, then the assumptions in the model might not be correct. Cessna 185 aircraft are extremely loud. To be using aircraft other than these aircraft isn't representative and doesn't account for noise. At Lake Hood, the departing airplanes do not necessarily gain elevation as quickly. They are lower over the whole area. The member also noted that flights departing Lake Hood turn to the north so the flight track shown for the Beaver may not be representative of Lake Hood departures. They want an example of how we got the readouts. Regarding helicopters, the committee member says that one helicopter path along Raspberry Road is not included in the analysis.

*Answer:* The SELs that we showed are only examples as to what aircraft noise levels *can* be (for several representative aircraft). They were not meant to represent all aircraft. The Beaver was chosen because it is generally an aircraft that produces noise complaints across the country. It is just representative of single event levels. The DNL contours include all operations based on type and time of day. For example there are 15 different models of propeller planes used in the fleet mix at ANC. For single event data, we showed only two specific examples, but all the other types of aircraft are included in the DNL. Additionally, noise power distance curves, thrust, tip speed, and performance data are included in the model – we do not adjust those.

Many aircraft types are included in the model, but not every aircraft type is in the model (this is especially true for seaplanes). However, the aircraft included in the model are representative of most aircraft. When a specific aircraft is not in the model, there is a substitute aircraft to use. These substitutions are conservative, meaning that the substitute aircraft is generally noisier. The flight tracks mentioned will be examined to see if any need to be added.

*Question:* The model doesn't seem representative of seaplanes (where the noise of the tip speed of the propeller is louder).



*Answer:* As stated above, many aircraft types are included in the model, but not every aircraft type is in the model (this is especially true for seaplanes). However, the aircraft included in the model are representative of most aircraft. When a specific aircraft is not in the model, there is a substitute aircraft to use. These substitutions are conservative, meaning that the substitute aircraft is generally noisier.

There are two seaplanes included in the model. We used those to represent our seaplane fleet. The INM model is not perfect, but it is a reasonable representation as to how the aircraft operate.

*Question:* It was mentioned that the 787 wasn't listed in the types of aircraft – is that comparable to the MD11?

*Answer:* Because FAA has not published the level or noise data of the 787, we use the triple sevens to represent this model. Also, we cannot model newer planes (that have not been measured) in the 2020 and 2030 maps. We assume they will be quieter, but they have not been measured to know exactly how much quieter they will be. Therefore, we can only use existing fleet, but because the existing fleet tends to be louder than the newer aircraft, using the existing fleet is a conservative assumption.

*Question:* What happens if they move 20 F16s here?

*Answer:* It will be included as part of the Environmental Impact Statement (EIS) for the Air Force's proposed move of the F-16's to Joint Base Elmendorf and Richardson. It will be the equivalent of five large aircraft in the morning, and five in the afternoon. They will be measurable and incremental, but would not provide drastic change.

Part 150 regulations say that if you have a significant change in operation numbers or aircraft types, you must look at the effects of this action. First, through qualitative analysis – you must look at the environmental document and analyze the change. Secondly, if you think this will have an effect on the contour (1.5 DNL increase or 15% change) – you must do the maps over again. However, this applies to aircraft operating at the Airport and the F16s would likely not operate at ANC.

*Comment:* There is some confusion on the flight tracks (daily radar data) and INM flight tracks – could you explain?

*Answer:* The flight tracks in the report and in the presentation are actually INM tracks (the tracks put into the model) – which are a little different from flight tracks for a single day (that were in the noise monitoring report). They are developed based on the regular flight tracks taken from radar data/monitoring. ESRI's ArcView Geographic Information System software was utilized for the detailed analysis of the radar data for the development of noise modeling tracks. The data was separated first by operation type (i.e., arrival, departure) and then by aircraft category (i.e., jet, propeller) and runway. Once the radar tracks were separated, INM primary tracks were developed to simulate the location of actual aircraft flight paths.



The INM sub-tracks were developed by creating 2 dispersed tracks to either side of a primary track. The result of the process was a series of INM model tracks that closely match the current radar data at ANC. But that does mean they are different (and look different) from the daily flight tracks we have shown folks earlier because they represent the primary and sub tracks that best match the majority of the flight tracks that were taken from radar data/monitoring. These INM tracks are the tracks that are actually input into the model.